The internet and postcolonial politics of representation: pacific traversals

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Each new technology is ... created according to values. (Jordan 1999:101-102)

The web is simply an interaction of people. (Kami 2001: interview)

In the popular television series, *Star Trek: The Next Generation*, an ever-present danger for the intrepid crew of the Starship Enterprise is an alien species called the Borg. These cyborgs (beings that are part organic, part machine) have three distinguishing features; the sophisticated communications network - The Collective - which is their social system, an adaptive ability to resist armed attack that makes them virtually indestructible, and their relentless impulse to conquer all other life-forms and assimilate them to their own. Assimilation entails a forced psychological and physical transformation. Not only are an individual's memories wiped out by a neural link to The Collective consciousness, but organic body parts are also replaced by bionic ones. These interface with the Collective communications network and thereby bring the new 'drone' into a symbiotic relationship with the Borg's means of transport and regeneration - Cubes, which can be likened to a fully armed, mobile computer mainframe.

These transformations - modifications - do not preclude a certain amount of individuation or cognition however. Singularity - (liberal) individuality - is not subsumed; rather, it is reconfigured. The peculiar adaptive abilities and response mechanisms of the Borg arise from how their organic and cognitive natures are meshed - integrated - with the electronic and mechanical demands of their communications infrastructure. Becoming Borg is not about being cloned or copied. The Borg assimilate. Furthermore (and this is important from the point of view of non-western practitioners) they are indefatigable in their insistence that no other social organisation is permissible. Being disconnected from The Collective - 'de-activated' - causes collective anguish and a relentless search to retrieve the missing 'unit'. All in all, the Borg are infinitely flexible, assessing and responding accordingly to stimuli as they arise whilst in continuous multilateral communication. Anything else is simply 'irrelevant', inefficient, and moreover, inferior. Such a fully integrated social system and purpose accompanied by an unequivocal colonising impulse means, in effect, that 'resistance is futile'.

It does not require too great an imaginative leap, or the need to be a Star Trek fan, to see the parallels between this story-line and the vagaries of Big Business power struggles, mergers and acquisitions in the now interconnected Telecom, IT, and Mass Media industries (see Chapter One). This is even more so given the increased centrality of the internet/www to the commercial, regulatory and sociocultural implications of these commercial moves. The much publicised anti-trust case prosecuted by the US Department of Justice against the Microsoft Corporation (The Guardian 6/11/99:27) begs an even closer parallel. It would be easy at first

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2 The cyborg is not simply to be found in the realm of science fiction. The term dates from the early days of space exploration where it was coined by Clynes and Kline in 1960 to denote the creation of a "man-machine hybrid" (Haraway 1997:51). This followed on from research into cybernetics in the 1940's and 1950's, as personified by the work of Norbert Weiner (see Lacroix 1998). For the purposes of the discussion here, Haraway's summation of the 'hybrid' in question, and its scientific and cultural manifestations since, holds true; the "cyborg is a cybernetic organism, a fusion of the organic and the technological forged in particular, historical, cultural practices." (Haraway 1997:51). See Jordan (1999: 187-190)

3 These processes are key elements, albeit immanent ones, both for the history of the interaction between people and machines (see Haraway 1997:51) and the Star Trek script writers. For example, a Borg - Seven of Nine - reverses back (with difficulty and in a limited fashion hence lots of room for philosophical ruminations) to human-ness in the latest *Star Trek* spin-off *Voyager*.

4 The software house was accused of abusing its dominant market position and behaving like a monopoly in its alleged anti-competitive practices (read: aggressive assimilation of other competitors). In June 2000 the Supreme Court ruled that Microsoft had to be broken up (as had been done with AT&T in the 1980's). Microsoft promptly appealed, claiming a voluntary 'reorganisation' in the media in the interim. In mid-
sight to see only Microsoft as the real-life incarnation of the Borg and all other parties as species threatened with extinction. Drawing such a tight parallel, however, misses important nuances. In the first place, in the Borg story-line's symbolic power in articulating the nature-or-nurture existential and epistemological conundrum and current debates about genetically modified foods and other biotechnologies (Rodgers 2000, Haraway 1997). In the second place, the political economic implications of a real-life battle for market share (personified, but not exclusively, by Microsoft) are overlooked. In both instances, non-elite users and their everyday life online drop off these 'future maps' for ICTs.

Given their inroads into everyday interpersonal communications, the struggle for ownership and control of internet-related software and hardware are integral to the technical and commercial context of the Microsoft trial on the one hand, and the postcolonial online peregrinations examined in previous chapters on the other. Moreover, the impact of the eventual (non)settlement on the commercial and political future of internet-based communications infrastructure(s) and their main protagonists 'interface' with an ongoing process of de facto standards-making under the exigencies of 'market forces'. The Borg story-line, including all its complexities and variations over the years, is presented here as an allegory for these mutually reinforcing interconnections; the relationship between the Big Business and its standards for 'global communications' (the Borg) vis-à-vis everyday internet-based uses - and users (the others), and the current political and economic project of internet development represented by the GII-GIS (the political and economic universe at stake). Whether this particular neoliberal rendition of the Global Market - Internet - Democracy as an a priori 'continuum' is still a going concern or not, its representative power has entered both the academic and popular imaginaries see Kleinsteuber 1996, Chapter Six).

Back to the Star Trek analogy for a moment. Bearing the above rather cursory correspondences in mind but also allowing for multiple readings as to who fits which allegorical role, the aim of this chapter is to locate where a (grassroots) counter-agency is still possible in the 'cyberscapes' of the future internet/www. The richness of everyday life online as evidenced by the Kava Bowl and the Polynesian Cafe is still there but the personal costs and commitment of their founders, helpers and constituencies are certainly not guaranteed by the broader power struggles in the political economy of ICTs. Whilst much of the latter can be seen in terms of their implications for various discourses on what constitutes the 'digital divide' (Chapter Two, Loader 1998, Hamelink 1997), others are deeply embedded in the systems and software architectures that come (off-the-shelf or 'tailor-made', as freeware or proprietary programmes) with PC's and local or global networks that enable everyday users to access and 'surf' the internet/www. Technical standards are examples of these hidden codes and their concomitant operational and sociocultural norms. Debates about who is responsible for setting standards, about what they should be, and how (and in which political and/or economic forums) they should be decided upon, articulate all too sharply the presence and propriety power of dominant ideological and business strategic interests examined in Chapter One. They also make themselves felt at the everyday user interface, even if (like the moral economies looked at in the last chapter) this is not immediately apparent. These arcane issues and architectures have economic and political consequences - who owns and/or has the right to govern the internet/www which carry their own sociocultural pay-loads. The Microsoft trial encapsulates the way daily habits and organisations of technological use and concomitant rights of access.

2001, the appeal against the split was upheld in that the company will not be forced to split into separate commercial ventures. So, for all intents and purposes it is 'business as usual' for a company that continues unabated to dominate the personal computer market, computer operating systems (Windows) for corporate and personal uses and increasingly internet Browser and email software.

For instance, Microsoft has been accused of threatening competitors "with extinction unless they agreed to carve up the internet browser market" (Martinson 1999:27)

6 In itself a product of its time, Star Trek is arguably a vehicle for a certain, US-centred ideology of progress and technological evolution; for example the value given to the individual processes in the culture of the 'United Federation of Planets' and how traditional notions of warfare and diplomatic negotiations are transferred to outer space.

7 Microsoft Windows as a de facto global Operating System standard, Intel microprocessors as the (Microsoft-fitted) PC component; those companies like Netscape aligned against Microsoft, all being cases in point.
and control to underlying systems and networks intersect with the gender-power relations of Research and Development trajectories and their respective constellations of techno-cultural expertise and knowledge.

In light of both the last chapter and Chapters Two and Three, the argument here is that the nuts and bolts of the internet/www - its various components and larger architectures - comprise 'strategic' operations that are neither merely technical nor of interest to industry or computer programmers alone. The point of the argument being made in this chapter is to show the need, and potential for resisting the way in which the internet/www is being developed and institutionalised under the auspices of one particular ethos, the Free Market, and the technical standards that underpin it. Standards that are effectively commercial uses, if not out-and-out trademarks. A 'worm's eye-view' of technical issues - from the point of view of everyday PC use and internet access - is taken in order to problematise these dynamics in light of (postcolonial) practices of everyday life online. These intersect with how the internet/www is currently being researched and developed, just as the rules and norms comprising the online moral economies of the KB and the KR intersect with the their own online/offline everyday life. Following on from the argument that the practice of everyday life is also inherently political (Chapter Three), the point here is that the agency and actions of non-corporate computer users (like the 'KB'ers' and the Polycafe patrons') are just as cogent to these more arcane issues around the future design and protocols of the internet/www as a 'global' virtual machine' (see below). The upshot is that this chapter revisits the first internet tale. It examines the relationship between the vested interests, such as Microsoft et al, competing for strategic control of the Global Information Infrastructure-Global Information Society (GII-GIS) struggles over technical standards for computer-mediated communications networks (the internet in short). The specific focus for dealing with this complex relationship is the Microsoft Anti-Trust trial. This attempt by the US Federal government to rein in this hugely influential corporation epitomises in many ways the coming of the 'Age of Digital Reproduction' (see Benjamin 19992). The everyday implications of which are analogous to struggles against the Borg in many a Star Trek episode.

After some historical and conceptual delineations on standards and software per se, this chapter then explicates these tensions in terms of everyday computer usages. Changes in standards as such and the (intergovernmental and consultative) forums and procedures by which these are set have come under increasing pressure from vested business interests; Microsoft being but the most high profile example of these. The argument being further underlined here is how a grassroots, non-corporate engagement and awareness of the political nature of the technical side to ICTs (past, present, and future) is crucial given the increasing inroads of 'market forces' in everyday life, and development agenda for 'developing' regions. Standards-setting, let alone the gender-power politics of how the process of standardisation unfurls at a legal, intergovernmental and de facto basis, are not just neutral specifications, purely a function of commercial efficiency or a response to consumer 'demand'. Not only are business interests fully immersed in de facto standard-setting where they seek to guide - to construct - such demands but their success ultimately delimits the (in)equitable design of the physical and digital architectures of communications networks. And likewise, by association, the gender-power relations of communicative modes and rituals. Finally, some open-ended propositions are made for reassessing what 'choice' and openness. let alone democracy and equitable R & D, really entail given the work of Global-Speak and commercial/technical standards to create the internet/www after the image of a privatised, 'free market'. Standardisation issues (as procedures, technical outcomes and/or products) and the values they carry, whether they be at the level of 'minor customisation' at the 'user interface' or deeply embedded in operating systems and platforms, are a crucial, structural element in the gender-power relations of the 'Digital Age'.

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8 An earlier version of this chapter was presented at the European Consortium for Political Research Mannheim Joint Sessions, 26 - 31 March 1999. My thanks to the other participants of Workshop 24 and also to A C Chong for their helpful comments on that draft. The technical details in this chapter owe a lot to K. Boonstra and P. van der Boom (ING Nederland) for allowing me to check my arguments out against their technical expertise.

9 This is what most users deal with, the computer screen and access points to email, the www, multimedia and so on.
Fictional and Historical Delineations

The Global Information Infrastructure will be an assemblage of local, national, and regional networks, that are not only like parallel computers but in their most advanced state will in fact be a distributed parallel computer. In a sense, the GII will be a metaphor for democracy itself. (Gore 1994, quoted in Lüthje 1997:36) 10.

The coupling of 'democracy' to this widely disseminated future vision of the internet/www, and underpinned by the deregulation ethos of the World Trade Organisation, Structural Adjustment programs of the IMF and the profit maximisation imperatives of corporate business (Chapters Two and Six), is also central to the political and ideological ramifications of the Microsoft case. In both Star Trek and real-life scenarios one of the central issues is the imposition of some sort of 'standard' 11. The respective technical specifications, institutions and procedures at stake in this notion (Hawkins 1996) are at the crux of the aforementioned Global Information Infrastructure - Global Information Society (GII-GIS) and any other representations of internet/www futures emanating from the OECD 12. This is a project in which the multifarious hardware and software that comprise the burgeoning internet-based 'superhighway' are to be made fully inter-operable, compatible, and above all 'open' and 'flexible' (Jussawalla 1998:4/8) by the implementation of some sort of across-the-board standards. The seemingly obvious rationale for this is the need for greater efficiency in newer commercial transactions like Electronic Commerce and online Banking. Moreover, it is argued that there is consumer pressure for more standardised communication between intelligent (i.e. software-dependent) tele/communications systems that, due to different manufacturer, and locally developed specifications and practices, are deemed as not yet able to 'talk' to each other adequately or quickly enough.

Standards, as various technical categories and values 13, and the process of standardisation itself (the ways in which the former are agreed upon, implemented, and institutionalised although not necessarily in that order) is a domain in which an array of vested interests compete for, what is in fact, strategic control of the overarching eventual internet/www infrastructure. Meanwhile, traditional inter / governmental, regional decision-making committees, of the ITU and the EU, are seen as lagging behind what is happening 'on the ground' (Mansell & Wehn 1998:180, International Herald Tribune, May 4 1998) in their struggle to codify rapidly obsolescent technical specifications 14 or, given the Microsoft Corporation's well-known penchant for breaking existing standards, recommend those that have already become entrenched as 'voluntary' 15. The net result is an increasing correlation between the orthodoxy of a deregulated, free-trading 'global' market facilitated by a uniform

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11 "...implicit in the GII-GIS concept is the interconnection and interoperability of a range of competing and complementary infrastructures, applications and services made possible by digitalisation. A harbinger of GII-GIS is the explosive growth of the Internet" (OCDE/GD(97)138 www). See also Tarjanne (1998) and an ITU Newsletter (No 8 1995) where it is clear that here "standards are the key to open markets. They represent freedom of choice for the user". My thanks to Alan Chong for pointing out that perhaps "customer preference is a trend of inevitability altogether" (personal email 24/02/99).
12 For a survey of past metaphors, such as the 'Information Super-Highway' or 'Information Society', see Kleinsteuber (1996) and Castells (1996) respectively. The reason I have stayed with this one, the GII-GIS (whether or not it be out of date) is for its evocative qualities vis-à-vis Global-Speak (Chapter One).
13 'Fundamental' standards measure and assess physical characteristics, 'descriptive' standards 'specify particular physical conditions and processes', 'performance' standards 'specify desired conditions but not the means to achieve these conditions' (Hawkins 1996:162). It is the space between the latter two that is at stake especially since "[s]ome kinds of standardization matter more than others, but all forms work by producing those that do not fit as well as those who do" (Haraway 1997:38).
14 For instance the current 18 month turnaround for ITU standards decisions is considered a considerable improvement on the 5 years it used to take. But not fast enough for an industry that needs the ITU to endorse any standards if they are to be successfully established (Richard Nickelson Pacific Telecommunications Council 1999: interview).
15 And in so doing, reinvent themselves as 'informal' 'collaborative' bodies that are "no longer technology-driven but operate increasingly according to market needs on a global scale" (ITU Newsletter No 8 1995:2 www). See Hawkins (1996:178).
communications network (in which equipment and software suppliers, service providers and certain upstream 'user groups' mutually benefit) and the gender-power relations of who really stipulates what this uniformity will entail, where it is to be operational and how all this affects the eventual 'functionality' of the 'Global Information Society' project 16.

There is an inherent contradiction here. Whilst a global (sic) standard of 'openness' and 'interconnectivity' is being orchestrated, the prevailing belief is that any equitable, inclusive standard-setting should be market-led. There is an internal contradiction here. In other words; monopolies like Microsoft are not permissible, even under 'free' market rule. Hence some degree of regulation is necessary to ensure the continued extension of market forces 17. For regulators and policy-makers (at the European Commission level at least), this standardisation equation is made to justify and confirm the imperatives of 'rapid technological change' and remaining 'competitive' (European Commission 1997) in a global marketplace. All this begs the question of what is meant by (equitable) standards in any case.

**A Standard Definition**

In much the same way that a standard alphabet is a cultural artefact as well as a utilitarian device, standards for electronic communication networks are products of social, political and economic relationships as well as critical technical components" (Hawkins 1996:157).

At any entry point, the meaning of standard/s is a slippery one at best (see Chapter Eight for how this operates in the relatively prosaic sense of 'netiquette' and/or nascent online moral economies). Yet it is one which permeates any notions and practices of codified interpersonal communication - writing and human speech being cases in point. Whatever the case may be, to talk of standards implies much more than the 'simply' technical. According to the copious Webster's Dictionary entry, a standard, in so many words, is an authoritatively enforced measurement, criteria, rule, norm, principle, as well as any of the equipment and devices designed to ascertain these. But the meaning also encompasses such if they are 'recognised as acceptable', are widely available, used or supplied, even when not necessarily of 'top quality'. Ambiguities in the relationships between custom, authority and quality control are intrinsic in the very term.

That being said, however, there are two other aspects to the definition that are pertinent to this discussion. First; when used as an adjective, standard articulates a notion of being 'substantially uniform and well established by usage'. The process of standardisation can then be understood as a process of being compared with or brought into 'conformity' with such usage. This confirms the reading of the term in telecommunications parlance whereby physical connections and components are standardised in various categories (basic hardware like plugs, keyboard layouts), linguistic conventions and access codes conceded to on various levels (from country codes, to basic computer codes like ASCII 18), and transmission bandwidths and signals negotiated and/or projected into software and network design in various ways (Hawkins 1996: 159). In the 'emerging global information infrastructure' the influence of any standards on the networks they eventually constitute and operationalise are no longer 'stand alone' technical factors (Hawkins 1996:181, Raymond 1998). Moreover, with the advent of information and communication technologies and devices as mass market products and media, and the increasing push to interconnect what were once nationally or locally conceived telephone networks, the procedures by which any standards are decided upon and then implemented have become fraught 19. Standards-making committees of the ITU have become increasingly opened

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17 Although the industry needs ITU approval (see above), they would prefer proprietary standards got through rather than generic ones that are combinations of various standards (e.g. the global standard for digital TV). In short, a Catch-22 for the industry as the ITU ostensibly never adopts proprietary standards (Richard Nickelson, op cit)
18 This stands for the American Standard Code for Information Interchange. Since about 1966 this has been a widely used code for communication between different computer systems; further evidence of the historical lead taken by the USA.
19 The ITU standards approval bureaucracy is based on recommendations; The final decision is a ballot by
up to lobbying from various loose conglomerates of 'user groups' as well as deferent to its devolved regional quangos 20. In short, standards decided upon by "all materially interested parties" (Hawkins 1996:174). Decisions about which norms, configurations of programs and equipment are now to be 'voluntarily' set in the deregulated commercialised nirvana of the GII-GIS.

A catalyst and rationalisation for this procedural and regulatory about-turning is the internet, or more particularly the advent of the world-wide web in the early 1990's (Thomas & Wyatt 1999, Abbate 2001) 21. Here, standard/s usage pivots increasingly on the variety of software programs that, together with the equipment (processors, disc drives, switches, transmission pathways - and the burgeoning capacity of all of these), comprise the recognisable surfaces of interconnected PCs and Laptops and now mobile phones. Beneath these, however, lies another landscape of linguistic conventions - the protocols by which transmitters and receivers, in a generic sense, can communicate with each other (Hawkins, 1996:162). These, in tandem with certain other software, are key strategic items for the efficacy of the GII-GIS as both a commercial and political economic undertaking. The point is that even if standard-making has never been a politically neutral decision, since the dominance of proprietary software for enabling and extending the commercial aspects of the internet/www, it has become even less so 22. Moreover, as Hawkins points out, standards are being increasingly conflated with brand-names and also "defined in terms of strategic business interests", if not the result of being strategically designed as such (Hawkins 1996:161,163) 23. Any standard(isation) of operating norms, communicative conventions (faxes, telephone numbers, email), transmission pathways (cable, satellite, radio frequencies), everyday practices (daily emailing, live chat-groups, Bulletin Boards), and even rituals (on-line sex, or simply logging-on) are not only deeply personal but also highly political give the economic stakes. They are also enormously profitable for those manufacturers whose products become the norm - voluntarily 'established by formal consent' (Microsoft being the case in point). They also delimit and shape future communications architectures and access (Hawkins 1996:160).

This has direct bearing on the second additional definitional aspect; a standard is also 'a conspicuous object', a banner, a rallying point, an emblem both for battle and for business. It is here that there is a semantic shift occurring in the weight given to the meaning and relevance of standards which is directly related to the gender-power dynamics of the political economy of the internet and the 'free market' ideological timbre of calls for greater standardisation (WTO PRESS/46, 24 April 1996: www).

Software Rules: 'We Are Microsoft'

But who determines what's worthwhile? It is the learner himself [sic]. He should be selective on choosing what is or may be applicable to the current situation and those yet to come. Those worthwhile factors varies for each individual and location. Since a learner from remote Kotu who has no access to electricity may not consider computer skills to be important to him, you who enjoys the electronic age on the other hand will not make sense of his fishing skills. But the wise man can identify what is worthwhile

which the recommendation is virtually guaranteed if there are no objections and if 70% of the membership has responded within the time limit. At this point 'manufacturers can safely develop compliant products'. This time-consuming procedure is under increasing pressure (see above).

20 Examples of the former are the; Global Standards Collaboration - GSC, WWW Consortium - W3C, Internet Society/Internet Engineering Task Force - ISOC/IETF. Examples of the latter are the; Telecom Standardisation Advisory group - TSAG, US-T1 committee, European Telecommunications Standards Institute - ETSI.

21 This is not too assume a simplistic ahistorical 'techno-centric' position nor forget that the developments "such as the Internet are not monolithic. They have various dimensions, ranging from techniques that are only slightly different from previous ICT's ... to techniques that show less and less resemblance to earlier modes of information handling." (Hamelinck 1997).

22 See Mattelart (1994) for the role of the ITU in the history of telecommunications. Moreover, Internet Protocol (IP), the "syntax and semantics of message elements" (Hawkins 1996:162) that allows computers and networks to link up, has only been widely deployed since 1983.

23 Here, Windows 95, Netscape or Explorer, ISDN, GSM are all cases in point.
and applicable that can serve his needs and benefit others surrounding him. (6 pence, 12/11/99)  

[It] bothers me because the term "knowledge" has become too complicated to describe in a way joe blow in the Pacific can relate to. It has elevated something we do (knowledge creation and retention) in our own ways in the Pacific into the realm of science for the "educated" and intellectual. The process of "creating" knowledge has to begin with what we can relate to and how we do things as Pacific peoples or in our unique circumstances... With the KB sometimes extracting something useful from a hundreds of what seem like frivolous posts may mean understanding the language and circumstances of a generation that is thousands of miles from our islands. From their perspective you may find knowledge that applies in their situation, (Say, an urban PI community) that is frivolous talk to others. Im going to stop .. Im writing an essay.. (tk, 8/11/99)  

With online interventions like the above in mind, a brief detour into what is or is not entailed by software is warranted precisely because of its double functionality in the standards debate for (fictional and actual) resistance and intransigence. Both the notion that software is inherently plastic (and therefore not predetermined) and the counter-argument (that software codes are in practice very hard to really change once embedded and contingent to a system) need to be borne in mind. This is especially so when entering the arcane and acronym-filled debates around technical standards; just as it is worth remembering that the cyborg is itself both sentient being and pre-programmed machine.

Be that as it may, software is at the heart of any electronically mediated universe where humans and machines seek to interact with each other openly and (a)synchronously. In this sense software rules, but only in tandem with other artifices for it cannot function, remains inert, unless it is brought into relationship with the paraphernalia of hardware, transmitters, and so forth. Moreover, software applications are not expressed in one - standard - kind of computer language, which is why these vary at various levels of any system, imply and govern different functions, or are in turn re-articulated as 'user-friendly' interfaces. Having said this, despite the best designer intentions and standardisation regimes, operational outcomes cannot be 100% predetermined or even necessarily foreseeable given that software still permits computers - and by extrapolation electronic communication systems - to be "re-programmable" (Quintas 1996:77). The particular nature of software's role in, for example, traditional telecommunications (to allow banking by telephone, automatic switching), enhanced text production (word-processing, desktop publishing), and cutting-edge technologies (holographic imaging, virtual reality suits, voice recognition) is the work of a "virtual machine" (Quintas 1996:79). However defined (Chapter Four), the internet/www as cultural artefact, complex telecommunications network, and social system is constituted by this kind of virtual machinery, combining as it does the fibre optics and satellite links of conventional telecommunications transmission with the 'softwared' mediations of electronics.

Because software does not stand alone  and its programmes are to a greater or lesser degree comprised of various generations of code and therefore various degrees of complexity and interdependence, it is both malleable and difficult to readapt 27. It is a site of struggle for control and influence. Either way, its re-design and manipulation - for any purpose - need not be restricted a priori to the technically qualified programmer. Anyone, or group can (re)design application and systems software if they so wish and indeed do so (Quintas 1996:82-83, Raymond 1998) 28. This potential is present at the most mundane level, for instance, software

24 In What is knowledge?? thread (Francis Kolo, 6/11/99, initial post, KB) at http://www.pacificforum.com/kavabowl/kc/messages/50223.html.
26 "Software programs tell a machine what to do. The term contrasts with 'hardware', which refers to the actual physical machines that make up a computer system. The hardware by itself is of little value without the instructions that tell it what to do (Barron's 1995: 291).
27 The Millennium Bug being the main example of both these properties.
28 The history of the Linux Operating System is a case in point; where a student and since then a loosely
that set up and designate what are known as 'desktops' are inherently adaptable for even the most disinterested PC user at various levels of the applications. By this I am referring to the capacity of the interface to be 'customised' so a PC user or 'web crawler' can distinguish their system from another's (the relative centralisation of their system allowing). In short, software - computer programming in other words - is not as mysterious or as far beyond the control of an ordinary user as often supposed.

Nevertheless, this plasticity does have an impact well beyond the immediate domain of such everyday uses. Here, the various hardware platforms, operating systems and protocols that comprise the current 'world wide web', also entail an ever-increasing complexity and level of mutual reinforcement. In this sense, predefined operating criteria (the default function) and their everyday uses together with incumbent architectures mean that newer and revised sub-layers of code are needed to extend interaction. Moreover, large-scale investments and commercial interests also run counter to the aforementioned plasticity of software as these are encoded as in-built exclusivity; to wit the anti-trust case against Microsoft. The point remains, however, that when interacting with respective equipment and transmission systems software is both adaptation and adaptable. This two-way potential persists even when the end-user is, more often than not, a creature of habit, nor wont to study the intricacies of her PC 'desktop' and supporting transmission and service infrastructures, or given to understand that the inner workings of these 'virtual machines' and the centralised supervisory apparatus that back them up are non-negotiable.

As the internet/www becomes more firmly entrenched in everyday social and commercial life - a far cry from its early days - the software-defined interconnectivity (the world wide web in other words) that is at the heart of enabling it to be a commercially viable, far-reaching network and a social project or artefact is where the gender-power politics of standards/standardisation are located. Standards - in all their definitional capacities - permeate not only the nature and reputation of software design but also the politics of ownership and diffusion (see Quintas 1996:82); from behind-the-scenes privately and publicly funded R&D initiatives to the regulation and implementation of top-down 'framework standards' for emerging digital networks (Hawkins 1996:163), to whose products become the norm. In this sense, the internet/world wide web, along with its uses, and its users is. In short, a virtual machine on a global-like scale. This being so, the above techno-commercial stakes of the current and future internet in relation to the Microsoft case need unravelling and then reinserting into their historical and political economic context.

connected group of computer buffs developed a popular alternative to MS Windows, the long-standing Hackers culture and activities notwithstanding (Jordan 1999).

29 This term has recently entered scholarly work (see Virilio 1984, Mansell & Silverstone 1996). More philosophical notions aside, an interface is the meeting point, the place "between various pieces and types of equipment" (Hawkins 1996:162) - both physical and logical that "only ensure that channels for communication exist (ibid).

30 For instance, internet transmission networks are built over existing telephone and telegraph ones.

31 Many programming (de)faults lie deep beneath the surface (otherwise known as 'bugs') and are not perceptible until they activate a counter-force (the Millennium problem being the key example) to the assumed function. This is, according to Tony Hoare, an advocate of better quality in software design, the result of a lack of rules and quality control (in Volkskrant 31 October 1998:5W). This means that other applications such as Lotus Notes or the incorporation of Linux require re-coding in order to work with other platforms. Conversely, the Unix platform has to be rewritten to allow access to its rival - MS Windows NT (my thanks to IT specialist, K. Boonstra and P. van der Boom, for these specifications).

32 First as the US Defence Department's ARPAnet back-up system in the event of a nuclear attack, and then as a tool for academic institutions to connect up with each other (Haraway 1997:4-5, Abbate 2001).

33 Bill Gates/Microsoft, and their competitors, are prominent in funding R&D in highly ranked universities e.g. a donation of $50m from the former was made to Cambridge University in 1998.
The Internet Free-for-All

I LIKE WHAT YOUR DOING, ITS GOOD FOR OUR PEOPLE TO HAVE SOMETHING LIKE THIS KAVA BOWL. IT BRINGS BACK THE FAMILYS OF ALL ISLANDERS AT HOME AND ABROAD. I WORK FOR A COMPANY WHO MAKES SERVERS AND ROUTERS FOR CISCO SYSTEMS AND H.P. AND IN THE WINTER I WORK FOR A HOMELESS SHELTER, MAKING SURE THAT NOT ONLY ISLANDERS HAS A WHITE XMAS BUT ALL NEEDY PEOPLES. IM NOT A LAW STUDENT BUT I HAVE EXPERIENCES WITH THE LAWS THROUGH MY CLIENTS AND MY SELF EXPERIENCE GROWING UP IN THE USA IN THE EARLY 70S GOING IN AND OUT OF JAILS AND BACK AND FOURTH FROM THE ISLANDS AND NOW A FATHER TRYING TO MAKE A BETTER WORLD FOR MY CHILDREN TO GROW UP IN. BUT I DO BELIEVE IN DONT KNOW YOUR PAST DONT KNOW YOUR FUTURE. IF YOU NEED ANY OF MY HELP DONT HESITATE TO CONTACT ME. MALO TAMA FIE TOKONI. (tama, 17/05/99)³⁴

It was here that I made friends from all Races. This is a forum, not a place of business. I know to date that Taholo hasn't charged anything for us to come and sit down to commune with each other. Taholo has led our race into the Future. Who are you? Let the Man, Taholo do his thing, Taholo you need not explain, anyone knowing this knows what great Sacrifices you have made to make this possible. (Percy Asi, 20/09/96)³⁵

During the 1990's there were moves amongst key players to promote and profit from the 'portable' standards that have been emerging (such as Java script and Linux), or to offer free internet access and services. Nevertheless, the 'natural monopoly' that is telecommunications, once publicly owned (the notable exception being the USA) and regulated, has transmuted into a global oligarchy of IT-Media-Telecom, privately-owned and deregulated. In the middle is the non-industry 'consumer', whether this be the individual, not-for-profit groups like the ones studied here, households (assumed to be ignorant, passive, and so irrelevant parties to all this), who are being sold off-the-shelf standardised applications and equipment that will ensure their participation in the GII-GIS 'collective'³⁶. This adversarial process (the struggles over the engineering of habit so to speak) is recycled as mass consumer demand that is in turn justified by assuming an indisputable link between the successful marketing of increasingly complex PC equipment, telecom/internet services and applications vis-à-vis relative market share, and the high investment load of supporting infrastructures and R & D needed to maximise the 'added value' arising from the commodification of information exchange and, by implication, communication (Bank 1998)³⁷.

The legal glare of the Microsoft case, the above moves and manoeuvres effectively amount to 'double jeopardy'. Missionaries of the GII-GIS and other vested interests overlook this when making Microsoft out to be the bad guy (the Borg) and the rest the good guys (the United Federation of Planets). All the while, since all manner of Capital is now piggy-backing on the internet boom, more and more of the software being developed for it is derived from business needs and thus profit maximisation. Moreover, software and communications

³⁴ In IMPORTANT: KB MAGAZINE - NEED YOUR COMMENTS thread (Taholo Kami, 16/05/99, initial post), at http://www.pacificforum.com/kavabowl/kc/messages/42706.html.

³⁵ In reply to Anyone's site! (Cyber-cop, 20/09/96, KB, no longer on server).

³⁶ Again, the user interface is not such a minor aspect to all these developments. The issue with MS and its Explorer is how the latter works by integrating the PC desktop to its respective Operating System which in turn denies access to other non-MS platforms for the unwary. Basically, the user interface becomes 'assimilated' by the system itself (Boonstra and v/d Boom with the Borg link added by myself).

³⁷ A representative - and 'prize-winning' - representative of this rationale is: "If information is the currency of democracy, standards are the bridges that link global trading partners. Standards are a unique type of information and their widespread circulation and incorporation into products and services is essential for eliminating barriers to trade" (Bank 1998:www1). And when defined as a commodity such goods and services should be paid for as "information trades at a market value based on supply and demand" (ibid).
multimedia conglomerates (comprising telecommunications giants like AT&T and BT and the ubiquitous Microsoft) have upped the ante (see Jordan 1999:125 passim). They have been buying out the Internet equivalent of media gatekeepers (America On Line's business deals with Apple and then Microsoft and its recent acquisition of Netscape); continue for now to ensure their Operating Systems are installed on over 90% of all PCs (Windows versus Unix/IBM); are appropriating the 'freeware' principle of any newcomers; reconfiguring each others protocols (Sun and Microsoft with their respective versions of Sun's 'universal translator', Java Script; assimilating others' user interfaces (Macintosh icons into Microsoft Windows); and elbowing out any other Browser software (Netscape bows to Explorer). At the end of the day, whether it be Microsoft or any of its main competitors under the shadow of an anti-trust law suit, the non-commercial, communicative particularities and potential of the internet/www are overtaken in the race for whose products are to be adopted - 'recognised as acceptable'.

It would be an understatement to call the situation, its political economic tensions and gender-power relations complex. In the recent history of alliances, mergers and buyouts by a number of rampant TNCs this is compounded and fudged by the contradictory nature of interventions by the US Department of Justice, the ITU *inter alia*, who are supposedly there to maintain the availability and design integrity of competing products (and products they are) on and for the internet/www. Such standards/products are not only the aesthetic, symbolic dimension to global communications, the point at which practices 'well established by usage' are formed and codified, but they also impinge upon the material specifications and trajectory of differently constituted communicative systems. At the same time, the increasing overlaying of *de facto* design adaptations at every level also precludes much that is more than a year or two old, and so by extrapolation limits equitable participation and functional coherence in a concrete number of ways (Jongeneel 1998). The irony of these ever-decreasing circles in ideological and regulatory terms, is that the capitalist ethos, of uninhibited competition as a necessary precondition for a 'level playing field', forecloses other communicative constellations and practices (even as these are extolled in the name of the consumer) in its push towards a certain standard of interoperability. Moreover, this project belies how intrinsic different 'standards' and distributed infrastructural nodes are to the internet's original configuration and operation. In other words, increased centralisation and standardisation runs counter to the very *esprit* of the internet/www per se let alone as an everyday, non-elite means and medium for communication.

The Internet Subdued?

The operational costs have been covered by the personal bank account but I must also add that has been worth it watching the impact the KB has had on our Global community .... up to now it has been rewarding enough watching the KAVABOWL providing a venue for our people to get together. Like to acknowledge the essential work by KBAdmin volunteers .... and the contributions from numerous KBers over the past 3 years, especially people like Bill Alatini, Iv, Toutai, Sandy, Saia, Dot, Phil, Ulutolu and others who have put time and $$ or provided support when we needed it most! Finally, now that the thankyous have started to run, my wife Sina ...not only letting me stay up and put the time, travel and $$ etc but she has started putting the hours into the technical support required to keep the place running and as of next month will be in Tonga to keep a presence going from the Pacific. (TKami, 18/09/98)

38 Microsoft again, Intel, Sun, Oracle not to mention their cousins in the Telecom and media domains (Lamprière 1998, Volkskrant 9/12/98:19).

39 The close link between any pending decisions on the case, the relative share value of Microsoft's competitors, and the US stock markets notwithstanding (Martinson 1999:27). Be that as it may, the question still remains as to whether the MS monopoly is the result of 'illegal business practices' or denotes 'success' from 'selling popular products or making shrewd business decisions" (Martinson 1999:27).

40 This is easily illustrated by the increasing demands made on a computer's memory capacities (between WP5.1 and Microsoft Word for instance) by new software leading to a new scale of in-built obsolescence - where size still does matter.

41 *A labor of love*, in reply to IS it true that the KB server has been running for FREE?? (WingDing, 18/09/98, initial post, KB, no longer on server). Taholo attests to having spent up to $US 60,000 on the
The concept of the GII-GIS presumes a higher order of interconnectivity, internal consistency and corporate ownership and control. Without a universal, and enforceable array of enablers, the GII-GIS dream of fully integrated Electronic Data Interchange (EDI), free-roaming and inviolable Electronic Commerce capabilities, integrated mobility (GSM cell telephones); to wit the particular 'virtual machine' presented in the 1997 WTO Pact on Telecommunications, would not be manageable (International Herald Tribune, May 4 1998). The humble telephone (those areas not served by this 'traditional' form of telecommunications notwithstanding) is also about to be fully assimilated into the above reconfiguration, as its days as a separate piece of relatively low-tech equipment are numbered. The telephones / telephone networks of today, with or without microchips for digital memory functions or access to a paraphernalia of services, have become simply one more (if not still a key one) interface in the global communications collective of privatised telecom operators and their shape-shifting IT and Media allies. Plans to bypass the telephone (and its networks) altogether by fully integrating internet access with television along broadband transmission lines that are owned and controlled by another privately owned array of cable companies and utilities alliances, further subdues the contingency of the internet/www as a free-form public mosaic 'network of networks'. The heretofore contingent virtuosity and wide applicability of the pioneering Internet Protocols, which continue to connect and facilitate computer-mediated communications, is being tamed into a fungible commercial and, what's more, good-looking standard for all communications (see Hawkins 1996:169 for a more diplomatic formulation). To differ, or be dowdy, is futile.

But before this civilising mission is completed a fundamental ideological and technological tension between a certain ideal of flexibility (read: 'interchangeable individualisation') and the Dystopia of rigidity (too much regulatory intervention) has to be resolved (Noam 1997, Heurisof 1998). In market terms, the push towards uniformity (the software package, the protocol, the format, and so on) is logical in terms of maximising efficiency and profitability; without mutual codes, connective conventions, and commercial agreements different systems cannot interact and global commerce would not occur, so the argument goes (Trebing 1994, Bauer 1994, Noam 1998, Mansell 1996:36). At the same time, however, an innate abhorrence to monopolisation, to wit to having other (communicative) options assimilated characterises the judicial and political rhetoric surrounding the Microsoft case (see Lamprière 1998, Gassée 1998, Launet 1998, Andrews 1998) and its wider political economic implications of setting up the necessary infrastructure (see Silverstone & Mansell 1996:217). Meanwhile this is conflated in the marketing of the standard(ised) communications ideal of the GII-GIS where becoming integrated (read: globally deregulated) is tantamount to being one with The Market (Trebing 1994).

The upshot is that the future design and applicability of the internet/www, and telecommunications as such, are being surrendered to big business interests and imperatives on a number of fronts (Hamelink 1997: 30 passim). Until recently, this transmutation of standardisation/standards into a vehicle for the global market ethos has occurred relatively imperceptibly in terms of public awareness. All the fuss over Microsoft's assimilationist upkeep of all these websites over the years, donations from several benefactors notwithstanding. (Kami 200: interview).

42 As Haraway points out, internet/www software is all about making connections. This "should incite an inquiry into which connections matter, why, and for whom. Who and what are with and for whom?" (1997:128).

43 Again paralleling another aphorism from the Borg whereby another species' "distinctiveness will be added to our own."

44 For instance; much internet traffic consists of emailing. This does not require broadband transmission. Moreover, in less Hi-Tech internet scenarios, the more graphic the interface, the longer it takes to enter any site. It bears noting that the Polycafe uses a lot of graphics, based as it is in the USA. In Fiji and Tonga, and probably Samoa, these can create bottlenecks when passing through lower capacity transmission lines. See the quotes below.

45 Arguably the Microsoft issue is the latest round in a PR battle for the mass Multimedia market's heart and soul. Nether should it be forgotten how relatively recent (mid-1990's) Microsoft's interest in the internet business is, nor how telecom operators like AT&T are currently applying their economies of scale in targeting this slice of the market, having achieved global 'synergy' in the telecommunications
mission is the realisation and expression of what is a key strategic and political economic issue. Hence, neither other vested interests, those of free market ideologues, nor inter/governmental policy-makers are marginal to the outcome of the Microsoft case and its ramifications. For those who, in software and regulatory terms, control the portals and the entrance requirements (access protocols, addresses, design parameters) of the GII-GIS control its form, and by extrapolation its substance.\textsuperscript{46} The gender-power relations of this process are at these control and access nodes precisely because of this criticality in where one or other 'standard' is located\textsuperscript{47}.

The Tyranny of the Default

I was pleasantly surprised (& a little envious) when on a recent trip to AS [American Samoa] I found that a fibre optic has connected all their k12 schools. Computers were also available in these schools with T1 internet connection. This milestone development has certainly put AS years ahead of everyone else in the region, and I would dare to say NZ & Australia included. Students have direct access to the DOE [Department of Education] (with a deluge of student emails in a day the DOE is trying to work out where the blessing is disguised although there's a glint in the 'complaining' eyes), and video teleconferencing is also available. These are phenomenal achievements, Uncle Sam funding aside, required vision, proper planning and cross-department cooperation somehow neighbouring Samoa has underachieved in. With that fiber optic backbone girdling the island, it was only natural to see departments start using applications to take advantage of such connectivity. While AS roads are a choice of the lesser evil pothole, their information superhighway connecting AS minds into the international IT grid has given accessibility to even the remotest village person. Now if only neighbouring Samoa can latch on....(garfield, 4/11/00)\textsuperscript{48}

eRate, a U.S. government funded project to ensure that all schools and libraries in the U.S. have good access to the Internet has an annual budget of over 2 billion dollars. This is equivalent to the Samoan government spending 1.5 million dollars a year on Internet connectivity. Which services would you like to see cut so that the government of Samoa can spend 4.5 million tala a year hooking it's schools up to the Internet? Factors influencing the roll-out of fibre on the island of Tutuila probably include higher wages and disposable income, as well as cheaper access to televisions (for cable) and computers (for internet). Remember too that American Samoa is only 76 sq. miles. In size compared to Samoa's 1093 sq. miles. I seem to remember reading that the amount of fibre that was to be laid was just 7 miles. This wouldn't even be enough to provide coverage for Apia [capital of Western Samoa]. I am not trying to put down the achievements of A.S. I'm just trying to show why it is unrealistic to expect the same in Samoa. (Tim Sansom, 5/11/00)\textsuperscript{49}

\textsuperscript{46} One development in this respect, that intersects with the Microsoft/Netscape Battle of the Browsers is how these latter search engines, that allow a user to access and navigate the sites available on the Internet, have become crucial portals through which entry is delimited as they become key sites for companies to advertise. The income generated by such corporate advertising (already well established in sports, television, the print media) is substantial and the programming by which a search engine's use and direction is configured directly accessible to such income generation. For the record, The Polycafe sell advertising space for Pacific Island/Samoan business and community ventures. This is where it differs from the Kava Bowl, which relies on donations and some government support (see above). Kami pays two journalists out of his own pockets to write copy for an alternative news source on Tonga on a website based in New York's (Kami 2001: interview).

\textsuperscript{47} For example, in a prosaic sense the application of these technologies in everyday uses impinge directly on relations between (groups of) men and women, girl children and boy children in terms of telephone and PC use - relative technological 'literacy', access and control of the artefacts in question - both at home and the workplace.


\textsuperscript{49} eRate and some other reasons, in reply to above, at
The general political and techno-economic mutations outlined above, let alone their uneasy transmutation into the Pacific Islands context, impinge directly on two key categories of standards for network systems; interfaces and protocols. Both these are crucial to facilitating not only internet/www use and functioning, but also basic telecom interconnections. Leaving aside for the moment the historical context and significance of 'Internet Protocol' (IP), 'Hypertext Mark-up Language' (HTML), Hypertext Transfer Protocol' (http) in facilitating the internet/www 50, both these categories have been thrown into the spotlight by the Microsoft trial. The catalyst for the latter (although the momentum had been building for a long time) is the battle for market dominance in the aforementioned Internet navigational tools - Browsers; namely between that of Microsoft Explorer and its main competition, Netscape 51. Once again software's double-edged malleability comes to the fore as Microsoft fully integrated its own Internet Browser (Explorer) in order to preclude all others (in this case Netscape). In short, PCs loaded with the later Windows Operating Systems, with 'basic' functions embedded deep into the system, are designed for optimal operations in an exclusively Microsoft-encrypted communications landscape. This is not intended to be (easily) compatible with others. Incorporating and integrating proprietary Browser software, hyperlinks, email, and so forth into everyday textual production, this manufacturer makes other designs, communicative domains and practices redundant - irrelevant 52. In other words, operating systems, user interfaces and the hardware platforms that make the interaction between these all work (or not) are becoming increasingly interdependent 53. The circle is closed. The point about Microsoft is that because of the corporation's all but complete dominance of the PC market, room for consultation, grassroots and community needs, other visions of ICTs are all but technologically sealed for ordinary non-specialist users. Embedded 'default' settings, at the 'user interface', or deeper such as between PC and the wider communications networks, assume conformity as a norm. The problem only arises when user/s wish to work differently, disconnect the myriad if user defaults that come with every new generation of desktop software, or opt for another Operating System. Conformity to a series of mostly un-negotiated textual practices - digital communicative standards and settings - runs deep in a Microsoft universe 54.

Now this may read like a consumer rights manifesto where product diversity and 'fair play' are the norm in industrialised consumer societies. The point, however, is that other 'material interests' lined up on the side of the opposition in the Microsoft trial are hardly lily-white in this regard (Gassée 1998b). After barely a decade of a rampant free-for-all in which commercial interests, regulatory and investment devolution, and political agendas have been staking out various claims in the gold mine that is the internet/www, the chickens appear to have come home to roost. Whatever happens, and how relevant the technology currently at stake may be in the next ten years 55, the sociocultural and political economic stakes are nevertheless

50 To reiterate; hypertext one to 'click' between unrelated and/or non-sequential documents - the defining characteristic of contemporary Internet usage. "At its most literal and modest, hypertext is easy to use and easy to construct, and it can change common sense about what is related to what....hypertext is an instrument for reconstructing common sense about relatedness" (Haraway 1997:125).
51 These are, in themselves arguably classifiable as interfaces and protocols (Hawkins 1996:162).
52 Over and above the latest race to offer any strategic software 'free'. Pirating circumvents such generosity anyway.
53 Unlike other operating systems, MS Windows doesn't use a 'neutral' sub-layer of code which would allow it to be portable to other systems. What this means is that the user interface, the computer 'desktop', far from being consequential to the way the system works, becomes very much part of, is symbiotic to the whole; one cannot change without the other (v/d Boom & Boonstra, ING Group: interview 1999). The upshot is that the user becomes unwittingly tantamount to a Borg-like MS drone.
54 From one such advanced user comes this observation; "the devious default was in setting up dial-up networking. The set-up programme takes you through a wizard. It asks where you live and presto, it then proceeds to dial a 'central' ... number where the nearest ISP [Internet Service Provider] is (my assumption is that they have already been approved of by Microsoft, if not owned by them)." (René Kardol, personal email: 1/12/98). The point here is that once one's awareness of this 'tyranny of the default' is raised, the connections are endless. It is here that the Linux Operating System as a feasible alternative to Windows enters the fray, carrying with it the seeds of counter-agency - for a while at least.
55 As IT specialists point out (personal conversations in the Netherlands), much of that which is in
very high. But even more so in terms of civic users and the alleged needs of individual 'consumers' (already automatically uploaded onto various online data bases according to gender, socio-economic designations and so forth), and other non-'material interests' whose intersubjective interchanges are to be mediated by any future array. Precisely because these standards operate and inform the user interface; meaning that these are 'tools' that are visible, widely available and can be more or less manipulated by the average PC user, they are also the spot at which an awareness, a reassessment of assumptions and counter-assumptions in everyday practices online can be based. Only then can be another, critical, voice amidst the consumerist and techno-economic Global-Speak of the loudest voices in the (anti)Microsoft lobby.\(^{56}\) There is a need to get around the commodified discourse entailed here and develop a more cogent analysis of the standard/s being put in place, in order to create feasible and equitable - in the non-commercial sense of these terms - regulatory and R & D strategies.

'That is irrelevant: you will be assimilated'

The telecommunications and information processing industries that have transformed the workplace into a site of knowledge production have also boosted the power and authority of scientific expertise, establishing cyber-culture as an international lingua franca of the new élites that is completely unintelligible to the uninitiated. (Ross 1996/97)

Knowledge is more than data and more than just information. Knowledge can be simplified to only that of which you know. However, this limits the extent to which your definition can be used. Knowledge is also what you do. (Mahei, 13/11/99)\(^{57}\)

Having said this, and noting that the Borg allegory is coming closer to home, a demystification of the assumed mandate given to technical expertise, the abstract systems analyses, and corporate prerogatives that uphold all this would be fitting. User customisations and restrictions resulting from deeply embedded defaults in software and how these in turn are integrated into the supporting architecture are not trivial to the standards debate. Indeed, they are central and even more so when the technical and regulatory aspects for the Microsoft case are placed in the same frame. The banal and widespread nature of computer use and electronic communicative habits, where anecdotes, user experiences and perceptions do, and must count as evidence, needs to be articulated with the arcane technical specifications and the politics of the decision-making processes that underpin them.

Resistance to this powerful alliance of corporate and political economic interests would indeed seem futile, let alone given other counter-forces. Here, I am referring to force of habit, inertia, passivity, and ignorance, in the face of time-consuming complexity (where network and functional integration mean that one change implies many others). Precisely all of the aforementioned perpetuate and justify the continued integration - subjugation - of all tele/communications to the collective aim of the global market. For example, the success and popularity of Microsoft (through its marketing and distribution strategy as much as anything else) has been based on the emergence of a generation of computer users and telecommunicators who 'do it the Microsoft way' with attributable concerns such as Intel doing very well out of this racket (Gassée 1998b). Here the norm is the accessible and affordable (once DOS, now Windows-defined) virtual machine; so why change when this one works? By contrast, Macintosh's Apple computer and its ever-decreasing band of enthusiasts base their resistance to all things mediocre (read; Microsoft) on the high production values of the

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\(^{56}\) Once again, a lot of the material comprises a general marketing (propaganda) war on the Internet. Be that as it may (see the 'Anti-Microsoft Network' for instance - type in the latter on your Browser and click 'search') using Microsoft or not as such is not the only issue. In fact the latter can become a smoke-screen for the positioning of other powerful concerns e.g. Sun and Oracle in the software domain, AT&T, BT, Cable & Wireless et al in the telecom arena.

\(^{57}\) In reply to 6 pence (op cit) in What is Knowledge???? thread, at http://www.pacificforum.com/kavabowl/kc/messages/50242.html
components and output of Apple PCs and ease of use. This has been construed as greater cost for the average - standard - user.

Over and above how this illustrates the effectiveness of WTO and the World Bank (see Mansell & Barnett 1998) rhetoric which helps in the "faking' of the order that is presumed to be required as a precondition for the production of [that] order" (Silverstone & Mansell 1996:217), the thing to remember is an inherent ambiguity in this seemingly inexorable de facto global standard. Resistance involves a reclaiming of this ambiguity in terms of the inherent plasticity of software, and the multifarious agency of interpersonal, everyday communications, as well as the incompleteness and contentious quality of any standardisation project; and all the while remaining vigilant to how both present and prospective designs of electronic communications systems are delimited by past decisions.

Nevertheless, in the face of all this regulatory and commercial fluidity (if not subterfuge - whence the Microsoft trial) there is a resignation in mundane computer and electronic communications use to the decisions and power-of-the-purse of the internet/telephone services provider. For example; software applications take a while to get to know, and once they are incorporated into the daily routine, affect, and in turn mould the cognitive processes involved (McLuhan & Powers 1989). Hence changing one's word processing software or systems set-up takes more than simply time, will, and energy in that switching, for example from Word Perfect to Microsoft WORD or vice versa, involves more than an aesthetic facelift. Nor should the power of habit be underestimated given the stress and tension involved in businesses, governmental organs, research institutions when Operating Systems are changed by central decree. Or when systems crash, files are lost and Back-Ups fail. Or when the, by now indispensable, email server collapses and leaves one and all disconnected - offline. Decisions about shifting from mainframes to servers and back again, between in-house software design and customised off-the-shelf packages (in corporate life as well) reflect the organisational and security issues that these changes at the various levels of user interfaces entail for more complex systems, and vice versa. The automation of production processes, salary payments, human resource and information management software, distribution automation and the smooth running of currency markets, to name but a few, have an even greater inertia to being questioned or challenged once established and paid for; that is until they crash, or malfunction and create the sort of collective anguish that would rival that of the disconnected Borg drone.

Having stressed how the "players who have a say in these issues and the playgrounds they occupy seem to be so desperately out of reach of ordinary people (and ordinary researchers for that matter)" (Ridell, personal email 14/02/99), it is often when an unscheduled systems breakdown (from the domestic level to the production line) occurs, when the degree and intransigence of interconnectedness makes itself felt, that a crucial 'window of opportunity', a breathing space, opens. By this I mean that it is at this juncture that one or more users become aware, or consciously assert their agency; for instance, when daring to maintain another array of communications standards (Apple users struggling to stay online in a Microsoft universe) in an institutional setting as well as in cyberspace. Another barely recognised opportunity is when other economies or less computer literate groups (within our mediated societies to be sure) discover that the constellations needed to be 'truly' online are too costly and the less flashy

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58 There has been a strong polarisation between the two sets of uses, and (computer) cultures they uphold. The losing end has been Apple's, now forced to enter into negotiations with a dominant Microsoft to ensure compatibility, as have other non-Microsoft manufacturers or end-users; more evidence of the double-edged nature of software's malleability.

59 Again, (see Jongeneel 1998) new generations of software programmes are built on old ones, meaning that they are comprised of various layers and generations of codes; the Millennium problem being once again a case in point.

60 In more complex situations - corporate and institutional - this whole process is called 'migration' and is loaded with potential operating 'gremlins'.

61 One working example is how Journalism students at the University of the South Pacific (Fiji) are designing web pages with the, by now, 'time consuming' HTML when they could be using the latest standard software packages for this. According to their teacher (personal interviews 1999: my thanks to David Robie and his students), the reason is that in the South Pacific Islands, internet access is patchy at best and the latest in ready-made web page design software even more so. Hence insisting that the 'old' software be mastered ensures that this knowledge can be applicable and adaptable to the context in which it is to be used. Power cuts and image downloading in Nuku'alofa.
alternatives increasingly difficult to install and maintain even when still technically feasible (try getting non-Microsoft approved software installed in an off-the-shelf PC, for instance). Pending more conscious exchanges and choices on how to 'drive' any particular document exchange between systems, access to contemporary versions of the internet/www with any of the 'older' search engines (e.g. Gopher) or document exchange formats (poor old Word Perfect and its progeny against the - by now - ubiquitous Microsoft Word) and lower capacity equipment is severely circumscribed 62. This relates directly to how the aforementioned 'Digital Divide' is perceived, resolved or even reproduced.

Meanwhile at the minutiae of the everyday level, this moment, and the tensions it encompasses, arrives when encoded documents arrive from other, assumed to be incompatible, less efficient if not obsolete systems (particularly any originating from beyond the tightly-knit informatised worlds of Western Europe, Japan, and the USA) and where the cosmetic level of software technology (increasingly sophisticated formatting) and user presumptions that it must work automatically and instantaneously conspire to make the decoding process far longer than the seconds it took to send. Perpetual updating and in-built obsolescence of precursors in software for the mass market means that reliable and readable formats become sidelined in the race for the cutest interface. What all this amounts to, over time, is an increased reliance on IT departments, relatively more computer-literate colleagues, self-appointed experts (the ubiquitous IT consultant), and finally the manufacturers (Panos, 1998). By handing over more and more control - to wit agency - of the medium, the embedding of non-negotiated norms (in meanings, modes of communication, rituals, linguistic codes themselves e.g. the contentious Microsoft grammar check function) becomes the property of corporate interests and their designated IT standards authorities and 'user group' alliances. Yet as Internet use proceeds apace and citizens of internetted home-worlds become more integrated with their electronic communications appendices, such passivity and disinterest is tantamount to an abdication of the right to think independently, and acquiescence to eventual assimilation. Furthermore, it eventually undermines the space, in electronic terms, to judge, assess, and act 63.

Resistance is not Futile

[T]he [US] government's misunderstanding of the internet threatens to ruin it and the social and political freedoms it - by its nature - supports. CNN stated [in January 1999] that the Government would [be deciding] to allow or not allow a Charge to your (OUR) phone bill equal to a long distance call each time you access the Internet. Think about that for a minute, and how it would affect each and every one of us. What would that [do] to people who cannot afford hours worth of long distance each month to access public and (until now) free information? The Internet is a tool of the people, and not owned by our, or any government... (GP, 6/01/99) 64

The point remains, however, that to go offline is a sobering thought indeed in political and economic terms for many individuals and governments. Whilst complete de-linking (and assuming that other economies and cultures would automatically want to take that route) would seem purely reactionary, this does not preclude a more cogent, perhaps localised form of (dis)engagement. Namely, the disconnecting of latter-day computer-mediated communications from the capitalist, privatised ethos of the GII-GIS and a reassertion of both the right to know/the right to be unknown. The consequence is a reclaiming of the right to participate in deciding what will "be recognised as acceptable" 65. To resist in this sense does not mean, then, to denounce all electronic communications interchanges; it is more a question of creating space in which practitioners, and the social networks in which they live can have influence on the

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62 At this juncture it could be argued that more 'standardisation' would be just the solution. However, by now it should be clear that this sort of interactive equity is not what current 'standardisation' issues are really concerned with, despite all the protestations to the contrary.
63 For instance, would anyone countenance such un-negotiated decisions on other, more established, social communications like private conversations and private mail?
64 A BIG Change to the Internet Coming???? (initial post, KR, no longer on server)
65 One way - limiting one's online presence by avoiding the entering of personal data, credit card transactions and such like has been advised by a number of civil liberties campaigners.
degree and application of ICTs to their everyday lives, the impact of which is already considerable and fraught with both positive and negative consequences. So far these domains for agency and agitation have been largely cornered and commodified by vested big business interests.

To question the political and techno-economic premises that comprise the GII-GIS (or any other name given to the internet/www as a strategic project) and the (de)regulation discourses and actions it entails, is to begin unravelling a tightly woven electronic ball of Hi-Tech mysticism. Along with a technically informed and creative commitment to other sorts of programming, other network designs, electronically mediated communicative concepts and 'appropriately' configured architectures (for example; linking equipment and software to local needs rather than corporate profit margins) an alternative set of empowering discourses and computer-mediated practices that are culturally and gender sensitive can be formulated, and heard. The argument presented here is only a start to rethinking how integrated computerised behaviour is indeed becoming to the everyday sociocultural and political economic practices of politically and economically dominant regions; and doing so without retreating into a pre-internet foetal-like position. Apart from these online groups studied here (and many like them), there is a wide variety of alternative communicative 'galaxies' that exist already in the midst and also on the fringes of electronic communications networks. These comprise feminist, political, cultural concerns; the enabling of much research and intellectual interchange; network universities, issue-based online communities; new forms of long-distance identity re-formulations - here co-optation is widespread amongst the academic and political communities. The GII-GIS/Global Market standard as it is currently being implemented is not at all a necessary condition for 'openness', 'inter-operability' - or efficiency in these or any other forums for that matter.

If standards do reflect "specific epistemologies" and "discursive elements" then they are indeed "important factors in the formation of perceptions as to how technology functions - in a particular instance, or in a society as a whole" (Hawkins 1996:169). As a prelude to the general conclusion in the last chapter, I shall now sketch a summary schematic for reflection, possible regulatory and policy initiatives that go beyond the ethos of 'competitiveness' and remember that the software-hardware coin has two sides. In this sense, the following propositions should be seen as 'tactical manoeuvres' in the face of the grand standardisation project of the GII-GIS - and its progeny.

First; in response to the contention that the story being told here is a rehash of the Conspiracy Theory, Cultural Globalisation thesis (see Hamelink 1997:20, Comor 1994, McChesney et al 1998) and so too simplistic to be 'relevant', or too pessimistic to be practical, there is no need to blush. There is no sinister plot because the agenda outlined here is not at all hidden; as a quick perusal of any of the ITU, EU, or WTO material in the last few years (widely available of course on the internet/www) or publications such as the Financial Times and The Economist will show. No excuses are being made there for touting the standard of a fully commercialised and privatised internet/www, whether or not a role for 'monitoring' be maintained (see Noam 1997) or anti-trust cases successfully prosecuted. The now privatised multimedia and Communications conglomerates (see Chapter One) have a ready-made mandate for continued standardisation and integration of related activities on their terms (where capital investments naturally have to bear fruit and so it is 'all about growth' - anything else is irrelevant). In turn these 'growth' opportunities are being sold to and funded in 'developing' economies (World Development Report 1998, Group of Experts, 1997). It is this self-

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66 To name but a few, Women on the Net (WoN - see Harcourt 1999), the various Webgrrls chapters (just enter Webgrrls), the South Pacific Information Network (SPIN) and the Kava Bowl Pacific Forum sites, various NGO sites (Rodgers 1998) and so on. These get lumped in, however, with the regulatory and censorship conundrums raised by those galaxies that are (deemed) less than desirable - ultra-right (Rupert 2000), sexually explicit or erotic material (see Lemos 1996), and other less socially acceptable cyber-behaviours such as hacking, 'spamming', and 'flaming'.

67 Project Oxygen, "Internet 2" and "Internet 3", to name but a few.

68 Once again, but one example is how one of the top global players in the telecom business, AT&T, has been active in allying with its former competitor in the EC region - BT (de Volkskrant 8/12/98:17) at the same time as it has been swapping equity and knowledge with that other dinosaur from the early days of IT - IBM (de Volkskrant 9/12/98:19).
perpetuating conformity that needs to be problematised as agency and the 'organised anarchy' of the non-commercial aspects to internet use, the low-cost, low profile telephone, and (the humbler) word processing applications are transformed into sub-routines 69 of one particular larger communicative collective. Hence one has to re-present talk of 'convergence', of 'integration', for what they currently signify; assimilation of other communications and thereby sociocultural standards (in every sense of the term) into the Global 'We'. This also means re-reading talk of openness and access to include the sociocultural and the political. At present the former has come to mean the right-to-multiply as 'open standards' or 'freeware' become a marketing gimmick (see Clark 1997:1, note 21). As for access(ability), this too has been reduced to getting (America) On Line at all costs or by offering free email and/or internet access (de Beer 3/11/98:18).

Second, as this eurocentric and self-centred 'We' becomes more computer literate, more electronically attached and so more software-dependent, the question or approach to take is; is any more of these sorts of undemocratic decision-making processes about the nuts and bolts of the internet/www really necessary? Is there not enough interconnection already, in the sense that for those groups, economies and societies that are/are not online, the current array is more than ample to meet their inter-netting needs and desires. Furthermore, is private capital really a necessary precondition for inter-connectivity? Self-taught technical expertise - in design, programming, implementation and so forth is out there in abundance to create other 'communications solutions' (not 'total' ones, simply equitable ones) for those places and people that request them. Software need not be the private domain of a few brave men (see Quintas 1996) 70. Nor do translocal communications need to be reduced to the homogeneous standard of profit maximisation. To enjoy emailing, online chatting or discussions, take advantage of swift document exchange, or even indulge in fun and games, the design and trajectory of the internet/www as currently construed need not be further standardised for 'greater ease of interconnectivity'. To all intents and purposes, the GII-GIS standardisation project is the institutionalising and embedding of a constellation of gender-power relations that relies on the transmutation of 'user groups' from civic ones to business ones, and 'communication' from interpersonal interaction to commodified information interchange. Here a re-assessment of (de)regulations and standards in terms of who they are for, why, and whether there are not resources that can - and should - be freed for non-commercial, non-business initiatives in the network design domain would be timely (Haraway 1997:125 passim). At the very least, a concerted effort needs to be made to include non-corporate, non-technocratic participation on standards-making and policy-making bodies. Better dissemination and more public debate would also not go amiss in an area where the mystifying power of the latest acronym (read; product) tends to silence those not designated 'expert'.

Finally, resisting the discursive slips occurring at any entry point of this constellation - of technophilia, free trade ideology and newer communicative capacities - that comprises these internetted galaxies could free up the creative juices as well. In this software-mediated semiotic domain of 'codes', there is a political and cultural struggle taking place for meanings, their production, expression and transmission, as I have argued throughout this study. This is precisely because everyday (electronic) communications are constituted virtually and actually by all manner of linguistic and sociocultural codes, whether digital or not. Everyday life online shows established ones and those that emerge from internet/www software being 'poached' and 'tinkered with' by non-expert, non-elite practitioners The practice of everyday life online by the postcolonial diasporas of the Pacific Islands, and their interlocutors in the islands, show the above in operation, as they traverse and converse on the cyberspaces still available to them and initiated by them. In the process they show that the internet/www is not a single collective, despite rhetoric such as the GII-GIS and its Big Business practitioners.

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69 "a set of instructions, given a particular names or address, that will be executed when the main program calls for it" (Barron's 1995:302)
70 The increasing number of women working in ICTs industries and services and electronics production lines notwithstanding (Mitter & Rowbotham 1995), IT specialists, strategists and managers are overwhelmingly male.
Conclusion

The question of knowledge and power thus comes into play. Is it not better for Taholo and other Tongans to be putting forward knowledge of their own culture than for an outside interpretation of that knowledge by others to be considered the norm. It has to be remembered that before Tonga Online there were no other sources for information on Tonga on the Internet outside of the sites developed by overseas institutions and individuals and the rather trashy tourism pages around. By allowing discussions on his pages Tabolo is showing an independence of thought which he needn't have done. The internet's value is in its ability to allow interaction by users, as opposed to one way bombardment of information (which is always subjective). By allowing freedom of expression (to an extent - where expression is not harming others), Tabolo is encouraging debate on the Pacific and a site where Pacific Islanders can communicate with each other from all around the world. The Polynesian Cafe is not a competitor, but rather a tribute to Taholo's ingenuity, as will my own site's discussion forum [SPIN] in the future. (Alopi Latukefu, 23/09/96)

The historical juncture under scrutiny here is one in which past, present and future communicative practices, as mediated and facilitated by new(er) ICTs, are effectively up for grabs. Their technical design, representations and operational trajectories have been becoming the property (literally) of a well-organised alliance of Big Business and neoliberal political economic interests. For further research, policy initiatives and the interaction of grassroots organisations, nascent political movements and dissident voices, the reclaiming and contextualising of the plasticity of electronic communicative means and media in itself is still viable. On the now linked R&D, policy-making, and so standards-setting front (Hawkins 1996:177 passim) there are also opportunities and, as I have argued, responsibilities to reassert a circumspect, better informed and conceptualised 'counter-hegemonic' discourse and knowledge production. The quotes above express these issues in their own particular way as well. At the customisation, the application, or the systems software level (and their respective standards issues) the technological alternatives and (new) communicative practices being held at bay can be re-activated, the intrinsically subversive nature of software re-deployed and the still extant non-conformist pockets of the world wide web enhanced; all the while not forgetting the role of languages other than English and non-Roman alphabets in any of this.

Be that as it may, the internet/www encapsulates and is incumbent upon "the very practices and processes of meaning [making]" (Ridell, 14/02/99). So becoming electronically integrated entails an existential dilemma for societies that have been built upon the notion of the physically present individual (Weissberg 1998 www:4) and his (sic) political representative institution - the nation-state. Star Trek's Borg story-line is a useful and powerful allegory for this discussion because it captures and represents this ambivalence about being 'fully integrated'. It themes are borrowed from Mary Shelly's Frankenstein and Fritz Lang's futuristic images in the film Metropolis, adding its own contemporary strands to these proto-cyborg threads along the way. Like all good story-lines it can be interpreted and applied in more than one way. Here, I have opted for its reflective and projective properties at the interface between the Microsoft case and the gender-power relations of standards setting as they pertain to the intersection of everyday life and ICTs. With a postcolonial critical eye on these matters and given the asymmetrical political economic relations between the majority of ICT users in the west and the rest of the planet's daily - and ICT - needs, these contemporary electronically delimited societies show that in many ways "we are the Borg" already. In terms of the Microsoft et al vanguard in de jure and de facto standardisation, this is even more so. For policy and

71 One of the first official websites for Tonga for which Taholo Kami is responsible (see http://www.tongasonline.com). An overlapping email group - listserve - to the forums examined here (using slightly different software to those of the KB and the KR) has been running through this portal since 1999. Its front-page includes statistics and another version of the ground-rules discussed in Chapter Eight. See http://groups.yahoo.com/group/tonga. Note that the number of registered members is nearly 600.

72 Knowledge is Power! Power is Knowledge! initial post, KB, no longer on server. This is an early intervention in a debate about the financing (thus ownership and control) of the Kava Bowl forums vis-à-vis Taholo Kami's perceived relationship with the Tongan Government.
actions in any future ICTs universe, and considering the delicate stage at which the potential agencies, subversions, and counter-actions traced here are, 'we' would do well to remember a double jeopardy of a more existential sort. Hence I quote at length:

A poursuivre un projet de vie sociale parallèle s'exprimant dans les réseaux, on rate le génie propre à ces configurations: jouer alternativement et simultanément sur les deux plans, celui des relations ordinaires basées sur la présence physique et celui de la présence virtuelle .... D'une manière trop générale, avec les technologies INFOCOM on attend à la fois trop et trop peu. Trop: façonner un autre monde 'cyber', indépendant du nôtre, voire contradictoire. Trop peu: on néglige l'effet retour, comme si on pouvait ajouter un épiderme en laissant le derme intact. En identifiant le 'cyberspace' a un autre monde, on sous-estime les effets de la commutation de notre monde avec le monde de la présence augmentée (c'est-à-dire transportée à distance ,transformé, intensifiée, mais distincte de la proximité corporelle). (Weissberg 1998: 4)

73 In pursuing the notion that a parallel social life is occurring in [computer] networks, the real ingenuity of these configurations is overlooked. That is; the playing out, alternately and simultaneously on two levels, of ordinary relationships that are based on physical presence with that of virtuality [présence virtuelle]...By over-generalising about ICTs, both too much and too little is expected of them. Too much; is to construct [façonner] another 'cyber' world that is independent, indeed the opposite of our own. Too little; is to neglect the effect of reciprocity, as if an epidermis can be added without affecting the dermis. By making 'cyberspace' synonymous with other-worldliness, we underestimate the effects of commutations between our world and the world of enhanced presence [présence augmentée]. That is to say, a transported, transformed, intensified presence across distances that is distinct from being in physical proximity. (My translation).
Figure Eleven: Tusitala

naming myself

"Tusitala"
teller of tales
that i never heard
till yesterday
born away
for another life
today
the tale i tell is my own
and theirs and yours
a way of seeking
some more
of Samoa
of my sacred self
the tale i tell
will hook its way
through tongued histories
timeless mysteries
sanctioned violence
spaces of silence
telling lives

"tala tusi"
tell the book
word the spirit of brown
in theory
in creativity
we make our sound
renown

1 Selina Tusitala Marsh (1999)