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ARTICLE

Exposing the interests: decoding the promise of the global knowledge society

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Abstract

Nico Stehr's idea of the knowledge society presents a vital alternative to orthodox beliefs about the organization of social, cultural, economic and political life. With the formation of a global market and institutions that seem to have entrenched inequalities, there is a need to examine how vested interests determine the use and application of information and communication technologies and intellectual property. Using examples from Australia and India, this article critiques the effect of vested interests and cultural effects in limiting the prospects of a global knowledge society before presenting some remedial advice to policymakers.

Key words

Australia • communications • India • intellectual property • Kenya • knowledge society • liberalization • policy

INTRODUCTION

In March *The Economist* (2004a) lauded this fact: more people around the world have higher standards of living and income than ever before but there are gigantic disparities in wealth and opportunity. Two weeks earlier

Forbes (2004) magazine printed its annual celebration of personal fortunes comparable to that reputedly controlled by the legendary King Croesus. Astute readers interested in decoding the promise of a global knowledge society will note that many of the people believed to have Croesusian-scale fortunes earned their wealth through engagement with information and communication technology (ICT), the media and commercialization of intellectual property (IP). These sectors lie at the heart of debates about paths to economic, social and political development internationally. Today the emphasis is focused largely on deploying knowledge to create economic wealth with the ideals of social development often an afterthought. This acts to endorse inequalities and ignores the great bounty that might be gleaned from using knowledge to spread benefits and opportunities for all people to improve their standard of living and quality of life.

This article critiques the contemporary deployment of ICT and IP through investigation of structures, processes and institutions before providing some suggestions to tackle the entrenched bias that is evident in policy against addressing the roots of inequality at national and international levels. Using anecdotes drawn from Australia (advanced economy) and India (emerging economy), it will be argued that the promise of the knowledge society (Stehr, 1994) is being kept out of reach through short-sighted policy and regulatory measures which constrain the broad acquisition, sharing and application of knowledge. Without changes diverting the direction of knowledge and information ownership and deployment it is inevitable that the fortunes celebrated by *Forbes* (2004) will continue to grow, but that the relative inequalities will create great tensions that will ultimately affect all societies.

ADVANCING THE KNOWLEDGE SOCIETY

The knowledge society is one of the theoretical pathways which can be applied to critique the application of technology, empiricism and new intellectual approaches to understand trajectories of development around the globe (Webster, 2002a). Many reference points may be applied: access to ICT, education, political participation, employment and economic opportunity, among other possible measurements. In addition, it can be considered from global and local vantage points. It is clear that ICT permits the potential formation of a global knowledge society. Yet, access to this ideal formation is hindered and ranges from dense nodes of access available in Australian cities and the celebrated information technology (IT) hubs of Southern India, to the technologically sparse terrains apparent beyond these oases despite 20 years of promise from satellite and wireless communication. While the digital divide reflects some shortcomings associated with lack of access to knowledge (Hudson, 2002), Stehr's (1994) proposition on the

knowledge society has a rich and ambitious course, particularly when it is compared to visions of the information age, society or economy.

As Mattleart (2003) argues, these visions can be tracked to the ideological needs and agendas of the Cold War and funds from various corporate or institutional backers who were keen to internationalize free market enterprise across all areas of human agency, derailing alternative approaches to manage information and knowledge. It is possible to follow this single-minded ideological agenda to contemporary development plans and policy presented by international institutions, including the World Trade Organization (WTO), World Intellectual Property Organization (WIPO) and the Organization for Economic Cooperation and Development (OECD). They have become increasingly influential in the orientation of the United Nations Development Programme (UNDP) as donor governments have exerted pressure on the pursuit of private sector engagement in poverty amelioration since the demise of the United Nations Conference on Trade and Development (UNCTAD) agenda.

Before exploring the motivations, agendas and mechanisms applied in Australia and India to encourage development, it is necessary to tidy up some definitional loose ends associated with the application of knowledge and information in relation to society and economy. Machlup (1962) wrote that knowledge is the human capacity to apply intellectual processes to making sense of information drawn from data, examples, evidence and phenomena and so forth. Knowledge can be acquired, refined and deployed through insight and training, via guidance and practice to determine what is *worth* knowing. The idea of worth becomes a value-judgement based on circumstances which, in turn, can lead to the commoditization of information. The notion of knowledge can be argued as a more subjective concept as it rests on combinations of experience, intellectual acuity and access to theoretical insights via training and experience that are relevant to a particular set of circumstances determined by place, social position and culture. Observations from the field highlight this point. For non-Hindus, an internet cafe at Ashi Ghat on the banks of the River Ganges might be like any other; judged on cost, speed of access, reliability and comfort. For believers of this 5000-year-old religion it has the benefit of being the last internet cafe on the path of pilgrimage and the first before the ritual bathing in the Gangaji that begins at Ashi Ghat. Reflecting the persistence of cultural practice in north India, the fact that the operators could provide a blessing to believers along with prosaic access to MSN Hotmail and the stock market in Mumbai illustrates dual value systems: theoretical knowledge based on rationality along with traditional knowledge.[1] Observed through a secular and egalitarian lens, this example demonstrates how entrenched economic and cultural factors must be addressed in order to unlock the promise of the knowledge society.

THEORETICAL BACKGROUNDS

Stehr (1994) observed that theoretical knowledge was instrumental in the complex interaction of technology, economics, culture, politics, social relationships and conditions across the world. According to Stehr (1994), the knowledge society is predicated on the systematic application of theory to all aspects of development, planning and human action in preference to earlier approaches based on traditional practice, superstition or trial and error. This approach provides the capacity to make sense of the copious amounts of information being generated from all kinds of measurement, assessment and commentary, promulgated through an ever-expanding range of media and communications channels.

Similarly, Webster (2002a) has emphasized mastery of knowledge for those wanting to thrive in exponentially expanding oceans of information that are fed by multiplying streams of data, analysis and commentary. So, from the outset, it is essential to follow Webster's lead and consider the regularly popularized and promoted concepts of information ages, societies or economies. In situating the knowledge society among these other visions, it is essential to note that it reflects an interest in recognizing and extracting the value of critical judgement, abstraction and generalization of particular experience or experiments codified in media to other practice (Webster, 2002b). Here, Webster's proposition on the value of theoretical knowledge must be contrasted with alternatives, including those relevant to traditional belief, ritual and practice, which remain platforms for the spiritual and emotional life of many people and cultures, although they may reside as parallel processes within the individual. Perhaps illustrating the complexity of the human condition, the point must be made that for many people, recourse to theoretical knowledge for worldly ends can coexist comfortably with reliance on traditional beliefs and practices for spiritual ends and community status.

With its inherent value, the knowledge society has been promoted as a development model by policymakers at both national and international levels. From the United Nations (UN), d'Orville challenges policymakers, industry and people to 'build a society . . . endowed with the ability and capacity to generate and capture new knowledge and to access, absorb and use effectively information and ICTs' (d'Orville, 2000).

Rising to the challenge requires a critical assessment of how broadly the notion might be drawn and stepping back from the deterministic proposition that ICT alone can encourage development and improvement in the human condition. Certainly, it is important to accept that ICT has radically improved the capacity of businesses to operate, and for privileged people to organize their lives and access beneficial services, but for those communities facing the prospect of entering the knowledge society after information has been commoditized and privatized, the options are

somewhat less enticing and costly. It is worth reflecting that contemporary trends for knowledge and information to be privatized and commoditized were initiated long before the majority of humanity was aware of the process and had a chance to consider the implications or express an opinion on whether this might be acceptable. While experts, industry figures and interested individuals might follow the detail and meaning of extensions of copyright and patents associated with the Trade-related aspects of Intellectual Property Rights (TRIPS) and proposed free-trade agreements cooked up in Washington, DC, WTO experts meetings, WIPO and the legal and regulatory bodies of industry and corporations that fund political parties in the United States and abroad, these practices go largely unnoticed by the majority of people who will ultimately pay for the changed conditions.

Having introduced the case for promoting knowledge as the marker of development rather than merely the amount of ethereal data on the internet or in material forms, it is important to reflect on the alternative visions of what Webster (2002a, 2002b) describes as 'information economies, societies or ages' that have been popularized in nearly 50 years of public commentary, scholarship and media reports. Technological innovations related to the application of computing and telecommunications to free-market economics lay at the heart of commentary from figures such as Toffler (1980) in relation to the emergence of the 'information society'. These ideas were promoted subsequently to industry, government and the community through populist commentary from figures such as Negroponte (1995), Microsoft's Bill Gates and the former US Vice-President Al Gore, who spruiked the adoption of technology by existing firms, promoting private investment in technology companies as a means to kickstart the US economy after the recession of the early 1990s.

These pronouncements can be seen as a part of a cyclical process of boosting the value of ICTs and related technologies as a means to change business and social conditions. Mattelart (2003) comments that the appearance of new communications and computing technologies during the late 1960s out of government and military research facilities, and their resultant spread into broader bureaucratic and commercial realms, seemed to spur some very fevered pronouncements about the way that they would reconfigure social, economic and political relations. These pronouncements, often before the evidence was found or assessed, seemed to reach new levels of exuberance through the promotion of these technologies to individuals over the last few decades as mechanisms to extend economic emancipation to consumers, or extend the social and political participation of citizens. Alongside these personal benefits runs the credo of benefit to commerce and government from a technological revolution, which unlocks consumer spending and spurs economic growth and profits for suppliers, retailers and so forth.

This credo of personal emancipation and opportunity can be seen in the glossy advertisements for household and consumer products that fill mailboxes, news articles and screens in wealthy societies such as Australia. Consumers are offered affordable options to network and digitalize their lives with a plethora of connectable gadgets. Digital Video Disc (DVD) players and software (e.g. blockbuster movies and recorded music), along with plasma television screens, computers, digital cameras and broadband internet access, were reported to be in huge demand for Australian consumers in December 2002 as people opted not to travel overseas for holidays (Cummings, 2002). The sales occurred at a time when the Australian economy was booming on the back of a real-estate bubble, where massive borrowing unlocked vast amounts of cash for consumer spending. Acquisition of these gadgets and household connectivity is used as a marker of progress associated with the information economy in Australia (in 2000, 53% [3.8 million] of all households had a computer and 33 percent [2.3 million] had internet access), although their true contribution to delivery of a 'knowledge society' might require more critical evaluation against criteria such as equality of access, generation or consumption of intellectual property and economic and social emancipation.

THEORETICAL PROPOSITIONS AND ALTERNATIVES

The fundamental shift in industrial and social practice derived from technological change has long been recognized by academics and commentators. While the notion of the 'information society' and its relative 'post-industrial society' emerged in the works of Bell (1973), Machlup (1962), Porat (1977) and Rubin et al. (1986), significant contemporary scholarship and valuable contributions on the information or global knowledge society have come from sociology and political economy, including Castells (1998, 2000, 2001), Melody (1987), Melody and Mansell (1986), Mosco and Wasko (1988) Stehr (1992, 2002), Sussman (1999) and Webster (2002a, 2002b). This group of scholars stand out from the more obviously positivist by tackling the way in which societies and economies have responded to technological developments. They have examined the way in which business and political interests have combined to introduce favourable agendas, regulations and systems. On the whole, they avoid the breathless and confusing discussion of information 'revolutions', 'superhighways' and related neologisms to either address social conditions or the configuration of industrial and market structures and positions of power within them.

Other interesting commentary which has considered the interaction between technologies and users in terms of new cultural spaces and economic relations is drawn from the scholarship of Hesmondhalgh (2002) and Venturelli (2002) in terms of new creative industries; also, the influential

journalist Leadbeater (1999), who promotes a vision whereby people dislocated by industrial change may unlock vast fortunes from creativity. Leadbeater writes of the endless employment opportunities in all kinds of entrepreneurial, ethereal or 'creative' activities associated with the 'weightless' new economy enabled by technology and information. To some degree these commentators are correct in promoting this promise, considering the astounding new fortunes of figures such as J.K. Rowling, author of the *Harry Potter* books, and the founders of Google celebrated in *Forbes* (2004) magazine. These celebrity visions have proven very influential. The state governments of New South Wales (NSW), Victoria and Queensland in Australia have supported the redevelopment of defunct industrial sites as new media hubs aimed at generating private investment in creative industries along with traditional real-estate business. The transfer of the former NSW agricultural showgrounds to the US-owned Fox Studios provides another case in point: how governments unlock public assets associated with the older economy and make them available to private interests in the expectation that local employment will be generated in new media and entertainment business ('Fox Studios to Expand', 2004).

Mosco (1996, 1999), Schiller (1999) and Sussman (1999) argue that ICT-supporting policies and markets have been shaped to further the financial interests of transnational corporations while forcing competition across the globe for investment in ICT and related information industries. Thus, employment in knowledge and creative industries has been a major theme within critical scholarship. Here we can find two trends: for workers to move to find employment, and information and knowledge-based employment being generated in places where skilled people and attractive investment conditions are accessible. In relation to information and creative industries, Sussman and Lent (1998) point out that industrial activity is often globally dispersed, with particular production hubs featuring clusters of companies and people with particular skills. For example, Australia has become a hub of the global feature film, television and commercial industry as production is shifted to studio space in Sydney and the Gold Coast (Australian Film Commission, 2002).

Similarly, Indian companies and some state governments have developed pro-business policies to attract foreign direct investment in ICT, software and services-related activities, generating work for the large number of graduates in science, technology and engineering fields, particularly in places such as Bangalore and Hyderabad where IBM, Sun and Indian firms such as Infosys have established hubs (Heeks, 1998; Wagstaff, 2002). Foreign direct investment in Indian production provides several advantages to local and international businesses. First, it allows foreign-owned businesses to access relatively low-cost labour to create commodities that can be traded internationally (see Heeks, 1998); second, it allows foreign businesses to

enter a market that traditionally has had cultural qualms about imperialism through joint ventures with local firms. Naturally, as Heeks ('iDevelopment not eDevelopment', 2002) points out, there are opportunities for Indian firms to benefit as suppliers of services and as users of newly available technologies. However, as India is such a large, populous and complex nation with enormous disparities in standards of living, the terrific success of ICT and participation in the global market for business services might seem a little incredible to villagers in Uttar Pradesh, Bihar and other places where running water, electricity and a simple telephone would be true miracles.

Access to advanced ICT (often directly connected via satellite uplink to the global rather than national telephone network) and the plethora of English-speaking graduates in India, the Philippines and other countries, have generated new opportunities for transnational and other companies to outsource accounting, customer management and administration (Dhume, 2002). These cross-border arrangements extend the creative and investment linkages between the hubs identified earlier. These arrangements are not always the traditional links between colonial centres and their peripheries. For example, a joint venture between a leading Korean publisher of online games and an Australian company has perfected a robust games engine to build a massive multiplayer game for the international online broadband market (Alston, 2003).

The reactions of national, state and municipal governments to the emerging global investment and market environment can be observed in Mosco's (1999) examination of the transformation of New York from a hub of industrial activity to a centre for creative and content industries. This illustrates the policy challenges associated with attracting footloose investment in an age of instantaneous global communication and the availability of comparable skills in many places. Competition has become synonymous with contemporary investment and industrial conditions around the world: Singapore competes with Ireland to manufacture packaged software, Costa Rico with Thailand for ICT hardware manufacturing and assembly. Each location relies on cost advantages, proximity to markets and membership of the relevant trade organizations and regimes to further its chances of attracting foreign direct investment.

DIRECTING DEVELOPMENT

Provocatively, it is necessary to argue that shrewd governments of developing countries should look to alternative answers to address shortcomings in education, health, income and so on, lest they fall into the trap of 'buying' the technological solutions proffered by international bodies and their increasingly commercial sponsors who stand to benefit from sales of

proprietary technology and systems, particularly when they are linked to copyrighted and patented IP.

Solutions to underdevelopment are addressed by the UN through world summits on the information society in 2003 and 2005; the challenge has already drawn attention from the International Telecommunications Union (ITU) and the UNDP. The latter has engaged with private partners including Accenture, which profits from providing advice on the liberalization and privatization of utilities, as well as the non-profit but pro-business Markle Foundation to produce the 'Digital Opportunity Initiative' that aims to apply ICT to achieve 'radical improvements in human development' (United Nations Development Programme, 2001a).

While the ITU and UNDP point to the application of ICT development purposes, the possibilities of the knowledge society remain to be achieved and are virtually blocked by endemic corruption, paucity of basic infrastructure (including electricity) and failed education systems. Yet development seems just one of the goals: the Digital Opportunity Initiative is quite explicit about the sharing of benefits with industry. Citing the Brazilian government's information society programme, the Digital Opportunity Initiative asserts that 'international computer manufacturers such as IBM, Hewlett-Packard, Compaq and Acer stand to gain substantially from a government program to increase PC penetration . . . the government will provide loans to lower income households to purchase the computers' (UNDP, 2001b: 57). The technological solutions presented by UNDP seem to be predicated on the information economy model of development rather than the holistic knowledge society. So how realistic is the prognosis for ICTs to really turn around economic and social inequality? Certainly, corporate interests have a great stake in promoting the implementation of programmes based around the acquisition of patented hardware and software which apparently enables 'efficiencies' in the way that information is generated, accessed and managed.

While much has been made of the potential for ICT to drive economic growth and employment in India and the vast challenges of bringing benefits to the poor and illiterate (Heeks, 1998), little emphasis has been placed on addressing the deep legacies of culture, religion and ethnicity which characterize this diverse nation. Certainly, one of the leading advocates in this area, Heeks ('iDevelopment not eDevelopment', 2002) has applied considerable technological knowledge and expertise to providing sophisticated policy advice to governments, industry and related fora, particularly in regard to his notion of 'iDevelopment' via ICT. Without attempting to diminish the sincerity of this approach, it could be argued the vision remains rather wedded to the application of ICT to the orthodox development task of enabling medium enterprises (Indian firms rather than IBM and related service providers, etc., which dominate national IT

production and software industry). This industry-focused programme can be argued to suit nationalist sentiments regarding government support programmes for Indian-owned businesses, which cuts against the general tenet of open markets and free-trade agendas which have propelled most of the foreign investment in Hyderabad and Bangalore:

> We need to be giving at least equal weight to supporting ICTs in medium to large firms . . . the greatest ICT danger for developing countries is in the use of e-commerce by huge multinationals to penetrate local markets. ('iDevelopment not eDevelopment', 2002)

While advocating ICT for development, this project places an emphasis on assisting existing Indian enterprises to expand and compete with foreign firms for local and international business. It parries the more usual efforts by the UNDP and UNCTAD to devise methods to assist grass roots communities to acquire and deploy ICT for ends such as e-commerce, education and political engagement (as advocated in the UNDP report prepared by Markle and Accenture). Decoding the contradictions between these visions demonstrates that 'solutions' tend to fit existing political, economic and business agendas that are acceptable to the client.

CONTROLLING KNOWLEDGE: INTELLECTUAL PROPERTY

Protection of IP is often raised as an issue by industry and advocates for governments to address if they want to foster development of the information or knowledge economy. Organizations such as the OECD, WTO and successive US Trade Representatives have explicitly identified IP protection through legislation and enforcement of copyright and patents as precursors for attracting foreign direct investment (Organization for Economic Cooperation and Development, 2002; US Trade Representatives, 2002; World Trade Organization, 2002). Yet the proposition that knowledge might be owned by individual and private interests is also likely to sit poorly with traditional societies where knowledge is held communally or for wider social aims. An illustrative case relates to the outrage expressed in India when foreigners sought to patent traditional Ayurvedic medicine (see 'Ayurveda Under Threat From Western Exploitation', 2003) and the genetic codes of plants such as neem, tumeric and basmati rice (see 'The Basmati Task for the New Government', 1998). Alternatively, from the standpoint of societies that accept individual and private ownership of knowledge and information, protecting the expression of creativity and its application to products and services is likely to seem a worthy goal and valid proposition, as people might be able to benefit from shareholdings in media, information and other industries which depend on the exclusive ownership paradigm.

In a persuasive critique of the pressures to introduce IP laws, Drahos with Braithwaite (2002) argue that it will entrench the power and position of the organizations and corporations that hold IP rights, while establishing a new age of feudalism whereby technologies are rented to users for limited terms and restricted purposes. This critique details the ways in which industry has convinced policymakers to extend ownership and control provisions over vast swathes of previously public knowledge, while capturing technology and information through the cross-linked mechanisms of patents and copyright. Driven through international agreements by a combination of lobbying muscle brought to bear by corporate interests based in the US and European Union, Drahos and Braithwaite are rightly scathing: 'TRIPS was the first stage in the global recognition of an investment morality that sees knowledge as a private, rather than public, good' (2002: 10).

The requirement that countries wishing to join the WTO accede to the TRIPS Agreement presents some compelling challenges for countries with limited policy and regulatory resources or which are bargaining from an unequal position. These countries are likely to be net importers of technologies that underpin access to the global networked economy; even if they are adept at producing the gadgets that connect users to the knowledge society, they face the reality that crucial patents are held by foreign interests. Mobile telephones provide telling examples. Although South Korean manufacturing companies have a significant international market share of mobile telephone handsets, the patents are held by US-based interests who earn about 5 percent of the wholesale price of each unit (Kim, 2003).

While developing countries obviously hope that the WTO will improve their capacity to export primary produce and earn foreign exchange that might be used to pay debts, fund infrastructure, services and so forth, the TRIPS mechanism enables foreign interests to patent and copyright knowledge and even lifeforms contrary to traditional or local custom (El Feki, 2002). More galling for the governments of developing countries is the likely cost of implementing IP protection regimes, which the World Bank estimates to begin at around US$250,000 (Bangladesh), ranging up to US$32 million (Mexico) for an apparatus which protects industrial patents and enforcement (Finger and Schuler, nd).

The flow of royalties and control over patents presents a crucial issue in achieving the development goals associated with the knowledge society. As ICTs are central to contemporary understanding of the knowledge society, it is evident that many countries and users will remain net consumers of technologies rather than actual innovators that drive and directly benefit from the creation of infrastructure and services. At a national level, the acquisition of these technologies and services is likely to provide an imbalance in foreign trade accounts for the sector (see World Bank, 2001; World Intellectual Property Organization, 2002). To be fair, it must be

accepted that ICTs are likely to enable domestic economies and exports through improved efficiencies in communication and management of resources. The balance of the equation must be assessed over a medium to long-term analysis of national development and income against what otherwise might have been achieved without the ICT and imported knowledge.

The discussion to this point has emphasized a nationalist account of the benefits and potential losses. This perspective has been overtaken by the linkages of national economies through foreign direct investment in local business operations, trade and the rise in exports. More significantly, in the cases of India and Australia we can see the rise of pro-business agendas over the last 20 years. In particular, the election of the overtly pro-private business government lead by the Bharatiya Janata Party in 1999 overturned the more protectionist tradition in Indian policy associated with the Congress Party. These overt changes have encouraged foreign direct investment and hence the establishment of more rigorous protection of patents and IP, particularly as foreign firms have increased investment in facilities in southern India. This trend became obvious during the 1990s as pro-business parties were swept to power, implementing policies that encouraged commoditization of information industries and knowledge. In contrast to what might be expected from examination of trade deficits associated with royalties and patents, support for TRIPS and bilateral trade agreements have been pursued by pro-business governments. The undercutting of national interest must be understood in the context of international relations, whereby foreign aid, foreign direct investment and the interests of local business elites in establishing joint ventures with foreign firms encourages the establishment of IP regimes that entrench deficits. The argued benefit is often identified as employment and investment.

It is possible to cast these debates in terms of class interests, whereby elites earn rents from IP, some workers gain employment in factories and in activities related to patents and copyright, while all the people in the economy pay rents for access whenever they utilize commoditized knowledge or information (Bettig, 1996).

CONTRARY VIEWS

Having these rights addressed through free-trade mechanisms illustrates the capacity for these corporate interests to institutionalize ownership and control mechanisms, which can run counter to the interest of users, local industries and the broader community.

However, the expansion of IP regimes to control access and usage over increasing areas of entertainment and information has been resisted and, perversely, undermined at various levels. First, the development of technologies by transnational hardware producers to enable digital copying

of software, recorded music, movies and so forth, seems to directly undermine the interests of IP owners. Even more puzzling is the fact that many corporations seem to have a Janus-like attitude to either enabling digital copying or protecting it, depending on which business unit is engaged. For example, Sony Music and Columbia Pictures aspire to prevent unauthorized copying of sound recordings and feature films and rigorously pursue copyright infringement. Yet Sony also manufactures personal communications technologies which make digital copying child's play – albeit with an ongoing emphasis on introducing mechanisms which inhibit unauthorized duplication or enable tracking of violations associated with software and content.

This internal contradiction over technological mechanisms to promote copying and those that seek to prevent it reflects the strategic difficulties inherent in transnational corporations, with multiple business units under different management cultures and orientations. An example of this strategic bipolarity might be drawn from Sony's global operations, where technological innovation appears to be the bedrock of its Japanese business strategy while its business units in North America (Columbia Tri-Star Pictures and Sony Music) have a much stronger software and content focus. The Japanese design units are obviously fixated on developing hardware technologies that involve shifting boxes from retailers, while the latter content providers seek revenue streams from rents associated with IP. As each business unit struggles to fulfil its mandate there can be tensions in orientation. The Apple iPod provides a further example, whereby a portable music player appears to be the salvation of the corporation yet its function is to enable users to copy music off the internet, CDs and other platforms in ways that violate copyright laws in Australia (Casimir, 2004).

While this battle over lounge or bedroom connectivity and accessibility might be the height of importance for pampered youths in developed nations such as Australia (and its respective marketing departments), the issue has a far wider importance if the operating systems used by corporations and governments are considered, particularly when decisions may involve hundreds of millions of dollars and the entire national approach to information management. The importance of this debate for developed and developing countries is illustrated by the concerns over Microsoft's attempt to introduce a subscription-based access regime (Version 6.0 'software assurance' package) to its operating systems and office packages, allowing it to determine the timing of upgrades and other enhancements (Wagstaff, 2002).

TECHNOLOGICAL LOCK-IN

Recent proposals for governments to lease proprietary software systems also require scrutiny. The implications for national budgets and technological

advancement from patent locks, subscriptions and licensing agreements cannot be understated. National governments and corporate users would not 'own' the software that they use to support their information technology systems, but rather obtain access through a time and application-based subscription service that is determined by the suppliers' profit objectives rather than the users' needs for equipment and applications which address particular needs. Typically, an annual licence agreement would determine the type of software and conditions of use rather than outright ownership. The attractiveness of this system for IP owners is that organizations would have to pay continually for access to software and operating systems rather than own it outright, forcing users to pay for software when older versions might have sufficed.

In essence, the key suggestion that IT is an 'enabler' of the knowledge or information economy must be decoded through consideration of the vested interests, engaging policymakers, industry, consultants and academia, as they generate the development vision. Obviously, countries and organizations risk being gulled by the OECD, corporate consultants and private interests into believing that IT and networks will improve the efficiency of business and service delivery (e.g. e-commerce, e-government and e-citizenship) without realising the potential losses. This argument has actually gained some credence despite the efforts of the global IT industry to present it as the pathway to achieving the promise of the information economy.

The European Union and countries including Australia, Korea, the Philippines and Peru have investigated this subscription-based approach and the associated technological lock-in preventing local innovation. From Australia, there is argument that governments should adopt open-sourced software such as Linux rather than constantly rely on the high-priced, proprietary offerings of Microsoft and IBM (Lundy, 2002). Lundy argues that the contractual arrangements with IBM and other foreign suppliers actually stifles local entrepreneurs and innovation because they are locked out of major contracts to supply large government information technology and networking needs. Citing the recently announced tender for IBM to manage an operating system for the entire Australian social security system, Lundy (2002) stated that 'long term contracts capturing government departments and agencies in proprietary software . . . at a time when technology is changing so rapidly is bad policy'.

Of course, with major accounts that set the standard for whole sectors at stake, the proprietary software industry has responded through another of its lobby groups with a campaign that 'policymakers should not . . . discriminate between developers that choose to licence their intellectual property on commercial terms and developers that choose not to charge licensing fees' (Software Choice, 2002). Careful digging at Software Choice's website shows that its membership includes Microsoft, Intel and other

suppliers that typically dominate the global market, alongside local companies that provide support services, outsourced development and, importantly, training for people wishing to use these systems (Software Choice, 2002). Alternatively, the Australian Computer Society, representing independent programmers and users, counters that proprietary systems are a major cause of the estimated A$15.8 billion IT deficit recorded in 2001, limiting the capacity of local designers and suppliers to develop both hardware and software for domestic use and export (Hogg, 2002).

An alternative dimension in the way that ICT might be applied to break free from the strictures of patents and rents associated with IP use can be drawn from the development of the Simputer in South India. The Simputer has been designed as a low-cost computing technology with a Linux-based, open-source operating system particularly suited to the needs of developing countries. Its designers and promoters are explicit about developing an inexpensive technology which allows users to participate and engage in the knowledge society: 'Rapid growth of knowledge can only happen in an environment which admits free exchange of thought and information . . . technology has unfortunately not seen this freedom too often' (Simputer Trust, 2000).

While this open-sourced vision presently requires a higher degree of user knowledge in comparison to operating systems that dominate the international market, it has become increasingly user-friendly and supported by a freeware or low-cost-ware community (Tsang, 2004). As people become more savvy about technology and it becomes simpler to interchange operating systems for PCs (operating systems for other computing devices are being more deeply embedded), there is a growing public debate about the whole model of proprietary and patenting as a means of inhibiting innovation (Carr, 2004).

This is a refreshingly contrary view from the tightening grip over knowledge reflected through TRIPS, proposed free-trade agreements and the punitive trade sanctions applied by the US and European governments to developing countries when they fail to implement IP laws that entrench private ownership of knowledge. Policymakers, governments and organizations seeking to enter or expand their engagement with the knowledge society must consider this proposition and whether it might be preferable to promote local innovation rather than merely 'enable' businesses such as IBM and Microsoft.

Nations such as Australia and India, which have made considerable advances in high technology industries, should be mindful that foreign direct investment from companies such as IBM in the IT industry based in Bangalore or Sydney utilizes highly skilled and relatively low-waged expertise to gain a foothold as a supplier of technology to governments and domestic markets. Unfortunately, such 'enablement' seems to be predicated

on the repatriation of profits associated with the implementation of IT programs with software and technology back to the US or other locations. With the local and expatriate expertise available to India and Australia, the case should be made to generate a local industry that might address the age-old issue of dependency with a measured revisitation of the import substitution promoted by Mahatma Gandhi in an earlier period of imperialism. Although this vision of import substitution runs counter to the credo of free-trade and open markets, it would emphasize local talent, interests and needs rather than the solutions offered by global information technology providers.

FREE-TRADE AGENDAS: A TRIUMPH FOR GLOBAL BUSINESS

With the demise of the Doha round of the WTO in 2003, there is an attempt by the interests that promote free-trade to pursue similar agendas at the bilateral level, which critics have noted allow a more explicit application of power and highlight imbalances between nations. This can have significant consequences for local industry and users. Using the free-trade agreement between Australia and the USA as an example, it is clear that IP and creative industries are key areas of debate and that the interests of Australian users have been undermined by the adoption of US copyright standards, particularly in relation to the digital environment. From a nationalist perspective, this can hardly facilitate the rise of an independent knowledge society in Australia when, to apply an old Marxist phrase, the means of production are owned by foreign interests who extract and repatriate rents earned from monopoly supply. As noted earlier, Australia has a net deficit in royalty and licence-fee flows associated with ICT, information commodities and cultural products with trading partners (Australian Bureau of Statistics, 2004).

Nonetheless, the groups ranging from academics, librarians and other users of content that will be affected by the extension of US regulation as the default have criticized the proposed agreement for going beyond the existing framework based on the multilateral 1979 Berne Convention. As the Australian Library and Information Association (ALIA) argues, the agreement will impair the right of Australians to legislate IP in ways that favour the national interest, it ignores the agenda of moral rights desired by creators, and it reinforces the distortion of copyright in favour of owners by embedding the notion of information as a for-profit activity with 'diminishing or no space for public or free use' (Australian Library and Information Association, 2003). Naturally, the extension is supported by transnational publishers, the record industry, the Motion Picture Association of America and software providers. The flow of royalties illustrates the point of the argument: in the 12 months to 30 March 2004, Australia had a

deficit in the two trade-in-services categories that can be most directly linked to the knowledge society: royalties and licence fees (exports A$615 million with imports of A$1,973 million leaving a net deficit of A$1,358 million) and audiovisual and related services (exports A$162 million with imports of A$683 million, leaving a net deficit of A$521 million; Australian Bureau of Statistics, 2004). The proposed free-trade agreement would substantially increase that deficit and mean that US copyright laws, identified by Lessig (2004) as onerous and stifling, would become the default in Australia and provide no scope for future abandonment (Australian Department of Foreign Affairs and Trade, 2004).

DIRECTIONS FOR CHANGE

To this point, this article has argued the value of adopting the values of a global knowledge society rather than pursuing an approach which can be argued to actually increase inequalities and build private fortunes. With most of the commentary being a rather unrelenting criticism of the existing approach, it is important to provide pointers for improving the regulation of knowledge industries and management in order to tackle these inequalities.

If the aim is a more equitable distribution of benefits, then it is worth considering the proposition provided by Kerr (2001) that national representatives on agenda and regulation-setting bodies such as the WTO be popularly elected rather than appointed by governments. This, it can be argued, would enable a broader range of views beyond those promoted by business interests to be considered when trade agreements and regulations were established. It might also allow a more commonsense degree of fairness and equity to be presented in debates over rules and regulation. Here there is an obvious need for individual users of knowledge and information to have their interests considered, perhaps via votes or direct consideration, instead of the usual practice of closed-door meeting of experts and *quid pro quo* exchanges between different industry players.

A further initiative should be the requirement for transparency in policy and consultancy interactions highlighted earlier. This could be achieved through public statements similar to those required of politicians in many jurisdictions of shareholdings, assets and other interests. This would increase possible public scrutiny. While civil service has often become 'streamlined', there is a need to reintroduce formal and genuine evaluative processes that engage user groups, local businesses and the public. Convincing such a wide range of groups through forums or committees would be an ideal way to engage society. *The Economist* (2004b) emphasizes the trend for corporations to disclose and report on performance across a range of outputs: financial, environment, social and so on. Perhaps it is also worthwhile for them to report on how the knowledge they acquire might be deployed for more than the gain of their shareholders?

Another line of change to the global architecture established for the management of knowledge in the digital age might be to introduce the concept of trusteeship along the lines of that used to collect and distribute artists' royalties in Australia and other countries. WIPO could broaden its mandate beyond extending IP mechanisms to take a proportion of the patent and royalty payments extracted from users in order to support access to knowledge. This would not adversely affect investment in any nation but would be an effective mechanism to direct investment into places with particular challenges or to address thorny needs. A model for this approach might be derived from the Gates Foundation, whereby rents earned from global sales of IP are directed towards various worthy causes of interest to its philanthropic founders (Gates Foundation, 2004). Although it is churlish to criticize philanthropy directed in part to eradicating the scourges of the poor, largely ignored by the global pharmaceutical industry, such largesse seems to reflect the grace and favour aspects of feudalism rather a reflection of the truly communal dimension that Bell (1973) suggests would be one of the outcomes of the information society.

Furthermore, the notion of ethics in control over knowledge and commoditized information might be introduced into its mandate, which more effectively balances the interests of IP owners and users – and those who have no access at all.

CONCLUSIONS

In concluding this article it is worth restating the core theme: that knowledge should not be monopolized and deployed for the benefit of a relatively small and advantaged section of the population. Through examples drawn from Australia, India and Kenya, it is evident that the orthodox means of deploying technology and controlling knowledge continues the trend to skew benefits towards those able to deploy policy and regulatory influence. Decoding the true promise of the knowledge society requires scholars, policymakers and the public to recognize contemporary models for the deployment of knowledge and inevitably, related distribution technologies are directed to serve commercial interests above those of the wider community. This can be seen from the private interests shaping international development agendas and national policy and regulatory plans for the adoption of ICT and knowledge resources. While the celebrity associated with Croesusian fortunes may capture the public mind, the challenge remains to implement measures that spread these resources to address less glamorous goals of deployment of knowledge for social ends. This can be achieved through the introduction of more democratic and representative means to determine the economic and social application of knowledge, through the reconfiguration of international organizations such as the WTO and through implementation of social impact statements.

Without such a shift the international policy framework will merely reflect vested interest. This democratization has long been associated with the knowledge society, but seems overlooked through the knowledge economy and related visions.

Notes

1 Interviews and observations at Tiwani Tours, Ashi Ghat, Varanasi, India, December–January 2002.

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