

OPENING SOURCES FOR KENYA'S DEVELOPMENT
THE DISCOURSE ON INTELLECTUAL PROPERTY AND TECHNOLOGY TRANSFER IN
ACCESS TO SOFTWARE AND CYBERSPACE

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ABSTRACT

Statement of the problem and research question

My research question is how Kenya could design an IT and IP law regime to most effectively facilitate access to software and cyberspace for national development. I claim that access to software and the Internet is limited by architecture, social norms, market, and law. These constraints have not been adequately addressed in any scholarly work previously. Moreover, most of the efforts by the Kenya Government, as well as the local corporate and NGO sectors, have tended to focus on the basic needs approach (BNA) to development, namely health, food and shelter. Overall, the approach has been largely sectoral and parochial and has failed to integrate the role of IT in achieving basic and other needs. These efforts are based on Government policy instruments such as Development Plans, sessional papers and policy statements, as well as local corporate, NGO, and academic studies and blueprints. Since the early 1980s the Government promised to formulate a comprehensive policy and institutional framework on telecommunications, IT and intellectual property in order to stimulate and support social, economic and political development. This has, however, not happened.

Three closely related problems have arisen in this scenario. First, a false dichotomy has been developed and nurtured in the Kenya Government, and local corporate and NGO sectors so that access to software, cyberspace and information is many times regarded as (completely) unrelated to, and less of a priority than, access to health care and food, for instance. Some policy makers, policy analysts, and academics regard this as a zero sum game for several reasons. First, they focus on the basic needs because of limited financial, human and other resources to meet all the country's needs. Second, this reflects a limitation in the conceptualization and operationalisation of social, economic and technological problems. Third, this exhibits path dependence and "lock-in" or inertia in influencing innovation and access to software. (Lock-in is a situation in which the market locks in or rewards inferior technologies to the exclusion of better ones.)¹ Indeed, as I explain below, path dependence assumes that all states and entities must follow a specific route to achieve development. This presumes that just like developed countries, Kenya must first address basic health and food problems before it can address matters related to IT.

¹ For an elaborate argument along these lines see Liebowitz & Margolis, *Winners, Losers and Microsoft, Competition and Antitrust in High Technology*, 1999.

An integrated approach to IT requires factoring in all the development issues. For instance, telemedicine is already being applied in Kenyan hospitals. Kenyan doctors utilize Internet enabled communications technologies to consult with Western and other medical practitioners and researchers on diagnosis, treatment and research. Second, compartmentalization has caused difficulties in coordinating the efforts of the various ministries, corporations, NGOs, and other agencies which have mandates on IT, telecommunications and related development programs. The third problem is that this fragmented approach to IT and development has further constrained public access to software, cyberspace and IT generally. As this thesis demonstrates, technological change and convergence in hardware and software require judicious regulation. The tendency has been to arbitrarily pigeonhole new technologies, a good example being Internet services which the Government sought to regulate in the same way as telegraphy. In such a situation, consumers whose problems fall in the interstices or grey areas miss out; they cannot secure access or redress. This is also particularly true in intellectual property law where legislation has kept a studied silence on software, IT, and cyberspace. So far these matters are largely regarded as falling entirely within the realm of traditional telecommunications and hence the Kenya Communications Act (KCA), 1998, and the Communications Commission of Kenya (CCK). And yet, the KCA and the CCK do not sufficiently cover innovation in some of the related communications technologies such as the Internet, e-commerce, and broadcasting. Regulatory inertia has resulted in monopoly of the gateway to the Internet as well as expensive telephone and software products.

Summary of argument

Kenya needs to design an appropriate policy and regulatory regime to enhance access to software and cyberspace. That regime must be sophisticated enough to capture the emerging complex technological, economic and social order. It must address these issues by adapting the four modalities which Prof. Lessig has identified as regulating social behaviour, namely, architecture or code, market, law, and social norms.²

In my argument, I have adapted or translated these to include the following four factors. The first factor is the state of the physical telecommunications and computer infrastructure and network, including problems

²See North, *Institutions Institutional Change and Economic Performance*, Cambridge U. Press, Cambridge, 1990: 92-104; Hettne, *Development Theory and Three Worlds*, Longman, Harlow, 1990. See Lessig, *Code And Other Laws of Cyberspace*, 1999, especially chapter 7: "What things regulate", 85-99; Lessig, "The law of the horse; what cyberlaw might teach"-Harv. L. R (1999). Lemley & Lessig, "The end of the end-to-end; preserving the architecture of the Internet in the broadband era" 48 UCLA L. Rev. 925 (2001).

of access to telephony, limited access to the gateway to the Internet as well as the fact that the source code of most software in Kenya is closed. Hence I argue for open access so that access to the gateway is not arbitrarily denied and so that telecommunications, IT, and computer corporations do not lock up standards by limiting interoperability or closing the source code of critical software. Second, I argue for access through efficient market structures, pricing and related practices. Third, I claim that social norms and perceptions limit access to IT in Kenya and hence formal and informal transfer of technology and skills should be enhanced to facilitate the development, adoption and diffusion of software and Internet technologies. Fourth, I emphasize the role of IT and IP law in constraining access to software and cyberspace. I also acknowledge the role of general contract and consumer law. The latter two are however beyond the scope of my thesis.

My study shows, first that these modalities act in a synergistic and complex fashion to constrain access to software and cyberspace in Kenya. Indeed my argument, as well as the evidence, analysis and proposals, underscore the interplay among these factors. Second my study proposes reforms which can be implemented respecting each of the modalities to encourage greater access to IT and software. The open code debate is partly intended to ensure a balance between social benefit (access) on the one hand, and to provide incentives and opportunities for innovators and investors to innovate on or around the hardware or software, on the other hand. The open source software and open Internet approach seeks to institutionalize the balance in at least two ways. First, the strategy will bolster access to software through free or reduced cost of the products. Second, open code is regarded as technically superior and more efficient since other programmers and users can more easily contribute to developing it or making any corrections or improvements. There are, however, fundamental limitations to open code in the Kenyan context. Some of these are universal as Lessig has shown.³ In the economic and institutional sense path dependence means history matters. Hence parties tend to transact with providers they have transacted with before. This is mainly because of transaction costs associated with securing information about products and providers, negotiating the contract, as well as enforcing contracts. Network effects is sometimes referred to as positive network externalities and may be translated as “big is better”. Consumers in a networked environment find it cheaper to join ISPs or software distribution channels to which their associates belong. And providers

³ See Lessig, *Code*, “The limits of open code”, pp. 99-108. Some of these include the capacity of open code to render public interest regulation difficult. In Kenya it faces problems associated with limited bandwidth and a mindset which prefers to be associated with Microsoft’s success.

find it cheaper to provide services to many (or networks) rather than a few consumers because of declining marginal costs associated with economies of scale and scope.⁴

There are also limits to law especially IP law, in balancing the rights of corporations and code writers with consumer access. In this context my main focus in the discourse is how to design an appropriate open source regime to facilitate access to software and the Internet. That regime must emphasise open network access and open source code. It must also integrate market principles including incentives for the provision of the code, and disincentives to providers who would defect from providing software. The regime must also recognize the role of the pricing structure and social norms such as appropriate training, education, technology culture, reputation and values which appreciate the role of IT as well as an appropriate balanced intellectual property law in the development process. It must also broaden issues of governance and regulation including an efficient investment regime as well as optimal contract and consumer protection laws used to limit IP and corporate power.

Lessig effectively argues against overemphasizing or privileging law as the exclusive or primary regulator of social behavior.⁵ Following his model on the role of architecture or code, market, law, and social norms, I argue that these four factors influence access to software and cyberspace.

My main contribution in this thesis is that I have identified the role that social norms, closed source software and intellectual property law play in constraining access to software and cyberspace in Kenya. I have also proposed specific regulatory reforms in IT and IP law to address these constraints. Such regulation needs to be implemented at various levels, including the market, under which I recommend greater competition in the various market segments; and architecture, under which I have proposed competition in the basic telecoms network including the gateway to the Internet. There is also need for

⁴ On path dependence and network effects in high technology markets see Liebowitz & Margolis, *Winners, Losers and Microsoft* op. cit.: chap.3: "Theories of path dependence", at 49-65; chap. 4: "Network markets: pitfalls and fixes" at 67-85; chap 5: "Networks and standards" at 87-115; chap. 7: "Using software markets to test these theories," at 135-161; chap.8: "Major markets spreadsheets and word processors," at 163-200; chap. 9: "Other software markets" at 201-233; Appendix: " Networks, antitrust economics and the case against Microsoft", at 245-272. See also North, *op. cit.*, chap.4: "A transaction cost theory of exchange," at 27-35; chap 11: "The path of institutional change" at 92-104.

⁵ Lessig, *Code, ibid.*

government support for open source software. This is partly because, in spite of some of its current weaknesses which I discuss in Chapter 2, the open sources model is less amenable to domination by corporate interests.

My other contribution which is closely related to the foregoing is a proposal to design intellectual property laws and institutions which guarantee equitable access to software and Internet content. This includes positive action as well as inaction: one positive action involves enacting a copyright law to protect consumers' rights to copy or adapt software for own use and for purposes of debugging. US and UK laws (to some extent) enable consumers to do this without running the risks of being sued for infringement. This could be done in the context of the current copyright law reform which is intended to make Kenya comply with the standards of the World Trade Organization's (WTO's) Trade Related aspects of Intellectual Property (TRIPs). Inaction requires Parliament not to enact and courts not to enforce laws which would constrain access, such as the expansive protection of IP associated with software patents, trademarks, domain names, and copyright laws. (See Chapter 6).

Methodologies or Procedures

I conducted most of the research at Stanford Law School in the context of the courses I took, and by using the School's Robert Crown Law Library as well as through the materials I received from Innovative Lawyering, Nairobi. I designed the field research in December 2000 upon consultations with Prof. Greenberg and Prof. Lessig. I did the fieldwork from January until July 2001. I analyzed the results as they came in. A summary of the results are discussed in Chapter 1. The research methodology and research instruments are included in the Appendices. Presentations, which I made to the SPILS Working Group on Technology Law, and at the joint Spring Conference between Stanford's Center for African Studies (CAS) and the University of California at Berkeley helped me review the progress of my research.

Dedication

For want of a more deserving gift I dedicate this thesis to the Sihanya Family: late father Fred, late brothers Tom, Ken, and Clem; Mother Agnes, sisters Joan, Rosemary, Risper and Patricia.