1. Develop, advance, preserve and disseminate knowledge.

2. Institute intellectual life.

3. Promote cultural development and the highest ideals.

4. Provide through research and consultancy - knowledge, skills and services to the community by helping solve problems facing the society.

5. Assist the government in achieving its planned development of higher education.

6. Produce the necessary skilled human resource for national development.

7. Foster national unity.

8. Promote opportunities for self-development and responsibility.

9. Promote social justice and morality, social obligations.

10. Foster international consciousness.

The objectives thus for providing university education are to:

- Develop a university that is a source of solution to many problems.
- Develop and promote intellectual discussions on issues of human development.
- Develop advanced knowledge and expertise in the fields of knowledge.
- Develop an environment for the highest intellectual inquiry.
- Develop an institution of higher learning, where people's minds are supposed to be trained for clear and independent thinking, analytical and problem-solving.

A university is an institution of higher learning, where:

- The frontiers of knowledge, a university interviewing advanced knowledge from one other.
- Transferring advanced knowledge and solving the problems of the society.

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Universities and Trade Unionism

From the above backdrop, there was consistent effort to make our education systems’ goals and objectives meet the realities of the day, nationally and internationally. As these changes were made, Kenyan universities experienced a gradual yet deliberate institutionalisation of the presidential involvement in the affairs of the Universities. The impact of this involvement on the operations of the universities had far reaching effects especially on academic discourse in the universities and general welfare of academicians. For example, University of Nairobi Terms and conditions of service, 1984 Clause 22(b) provided inter alia, that:

A member of staff whose appointment is terminated shall have the right to appeal to the chancellor against the decision of the council and such appeal must be lodged within three weeks.

Some of the questions which one can ask are: How does one appeal directly to the Head of Staff given that the clause is silent on how it is supposed to be done? What chances does the aggrieved person have in terms of being accorded fair hearing? It was this institutionalisation especially after the failed coup attempt in 1982 that led to the introduction of patronage systems and networks in our universities. Merit and professionalisation were thrown out of the window and university managers, students and even lecturers became agents of espionage to consolidate the patronage system.

The result of this was the curtailment and infringement of all members of academic community in the pursuit of freedom of association, including the right to form and join independent and autonomous trade unions. The right to peaceful assembly and formation of groups, clubs, associations and such other bodies to further the academic and professional interests of members were barred or restricted to ethnic circles. In a nutshell there was an unprecedented “invasion” of the universities by armed personnel, intelligence and security personnel, forces of law and order leading to a state of terror and fear.

These were the times of crises, but they were also times of hope. Academicians’ free and independent existence was in question; they began to question the existence of unfree and right-less policies. As a human obligation and social responsibility, there was a movement towards people’s struggle for their rights and human emancipation. It was evident that rights are not simply given; they are won. And even when won, they cannot endure unless protected, nurtured and continuously defended against encroachment and curtailment.

It was due to this abuse of intellectualism and lack of recognition that led to the ceaseless determination by academicians to fight for registration of an academic union in order to champion their grievances. The struggle took almost over a quarter century for UASU to be registered. On 2nd May 2003, twenty-four years since the ban of UASU, the NARC government registered the union amidst a spirited campaign by the lecturers. This was a culmination of a very long, costly and sometimes fatal struggle for some of our
comrades. Indeed we are obliged by history to be the custodians of this well fought struggle and trustees of this struggle for the future generation.

UASU seeks to bring together members of the academic teaching staff from all the Kenyan universities for the purpose of achieving their common goals. The vision of UASU is to transform the Kenyan universities into centres of excellence through academic rigour, freedom and adherence to established standards. Our mission is enshrined in our commitment to academic excellence and freedom in both public and private universities are improved through:

- Ensuring that education standards in both public and private universities are improved through enhancement of academic excellence, research and teaching.

- Providing, disseminating, guiding and monitoring academic standards for all universities in Kenya with a view of developing and sustaining respect for intellectual culture within and outside university environments, achieving academic excellence and freedom.

- Restoring the dignity of academic staff members for all private and public universities in the Republic of Kenya by fighting for the improvement of their welfare, status and working conditions.

- Ensuring that academic staff as intellectuals are at the core of national development of this country.

Specifically our objectives as a union are:

(a) To regulate and improve relations between academic members of staff, the university councils and the students of Kenyan Universities.

(b) To secure complete organization within the union of all members of the academic staff employed in the universities.

(c) To safeguard the interests of members with regard to proper wages, terms of employment and negotiate the settlement of disputes.

(d) To establish and maintain funds from various sources.

(e) To participate in the consideration and formulation of universities’ policies and in the management of the affairs of the universities.

(f) To promote academic standards through staff development programmes in the universities.

(g) To seek and obtain legal advice for members or matters pertaining to the union and their employment.

(h) To co-operate and network with similar organizations on matters of common interest.

(i) To provide for the general welfare of the members.

(j) To acquire, administer and maintain assets of the union.

In pursuit of our objectives, goals and functions, we have so far recorded some achievements, which we consider to be minimal in the context of our previous demands to the government, but UASU’s registration in May 2003, gave it a legal personality and the capacity to negotiate for its members, articulate their interests and defend them against victimization from any adversary party.

The de facto recognition extended to us by the government, made it possible for the top administrators in our public universities to sit and discuss issues with us. Inter alia, there has been several commissions for example; the Kamunge Commission, Kipkule and the Kippru Report, all of
which in one way or another had tried albeit without being released to address the terms and conditions of service of the academic staff. Consequently, we were able to sign collective recognition agreements to regulate our mutual operations but with reservations to contentious provisions of whether Heads of Departments, Deans and Directors should become members of our union or not. Due to the recognition, we were able to negotiate successfully for an improvement of terms and conditions of service of our members which included a new salary package. On the basis of this new package we are putting forward to the government a new proposal this July (2005) for better terms and conditions of service.

UASU has also enhanced cohesiveness between universities. There is more interaction between public and private universities now. UASU has also created a democratic space in universities' management as well as a forum for checks and balances in universities' administration.

The promotion and expansion of academic freedom, intellectual discourses and delivery of public lectures by prominent scholars and politicians is a positive development in the recent history of our public institutions. We have also noted an increased level of professionalism and commitment to enhancing quality education among our members. We believe that this situation can even become better if further motivation is availed in the near future.

Another major achievement is the establishment of a National Secretariat, where we document, coordinate, harmonize and execute our operations. We have all facilities a modern office should have, unlike yester years when for quite sometime we operated from senior common room and various hotels as we took coffee and even in the streets of Nairobi. We encourage all members of the union and those with similar objectives to support our secretariat by whichever means possible in order for us to cultivate and consolidate our gains. We are situated on the second floor of Uniafric House, Loita Street, Box 30198, Tel: 020 340292, E-mail: UASU@coopkenya.com.

We are also proposing that since the objectives of our public universities and those of UASU are in one way or another the similar, i.e. commitment to seeking to promote academic excellence and quality service to our dear country Kenya, the universities and indeed the government should consider strongly giving leave with pay the Chairman and the Secretary General of the union so that the process of institutionalisation of UASU can be hastened and consolidated. UASU has also managed to lobby the government to advertise the positions of Vice-Chancellors as it has happened at the University of Nairobi. We hope that all the others would be advertised as soon as possible in order to recruit reform minded Vice-Chancellors to manage the restructuring of our universities. We however insist that we need to amend the Acts and Statutes of our universities to accommodate this prevailing situation. The forces must be consultative enough; all stakeholders must be consulted on modalities and criteria because the winning candidate must pass the test of popular mandate within the university community and the public at large.

The union also managed to push for the establishment of Universities Board of Inspection. The initial Gazettement (Gazette notice No. 8423 dated 27th Nov, 2004) did not have any Terms of Reference and was illegally constituted under the State Co-operation Act (Cap 446) instead of the University Act cap (210B). UASU lobbied and advocated for inclusion of Terms of Reference and proper legal framework. We later provided the Terms of Reference, proposed a reduction of the life of the board from three years to six months and inclusion of UASU in the board's deliberation. We are happy to report that the government heeded our call, regazetted
the Board Special Issue, Gazette Notice Vol. C VII – No. 27 dated 22nd April 2005) and included all our suggestions. We would like to state that we will fully support the Board but the government must avail enough funds to facilitate the working of the board in order to accomplish its business within the gazetted time.

Despite the success, universities are facing various challenges. Good governance is best for our country just as it is for our universities, but it can only be achieved when we have the right rules, policies and systems in place to give direction that will enable us achieve our goals. Being industries that produce the best professional expertise, the universities should give guidance in generating and implementing these right rules and procedures. We as a union are taking the lead in transforming and revolutionizing draconian and obsolete rules/policies/structures and systems into new ones, so as to function effectively. Our objective in this restructuring process will be to increase efficiency in teaching and learning process, improve on library facilities so as to become a role model for prudent and effective management of all resources in our country amongst others.

Areas of concern to UASU include merging departments that have duplicating functions; a process already initiated at Kenyatta University and must be expanded to others. We need also to abolish the Principal’s Office for various reasons: they were created in 1985 for political expediency. Since that time, appointments to this position have been based on the reward system, political patronage and ethnicity. In addition, they continue to incur huge and unnecessary expenses. Furthermore, some of the functions performed by principals are either a duplication of the Dean’s office or have been deliberately removed from there to render it ineffective.

The expansion of universities however, has witnessed the growth of students’ populations that need a comprehensive strategic management plan, thus justifying the existence with Principals as heads. This notwithstanding, the union proposes the retention of the Principal’s Office on condition that small colleges are merged, functions redefined to avoid duplication with the Deans Office and positions advertised to attract competitive applications. The union’s position on offices of DVCs is that they should be merged and reduced to two in small universities and that the number of Registrars should also be reduced to avoid duplication of responsibilities. On this basis also, positions of Chairs of Departments should be advertised or even better: be elective.

It is also imperative that the process of recruitment of top administrative positions of Chancellors, Vice-Chancellors and Chairs to the Council be made competitive to enhance the process of good governance in our institutions. Consequently we need to redefine procedures, systems and structures that will oversee this process. Stake owners such as UASU, the University Senate and Students’ Representatives should participate in appointing their administrators who will be accountable to them. The union expects the process to be depoliticised and managed independently from external forces and the government. Advertisements of vacant positions should be done upon mutual agreement by stake owners to allow transparency to prevail. To this end Acts and Statutes of individual universities need to be amended or overhauled, particularly those related to appointments and elections to accommodate the new dynamics.

The other challenge has to do with student welfare. This is very close to our heart. The union has noted with deep concern the deplorable conditions under which our students are staying in their halls. Furthermore, no adequate funds are given to them to sustain their living, learning facilities are scarce and libraries are not only outdated but lack most
updated books and journals. The government seemed to have
given no clear policy on higher education: government
officials have been more concerned with promoting basic
education due to demands from the IMF and the World
Bank and other western donors. The union's position is that
the government should provide adequate loans, preferably KSh.
150,000 per year and increased bursary facilities to our
students in the current circumstances of fees hiking. We
expect nothing less in any future consultations and
negotiations on this issue.

As already mentioned, the autonomy of our institutions
remains a major challenge. Institutions of higher education
should be autonomous and independent of the state or any
other public authority in conducting their affairs, including
administration and setting up of academic, teaching, research
and other related programmes. This should be exercised by
democratic means of self-government, involving active
participation of all members of the respective academic
community. As such, the state is obliged to ensure that no
official or organ under its control produces or puts into
circulation disinformation or rumours calculated to intimidate,
bring into disrepute or in any way interfere with the legitimate
pursuit of the intellectual community. The state therefore is
obliged to take prompt and appropriate measures in respect
of any infringement by state officials of the Rights and
Freedoms of the intellectual community brought to its
attention (Kampala Declaration on intellectual freedom and
social responsibility Nov. 1990).

In trying to circumvent these challenges, the union expects
its membership to uphold the highest possible social
responsibility by:

(i) Discharging their roles and functions with competence,
integrity and to the best of their abilities.

(ii) Performing their duties in accordance with ethical and
highest scientific standards.

(iii) Having a responsibility to promote the spirit of tolerance
towards different views and positions and enhance
democratic debates and discussions.

(iv) Not indulging in harassment, domination or oppressive
behaviour towards another group.

(v) Approaching differences and resolving them in the spirit of
equality, non-discrimination and democracy.

(vi) Not participating in or be a party to any endeavour
which may work to the detriment of the people or the
academic community or compromise scientific, ethical
and professional principles and standards.

(vii) Showing solidarity and giving sanctuary to any member
who is persecuted for his intellectual activity.

(viii) Elaborating and concretising the norms and standards
set at regional and pan-African level.

(ix) Exercising their Rights with responsibility without
prejudice to the Rights of others and the needs of our
society.

(x) Contributing towards redressing historical and
contemporary inequalities in our society based on
differences of class, beliefs, gender, race, nationality,
religion and economic conditions.

(xi) Voluntarily giving their time to impact education to
the disadvantaged sectors of the population.

(xii) Joining an organization of his wish and monitor and
publicize violations of the Rights and Freedoms of a
people.

In a nutshell, UASU is ready to give leadership and guidance
to other professional bodies like the Law Society of Kenya
(LSK), the Architectural Association of Kenya, Kenya National
Union of Teachers (KNUT), amongst others in strictly
observing and upholding the highest ethical and professional
standards.
Knowledge, Research and Neo-Liberalism

In his book, *The Post-modern Condition. A report on Knowledge*, Jean-Francois Lyotard acknowledged that “the status of knowledge is altered as societies enter what is known as the Post-Industrial age and cultures enter what is known as the Post-Modern age” (Lyotard, 1984). With the Neo-Liberal onslaught in our institutions, the historic assumptions that informed the founding of our universities and which shaped broad social responses to it have all evaporated in the faces of globalisation and the neo-liberal. With globalisation, universities have come under severe attack. The World Bank suggested that Africa had no need for universities, universities were “white elephants” which devoured more than what they produced (Zeleza and Olukoshi eds. 2004, 2).

In a World Bank meeting of the Vice-Chancellors in Harare in 1988, it was even claimed that Africa’s need for University Education to fill the white collar jobs could be met by overseas education institutions, so that resources could be channelled to primary, tertiary and vocational education (Chachinga, 2005). Though the World Bank changed this notion, it is evident that, our universities have not escaped these attacks. For example, the conceptualisation of parallel programmes need to be handled in a way that it doesn’t compromise standards and the integrity of our universities. At the dawn of the new century with the triumph of capitalist globalism, academics face multiple challenges, both old and new that demand strategies that are also both old and new to protect their interest and promote the triple mission of higher education for teaching, research and service. In short, struggles for institutional, individual autonomy, freedom, rights and obligations, excellence and efficiency are more pressing and problematic than ever.

Their clear articulation is essential for the production of critical social knowledge that facilitates material development, democratic citizenship and ethical advancement. Indeed, universities even in the impoverishment in which many of them currently find themselves, are incredible reservoirs of minds that can imagine and help remake our societies into more productive and humane places to live. As a union we cherish vibrant universities where democratic ideals are championed and cherished and where everyone irrespective of class, beliefs, gender, race, nationality, religion and economic condition are allowed to exploit their potential to the full.

Conclusion

The presentation has focused on our universities as envisaged and the inherent contradictions that sprung due to interference from both external and internal forces. We can turn the challenges we have had into opportunities and make our universities better. We should reclaim some of the traditional objectives of a university — scientific enquiry, pursuit of knowledge and the search for the whole truth in the interest of social transformation and human emancipation. The state on the other hand has an obligation: it should not allow universities to be run like government departments or like businesses. Mahmood Mamdani has observed that universities cannot function thus, because they are not limited by short-term considerations of winning votes or making profits. The universities Academic Staff Union is already taking a lead in this emancipation course. It is our hope that all members of academic community will join UASU enmass for us to consolidate the gains already made. As I said earlier, Rights are not simply given; they are won and even when won, they cannot endure unless protected, nurtured and continuously defended against encroachment and curtailment.
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Internationalisation of Intellectual Property Rights through Information Communication Technologies (ICTs) - the case for Patents and University Research

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Introduction

Intellectual power is housed at Universities. Yet, very few inventions appear to come from Universities, especially in the Third World. There is need to refocus the goals of research at Universities from the slogan of “publish or perish” to “invent or perish.” Intellectual property rights (IPRs) are rights granted to those who expend great skill and time to innovate. IPRs take various forms, i.e. patents, copyright, industrial designs, trademarks, trade names, trade secrets, and geographical indications. This paper focuses on patents as these have been touted rightfully or otherwise as vehicles of development. They are also the most controversial of all IPRs in terms of definition and the nature of protection offered.

A patent is a certificate of registration granted for an invention that is non-obvious, that involves an inventive step, and that is industrially applicable. For a patent to be granted, the applicant must disclose the invention.
Philosophical underpinnings of patents
The philosophy behind the protection of IPRs is to reward the inventor against the inventor availing the new knowledge to the public. Knowledge is generally considered a common heritage of mankind. Knowledge is seen to be infinite that it cannot be locked up. However, where a person adds something new that is beneficial to mankind, then such effort needs to be rewarded through temporary protection.

Philosopher John Locke\(^1\) says that where a person adds his/her labour to improve on something in the common domain, then such a person’s effort deserves protection for adding value. Besides, Locke says that labour is uncomfortable. Therefore, those who engage in it ought to be rewarded to encourage work.

Bentham, him of the positivist strand looks at protection through IPRs solely for the benefit of the larger majority. Accordingly, inventors should be protected so that they avail their knowledge to the public. Such availability is to guarantee the “happiness of the greatest numbers.”

According to Hegel, property is an expression of the self. An individual acts on an idea making it useful. Such usefulness transcends the individual inventor. Philosophically therefore, an inventor is to be rewarded for adding value to that which belongs to the commons. Be that as it may. This philosophical thinking takes an individualist approach to property ownership. Many traditional communities as found in most developing countries have a communal approach to property relations. Property, both tangible and intangible, is passed on from one generation to another. As such, traditional knowledge is not acknowledged as worthy of protection in the eyes of the Western world. This differing view on what constitutes property continues to be a cause of disagreement in discussions on intellectual property rights.

Requirements for patenting
These have been stated as novelty, inventive step, industrial applicability and clear and complete disclosure\(^2\).

Purpose of disclosure requirements in patents
It is the respected philosopher and scientist of old, Sir Isaac Newton who said thus:

“If I have seen further it is by standing upon the shoulders of Giants.”\(^3\)

Disclosure is considered an essential requirement in the application for a patent. Commenting on the purpose of disclosure, Marshall\(^4\), CJ said it is:

“To give the public, after the privilege shall expire, the advantage for which the privilege is allowed.”

Disclosure is supposed to be done in such a way that another person of similar skill and ability can reproduce the invention. Some scholars in united in saying that:

“The enablement requirement is often considered to be at the heart of the quid pro quo between the government and the inventor. In exchange for the powerful right to exclude the inventor must inform the public how to make and use the invention so others, namely competitors of the inventor, can improve upon the claimed invention.”\(^5\)

In the case of Vornado Air Circulation Systems, Inc. v Duracraft Corp\(^6\), the court stated thus:

\(^1\) Chisum et al., pp. 38-49

\(^2\) Chisum et al., p. 155; Cornish, p. 147

\(^3\) (not indicated)

\(^4\) Grant v Raymond, 31 U.S. (6 Pet.) 218 (1932)

\(^5\) Chisum et al., 2004, p. 156

\(^6\) US Circ. Ct Appeals, 10th Circ, 1995
“First, patent law seeks to foster and reward invention; second, it promotes disclosure of inventions to stimulate further innovation and to permit the public to practice the invention once the patent protection expires; third, the stringent requirements for patent protection seek to assure that ideas in the public domain remain there for the free use of the public”.

Similar sentiments were echoed in *Markman v Westview Instruments, Inc.* where it was stated that:

> “the limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public”.

**Case study: Fuzeon or T-20**

Fuzeon (enfuvirtide) or T-20 is one of the latest ARVs that block the AIDS causing virus from entering immune cells, thereby preventing further infection of the body. As the older infected cells die off, a person infected with HIV can convert to sero-negative status. For maximum efficiency, Fuzeon is used alongside other drugs. The patent for the pre-clinical proof of activity was awarded on 7 June 1993 and assigned to Duke University. Further studies resulted in another patent for basic methodology of making large-scale batches of T-20 (a process) and this was assigned to Trimeris, Inc on 23 March 1998. Another patent for more methods for the synthesis of T-20 was given out on 1 May 1998 to Trimeris, Inc. A study on the proof that T-20 can be safely administered was presented in November 1998 and Trimeris, Inc. and the National Institutes of Health (NIH)

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7 517 U.S. 370, 390 (1996)

sponsored this. On 16 June 2000, a study was published on injection site side effects of administering T-20. In September 2000, a paper was published on the mechanism of drug action. This study was supported by Howard Hughes Medical Institute (HHMI) and the NIH. Another study released in April 2001 showed that T-20 can be safely combined with other anti-retroviral drugs (ARVs). The NIH financed this study. In September 2001 another study detailing the interaction between T-20 and another drug code-named T-649 was released. The HHMI and the NIH sponsored this. In May 2002, another study combining T-20 and other ARVs and sponsored by the NIH and Scherring Plough Research Institute was published. The NIH, Trimeris, Inc and the HHMI financed a study on creation of T-20 resistant virus, which was published in June 2002. In July 2002, phase III studies on the efficacy of T-20 were made public. Trimeris, Inc. and Roche sponsored these. A study supported by Roche on the long-term treatment satisfaction with subcutaneous T-20 was published in July 2002. In the same month, a study on resistance to T-20 and supported by the HHMI was released. In addition, a Roche financed study on pharmacokinetics (drug safety and blood levels) was published. Another Roche sponsored study that investigated behaviour-related restrictions to the use of T-20 was made public in September 2002. Studies on sensitivity of T-20 to HIV-1 were completed in December 2002 and NIH, Burroughs Wellcome Fund, Elizabeth Glazer Scientist Award, Deutsche Forschungsgemeinschaft and Trimeris, Inc financially supported these. In January 2003, susceptibility studies financed by Agence Nationale de Recherché sur le SIDA was published by French scientists.

The case of Fuzeon (T-20) shows that disclosure of one patent stimulated global scientific and commercial interest to improve on the invention. This case study illustrates that once disclosure has been done, other persons skilled in the same art as the inventor can in fact improve on the
invention even before the sunset clause becomes operational on the patent. Also to be noted is the large involvement of the pharmaceutical industry through their R & D programmes.

**Developmental/technological issues**

Largely due to huge amounts of investments that are put in place to work a patent from an idea to a commercial commodity, these countries insist on stringent IPR laws to be observed globally. To this end, TRIPS serves only as the minimum standard of the level of protection expected. Such protection can allow the investors to recoup their investment. Lack of such protection has been noted to be a major cause of commercial loses. It has been argued that since the majority of patents are from the North, countries of the South stand to gain nothing by protecting such patents through their national legislation. To this end, countries of the South demand that knowledge be treated as a “common heritage of mankind” and that such knowledge be availed to all nations as part of development aid. In addition, they are unhappy with the present definitions of what is patentable, which definitions exclude traditional knowledge. Moreover, although there is a possibility of such countries using the provisions in TRIPS Art. 27 to come up with a *sui generis* instrument, they have not done so. The apparent “stand-off” continues. As a solution that would meet the interests of both the North and South, it is proposed that inventions be internationalised using information communication technologies (ICTs).

**Why should patents be internationalised?**

Several reasons for the internationalisation of patents have been advanced. Firstly, it has been argued that knowledge is infinite, i.e. it cannot be locked up. What is more shocking is that two different people without any contact and living very far apart from one another could come up with the same invention at the same time. Secondly, such internationalisation would facilitate quick “searches” in case of prosecution for a patent. Thirdly, internationalisation would help reduce confusion related to claims. Fourthly, it would offer the patentee wider protection as many people would know what not to infringe. Fifthly, it is also contended that patented inventions are for the benefit of mankind, as they must eventually be “freed” to the public. The sixth reason is developmental. Some scholars argue that internationalisation would speed up technological progress as it would stimulate further research and development activities globally and within a very short time. This was new knowledge would not only be availed to mankind but that such knowledge would develop faster using the vehicle of ICTs. The seventh reason lies in the stimulation of the inventive capacity of others. This point is ably illustrated by the case study of T-20 above.

**How can internationalisation be achieved?**

It should be observed at this point that the current international legal instruments on patents only provide basic ground rules, i.e. the requirement of full disclosure, novelty, non-obviousness and commerciability of an invention. None of the international instruments so far talks of using ICT to avail such information to States parties. Dissemination or sharing of information is a challenge. To compound the problem of “dissemination,” the regional and national institutions that handle patents seem to have a limited mandate, which does not appear to include dissemination of information on available patents. It is postulated here that there is need to post all inventions on the Internet showing the expiry dates of each one of them. To this end, ICTs can be useful. We now focus the discussion on possible benefits of using ICTs in dissemination of information on patents.
What are the possible benefits of using ICTs?

ICTs have been hailed as one of the major developments of this century besides biotechnology and materials science. ICTs have an inherent character to avail information very fast\(^9\) and the same information can be simultaneously availed to a host of users sitting in different locations. Their use in patent registration could ease the process of “patent examination,” besides relaying the information very fast. Secondly, a larger public can access the information within a very short time. This is likely to stimulate the “inventiveness” of the public on a large scale. Thirdly, it is here argued that such a venture would stimulate faster technological development. The available knowledge can be easily improved upon before the patent expires. Fourthly, it is easier to facilitate transfer of technology. Least developed countries that complain about the “relative high cost of new technology” can watch the sun “set” on some of these patents and work those which would not involve infringement.

**Pitfalls of ICTs**

The use of ICTs in patents is likely to have some pitfalls. Such pitfalls are inherent in the technology. For instance, freely availing the patent information on the Web is likely to lead to lose of revenue that countries usually earn through “patent searches.” It should however, be acknowledged that such a loss is a small price to pay compared to the eventual benefits of availing such information to many would be inventors.

The other pitfall is that least developed countries have poor infrastructure for both electricity and telephone\(^10\). Sub-Saharan Africa is said to have the lowest teledensity in the world, i.e. one telephone line serves thousands of people.

The problem of infrastructure is likely to be a major hindrance to access to information posted on the web. However, this problem could be tackled in phases until a country is properly wired both in terms of electricity and telephone network.

Another pitfall relates to the cost of computer hardware\(^11\). This hardware is very expensive in least developed countries that seek to earn tax revenue from their importation. Policies should be put in place not only to make such technology easily accessible to citizens but efforts should be put in place to make everyone computer literate.

Another possible pitfall is lack of a regulatory framework\(^12\) on e-commerce. Many countries of the South appear to be totally lost and looking to the North to lead the way in this particular respect.

**Conclusion**

Indeed many benefits can be obtained from the use of ICTs in disseminating inventions. It may be the only hope and raison detter for least developed countries to put in place stringent IPR laws. In fact, the use of ICTs as proposed above could be a way of leveraging the perceived misgivings least developed countries have about patents. The pitfalls that appear to be associated with the use of ICTs can be taken care of through appropriate policies. In sum, internationalisation of patents through ICTs is likely to enable least developed countries to leapfrog in their technological development. Universities need to lay greater emphasis on ICTs. All staff offices should by now be connected to the World Wide Web. Such combined efforts from both KIPU and the Universities are likely to witness a paradigm shift in research activities at the University.

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\(^9\) Lessig, 2000  
\(^10\) Aguyo, 1997; Wasike, 1997  
\(^11\) Wasike, supra  
\(^12\) Sihanya, 1997
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