The Information Society

Linux Society Contributions to the Drafts of the **WSIS**

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Preamble

Since this document will be shared with a wider audience to help promote the goals of the Information Society, there is some descriptive content. This document is the Linux Society liberal interpretation of the drafts which hopes to be an imaginative source to reinforce and refine the concepts presented in the initial documents. **Text in italics is from the drafts or other United Nations documents.**

The Information Society

Building the global Information Society represents the first opportunity given to the international community to imagine and prepare as a whole its own future, which should help at least to narrow those imperfections, contradictions, and divides.

Article 19 of the United Nations Charter

Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.

Topics:
- **Definitions**
- **Rights**
- **Culture**
- **Technology**
- **Standards**
- **Privacy, Property and Protection**
- **Radio Spectrum**
- **Employment**
- **Recycling as Funding**
- **Technical Addendum**

Definitions
- **Vital Information** This is the most important data handled by information systems,; medical, agricultural, news, and messaging. This information is necessary for life and liberty and for developing interactive dialog, the creation of content, storage and sustainable information systems growth.
- **ICT** Information Communication Technology
- **Seed Networks and Kits** These are interchangeable terms for light weight hardware

and basic software for interactive computing

Village The central node of a **Seed Network** be it a third world village or a New York City high school.

Economy What meaningful caring humans really want; home, family, health, community and cultural enjoyment. Also what they need; sustainability, environmental values, freedom from cruelty, as well as some of the nice things in life, like single malts.

First and Second Phases of IS Development The first is to de-marginalize villages with vital information. The second is to use the newly developed village centric networks to create vibrant economies.

Technical Definitions:

- **Messaging Protocol** A system for interactive communications between people, between people and machines or even between machines, XML-Jabber
- **News Feed** A news stream which can be created on any server with free software, typically written in the perl language, XML-RSS. Most major American newspapers run one.
- **Public Software Typically** GNU Copyleft or Open Source licensing and the public domain. There are countless variations but reflect similar intent.

Rights

All citizens should have access to pluralistic and independent radio and television services, relevant to their own culture and in their own language.

Vital Information

Systems need to be available to give citizens the ability to communicate interactively to fight disease, aid rescue, provide agricultural information, and promote economic sustainability. ***People need guaranteed access to vital information and to messaging systems*** *so as to be able to save and improve their lives, and get "reality checks" of the truths that they have been given.*

Encryption and Authentication

In the long term, a global culture of cyber-security, should be developed, based on a common understanding of regulations and appropriate mechanisms for information and technology exchange and international cooperation.

To work responsibly with digital information, people need to be able to authenticate themselves, whether for logging into systems or for updating stored information. *A **guaranteed right to digital authentication** will also provide the protection of identity necessary to establish credibility to report international crimes and otherwise assist in freedom.*

*Encryption issues, however, will always be roadblocks so the Information Society should not seek to encrypt, or otherwise hide information, at least in the first phase. The focus should be on the **assurance of the identities of people and groups** using passwords and pass phrases. Primary to the concern is increasing damage to humanity through events* such as terror, precisely what the Information Society seeks to prevent.

In the second phase, when marginalized societies are clearly growing and well attached to the rest of society, the horrific results of hatred will be far less of a concern and the use of encryption will be less of a concern to the security of threatened nations.

Access to information and communication technologies shall be secured in accordance with international law, bearing in mind that some countries are affected by unilateral measures which are not compatible with it and which create obstacles for international trade. [The Information Society will create,] at the national level, laws, rules and regulation that enforce the individual freedom and that punish all kinds of action, activity or behavior that would represent an attempt to this individual freedom

Simply enabling the passage of information will promote the internal development of free and sustainable societies. If international law becomes an issue then the goal should be to enable strengthening of international law with the support of advanced and enlightened nations to eliminate the hardships caused by hatred and cruelty.

Culture
[All villagers] require access to full information for democratic participation at all levels, including unbiased information and a plurality of opinions, as well as access to a wide range of content, including material reflecting national and regional cultures and content relevant to local communities.

Cultural Misguidance and Bias
The continual skewing of cultures for business and political reasons, or the culture of business itself where management exists for itself, has resulted in endless conflict and hardship. An even greater threat to humanity exists in the form of incurable infections disease. The only explanation for our most threatening infectious illnesses is that human the disruption of the environment has allowed deadly viruses and bacteria to mutate and spread. The Information Society must provide the channels for education and dialog so that people can learn safe practices and act as responsibly as individuals.

Access as to the Resources of Freedom
Parts of cultures and religions often mitigate heath and the environmental problems when they control group mentality, reproduction, and even diet and personal habits. These pressures especially affect women. Messaging as a right can easily allow access for those under this kind of stress to the knowledge and support they need to preserve their basic rights. **Messaging, as a right**, *will allow persons of knowledge to support those under illegal duress.*

Removing Taboos
With the free flow of vital information, the Information Society can de-marginalize cultures, remove dangerous taboos and through interactive education, advance all peoples into the present millennia. When basic needs and values are in place, the most important beneficiaries of the Information Society, here called villagers, can research and develop their own sustainable economies.

Less Reliance on Capital in the First Phase
With a flood of knowledge, even money itself may become less significant. The renaissance of the world of villagers in a cyber-sea of knowledge will no doubt learn to share and extend themselves in a way that all good deeds are returned. Certainly, skills they develop which are reinforced by remote support will allow for far more self-sufficiency, eliminating much of the need for global capital with its loss of local control and the export of the majority of vital resources.

Education
With the Information Society's guaranteed access to global knowledge, the questions asked and the resultant answers will comprise education. Suddenly, teachers will enable students with the Information Society and push them off into cyberspace to learn for themselves. They can, instead, concentrate on those students who need the most support.

Sensitivity to Local Culture and Language
Cultural and linguistic diversity. Linguistic and cultural diversity enriches the development of society by giving expression to a range of different values and ideas.

Given the localized development of the Information Society, local librarians and scholars cannot help but use computers and storage to preserve history and culture. They would rely on the rest of the Information Society to aid with storage and help with that magic process of cultural fusion which brings all humans together spiritually. Because they develop their own technology, it will naturally be in their native languages. But because one language, American English has established itself as the lingua franca of transport, rescue and critical operations, it would be unwise to assume cultural chauvinism. This seeming dominance as resulted only from a century of hard work in developing and integrating ICTs. As part of the American collaborative effort, multilingual protocols have been as much a priority for the public software community as technical prowess.

Technology
Digital broadcasting, with its interactive enhancements, will be an essential tool for making the services of the information society widely available, thus contributing to bridging the digital divide

Because vital information provided by the Information Society is guaranteed to be free of restriction, it will assist the process of its own development and the improvement of its flow. Since much of the information flow will consist of enabling software, the distinction between information and software is blurred.

Seed Networks
Certain villagers will naturally gravitate to the **seed networks** because, as it is easy to prove, some villagers will have a natural love for technology. The systems themselves will train the technologists as they begin to utilize the **seed networks**. Using **seed kits** they can easily and joyfully adapt technology to their needs and share it with similar communities in an open source environment.

Moore's Law
As **Moore's law** diminishes the size and costs of inter-networking equipment and increases its efficiency it will fuel expansion that will in turn exponentially add to the available pool of engineers. The villages, with seed kits, can develop outwards to each other. By the time Information Society milestones are reached, communications technology known as **meshing** will allow all these seed networks to relay data from one network node to the next, the majority of which will be wireless.

Village Development
Village networks *will initially resemble the Internet of 1990, which was adequate to quickly expand from ten thousand users to one hundred million. Initially*, things will be simple enough that the vast array of protocols coming form the standards bodies such as the W3C will not be useful to them.   Their simple systems would be overwhelmed. Their own technology will have developed to make the seed systems viable,   Some of the components are already available thanks to the public development community as well as the US government.

Converging Technologies
Technological convergence must be monitored with a view to integrating traditional and new ICTs in order to create alternative forms of access that can help narrow the digital divide.

Convergence is the natural evolution of public software. Private sector controlled software cannot converge freely and laws created to enforce this will likely be resisted and fail.   The Information Society must rely on free software, which is often much better and far more collaborative.

Connectivity Centralization
The optimization of connections among major information networks should be promoted through the creation of regional traffic hubs to reduce interconnection costs and allow the penetration of access networks to be broadened

As connectivity increases, and newer communications technology reveals itself, centralized nodes will become less important and the Information Society's data flow will be less vulnerable to disruption.

Standards
Technical open standards (interfaces and protocols) useful for operating at the village level probably don't exist yet.. We need to develop new more appropriate standards which will be able to satisfy village needs while scaling to support the billions of users and the diverse network environments of the Information Society.

If systems are going to share data seamlessly along possibly flawed transport layers, they would probably benefit by sharing datastruture design, common systems language support and the use of effective algorithms and procedures. Quality standards will be

decided by a very wide and field-tested form of peer review. This process will be managed by the Internet Society but their implementation would have to be democratically decided by the villagers who actually use and develop their ICTs.

Failed Mandated Protocols
Hardware standards should be developed globally by civil society, with the assistance of government and the private sector. Government and the private sector have consistent proved that they will never provide technology and entertainment standards that accommodate anybody except the small one percent of the world that controls the vast majority of the wealth. A primary example is HDTV. Even the public domains nemesis, Bill Gates, suggested that Vga, Svga and Xvga should be the HDTV standards while the US government and the private sector developed system protocols which intends to make television more expensive even than cars and vacations and flood the bandwidth with superficial content and advertising.

Stake Holders
Resource mobilization: All stakeholders are urged to mobilize resources for the development of the Information Society... ...It is essential for governments to encourage technology transfer and investment, including venture capital, in the creation of national and regional ICT production facilities:

Manufacturing
Creating production facilities in marginalized areas is important but may not be crucial at the outset. The primary limitation to manufacturing development would be the licensing of code written to the hardware.

The only truly difficult part of computer manufacturing is in the development and production of component chips. This is so sophisticated that it may never be practical outside of existing production areas. These chips however comprise only a small portion of total cost. By loading pubic software into the writable areas, called firmware, reduces chip costs even more. Systems can be run by car batteries, for instance, and racks can be constructed from any material.

Civil Society, Market Fraud and Failed Enforcement
Civil society holds itself out as the most important factor in distributing seed networks. The free market failed technology to where it exists at sub depression levels. The controlling US bank chose to create usurious interest rates, cutting the cash flow for research and development at time when brokerages were using technology to carry out some of the greatest frauds in history. We were informed that technology's financial failure was the result of "over exuberance." The insignificant number of brokerage and banking felons imprisoned for the theft of trillions of dollars in technology scandals proves that government enforcement is as likely to promote official and corporate corruption as enable an altruistic Internet Society.

Privacy, Property and Protection
In intellectual property rights it is important to ensure a balance between intellectual

property rights (IPR) and the public interest:

Encryption
Since the most important information is vital, such as weather, medical, news, agriculture and messaging, and that the relevant software is being public ally developed, intellectual laws don't really become an issue at the outset of the network seeding process. Insisting on excessive privacy at the outset of the seeding process may create roadblocks. Ultimately the world will become more peaceful and prosperous as a result of the increased information flow, and privacy as a component of business will out weigh fears of it's misuse.

Privacy and Actual Ownership
There is a real consumer fear concerning the loss of privacy as well as in relation to the fight against illegal and harmful content and the protection of minors. Assurance of the confidentiality of personal information is essential in building the Information Society.

In bizarre legal processes, things that you own, have paid for or other wise legally obtained, are not your property.   The fact that your own DNA can become someone else's intellectual property seems outlandish. Examples of this surround the never ending controversy over browsers. Browsers can prevent the users from manipulating or filtering data being sent to them, even free and open source browsers do this.

Browser Wars
Browsers are always the locus of the American anti-trust struggle. Since they are the only available tool for rendering content they, therefore, have to be constructed on village devices by villagers themselves from available components. This self determination with respect to village devices and software has to become law, rights over your own technology and your use of it need to be enacted that are no different than other individual rights.

Gender and Repression within Public Software
Even in the free software movement, where, obviously the individual has direct ownership of installed software, other tactics are too often used to control its use. These may actually include email harassment or threats of isolation with respect to technical support.

This explains why the vast majority of open source programmers are men. For women to benefit from the Information Society, they have to embrace the challenge and support ethical standards for their protection.

Public Software Style Standards
There also exists the bizarre practice of "code obfuscation" where programmers make their code so difficult to understand it has to be discarded if modification is necessary. Coding standards must be encouraged to preserve the primary value of public software which is its ability to promote further development by its openness.

Information Society Protection
Because of their importance, the rights of village technologists as information evolutionaries must be protected. I would volunteer the superb US military for this mission as I honestly believe that they would appreciate the far reaching implications that it will ultimately eliminate many of America's present threats.

Radio Spectrum
The radio frequency spectrum should be managed in the public and general interest and in accordance with the basic principle of legality, with full observance of national laws and regulations and international agreements governing the management of frequencies.

Duplicity in Diversity
The US government has, in the past, mandated public access to assure that local communities were represented on the radio. A few companies have been allowed to dominate the radio spectrum and have leveraged their power to remove the public protections. They claim that the public protection is no longer necessary because they have achieved "entertainment diversity" by using performers of various racial backgrounds. In children's entertainment this might mean providing African-American appearing characters as well as Daffy and Mickey. This is supported by the chairman of the FCC as part of reducing government. Content is no longer relevant and its creation is strictly controlled in centrally managed offices to specifically to appeal to target markets. A similar misuse of the term diversity by the FCC chairman's father, Secretary of State Colin Powell, advocated supporting the global corporations in their destruction of local environments so that they could provide a more "diverse array" of species, such as McDonald's livestock.

Spectrum Syndicate
In the US, the FCC manages radio waves are managed where they don't exist. Agents in frumpy trench coats regularly round up farmers, students, would be DJs and hobbyists for the use of tiny transmitters. Simply creating EMF where there wasn't any before, is a felony though no transgression has been registered. There has been created a special court system which operates outside the normal due process. Deceptively named "administrative", punishment is real and is intended to ruin life and deprive liberty. There must be immense incentive for such an extreme constitutional breach. It is, of course, the obsessive prurience of the controlling consortia. Arbitrary law, therefore, must be made illegal by the Information Society. Courts must prove actual injury for prosecution to be free of persecution and the illegal alienation of rights and property. "Because that's the law" can no longer be the cliché of jurisprudence.

Employment
E-employment: ICTs can provide tools for new job creation and enhance competitiveness and productivity through teleworking, enterprise networking and efficient linking of job seekers and employers.

Labor Disputes
Competitiveness is important to free enterprise but it clearly needs to be attached to

business and not employment. The Information Society should be cautious in creating rivalries between workers. It often leads to near-slavery since, in litigation, a global corporation with vast resources is viewed as a single person, a simple villager is at an incalculable disadvantage, especially when trying to build unions.

Best practices and new labour laws for e-workers and e-employers should be developed at the international level. The role of the ILO is fundamental in this respect.

Very probably the Information Society, with all its altruistic values, can set an example for the world. During its short life, "new economy" gave the empowering feeling that all people would benefit handsomely. since the profits would come not from exploitation of resources but from the creation efficient systems. While making life easier and less disruptive, it would also offer first world business stability to marginalized and troubled regions.

Telecommuting should be promoted to allow the best brains of the developing world to live in their societies and work anywhere.

The information society should also be cautious here because telecommuting often complicates project management and might have the opposite of its intended effect. It may accelerate the process of "brain drain" by linking employers and employees with plane tickets and work visas.

Recycling as Funding

Governments and the business community must initiate actions as well as develop and implement programs and projects for the environmentally safe disposal (including recycling) of discarded ICT hardware and parts.

No computer hardware needs to go into landfills. Recycled hardware can travel in otherwise empty containers from first nations to marginalized areas. By coordinating global recycling, the Information Society would prevent reusable products of any kind from being wasted. Manufacturers off all kinds would find reason to standardize parts to give old products new life. They would create secondary markets by providing kits to rebuild durable types of equipment and appliances. Both manufacturers and shipping companies would have to be rewarded for their social contributions with lower taxation.

Addendum: Converging Components(ITCs), VMs and OSs
Virtual Machines have become so useful that their sophistication cannot be a reason to prevent their use in marginalized regions. One VM's native language is so close to CPU language it promises not only quick computation but offers easier communication with the underlying hardware. Others actually customize themselves "auto magically" to the needs of applications. The Linux Society's model uses a thin client/server model. Because thin clients are reliant on other devices or servers for support the Linux Society's VM model is open to three channels of communication along with its internal processes. The first is an open messaging protocol where the lightweight device can communicate with any other similar device or supporting host servers. Messaging done between

devices to allow those that are fully functioning share object oriented modules of packages and methods along the second communication which is designed just for this kind of transport. These text and binary modules, often called "BLOBS" of data, enable application functionality and even the boot process. The third channel simply seeks to acquire data objects to work with, which are defined as URLs. They can be any data or combination of data. If the formats are too complex for the lightweight device to use, signals are sent out on the first channel for modules to be provided through the second channel.

As the user finds and loads data which to work with, the operating system determines what modules are necessary to work with this data. Calls are sent out and the most efficient route is quickly determined with which transport the modules. As the user's working data is loaded into memory, the methods appear in the screen's windows as buttons, dialog boxes, palettes, or other visual tool kits. Since the system customizes the screen's windows as an extension of operating system, there is no overhead nor collections redundant procedures. If memory or storage becomes scarce, less used modules are data are removed, but only if it is known that that data exists elsewhere in the network of thin clients and servers.

The architecture allows for very little waste, no two modules do the same thing and, depending on the resources of the devices, user data and system functionality can be preserved between power-downs.

The underlying **OS** is **Linux**, where the components are specified by the US government's **LinuxBIOS** initiative. The **VM** is that of **Perl6**, the language designed for system operations which also pioneered the web. The communications is an enhanced version of the very first functional use of the Internet, **Aloha Net's** radio packet technology. The architecture was an independent inspiration but resembles several parallel, albeit proprietary, efforts.