INFLUENCE OF USE INFORMATION-COMMUNICATION TECHNOLOGIES ON ENVIRONMENT

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Developments in computer and telecommunications technology have pushed information into the forefront of business. Information is now considered the most important factor of production in a world economy that is gradually becoming globalised. These developments are also the principal pillars upon which the change from an industrial age to an information society hinges. This paper spells out the role of information in the new "information society" and how it affects the fortunes of a nation. A historical approach to underdevelopment and poverty is undertaken and applied, by analogy, to the call for African countries to use electronic formats to solve the continent's myriad problems.

Information-communication technologies (ICT) industry seriously can impact the environment at different levels and in various dimensions. The ICT industry designs application programs which can ensure cleaner production patterns. Being an enabler of development, ICT can make a valuable contribution to sustainable environmental management; improve environmental monitoring and response systems; facilitate environmental activism; raise awareness and enable a more efficient use of resources. The industry uses material resources to manufacture products such as computers, hardware, and devices, but it also produces wastes.

Applications of ICT for environmental protection are becoming common around the world. For example using ICT to collect, store, process and disseminate environmental database and information. This provides users with access to up-to-date information, thereby increasing and enhancing efficiency in environmental monitoring. It also facilitates the prevention and mitigation of environmental degradation. For instance, the websites of the Food and Agricultural Organisation (FAO), the United Nations Environmental Programme (UNEP), World Meteorological Organisation (WMO) and the World Resource Institute (WTI) are very good sources of data and information on the environment.

Table 1 below indicates the effects and opportunities created by ICT at three orders: physical existence of ICT (first order), on-going use and application of ICT (second order), and accumulative effects (third order).

Table 1: Environmental Effects and Opportunities Created by ICT

First Order Effects	Second Order Effects	Third Order Effects
Design and Manufacture of ICT equipment - ICT production is relatively lightweight industry - Use of toxic components - New waves of technology are more energy-efficient	Increase and Decrease in use of Transport - E-commerce have significant environmental impacts from the increases in home deliveries - IT employees have less travels, then less pollution ICT managed control systems in business can reduce environment impacts Distribution and manipulation of environmental information such as ISO 14000 label/ certification	Decoupling economic growth and energy consumption and/or carbon emissions - Possibilities of reducing energy used and/or CO_2 per unit GDP
Operation of ICT equipment:Save energy use by stand-by mode		Changing settlement patterns - Conflicting pressures on local settlement
Disposal of ICT equipment - Increase in recycling and reusing		

Geographical Information Systems (GIS) and Global Positioning System (GPS) are typical ICT based tools for environmental purposes. A GIS is an automated system that enables the capture, storage, checking, integration, manipulation, analysis, display, and modelling of complex spatial data. It comprises hardware, software, and specified procedures for solving complex planning and management problems and formulating coherent management strategies. A GPS on the other hand, is a space-based radio positioning system that provides 24 hour three-dimensional position, velocity and time information to suitably equipped users anywhere on or near the surface of the planet. A combination of these two technologies provides an important means to analyse and access environmental information. All information and databases on the environment posted on the Internet, the Webs, TV, etc. are good instruments for environmental education and awareness creation.