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LAW, SCIENCE, AND TECHNOLOGY THE MILLENNIAL CHALLENGE BY ENEFIOK ESSIEN

INTRODUCTION

Man's way of life and progress throughout the ages have been determined by the human activity of science and its practical techniques, developing an historically cumulative body of interrelated techniques, empirical knowledge, and laws. However, it is only during the modern period of history that science and the forces promoting science have developed an ever-increasing power of historical change. The change so wrought have done much to form the character of modern civilization, to bring about a profound secularization of the human mind, and to dissolve old traditions, beliefs, human values and old ways of life.

At no time has Science and Technology reached the level of technoplosion as is seen today. The booming technology reminds us of Huxley's *Brave New World*, and Orwell's *1984*. Scientific inventions and technological innovations are increasingly decisive means for fulfilling human needs and creating optimism and exceptions. With the increasing dependence on "the machine" and booming technology, there is need for the law to constantly keep pace with or remain ahead of Science and Technology.

A discussion of Science, Technology and law naturally brings to mind a few distinct but inter-related questions, such as: what challenges have Science and Technology posed to law? Since

Albert Einstein, the rapidity of science and technological inventions has been tremendous, giving rise to many novel legal questions as, e.g. what is meant by "human being" or what is a "document" in the case of electronic transmissions. In colonial times Nigeria and indeed the world at large had only to contend with laws (or treaties) partitioning the colony to the imperialists. In other words, the law was concerned with discoveries, but now it is concerned with inventions. As we know, discovering things is merely making available what already exists in nature. A substance freely occurring in nature is mere discovery and therefore unpatentable. It therefore does not give rise to any major legal question. On the other hand, if a substance found in nature has first to be isolated from its surroundings, and a process for obtaining it is developed, that process is patentable.

However, notwithstanding the easing of life for the man of technological culture and elimination of difficulties of physical survival and struggle, the spread of modern technology has tended to destabilize modern societies by increasing alienation, fragmentation of life, disparities, social disharmony, violence and a variety of paradoxes. Technoplosion tends to bring about a social morphological revolution, not only in transforming the social and economic order, but also in generating or exacerbating many problems and creating fresh legal questions. Examples are the social consequences of biological revolution in the form of genetic engineering, DNA sequence, genetically modified fruits, human cloning (with possibility of fabricating standardized human beings from genetic blue-prints), creation of test tube babies, establishment of sperm banks for preserving semen for artificial insemination and fertilization, and euthanasia or

"mercy killing". Do you have a right to take another man's life for his own benefit?

Outside the life sciences, there is the legal problem posed by recent computer applications. Take for instance the area of e-commerce and e-shopping. Where tax has to be paid, which Government is the tax to be paid to? Consider an example where beer is ordered from Lagos by e-shopping generated in Zamfara State but payment is made through credit card from a bank account in Abuja. This poses a problem for law as to: where was the contract made? Which state's law governs the transaction; Zamfara where the order emanated? Lagos, from where delivery was taken? Or Abuja where the payment was made? Indeed, the legal problems posed by our computer age may be multiplied and infinitum. In the area of academics, the law also has to determine how copyright will be collected in the case of electronic publications, where such electronically published documents are downloaded and circulated for gain.

Legal thought cannot be divorced from the general intellectual currents of the age and national law must respond to the demands of scientific and technological reality in order to cope with the practical and legal problems created by social change. In our times, the cycles of change have higher amplitudes and greater frequencies than ever before and the law has to anticipate problems of and respond to the millennial technological reality. The concept of law requires to be expanded beyond the narrow scope of the resolution of legal conflicts to a more general one of the management of human predicament. What this means is that law is no more, and can no more be seen as a conflict resolution device. Law is and has now to be more pro-active; it has to anticipate changes or even

cause changes to happen. To wait for scientific and technological inventions to occur before thinking of a law to govern the situation would be like shutting the stable after the horse has bolted. Law is and will remain a vital catalyst to any meaningful Science and Technology policy in so far as any innovation or invention has to be within the law and has to be patented or copyrighted by law. Also, a favourable legal environment has to be created for scientific inventions to thrive. In Nigeria, such enabling environment is created by section 18 sub-section 2 of the 1999 constitution which provides specifically that "Government shall promote Science and Technology". Promotion of science and technology is therefore a fundamental objective of state policy. The point should perhaps be made that the relationship between Science and Technology on one hand and law on the other hand, is symbiotic rather than parasitic. While law lends legality to inventions and innovations, the latter have also been of immense help to law. Lawyers, law firms, the judiciary and even the legislatures now have their websites on the Internet, thanks to modern information technology. Another ready example is that of electronic transmission of documents and an introduction of CREST where paperless share dealings can be made electronically. With an increasingly computer-dependent age especially as we enter the millennium, it is probable that in the not too distant future, many commercial transactions will be made electronically without the need for paper. This may be dismissed by some as tomorrow's (or future) problem and, in any case, one may ask, why should we try to cross the bridge when we have not yet come to it? My view, however, is that if law waits for the technological

problem to arise, if law is not proactive and forward-looking, if law is not carried along in the Science and Technology forward-match, then law would be caught napping and we all would suffer for it.