ARGUMENTA

OECONOMICA

TABLES OF CONTENTS

INAUGURAL LECTURE
FOR OPENNING THE ACADEMIC YEAR 1994/1995

I. ARTICLES

II. REVIEWS AND NOTES

Andrzej Baborski

ON SOME MORAL, LEGAL
AND ECONOMIC PROBLEMS RELATED
TO COMMUNICATION NETWORKS

The paper deals with the problems arising with the proliferation of communication net-
works. These problems arise from the fact that Internet provides a very inexpensive
communication means which can be used and abused. Three kinds of problems arise here:
moral, legal and economic. Moral problems are related to those that are induced by
television – widespread obscene and violent programs. Legal problems are tied not just to
computer crime, as in books to date, they are tied with the propagation of information that
can be harmful – the author proposes here category *informatio mala in se*, i.e. information
inherently bad, which should be banned to public access. The implementation of legal acts
in Internet requires international cooperation and more accurate rules governing sending
information and rights to store information for public use. The most potent tools to help
maintain moral standards are, according to the author's opinion, economic ones. These
factors can influence individual preferences in favour of more socially positive attitudes.

INTRODUCTION

Communication is a growing phenomenon in developed countries. The
problems treated here deal with the problems related to the use and abuse of
the communication media. The advent of communication networks influence
social life in many countries. The paper presents some of the phenomena
related to and incurred by the rapid growth of communication. Some of these
phenomena are positive – better intellectual development due to the bigger
availability of information, improved communication between nations as an
obstacle to creation of closed nationalistic societies and progress in education.
The other are negative – the decrease in direct human communication, super-
ficial culture, expansion of inferior quality films and the dissemination of

fascist and racial propaganda through international communication media and others.

The ways to counter the negative tendencies are by no means administrative decisions, penal legislation or restrictions in access to information; we are, fortunately, past that age. What is necessary, is a spectrum of means, some of them legal, like an extension of responsibility for information into information disseminated in the communication network. Some means are economic, like proper cost allocation related to activities in a network. Others comprise of guidance; assisting information as well as creating alternative information sources which can exert a positive influence.

1. THE IMPACT OF COMMUNICATION TECHNOLOGY

Information accessibility

The information that can be deemed available to a human is that which can be accessed locally – within the household or the neighborhood. In the case of Poland we have recently experienced a dramatic increase of available information. Before 1989 there were two channels of television, several radio channels and a fairly well developed publishing infrastructure and cheap books. The telephone network was poorly developed, concentrating mostly on institutions. The data in table 1 show gross numbers without separation into telephones in institutions, public phones and phones in households. It can be seen that after 1990 there is a rapid increase in the number of telephones. A similar increase occurred in the number of television channels and really dramatic increase took place in the number of computers. Statistics are not available for previous years (and the computers themselves cannot be easily compared), but at present it is estimated that about 2 million computers are being used in Poland. Of these only a part are connected into networks, with

Table 1
Telephones

Year	Telephones per 1000 inhabitants
1980	54
1985	66
1990	86
1995	138

Source: The 1995 Statistical Yearbook. GUS, Warszawa.

principal hubs in the big cities. The technical infrastructure is being constantly improved, from modem communication to FDDI with planned upgrading to ATM transmission regime.

Networks in Poland are now mostly grouped around university schools (we do not consider dedicated networks like bank, administration or police ones). In Warsaw, Poznań, Wrocław, Kraków, Katowice, local metropolitan networks are being built or are already operational. That creates a large potential for communication.

Satellite television

Installing a satellite antenna meant breaking the state monopoly of information. In the eighties permission had to be granted for the installation of a satellite dish. This requirement was lifted in 1987 and since then development has been explosive. It was more rapid than in many Western countries because there was no competition from cable networks. In 1989 there were an estimated 800 000 satellite receivers installed in Poland. Afterwards, in view of the increased information accessibility from Polish television, the development was less rapid.

The most popular satellites in Poland are the Astra group and Eutelsat. Most channels that are being broadcast by these satellites are German television channels, however there are a few English and one Spanish. On Eutelsat there is one channel Polish television. The situation of satellite reception has changed dramatically with the signing by Poland of the convention on intellectual property protection. Prior to that date there was no possibility to receive legally Western coded programs. Presently two emitters are competing in Poland to distribute decoders for their programs. This, combined with the increase of Polish television programs to three and the emergence of a private channel, increased the number of available channels to about twenty (in the southwestern region of Poland there is the additional possibility of receiving Czech and German television).

Media integration

Media integration is an important trend that has occurred recently. Previously there existed (and still exist) separate telephone, telex, telegraph, radio, television and computer network, communication means. The first sign of integration was the introduction of a fax service, which has cut the necessity of telex service and in many countries this service has been discontinued for

many years. Then radio service was an integrated on satellite links. The most efficient boost for integration was the emergence of multimedia techniques in computer systems. The capability to process not just text and numbers but also graphics, video and sound, was a potent argument for the integration of computers and previous communication means.

Another stimulus for integration was the rapid development of computer networks. Yet many years ago with the use of modem link, it was possible to access the mainframe to perform remote sessions. The teleprocessing, though cumbersome, was the first step to overcome the physical separation of computer users. The development of computer networking created the necessity to develop new types of hardware – routers, concentrators, switches and new communication media with the more and more widespread fiber optics.

In parallel with computer networks cable television has developed rapidly. Its cost effective solutions, combined with the wide availability of good quality programs, were the reason for its spread in many Western cities. Now practically every town is covered by a web of television cables.

It soon turned out that the throughput capabilities of the new media exceeded by far the current needs of a single communication channel. That in turn gave rise to resigning from separate wiring of the above mentioned communication means, in favor of one structural cabling.

2. TRENDS IN CIVILIZATION

The above considerations showed the capabilities given to mankind by modern technology. They are really tremendous, but when we go beyond the engineer's fascination with new inventions, we must ask about the use that these technical arrangements can be put to. The question also pertains to the use that is being already made. These questions are not by any means premature. We must bear in mind that although there exists tremendous development in technology, more than half of the Earth's population has yet to make their first telephone call. Therefore what is related to the developed part of mankind can, and hopefully will, be extended to the other part. Therefore there is still time to avoid the mistakes made during the first phase of communication technology development.

To answer the above question we must first observe the tendencies that occur in the use of computer technology. We must say that it can be deducted from the general principles of human behaviour that any possibility given to man can be used positively or negatively. We can build nuclear power plants and nuclear weapons.

Increased stratification

Giving equal possibilities doesn't mean that people are equally apt to use them. As in many educational systems aimed at individual development, the results obtained depend upon the individual qualities of the people receiving education. In Poland, where educational systems are more strict and centrally prescribed, this influence is less significant, but can already be seen. In America, where individual programs are in operation from high school on, the students who are self disciplined have all the possibilities to expand their knowledge, whereas the rest stay at a very basic level. It can be argued that unless one needs some specific knowledge, he/she does not need to learn it. Yet such a utility approach to learning leaves aside the basic question that we do not know exactly what will be necessary in the future, and by the way the training to learn is also left out.

This is enhanced by the emergence of Internet. Internet is nothing more than communication means, giving us access to countless treasures of knowledge. In the situation though where there is a big choice of offers to use, the frequently worse but easier source wins over the more ambitious one. It is analogous to the Copernicus-Gresham law on better and worse money. A similar situation can be observed in television, where popular channels are flooded by low quality films with lot of action, fire and brutality.

Also a new attitude towards printed material can be observed. People read less and watch TV more. In Poland it is a very frequent occurrence that students in high school substitute reading school lectures with the television version of those books. It is common practice to use novels as scripts for films. A good novel, like Nobel Prize winner Sienkiewicz or Tolkien, tested by generations of readers, promises to be good material a for television film. As a result, a new phenomenon can be observed in civilized countries: secondary illiteracy. In Poland, where education to high school level is compulsory, it amounts to about 10 per cent of the older population. In Western European countries and USA these numbers are of a similar size.

All these bring forth the problem of new stratification – based on the level of education and what can be called 'information culture'. Traditionally the biggest difference between European and American societies laid in the fact that in America a strong middle class was successfully created and that class set the standards of American culture. In Europe a bigger stratification existed. It was based mainly on individual material wealth since feudal titles were abandoned. A strong correlation existed between material standard and education level, both in America and Europe. Now in our post-industrial time, this is changing. With widely available access to information at low cost, it is

not so much essential what school does one finish, but what information has. In postindustrial time

Change of moral standards

In the last four centuries we have observed changing moral standards. In law, customs and even religion, a relaxation of previous stringent regulations can be seen. An act considered criminal in Elizabethan England and punished with death is considered today a misdemeanor punished with a fine. Strict lent was replaced by a prayer in today's church. Similar examples could be quoted at length. We put more emphasis on self consciousness than on mere fear of punishment. And moral standards are set not just by law, but also, to a ever bigger extent, by example. They were given in the past by royal courts, by opinion forming people, by of fashion gurus and teachers. But nonetheless they always existed as either open or hidden persuaders. All this in itself is nothing new. The occurrence of any new means caused a change of authorities. Our XIX century poet wrote:

> "... and they wouldn't believe in the eldest thing
> unless it appeared in newspaper print".

Against this background we can discuss the impact of modern communication on moral standards. It must be said that the modern media exert a big influence on the common people. The way we dress, the way we behave is to some extent suggested by the films of television programs we see. It is still more vivid to observe in the ways crimes are committed. There are arguments that brutality in a film does not influence the viewer, but I am of a different opinion. As an example I can quote the case in a kindergarten in my town where a boy of 5 was beaten by his colleagues so professionally that he had to be hospitalized. When asked how they were able to know unarmed combat techniques, the boys answered that they had watched a video film the day before. When in the movies, brutality becomes as commonplace as a ballet scene in a classical opera, it also becomes the norm in life. Brutality is shown not only in the movies. At least we know that no one there is really killed or maimed. But when in the news we see carnage shown with naturalism that would be shocking for a journalist only twenty years ago, and when the media mostly cover accidents, terrorist attacks and anything sensational in general, then the public becomes sensation-oriented and accustomed to brutality. The same can be said about fraud and some other types of crime.

Abuse of freedom of information

Democracy is the biggest achievement of humanity, yet like everything human it has its drawbacks. Freedom requires responsibility in its use. Any freedom can be used and abused and the freedom of information is no exception. Without censorship, only the publishers' self consciousness, as was said above is the limiting factor in the process of making the decision whether to publish (broadcast) or not. The forms of information abuse are to a large extent already described. They manifest themselves in the appearance of publications (programs, broadcasts) of low quality, addressed to the lowest tastes.

A more dangerous form of information freedom abuse is the conscious abuse carried out by extremist political groups (fascist, leftist, terrorist and others) who spread information and propaganda through the media. On Internet there are readily available files with racist, fascist and other information of that type. More dangerous than just propaganda is the use of communication channels to organize criminal acts of terrorism. For instance the last gathering of punk youth in Hamburg on „chaos day" was organized almost entirely through Internet. It is true that nobody is compelled to access that information, as nobody is compelled to watch pornography. But widespread availability is a motivating factor to be used, especially by young people with an uncertain ranking of good and bad.

3. THE WAYS TO COUNTER
THE NEGATIVE TENDENCIES

Is the picture, as written above, altogether black? I don't think so. Accompanying the above said tendencies to relax moral standards is also growing conscience of the adverse consequences of information abuse.

Let us note that whether we speak about standards in health, welfare, morality or whatever general feature of modern society we tend to speak about some general, average concepts which may have little or nothing in common with the same concepts as seen by members of this society. Law sets standards to observe, but actual observing depends on many factors and is never perfect. Therefore it is reasonable to talk about standards in law or other topics, but any inference on this basis about the state of members of society is extremely risky. It can lead to erroneous conclusions. In reality the vast majority. One more remark on this topic is that when we observe a set of elements (speakers for instance) only the most outspoken catch our attention.

What ways and means are we to adopt in order to tame the rising wave of low quality information and to restore moral standards? Let me say straight away that I am not by any means in favour of restrictive law and „information police" at every computer network hub or television station. We have had enough experience in Poland with totalitarian regimes of Hitler and Stalin to yearn towards limiting freedoms given by democracy.

On the other hand, total freedom leads to anarchy and exaggerated influence of the most unstable members of society. The compromise lies in limiting marginal groups and positive models to follow. The self responsibility for individual behaviour generated by the market economy is growing with the greater role of that type of economy incurred by economic development.

Better cooperation in the development of legal systems

Information criminal law is now a booming branch of law, but it is occupied mostly with information theft, information distortion or destroying, i.e. civil law aspects of information treated as property. For instance (Anderson et al. 1991; Dock 1988) distinguish unauthorized use of computer, theft of software and computer raiding i.e. unauthorized takeover of information and creating viruses. The ethical problems of information are less pronounced, especially in a computer network. But with the integration of media this problem will become more emphasized.

To what extent must the law enter individual freedom? Traditionally it is accepted that one is free to the extent that one doesn't infringe others' freedom. That is why all penal codes are concentrated on the fact of hostile acts against others' integrity or property. A symbol of freedom of speech is Speakers' Corner in London's Hyde Park. Anyone can climb onto a soap box and speak at will. And yet I watched one speaker being forcibly removed by the police for advocating mass violence. In this way we have the limits of individual freedom clearly illustrated. The respective acts against proclaiming violence in media exist in many countries. In the past they were frequently abused for political reasons. In Poland we had „The law on upbringing in peace" which forbade importing toys which imitated weapons – but only from the West.

Law can be introduced by consensus, e.g. a moral code for Internet users. It was agreed that no advertising can be put on Internet. But this example is a vivid illustration of how a law without executive power can be abused. Very soon commercial activity started thriving on Internet and angry messages were all too weak a repellent to stop the wave of prospectors wanting to explore this marketing niche.

Therefore in order to have better law enforcement in multinational media environments, we must have multinational cooperation in law-making and law enforcement. The situation is different in different countries. In Poland it is totally unregulated, because we are only at the beginning of out media revolution and the abolishing of ever-present censorship created a legal vacuum, which can easily be used for malpractice. Presently an attempt to introduce restrictions on what can be shown or broadcast in the media could easily be considered an attempt to reactivate censorship under the guise of the protection of moral standards. We have only a few acts in the domain of the media, like intellectual property protection, but that is not enough by far to create a legal basis for law enforcement in the media.

There are two kinds of information that should be considered *informatio mala in se*. This classification is essential, because it is easier to negotiate a general accord on it. The first deals with hate against people, based on race, religion or profession. It can be considered as inherently bad since the moral standards of all civilized people are against such hate.

The other kind of information of that type is the knowledge of harmful or deadly acts, like the construction of home made nuclear devices, making narcotics, burglar techniques and the like.

The dispersion of the above two kinds of information forms a concept of information criminal act that should be punishable by law in the category of eventual attempt, like reckless driving or neglecting safety regulations. The severity of the crime should be evaluated on the grounds of the potential harm that can be inflicted by the information.

The problem is how such an act should be formulated. In my opinion the less causal, the better. For instance in the Federal Republic of Germany, nazi propaganda is forbidden, but such causal treatment causes problems with law enforcement, because a common practice of neo-nazis is the creation of organizations having nominally nothing to do with any ideology. As a consequence new amendments are constantly necessary to be added in order to deem specific organizations illegal. It is similar to drug law in the USA which prohibits the distribution of drugs with a specific chemical formula. The discovery of a new compound with only a minute modification in molecule but as harmful as others goes beyond the list of criminal acts and the distribution of the compound is not punishable.

Discussion of the laws of morality is more difficult because these laws are to a larger extent a matter of social accord. We would be shocked by the behaviour considered normal, from the viewpoint of view of morality, in ancient Greece or in the Heian-Kyo, as described by Murasaki Shikibu, would be demonstrated today. We are able though to limit the availability to children of programs deviating from common standards of morality. This effectively is

done in many countries like the USA, Germany, Czech Republic, by their respective laws. In Poland although there is no censorship, the act concerning Radio and Television states that programs should respect Christian values. That imposes a practical ban on explicit sexuality. I am afraid though, that general acceptance of global norms in this matter would be extremely difficult. Any discussion would be derailed by the contradictory interests of the entertainment industry, the Catholic Church, police authorities and others. If we look at the discussions regarding, the correlation between youth criminality and films, we can imagine the difficulties that are hidden here.

Introduction of responsibility for information as a legal category

If we are to tame the wave of communication media abuse, the first step is to introduce responsibility for information. It in fact is nothing new. In many countries press law has this provision. Editors are responsible for the contents of their papers and they can be sued in a case of erroneous or defaming information. The same can be said about the authors of advertisements. But when we are talking about a communication environment like Internet, then more stringent rules about author recognition must be introduced in the protocol.

In the case of a not dedicated local network, exploited without passwords, anyone can log into the network and enter any information to it. He/she has to adopt some identifier, but there is no check procedure as to their real identity. The technical means necessary for it are ready, with tools like electronic signature, a user name as registered by network's administrator and the possibility to couple access rights with caller's authorization and others. All these procedures can be transparent to the user and can be make untraceable to other users. Only on an administrator's level could it be traced. But such traceability would mean potential liability for information crime.

Another method in fighting against crime in communication network is installing „listening devices" in them. It is currently done by the CIA employing the SATAN system, which can penetrate computer systems. Using this system the CIA was able to foil many terrorist plots. I am of the opinion that such methods must be applied in a very specific and limited way under close surveillance. Also the legal conditions to undertake such activity must be clearly set. As a citizen of Poland I recall well the situation where every international phone call was recorded for the purpose of future monitoring and where the only control over the security services was limited staff to man the hearing devices.

Organization of accounting in WAN

A very potent means to promote the distribution of messages is to make them free. In many countries (Poland too) wide area networks are sponsored by the state in order to foster their development. This prompted many developers to create software (e.g. Soft-talk) that enables putting calls through wide area networks thus avoiding the high costs of long distance calls. This on one hand poses a threat to telephone companies, but on the other hand is a clear abuse of sponsoring funds. The solution is to end the pioneer period of WANs and begin normal commercial exploitation.

The economic factor can be quite potent in influencing decisions, also from the point of view of ethics. When a marginal organization wants to spread information and must first gather funds for that purpose, it may prove insurmountable obstacle.

When we consider the introduction of accounting, the first thing to do is to organize a proper costing system. Many costing systems presently exist in communication systems. The simplest system is global payment, as for example for public television in Poland. This system is poorly suited for the purpose we are talking about.

Better is the system with time costing, like in telephone systems, where the amount charged to the user is proportional to the time in which he/she occupied the link (with possible different tariffs). Its advantage is simplicity, its disadvantage lies in the different speed of information transmission. When in a computer network, a piece of information is passed directly from the keyboard, it is very time consuming. When the information is passed in the form of files or pictures it takes a lot less time.

A way of costing that does not have the disadvantage of the previous ones, is costing according to the amount of information sent. In this method sending information in the form of files would be easily measured by the amount of bytes sent. In order to consider the great difference in transmission speed between sending from the keyboard and from disk and to discourage the extensive use of the keyboard, discounts for a bigger transmission speed should be offered.

The next thing to consider concerning an accounting system is the exact allocation of users' names in the accounting system. The rules of this allocation can be unknown to the user the same way as are the rules by which we are given codes in telephone company accounting system. That requires certain formalities on input of the new user into the computer network. The solution of this problem is not easy, as users can wander across the network using portable computers and log in from different points, but with a permanent login name, it is possible. It would require modification in the address structure

and, probably, in the protocol. This would allow billing users for the service obtained from the network. The role of such a system in creating a bigger responsibility for the information sent is obvious. The economic problems tied with the creation and implementation of accounting system for networks are described in general literature, (e.g. Weygandt et al. 1989).

Creation of alternative information sources within computer systems

The last thing is setting positive examples. In contemporary America we can observe a strong decrease in smoking and in the amount of heart attacks. They were both achieved by setting positive examples and proper information action. Here in our case lies also a positive aspect counteracting the decline in moral standards with respect to the modern communication media. In the same networks where we can find information related to the above named criminal types or information considered immoral, we can install libraries with positive examples. It is much more active and praiseworthy than merely condemning cults and fascists. This information can comprise of a broad spectrum of advice about how to act in a crisis situation – by 'crisis situation' we can mean a marriage or family crisis, drug abuse, fair information about cults, racism, fascism, fanatism and other phenomena, we want to counter. The detailed contents and shaping of this information requires separate publication and goes beyond the framework of this paper.

REFERENCES

Anderson, R.A., Fox L, Twomey, D.P. (1991): *Business Law*. Southwestern Publishing Co.
Dock, T.V. (1988): *Computer Information Systems for Business*. West Publishing Co.
Piwowar, B. (1995): *Teleworking*. NwtWorld No 4.
Weygandt, J.J., Kieso, D.J., Kell,W.G. (1987): *Accounting Principles*. John Wiley and Sons.