Impact of communication technology on Indonesian urban lifestyle: nutritional considerations

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Communication and information technologies are rapidly changing the way we learn, live, and relate to others. There are societal and direct personal consequences, along with the impact of communication as a process, with which we need to reckon. As in other domains of life and health, nutritional well-being may be profoundly affected, favourably or unfavourably, depending on how we manage the new technologies. It is opportune for nutrition scientists and practitioners to embrace proactively these developments.

Introduction

Of all the advancements in technology in the last two to three decades, probably none are more rapid, popularly known or broadly applied than those in communication and information.[†] Products or applications may be short-lived or rapidly obsolescent. A hesitant user's mind is never made up as the product under consideration continues to improve.

Some of this technology is restricted to certain segments of society on account of education and affordability. Nevertheless, most products are within the reach of almost all economic groups in most places. Interactive multimedia laptops or global system handphones may be affordable only to a few, especially in developing countries like Indonesia. Yet, television, cassette recorders or even satellite parabolic (dish) antennas have become common across income lines. The dishes sprout from roof tops in isolated villages as well as in expensive estates or enclaves. In urban areas, dishes may be seen in the poorest sections, paid for by cooperative efforts and contributions of community members.

Communication technology, has had a profound impact on society and various aspects of life. Its impact, particularly in negative terms, is the spice - if not the focus - in some social discourse. Stories abound as to how television tempts people to imitate the consumption patterns, fashions or behaviours of those in industrialised countries.

But the application of communication and information (CI) technologies is much more than for entertainment; it covers a variety of communication modes from mobile phones to the internet. This broader impact is capable of transforming values, attitudes and behaviour, and lifestyles. This is how CI impact should be viewed, in three different categories, namely: a) *general societal*, affecting our well-being as communities and individuals b) *direct technological*, affecting the way we do things, our modes of communication, our need to travel and our usage of time, and c) *indirect*, notably through the command of orders of magnitude more information, with few appreciations of who we are, where we are in the universe, what is happening to our sense of time, what our value systems are and what our future might be. Whether all of this will proceed rationally, equitably and justly is uncertain.

Societal impact

The development of CI technology in the last 30 years is a 'revolution': an information revolution, a communication revolution, and a technology revolution. We have a new society, variously called the 'post-industrial society'[1], information age, technological society[2] or technotronic era[3], and referred to as the "globalisation of information and communication".

A comprehensive picture of the impact of communication technology (including the impact on lifestyles) is provided by Fritz Machlup[4] with his concept of the information sector, Marc Porat[5] with the information economy, and Alvin Toffler[6] with the Third Wave. Fritz Machlup[4] probably started the conceptual development when his study, almost three decades ago, concluded that the economic structure of industrial societies was changing. With a rapid growth of information services and knowledge

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[†] Note that the progress in communication technology (CT) (which deals with the transmission and reception of messages) goes hand in hand with that in information technology (IT) (which deals with informatics or computer science). These two technologies are converging with the technology of control, to become what some calls the 3 Cs (communication, computer and control). The convergence is such that it is often difficult to distinguish the respective product application of one from the other. Any product of communication technology today cannot operate without the use of at least some elements of information technology, especially the chip. Likewise, information technology products are more interdependent with other technologies, not linked by communication technology. Much of what is called communication technology today may very well be named information technology. Similarly, what is considered as the impact of one of the two technologies may also be the impact of the other. In this paper, the two terms and the abbreviations CT and IT are used interchangeably, unless a distinction is made.

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production, a new 'information sector' was expected to outgrow the industrial and agricultural sector, giving birth to an information economy. Marc Porat[5] shows that the role of information is expanding due to the crucial role of communication and information technology in the new Information Society. Toffler[6] examines the transformation for the whole of human civilisation. For him, CI technology not only changes the structure of the economy and society, but also brings a new wave of civilisation - to replace the agricultural and industrial civilisations - characterised by totally new values, way of life, employment and work habits, organising of time, and communication modes. In the third wave, everything will be demassified, much more specialised, and hence may also give rise to more diverse lifestyles. With the advancement of CT, information media will be interactive; its content follows the demand of the audience, and is no longer controlled by media managers.

The growing importance of information is not only economic, but also societal. It will affect social structure[1]. Those who produce new information (scientists, research and development workers, engineers) will be treated as super elites in an emerging new class structure, making them trendsetters, who should be more rational in their decisions and, hopefully, in their behaviour patterns and lifestyles.

Information has become an important political and economic resource[7]. It will displace the position and power of capital in contemporary society. The power base was land in agricultural society, and money and capital goods in industrial society. Land or properties, products, services, or capital goods, will have added value when they have more information content or components. People are starting to compete to gain access to information and its technology. Information has become a commodity, and CT the means for creation of wealth through information.

It extends beyond industrialised societies to ones which are developing or transitional like Indonesia. Graduates and workers in information related services obtain better positions and pay; they are in demand as the required human resource. As seen in computer shows in Jakarta, for example, lower middle class families sacrifice their savings to purchase PCs (personal computers) to ensure that their children climb higher up the socio-economic ladder. The information society is fast becoming a reality and much of the theoretical discourse is now observable.

Wider changes are yet to come. The "information highway" has propelled segments of our own society (small but influential) into two parallel societies: the real day-to-day society and the virtual society of the global network. Some, particularly in urban areas, will feel much closer to the members of their global network on account of kindred specialisation or profession. Their thinking, attitudes, behaviour and lifestyles may become closer to their global friends than to their neighbours in Jakarta.

Globalisation, which in the coming years is going to be increased by the implementation of the Marakesh agreement, will further stimulate the demand for more information in society - a demand to be met by the newer telecommunication technologies and the rapid expansion of global networks.

With a new lifestyle which demands a continuous flow of information, society should develop the capability to manage the world of information. Our information space is expanding exponentially with the capacity and clock speed of computer chips.

Frederick[8] describes how the total amount of information and knowledge has grown since the invention of the new IT. Taking all the information available in the year 1 CE as one unit, it took 1,500 years for the amount of information to double in size by the dawn of the scientific revolution. But afterwards, the doubling time kept decreasing, from every 250 years, to 50 years, and, since the 1950s, to 10 years, six years, and currently somewhere between eighteen months to five years. Between the time a student enters and graduates from the university, the core knowledge doubles in size.

If we are not able to manage or accommodate the information explosion and be circumspect about technology growth, we may suffer what Wurman[9] calls 'information anxiety', the disease of the information society. This may be the negative side of the new information-rich lifestyle - or perhaps, it will develop as a separate lifestyle of its own, about which we will be eclectic.

Direct impact of the technology

The previous discussion on societal transformation shows that CI technology is affecting social systems and lifestyles as parts indirectly mediated by a host of socio-cultural factors like asset base and social stratification. There are also direct impacts of CI technology on social behaviour.

First, there is the impact on mass *media communications.* The media itself proliferates. New frequencies and compressed technology made it possible for channels available for television and radio broadcasts to increase. Digital technology makes possible the broadcasting of several signals simultaneously through an individual channel, with programme enrichment like higher fidelity, piggybacking videotext and two simultaneous languages. Powerful, dedicated direct broadcast satellites and much smaller and cheaper antennae offer cheaper and easier broadcasts across national borders. Programmes to be selected will increase in number. There will be a 'freer flow of global lifestyle', although the effect to individuals may not be as dramatic. With so many alternatives, audiences may become anxious 'channel surfers', unwittingly a part of the new lifestyle.

Second, entertainment media. Information media are getting increasing competition from entertainment media. Satellite entertainment broadcasts direct to Indonesia (eg Indovision) may get competition when new and more powerful satellites, are launched. There is also a rapid growth in entertainment non-mass media such as videocassette recorders and laser disc players. CD ROMs are becoming more popular in metropolitan areas. In the future, there will be other technologies like DVD (digital video disk).

Third, interpersonal technology. Cellular radios are becoming popular. With the cost coming down, more people will be able to afford handphones. Handphones will be less a status symbol and fulfil true needs, again changing the way we see ourselves and others. People will have more opportunity to communicate, but be more open to intrusion. Work and leisure will be more blurred, unless considerable discipline is applied.

Fourth, convergence of media. With the development of the global information super highway, an abundance of communication channels and information will be available for those who join the network (internet). Computers will be used increasingly as communication media, for sending or receiving facsimile and e-mail, acquiring information from databases, online video entertainment and socialising with virtual communities.

This technology will require rearrangement of the daily life of the users, and pose time management problems. If the experience of those who are hooked on the internet is any indication, this may be a real lifestyle problem. Food habits are likely to change further, with infringement on mealtime. Heavy use may affect socialisation and interpersonal communication between the user and his/her other immediate surroundings.

The impact of communication

The most direct impact will not be from technology, but from the communication itself. In this sense, the technology has an indirect effect as it provides the facilities for communication. The process and content of communication, no matter through which channel or technology, will affect audience and user.

Several functions of communication will contribute to lifestyle[10]:

1. The *surveillance* of the environment. Judgements will be about what is actually important and relevant, and what is true or certain, with more information and probably more distillations of it.
2. *Consensus* should be more possible. How will this affect us? What is the implication for the community? Will stablished values be replaced with new ones, or evolve into new ones?
3. *Socialisation.* There can be a process of building awareness and educating others whether on a financial, philosophical, commercial or other basis. If behaviours or values are disseminated repeatedly without any critical analysis, communication will confirm these particular wisdoms whatever their validity.
4. *Entertainment.* An increasing portion of mass communication is now entertainment, which still conveys information, values and lifestyles, creating them more globally.

Communication can thus provide role models , fill gaps in personal experience and provide opportunities for resolution of personal and societal difficulties. How constructive this process is depends on the quality, integrity and ethics of the communicator.

Implications for nutritional status

Our knowledge of the food supply, our ability to make informed and healthful food choice, our skill in food preparation, our eating patterns, our food beliefs insight into our own nutritional status, and how it relates to our health: our ability to engage in regular physical activity, minimise stressors and avoid substance abuse, all of which have nutritional and health consequences, will be influenced by communication and information technologies. The future nutrition scientist, public health nutritionist and clinical nutritionist will need to be proactive in relation to CT and IT, for professional and societal reasons.

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通訊技術對印尼都市生活方式的影響
摘要

我們學習、生活等的通訊與報導技術在迅速地轉變中。這些轉變對社會和個人均產生影響。作為生命和健康的其它領域，營養狀況也許會深深地產生有利或不利的影響，這取決於我們怎樣處理這些新技術而定。作者認為營養科學工作者和醫生們應及時積極地採用這些新技術。

Pengaruh teknologi komunikasi pada pola hidup perkotaan di Indonesia

Dibandingkan dengan teknologi-teknologi lain, mungkin teknologi komunikasi yang memiliki dampak luas pada masyarakat dengan berbagai pola hidupnya. Pengaruh teknologi komunikasi dan informasi paling sedikit dapat diklasifikasikan dalam tiga kategori yang berbeda yaitu pengaruh sosial, pengaruh langsung teknologi komunikasi dan informasi dan pengaruh tidak langsung teknologi komunikasi dan informasi. Dengan pola hidup modern yang membutuhkan aliran informasi terus-menerus, masyarakat sebaiknya bisa mengembangkan kemampuan untuk mengelola dunia informasi. Sebaliknya, kemajuan teknologi komunikasi yang pesat juga dapat mempengaruhi pola hidup secara langsung. Lagi pula, isi komunikasi, melalui saluran dengan menggunakan produk atau aplikasi teknologi apapun, akan memberi pengaruh pada pemakainya.

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