A Cybernetic Paradigm for a Cyberspace Economy

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Introduction

We can begin to see the elements of the global digital communications future not only in technological advances, but also in the rhetoric of government and media tycoons and in the investment decisions of global multimedia conglomerates.

A planetary network comprised of broad band intelligent digital networks, fiber-optic cable systems, and satellite and terrestrial broadcasting systems is coming into being before our eyes. Together with the large flat screens, smart phones, wearables and personal digital assistants, which will link individuals and households to limitless quantities of data, all the ingredients of virtual reality are on the horizon.

So what are the values, which should inform our formulation of policies towards these new domestic communications technologies?

Information Policy and Economics

The first stumbling block is that we are trying to solve today's problems with yesterday's tools. Everywhere government's policies toward new media technologies are being guided by neoclassical economic theory a set of ideas which have their origins in pamphlets written and published by 17th and 18th Century philosopher-merchants or bankers. The project of these first economists was to use Newton's atomistic principles in order to explain and predict changes in prices and trade (1).

The moral basis of the theory is the belief that individual self-interest, mediated through the working of the invisible hand of the market, results in the good of all. The market, in this view, consists of buyers and sellers, equivalent to atoms, constantly attracted by the gravity of pleasure and repelled by the force of pain. Buyers seek to maximize their pleasures by buying the best value for their money, while sellers buy cheap and sell dear seeking to maximize profits.

Optimum distribution of satisfactions in this model is achieved when all markets are allowed to operate unfettered by inflexible restrictions imposed by monopolies, organised labour or state bureaucracy.

In this view the dynamic of the market system is provided firstly by entrepreneurial enterprise the desire of individual businessmen for new opportunities to make profits and, secondly, free competition which gives the consumer a wide choice of products to buy.

The power of this simple idea can be seen particularly in government policies toward the new media technologies in the UK and USA.

These have sought to maximize their potential with policies which deregulate and privatzse telecomms and media in order to free markets and encourage enterprise. At the same time many government information services have been transferred to the more competitive and therefore more efficient, private sector.
Thus commercial information suppliers are both subjected to the rigours of competition and freed from onerous state regulation. The aim is to provide consumers with a plethora of choice: hundreds of channels of information delivered into the home by either cable, satellite or terrestrial broadcasting.

The overall tendency of these laissez faire policies has been to change the public perception of information from the civic to the commercial.(2)

Inadequacy of Orthodox Responses

Criticisms of the neoclassical economic model are nothing new (3).

My argument here is that, whatever the merits or demerits of economic theory as a model for describing the reality of its domain, it is singularly unsuited to be a basis for policy toward new media technologies in the home. What is needed for this age of cyberspace is a philosophy based on the insights of systems theory, cybernetics and molecular biology.

I wish to base my position on the ecological critique of economic theory and values. In more general terms my perspective is that of what Wilden has described as context theory. Context theory evolved from a cluster of advances from the 1940s to the 1960s in information theory, systems theory, semiotics cybernetics, ecology, and molecular biology.

The element that all these fields had in common was a concern with information processing systems with mind in its most general sense.

The Newtonian world view, on one hand, is dominated by matter-energy, one to one linear causality, forces, atoms, singularity, closure, one dimensionality, determinism, symmetry, sameness, simplicity, competition, short-range survival, and the past. Context theory,on the other hand, is oriented to information, goal seeking, relationships, reciprocity, levels of reality, levels of responsibility, levels of communication and control, requisite diversity, innovation, openness, co-operation, the capacity to utilize unexpected novelty and thus toward long-range survival and the future. (4)

Gregory Bateson in Pathologies of Epistemology sees the problems of social and ecological degradation as deriving from the tendency of the prevailing world view to exclude mind from the universe. When you separate mind from structure in which it is immanent, such as human relationships, the human society, or the ecosystem, you thereby embark, I believe, on fundamental error, which in the end will surely hurt you (5). From a systems perspective, information is part of the feedback process by which societies adapt to changes within themselves and in the environment. In treating information merely as a commodity we run the risk of distorting that process.

The Paradoxes of Information as a Commodity

Because of these epistemological deficiencies, the economic paradigm has great difficulty in accommodating the phenomenon of commoditized information even on its own terms.

Because the full value of information depends on its future use, the value of an information good cannot therefore be determined before it is used. Thus since the traditional economic model is deterministic it is not capable of easily incorporating information goods.
There are other differences between information and other commodities. The value of information good for the consumer lies in its content, the cost for the supplier lies in its physical form. Thus, although the physical form of the information may involve costs, the marginal cost of broadcast or networked information is zero.

Information is nonmaterial requiring the use of no other resources in its replication. Thus information is infinitely reproducible a piece of information may be used many times and be possessed by many people.

As Bates (6) points out, information goods generate social benefits which are not reflected in price; in economists' jargon, they are "externalities." But because it does not pay the private sector to produce them, the benefits for society may not be reaped. There is thus a case for public intervention in order to ensure that information necessary to the exercise of effective citizenship is equally available to all.

Policy Implications

The aim of free market economic policy has been to maximize the value of monetary transactions involving information. This puts no value on the quality of information in terms of the recipient's improvement in knowledge, insight or consciousness its value lies in the fact that someone is willing to pay to consume it.

If we cannot rely on a private, profit-maximizing information industry to provide the information services to which all citizens of a democracy are entitled, then there should be public intervention to ensure that this takes place.

This is not so much to do with the dangers of creating a divided society of information haves and have-nots although this is a real danger. Such a policy objective arises from a view which sees the free flow information as a source of new ideas crucial to informed debate and so to the adaptive processes of society.

Legislation Needed

Legislation should ensure that certain types of social, economic and commercial statistics are published and made available on publicly accessible digital networks free of charge. This might be done by subsidizing commercial information providers, imposing legal obligations on licensees or by setting up separate public service providers.

Public authorities should also try to nurture the unrestricted interactivity which has evolved on the Internet to enable a wider section of the population to both participate in convivial communities of interests and have access to a wide variety of on-line information sources.

Conclusion

The problem with the bastardized form of economics which inspires politicians is that it has conflated the technical question of monetary value as a means of economic measurement with value in the sense of a desirable end.

In the first sense, money is seen to represent a quality of a good or a factor of production. This is a necessary social arrangement in a culture based on commodity exchange.

Value in the second sense does not correspond to particular material qualities within things but to a relationship between human actions and the social contexts in which they take place.

Neoclassical economics has tried to eliminate value by reducing it to monetary terms what is good is what people will buy. But as Lewis Mumford has said: value comes into existence through man's

primordial need to distinguish between life-maintaining and life-destroying processes and to distribute his interests and his energies accordingly (7)

Where economic theory puts value on the private consumption, context theory stresses the social and adaptive qualities of information. It is my contention that we are unlikely to realize the full democratic and liberatory potential of information technologies until policy is based on a cybernetic paradigm for a cybernetic age.

Notes

1. ROUTH, G., The Origins of Economic Thought, Macmillan 1989
2. DEMAC, D. A. "Hearts and Minds Revisited: The Information Policies of the Reagan Administration" in Mosco V. & Wasko J, The Political Economy of Information, University of Wisconsin 1988
3. Most famously in the 1930s John Maynard Keynes pointed out that equilibrium was unlikely to coincide with a full use of resources, particularly labour. The philosophical deficiencies of the mechanistic economic paradigm have also been criticised by Joan Robinson (Robinson, J., Economic Heresies, Macmillan 1971) and Hollis & Nell (Hollis, M. & Nell E., Rational Economic Man: A Philosophic Critique of Neo-classical Economics, Cambridge University Press 1975) among others. Critiques of the conventional model from an ecological perspective have also been mounted by E. F. Schumacher, Gregory Bateson, Anthony Wilden, K. William Kapp, Herman E Daly and others.
4. WALDEN, A , "The Rules are No Game," The Strategy of Communication, London, Routledge Paul, 1987, p310.
5. BATESON, G , Steps to an Ecology of Mind, Paladin, 1973, p461.
6. BATES B. J., "Information as a an Economic Good," in Mosco V. & Wasko J. The Political Economy of Information, University of Wisconsin 1988.
7. MUMFORD L, The Condition of Man, Sacker and Warburg , 1962 p270

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