BOOK REVIEWS


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The dramatic growth of the Internet and the World Wide Web is transforming not only the way information is transmitted and accessed but also the way business is done. Under the influence of such a growth, markets are unexpectedly becoming competitive and global. New information goods are emerging rapidly in markets with practically zero marginal production and distribution costs. All these have led to appearance of new models for business, distributing, sharing, linking, pricing and marketing of information goods. And, these models have successfully raised several interesting challenges to existing economic and business thinking. The present edited volume on ‘Internet Publishing and Beyond: The Economics of Digital Information and Intellectual Property’ by Kahin and Varian examines some of such emerging challenges and business models for information goods that are traded electronically. It consists of nine chapters contributed by several authors along with a brief introduction by the editors and each one is focusing on different issues/models related to trading in the era of the Internet and the World Wide Web.

The opening chapter—‘Speculative Micro-economics for Tomorrow’s Economy’, contributed by J Bradford DeLong and A Michael Froomkin, starts with contrasting traditional economy with new economy in terms of market structure and pricing. DeLong and Froomkin point out that the new economy ignores the basic features of property and exchange, which make the invisible hand a powerful market mechanism for traditional markets. The implicit pillars, that make the invisible hand an efficient market mechanism of traditional market, are named as — excludability, rivalry, and transparency. Excludability means that the property owners have a right to restrict the use of their property to those who can pay for it. This works very well in Adam Smith’s economy but does not work efficiently in new economy, as the owners of information commodities are no longer able to easily and cheaply exclude others from using information commodities in the world of clever hackers. Rivalry means that one person’s consumption of a good precludes another person to consume the same good and reduces the amount available to them. But, information commodities do not have this property, as viewing of a web site by one does not preclude anyone else to view the same. Also the traditional economy assumes transparency in the sense that the purchasers know what they want and what they are buying. But, unfortunately the buyers of information goods mostly buy black boxes in the sense that they do not know what at all is there inside, say, an operating system. Thus, the absence of excludability, rivalry and transparency in the new economy restricts the effective play of invisible hand. To restore the same, several Government programmes and legal laws would be needed to closely mimic the invisible hand. But, this means friction in the market. Therefore, a socially viable trade-off between regulation and friction has to be struck. In this connection, DeLong and Froomkin have emphatically said that—“… the regulations for tomorrow’s economy are likely to be written today. It means
policy choices will be made in advance of both theory and practice, "...". Though they have not suggested any model or policy formulation for handling issues of non-excludability, non-rivalry and non-transparency of the new economy, yet they strongly feel that discussion of emerging issues would definitely be important for future choices and policies to be made with care.

The issues raised by DeLong and Froomkin are further investigated in detail in the following chapters. For instance, Chapter two — Advertising Pricing Models for the World Wide Web by Donna L Hoffman and Thomas P Novak discusses issues related to pricing of advertising on the Web. One of the major issues, unanswered so far, in Web advertising industry is lack of standards for measuring activities and use by potential customers. Due to it, many advertising (on Web) pricing models are in practice currently and none of them is fairly satisfactory. Two kinds of Web-based advertising are discussed — Banner Advertisement and Target Advertisement. Banner advertisements are of a form of passive advertising exposure; in that the consumer does not consciously decide to view the banner advertisement, while Target advertisements are of active advertising exposure, as the consumer actively decide to click to target advertisement. To date, most of the focus has been on banner advertisements and cost per thousand impressions or flat fees pricing model are applied to them. For target advertisements, fees based on actual click-throughs are in use. But, none is working expectedly satisfactorily. Hoffman and Novak have argued that extending traditional media exposure models to the Web would miserably fail as they do not take into account its unique interactive nature. Therefore, they suggest that a meaningful pricing model must integrate the interactivity, exposure, and outcomes of Web advertising. For that, any further research in this regard must identify those metrics that are most useful for judging the effectiveness of advertising, for determining the placement of advertisements and for determining optimal pricing models for efficient media buy. This is not a simple task due to conflicting needs of diverse constituents in the whole system of Web advertising. However, only through cooperative efforts among them can lead to progress but on a rough path toward profitable commercial development.

Susan M Mings and Peter B White examine business models used in a particular industry of information goods — Online Newspaper in Chapter titled as: Profiting from Online News: The Search for Vi able Business Model. Currently, online newspapers are viewed as complement to print versions rather than as substitutes, since online news can provide a variety of additional features. Therefore, it is expected that newspaper will change the nature of their offerings in response to it. But, this is going to be a challenge before the online news industry. Further, they review the experiences and thinking with revenue models for online newspaper industry in search for profits between 1995 and 1999. The economic models, examined in the chapter include, variations of four basic models: subscription, advertising, transactions, and bundled (partnership). They suggest that there seems to be consensus that, given the complex challenges for online newspaper publishers trying to turn a profit, no single economic nor a particular mix of models can entirely be suitable; instead one should go in for a dynamic mix of the four economic models.

Chapter 4 onwards, the book is devoted to economic analysis of intellectual property and information pricing. In the recent past, photocopying in the printed media has become more legally acceptable and copy protection in the software industry has declined. But, why this trend is setting in is one of the issues that has motivated Oz Shy to contribute Chapter 4 — The Economics of Copy Protection in Software and Other Media. In search for a meaningful economic justification to the emerging trend in copy protection, Shy presents a very interesting analysis under competitive environment. First, he discusses the literature on photocopying and video/audio cassette dubbing that shows that as and when the producer of print media reduces the degree of the copy protection, their profits have increased. At the end of the chapter, Shy has demonstrated that software firms may be able to increase profit by sell-
ing unprotected software and this precisely explains the strategic reason for decrease in software protection in mid-1980s. The author has guessed that today from now, most software will run on servers that support many machines. In such a case, it would be possible to track who has used which software and how long. Then the software firms would be able to rent software for the length of time it is used, thereby making piracy impossible.

The emergence of Internet as a way to distribute information goods has created a variety of revenue models, as old rules of pricing and distribution are no longer applicable. Whether digital goods should be sold as bundles of smaller goods is one of the important issues before the producer and the distributors of such goods. Yannis Bakos and Erik Brynjolfsson have tried to find a satisfactory answer to it in the Chapter — Aggregation and Disaggregation of Information Goods: Implication for Bundling, Site Licensing, and Micropayment Systems. The authors suggest that the bundling (aggregation) may be done across goods, consumers and over time. Whatever be the form of bundling, their analysis shows that lower transaction and distribution costs tend to make unbundling of goods more attractive to sellers, while lower marginal costs of production tend to make bundling more attractive. For instance, different articles on various topics are bundled together in a newspaper. But, some people value business stories, some sport news, others may prefer entertainment; others may value most political news. Since the marginal cost of bundling all the different stories into one newspaper is insignificant, the seller would be able to charge more prices than the sum of the prices it could charge for the separate components and will, therefore, be able to make higher profits. They further suggest that the optimal pricing strategy will often involve mixed aggregation of available information goods specially when consumers are very heterogeneous and the marginal production costs are significant. But, for the success of these strategies, suitable micropayment technologies should emerge enabling proper implementation of them.

John Chung-I Chuang and Marvin A Sirbu also investigate the issue of bundling of information goods but restrict to academic journal in the Chapter of Network of Delivery of Information Goods: Optimal pricing of Articles and Subscriptions. Since the marginal production costs of information goods are practically zero, bundling is mostly desirable for information goods. However, using a different model of consumer demand, they demonstrate that a different conclusion may be drawn regarding bundling of information goods if a distinction between pure and mixed bundling is made. While mixed bundling is found to be always a dominant strategy, pure bundling may, in certain conditions, be inferior to pure unbundling. They, therefore, caution against wholesale adoption of pure bundling without a thorough analysis of the supply and demand for the information good.

Peter C Fishburn, Andrew M Odlyzko and Ryan C Siders in Fixed — Fee verses Unit Pricing for Information Goods: Competition, Equilibria, and Price Wars examine a particular kind of bundling, and that is subscription pricing. According to them, the only possibility in a pure competitive market of information goods with zero marginal cost is a ruinous price war that drives the prices to zero. Therefore, to have simpler and realistic model, they propose a competitive dynamic duopoly model in which one producer offers product on a per-use basis, and the other on a fixed – fee basis. Their results exhibit several forms of interesting behaviour: sometimes there are stable competitive equilibria, but at other times there are price wars that are disastrous to both participants. They also discuss strong evidence that customers have preference to flat-rate pricing. Further, subscription pricing and site licensing models are found to promote software producers’ goals that their systems are to be easy to try out, to be widely used and to capture additional customers.

 Techniques of price differentials are important when different customers have different values for information good. One of such techniques of differential pricing is quality discrimination or versioning, which is discussed by Hal R Varian in the Chapter
Versioning Information Goods. In it, the producer provides different qualities/versions of a good at different prices. The problem of versioning is an interesting one; in the sense that unlike industrial goods, lower quality information goods are produced at higher production cost! The reason is that to obtain degraded version of high quality information good requires extra production efforts. However, any form of differential pricing involves grouping of consumers according to their willingness to pay and charge prices accordingly. Varian examines, profit-maximising choice and the Pareto-efficient solutions under such pricing. Further, it is suggested in the Chapter that in the absence of any additional information, having three versions rather than two may be more attractive due to extremeness aversion on the part of consumers.

The last chapter — Economics and Electronic Access to Scholarly Information by Jeffrey K MacKie-Manson and Juan F Riveros — concentrates on a controlled field experiment to investigate the effects of product bundling and pricing structures for electronic access to scholarly information. The authors have described in detail an ongoing project, “Pricing Electronic Access to Knowledge” (PEAK) negotiated between the University of Michigan and Elsevier to develop a variety of access models and to administer a pricing system. Since the project was not completed at the time the chapter was written, the authors do not assert any conclusion. However, they admit that several technical issues/theoretical framework have to be addressed and developed before the complete implementation of PEAK. Nonetheless, besides theoretical developments, such empirical analysis is always called for.

A lot is discussed about currently used pricing models of information goods; but none provides in-depth and systematic study of underlying economic assumptions and thinking of such models. Fortunately, here is a volume that very comfortably explains why traditional economics fail to provide satisfactory pricing models for information goods and what should be included in the new economics to be developed for goods having zero marginal cost. It would provide a deeper and meaningful insight of various related dimensions to especially those who are at the helm of developing a suitable pricing model in this regard. Excepting few chapters that contain a bit of mathematics and some technical terms for the editors should provide necessary glossary, an ordinary reader can understand the text. It seems that the book is based on an implicit philosophy of ‘... stable long lasting viable models can exist in practice only when they are based on sound theoretical foundations...’. Therefore, readers will find that many theoretical justifications are discussed here and there to support why a particular pricing model was/is existing. It is a very humble but nonetheless very important step towards the goal of obtaining satisfactory pricing models of goods traded electronically through the technology of the Internet and the World Wide Web. The book may frustrate those who are looking for ready-made solution in it, yet its multi-dimensional discussions of emerging issues would definitely be very fruitful for future choices, research and policies to be made in this regard.

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Analytical Techniques in Monitoring the Environment, edited by S Jayarama Reddy (Student Offset Printers, Tirupati) 2000, pp 657, Price: Rs 1050/=; $ 75.00 (Rs 850/= for individuals in India, $ 60=00 Overseas)

The rapid and steadily growing load of environment with diverse anthropogenic pollutants in nearly all the environmental compartments have lead to an increasing demand for techniques for environmental monitoring and for in-situ measuring techniques.

This book gives an excellent account of the rapid, sensitive, selective, cost-effective and accurate analytical procedures developed, for the quantitative estimation down to ppb and ppt levels, of organic
and inorganic pollutants. Pollutants include toxic trace elements, drugs and pharmaceuticals, pesticides and their residues, dyes and surfactants. The matrices of analysis described are water, soil, food, cotton fabrics, air, aerosols, leaf samples, blood, urine, tissues of fish, salt marsh, sediments, etc.

Applications of ASV, DPP, DPASV, DPCSV, SWV, IR, SEM, XRD, FT-IR, NMR, EPR, Mossbauer, DRF, Flame and Graphite Fumace AAS, IC, XF, ICP-AES, ICP-MS, HR-ICP-MS, Capillary Electrophoresis, TXRF, hyphenated techniques with Mass Spectrometry in environmental monitoring are described.

Articles on reference materials, metal speciation, role of microbial biosensors and chemical sensors, quality assurance in trace analysis, cost factors in analytical techniques, simplest field environmental analysis tools, recent environmental policy changes in R&D management are included.

Recovery of metals such as Sn, Hg, Fe, and Cu from industrial wastewater, solid phase micro extraction from aqueous solutions, fluoride removal in potable water, dye removal from aqueous phase, retrospective environmental analysis of heavy metals in tree rings and snail shells, air quality assessment and modelling, noise pollution monitoring, studies in fixed film anaerobic reactor, and adsorptive studies in wastewater treatment, are also described. Various case studies pertaining to monitoring were also incorporated.

This book is unique in the sense that the original research articles from almost all scientists working in the field today from all parts of the World are brought together. This should serve as a quick reference in the area of environmental analysis and also helps one to choose most suitable method for the estimation of various pollutants in the environment at p p b or p p t levels. It will give good impetus for further research work in this important area of research on Environmental ‘Monitoring and Management’.

I personally feel that this book is a must in the shelves of all those concerned with solving complicated and complex problems of the environment. This single book contains so much scientific material that is very difficult to obtain from a single source.

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Industrialisation and Innovation— The Indian Experience, by Nasir Tyabji (Sage Publications India Private Limited, New Delhi) 2000, pp 162, Price: Rs 345/- (Cloth) [ISBN 0 76199486 6]

In the present context of knowledge competition, firms have to continuously upgrade their knowledge base to come out with new products and processes. So the basic issue is to make use of knowledge to innovate. It is not enough to have knowledge to know how to make things but it is essential to develop knowledge to know how to make things better. This gives the firms the competitive edge. Indian industry, which survived for nearly 45y under the government’s protectionist regime, could not in real sense get out of the infancy stage. With the liberalization policy the Indian firms had to face technological competition from not only the most developed countries but also from industrially advanced developing countries. This being the competition of technology could not be handled with merely government’s fiscal policies.

This is an important issue and the author has analyzed it in the context of the process of industrialisation in India. He asserts, in India, the large firms have not gone beyond developing manufacturing capabilities. He attributes this to the family styles of corporate management, which is far away from the present management practices of ‘core competence’ and ‘good (corporate) governance’. This is also reflected according to him in the way the workers are viewed in the process of industrial growth. Competitive strength is not by having enlightened workforce through higher pro-
ductivity but rather through cheap labour. It is to
say that the concentration is in having manpower
but not the human resource, which is an asset. This
has basically led to an industrial base with more di-
versified manufacturing capabilities and almost lack
of innovative capabilities. This is again at the indi-
vidual level, i.e., to say that the firms have individu-
als with scattered knowledge base but it is not insti-
tutionalized through organizational management
practices to convert them into resource for innova-
tions. This change is something, which is very much
necessary for the transformation process to take
place. This has implication at another level that is
the national innovation system where the attitude
of entrepreneurs towards workforce is very impor-
tant. Knowledge to introduce changes is human
embodied. So the active involvement of manpower
in building firm level technological capability is very
essential.

While looking at the Indian innovation system the
author has pointed out that Indian innovation sys-
tem was silent on two important aspects that have
critical significance, i.e., the conditions of existence
of industrial workers, even from the point of view
of enhancing their efficiency and the other was mod-
ernization of industrial relation. This basically re-
sulted in an innovation process that ignored the
labour force and looked at technology as an engi-
eering component. The most important component
of technology, that is the human component has not
been enhanced or developed or utilized with a per-
spective of using it for new knowledge creation. The
author also points out that it is not that comprehen-
sive view of technology was not perceived at vari-
ous levels, but the problem was at the level of inte-
gration at policy level. He has suggested for further
probe into this issue, which is critical for any coun-
try, which is moving from manufacturing capabili-
ties to innovation capabilities.

This is an important book, which has looked into
the contemporary issue with an historical perspec-
tive. It provides case studies and gives a comprehen-
sive definition of technology. This book would
be very useful for researchers in the area of innova-
tion studies, policy, and industrial management stud-
ies.

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