Prometheus, Vol. 23, No. 1, March 2005

Routledge
Taylor & Francis Group

Book Review

The Global Internet Economy

Bruce Kogut (Ed.)

Cambridge, MA and London, The MIT Press, 2003, xvi + 520 pp. US$42, ISBN 0262112728 hbk

Following that advice on the review of books originally offered by Belloc, I gripped the sides of the book firmly and opened. Of course it is no longer possible to open with that sharpness advocated by Belloc, crack the back and base the review on what one reads on the page opening revealed. Technology (oops, is this still the acceptable term in this Internet world?) has seen to that. Nevertheless, I happened, however softly, to open randomly at Chapter 11, *Suppliers and Intermediaries,* and was relieved to read that B2B

> has already passed through its first cycle of hype to disparagement, following closely on the heels of its near relative B2C. This is useful, for it means that the spirited but ultimately limited debate about whether new economy firms would overpower and displace old economy firms is largely closed. Instead we can focus attention on a broader enquiry into the ways that the capabilities of the Internet can alter the modes of exchange among firms (p. 331).

Perhaps this book did offer something different. Perhaps some sense—of the common variety—was descending on those who gave the impression that technology had been reduced to one interlocking group of communication/computing technologies. The unique meaning currently being attached to the term technology is an outcome perhaps of a belief that the kinds of technologies which were inputs to a non-cracking book spine somehow are being replaced by Internet technology or are simply technologies used by third world countries producing for first or American world companies. They are perhaps not of a status to be embraced by the term technology. Perhaps, so I turned elsewhere in this volume. Kogut has written the introduction, the first chapter, one on regulation and the conclusion. His writing of the early days is enlightening with many indicators of a fuller awareness of the factors culturing the growth of innovation and its role in stimulating economic prosperity. Yet he is disappointingly still entrapped in the exciting hype of the Silicon Valley model which he promotes as the model for the world at large.

Prometheus ISSN 0810-9028 print/ISSN 1470-1030 online © 2005 Taylor & Francis Ltd
http://www.tandf.co.uk/journals
DOI: 10.1080/0810902042000335741

The trumpet blares for a Valley driven Internet technology and economy, drowning out the fact that it was the major transforming innovation of the microchip, an earlier innovation led by the Valley which made feasible transformations in many sectors and their technologies. Specifically, it enabled computing and telecommunicating technologies to interlock in transforming every kind of data and information into digits which can at the same time be stored, processed and transmitted on demand over long distances with immediacy. It has transformed automobile technology, machine tool technology, the machines for making things in many sectors, medical technology, domestic appliances etc, etc. It is a classic transforming technology such as happens at relatively regular time intervals and creates surges of wealth creation and higher levels of prosperity by the way in which new products and processes are created by innovations in most other sectors and technologies as it is introduced into them. The transformation of petroleum into nylon stockings—a development exciting for all—coated Tetrapacks, lines of pipes, car bodies and thousands of other products was a technology which has transformed the ways in which so many things are made and in which we do so many things. And new industries grew to make the things, creating yet more employment and wealth. As the French chapter concludes 'technologies in themselves are never truly radical, but evolutionary'.

Inevitably the question leaps to mind as to what is the global Internet technology or economy? Is there one? Or is the Internet itself an outcome typical of a major transforming technology, providing the means to do existing things better and to do new things? My next book, instead of being written on a typewriter is being written on a laptop, Apple of course. The text and illustrations will be dispatched online but more probably on disc to a small firm, a collaborator in previous works, who will set it, using Apple, of course, according to the publisher's layout specification which will have been sent to me by e-mail or been accessible on a website. I will proof read it (forget spell check even on Apple) and then to the printer who uses Apple of course.

The publishing sector has been transformed but in an evolutionary way. The basic activities remain the same in that the sentences of the author are recorded, then pages of text are set in the chosen typeface in the chapter, page, paragraph and sentence structure specified by the publisher and then printed and the resulting book is then distributed. These basic activities have been changing in smaller ways for centuries, indeed since the Irish monks invented lower case, longhand and abbreviations in order to speed up the production of manuscripts for the large markets which they were creating and supplying in Europe in the sixth to ninth centuries. The Internet is essentially a publishing and distributing system of public and private documents as well as being a system very useful to the traditional publishing sector. Amazon remains a mail bookseller, receiving orders online but sending out the books by mail. And the walk-in browsing bookshop has not disappeared, thank God, but it has access to remote bibliographic databases as well as its own records.

Thus far what we see is a very normal process in the evolution of technology and processes, paradoxically exciting and routine at the same time. Transformation of the daily activities of the so-called old economy is taking place, many changes but not wholesale elimination. At the same time new sectors have been created, as in the past, and the evolution and rate of new innovations continues from past transforming technologies, as it still does in the previous petrochemicals transforming innovations in polymeric materials and their myriad applications.

Several critical points arise from this short statement. Apple, the more innovative technology, lost out to another but less innovative operating system, for a variety of reasons, including the bureaucratic fixation of large organisations on IBM technology and Apple's own management mistakes. This reminded one of comments by peers more expert in innovation in the automobile industry that the internal combustion engine, not the more innovative technology of an electrical power system, became the dominant technology, largely because more money and more people were invested in development of the internal combustion engine. The dominance of the internal combustion engine, the second rate technology, has imposed costly externalities on motoring. Is this happening in the IT and Internet industries?

Was such large scale mass-production necessary of desk and laptops? Information technology is in its essence is a very flexible technology capable of being customised to many different kinds of user and applications. Unfortunately, the US managerial culture is oriented to mass production and mass production needs intensive selling to dispose of the mass output and to recoup the investment and make a profit. Given the presence of venture capital firms in Silicon Valley having large funds to invest, the large scale investments necessary were both feasible and very actively encouraged in order to make very large volumes of profit. The desk tops and laptops have therefore been standardised to a common denominator, containing a mass of all kinds of things most of which will not be wanted by any single user. They absorb memory, introduce unnecessary complexity and as someone asked recently, why does the machine with its advanced technology take so much longer than an early model to start up? They are presumably considered to fit a profile of what the average user looks like, including wanting access to Chinese typefaces or what the average designer thinks should be in it.

And then there are the crashes and bangs. Software is patched before issue to the point where it is considered tolerable to release it and continues to be patched after purchase, major systems collapse time after time and small ones close down, inexplicably says the window. Hackers break into every size and kind of computer system and programme and are enabled to join the mass production culture by mass infection through the Internet communication network. These real problems are the consequence of mass production of desk and laptops based on a dominant operating system. Writing software for customised use by professional people requires specialist knowledge. It was long ago that the realisation came that the better programming is done by people skilled in the particular professional application as well as being skilled as programmers. Shifting to a more customised mode of production and sale would be more costly. Professional users would be more willing to pay for a higher quality in their own work and in their use of time and the popular market could be catered for even more cheaply.

Why, as an Irish author, can I not have an Irish typeface although I have to give full marks to Apple for providing me with a keyboard on the laptop which allows me, when writing in Irish, to put the accent on any vowel by simultaneously pressing the Alternate key? So what about other needs of an author, like a running ability to insert references in the list of references directly and simply. What about a specialist laptop for authors but designed by an expert author rather than by a computer scientist as seems to be the norm in software production? The latter is a reason for the decline of the US machine tools industry.

In pursuing the concept of Silicon Valley as the model for the rest of the world, Kogut introduces the concept of national systems of innovation, a concept which

Robert Nelson and others have studied. Kogut introduces this concept of NIS 'not as rigid templates but as capable of a political and economic process permitting a recoupling of institutions that allow for entrepreneurial exploitation of a global technology. Surely Silicon Valley produced specific institutional patterns in which innovation was promoted and sustained' (p. 8). Presumably he means that the national system should be such as to allow local systems such as Silicon Valley to emerge. Seven of the chapters which he is introducing are to varying degrees accounts of national Internet innovation systems and four additional chapters examine regulation from different aspects and as previously mentioned suppliers and intermediaries. The seven provide much interesting detail, making the book well worthwhile, but written against the template of the 'Silicon Valley' model because Silicon Valley drove the 'American Internet economy'. This model for Kogut 'consists of a few distinctive elements that might be summarised as an embrace of the institutions that promote new firm innovations' (p. 6).

These elements are: early venture capital, equity markets for IPOs, fluid regional labour market for global talent, that is easily accessible to non-US citizens, fiscal policies which lower costs of starting and operating a new business, proximity of university and research institutes within a region. But Kogut does remark that these elements 'more importantly' distract attention from the discourse and coordination that are embedded in the social and professional communities. The human factor of intensive interactions based on trust, mutual support and shared know how, which Saxenian, in *Regional Advantage*, 1994, found in Silicon Valley as it had been found in European dynamic districts. As she noted, the tacit information gained from experience and passed on through the intensive social interactions was what gave Silicon Valley its innovations and the concepts around which new firms were founded. This, the social capital, is the key difference of a district which produces an innovative dynamic driven by new firm foundation in its sector specialisation. Further, it occurs only at a local level, less than what we perceive normally as a region and certainly not at a national level. So the US saw innovative dynamism in the locality of Palo Alto, Sweden near to Stockholm, India in Bangalore, again demonstrating that Internet technology follows the pattern of how local a phenomenon is technological and economic development. National Innovation Systems are grand provided they serve the local and act as though local.

There are other problems in the model. The fluid labour market for non-nationals exists because the US educational system is generally poor as Kogut admits with a resulting 'deficit of skilled technicians and engineers'. This deficit is an outcome of the managerial culture which rewards senior staff very highly but cuts costs of employing and training skilled staff. Early venture capital and equity markets do sound desirable to many yet can also be used as an aspect of the management culture of high rewards for senior management, which has been named the greed factor. Undoubtedly, venture capital has played a very significant role in the dominant position of Silicon Valley and the wealth of its founders and staff, but it has led to the mass-production focus and glamorisation of the greed factor, probably the source of gradual loss of sustainability. The US National Innovation System not only depends on foreign skills but also on the very wide polarisation of US society in wealth and income, a polarisation which is continuing to increase.

The German chapter refers to stock options found in some German firms interviewed as signifying

> an important shift in employee motivation incentives used by German technology (sic!) firms, allowing many of these firms to introduce the extreme dedication to work commonly found in Silicon Valley-type start-ups (p. 247).

The risk of burn-out is high wherever there are extremely long working hours, whatever the financial return which eventually comes and especially in an economy where time-off is not high. In practice, excessive working hours are endemic to situations where the quality and numbers of skilled technicians and engineers are mediocre. Negative elements like positive have a way of reinforcing one another and this is inevitable in an economy where too many firms are managed for the benefit of the management.

And of course there is the phenomenon that the most frequent uses of the Internet, are for sex, as was found of Minitel 20 years ago, and for fast ways of making money or getting money. That these uses are a majority is another kind of polarisation and can only in the longer term undermine confidence in use of the Internet. Another factor which may have deleterious effect through use of the Internet is the constant referral to the knowledge based economy and the role of the Internet as a driver in such an economy. The main drivers in innovative development are the gaining of skills through education and training and especially through experience and interacting with experienced others who have the tacit know how central to innovative development, as Saxenian demonstrated in Silicon Valley. The Internet carries explicit information not tacit. It is useful for passing on any information and knowledge which can be or is written down and therefore meets the central needs of academics but not those of innovators and entrepreneurs. Promoting its use as meeting the needs of what is being termed the knowledge economy is dangerous. The Internet is essentially a publishing system.

Kogut's enthusiasm leads to another and major misconception. He states that:

> Many national models were in crisis; many European countries failed to provide growth and jobs during a time of American resurgence in the first two thirds of the 1990s; Korea and Japan were in economic crisis; India had begun to liberalise certain sectors. The Silicon Valley provided proof that this space could be filled by new firm creation (p. 7).

The American resurgence was due much more to inflow of funds directed to speculation on the New York Stock Exchange and the new exchanges in particular and to the massive volume of domestic funds for the same purpose created by remortgaging of homes. Undoubtedly the IT sector had tremendous growth in productivity and wealth creation but the rest of the productive sectors lagged behind, providing the negative side of the Solow paradox.

The other misconception which in the past I have found to be almost a constant in US papers on entrepreneurship and small firm studies is that the US is unique in its rate of foundation of small firms. Where it matters in the productive sectors, it is poor. Italy has up to four million small manufacturing firms, possibly a little exaggerated and nearer three million, but very much larger than the total number of manufacturing firms in the US which is about 400,000. The Italian firms are predominantly small but cooperate and compete intensively. Kogut is carried away with his enthusiasm: 'Is the evidence that new firms rose in Germany, France, Sweden, and many other countries contrary to the traditional logic of their economic systems?' (p. 9). What was the traditional logic? Undoubtedly Germany is

in need of renewing its entrepreneurial dynamism which created the 300,000 Mittelstand, the core of its economic and technological strength but the elements which led to their creation are still present. Retuning is undoubtedly required. France certainly does have very few dynamic small firm districts, Sweden has long had one and seemingly has been able to see the growth of IT and telecommunication small firms around Stockholm as described in the chapter on Sweden. Switzerland also has an effective small firm sector and all of these countries have strong vocational training systems which extend through to the applied orientation of their technology universities. Proof of the value of small firm creation has been clearly demonstrated by them in the decades since the Second World War.

On the other hand the US has a fantastic ability to sell intensively with great self-confidence even when it is weak, such as in small firm foundation in manufacturing productive sectors where dynamism does matter. Kogut is a good illustration of this phenomenon. Silicon Valley will continue to be the main driver in development of IT hardware and software and in some telecommunications technologies relevant to the Internet. The Silicon Valley model as outlined by Kogut does need to be seriously amended if it is one to be followed across the US in stimulating other sectors of technological activity and small firm dynamism successfully and in sustaining Silicon Valley. This is necessary if the US is to lead the world in a resurgence of economies.

If you wish to be innovative remember that the old phenomena remain. Economic development and the technological dynamism of small firms which drive it are local phenomena and are based on the skills and tacit know-how of local entrepreneurs, technicians and engineers as well as on access to finance with which to exploit the dynamism. Above all, the innovative dynamism of the small firm is dependent on the social capital of the local economy, the social face to face interactivity through which relevant know-how is obtained and opportunity identified. Lose this and you are into the down side of the cycle: the negative side of the Solow paradox.

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