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‘Venturesome Consumption, Globalisation and Innovation’

Professor Amar Bhidé (Columbia University)

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Professor Bhidé delivered the first lecture of a new seminar series on “Aspects of Globalisation” in the Oxford Economics Department Lecture Theatre. The seminar series is convened jointly with Exeter College and is sponsored by HSBC. Motivated by trends in innovation and productivity, Professor Bhidé challenged many of the age-old assumptions inherent in economic models of innovation. Using the United States as a case study, he suggested modifications to the theory and described some of the important factors that have been elided in much of the literature.

Tension between popular wisdom and trends

Professor Bhidé opened with a series of observations about the kind of attention innovation receives. Rather than adopting a holistic approach of considering both the invention (upstream) and the implementation (downstream) aspects of innovation, there instead exists a techno-fetishism that prioritises upstream innovation and equates economic success and prosperity with technological leadership. Citing Paul David, Clyde Prestowitz and Richard Freeman, Professor Bhidé illustrated how it has become fashionable to claim that relative increases in skilled labour abroad is undermining the position of technological dominance that the United States has enjoyed to date.

For instance, the ratio of science and engineering PhDs in China to that in the US has increased from approximately zero in 1975 to some 32% in 2001. The respective figures for Europe are 93% and 154%, suggesting that the US is losing its advantage in both developing and developed countries. Faced with these figures, an observer using a “North-South” trade model framework would provide the interpretation that China is undermining the US’s monopoly on producing new technologies. In such a model, which relies on a South with little innovation capacity but substantial production capacity, the prediction must be that the US’s technological superiority has been substantially eroded over the past three decades.

A breakdown between innovation and productivity?

This presents us with a puzzle: why has the US maintained (or possibly expanded) its productivity and per capita income lead while the EU and Japan have increased their shares of PhDs, scientific articles and other measures of innovative activity? Professor Bhidé suggested that the answer involves a number of factors emanating from faulty assumptions about innovation and globalisation. To begin, concentrating all the attention on upstream indicators ignores the important role that downstream capacity plays and, in addition, the role of the consumer. The development of new technology may be important, he reasoned, but the willingness and ability of consumers to acquire and use that technology is as important and is commonly overlooked in these models. It may even be argued, Bhidé suggested, that in small countries this “adoption willingness” is more relevant than the development of the actual technology itself.

Furthermore, characterising trade and innovation in an international context as a zero-sum game misses the key point that the benefits of inventions in one market can be shared among other countries. It is spurious to suggest that innovations in one country occur somehow at the expense of other countries. On the contrary, provided that the downstream capacity and willingness to adopt exists in these countries, the benefits should be available irrespective of where the innovation may have originated.

Debunking myths to explain reality

Professor Bhidé identified three areas where commonly-held “myths” have been perpetuated, resulting in misguided models producing questionable conclusions. The first of these areas concerns modern innovation. The Schumpeterian dogma of creative destruction is inappropriate, as is the notion that innovation should be expected to appear from a single source. Instead, Bhidé ventured, innovation arises in both destructive and non-destructive forms. A better representation would cater for more incremental and evolutionary changes rather than the discrete “leaps” that have instead been understood to be the trajectory of change. As these increments reduce, the innovations become more intricate and complex, catering to the evolving demands of the consumer.

These intricate and non-destructive innovations are also being made by very many players, not the single innovator that is commonly assumed. The complex, multi-period, multi-player game of incremental innovation that characterises the real world bears little resemblance to the mythical constructs of outdated theory.

Beyond misconceptions about innovation, myths about the nature and role of the consumer are similarly concerning. The commonly modelled notion that mid- and downstream consumers are passive but curiously omniscient misrepresents the end user in a non-trivial way. In reality, Bhidé proposed, consumers are “venturesome”, constantly making entrepreneurial contributions. Far from being passive, these consumers more closely resemble Von Hippel’s lead user, engaged in a dialogue with manufacturers and “innovators” that could better be described as co-development. These consumers, rather than having a fully developed and well-defined utility function, bear Knightian uncertainty over a wide range of variables.

Finally, the assumptions embedded in North-South models relating to tradability are also biased towards upstream developments in science and technology. The idea that freely tradable goods render the origin of innovation irrelevant may be valid but only if there is downstream capacity to support the implementation. This insight is strengthened by the observation that a considerable part (certain services, for instance) of economic activity is non-tradable.

Towards an explanation of the US phenomenon

If we are to believe that United States dominance in innovation has been increasingly eroded as motivated previously, we need an explanation for how the US has managed to maintain a lead in productivity. Having exposed some of the common errors associated with innovation models, Professor Bhidé presented some data outlining expenditure on IT and gross fixed investment as a proportion of GDP for the US and many other countries. Though IT spend may be less than 10% of GDP, it has a profound influence on how effectively the remaining 90% is spent. Bhidé suggested that the source of the US productivity edge over Europe and Japan may be not only that the US spends more on IT (as it does) but also that it spends more cleverly. This theory is supported in a recent paper by Bloom, Sadun and Van Reenen who note that the higher “productivity of IT capital” almost completely accounted for the overall productivity lead of US companies in IT intensive industries.

In addition, Bhidé noted several distinctive factors commonly associated with the US that may be similarly influential. For instance, the predisposition of consumers to “believe” in technology, combined with a utility gained from early adoption creates a culture of IT spending that may at least partially account for the higher ratio of IT expenditure to GDP in the US. Add a disregard for thrift and

a competitive market necessitating a grow or die imperative and the IT proportional spend gap appears less unreasonable.

Concluding remarks

Ending with an old question, what makes some countries rich and others poor, Professor Bhidé suggested that what matters in innovation is not necessarily who can produce or pay for technology but who has the capacity to implement and use modern technology effectively. We need to be asking what we mean by “savings and investment” today: a modern knowledge-based economy should not tie incentives to spending on old-style investment opportunities. Lastly, recalling the implementation imperative, Bhidé guarded against the temptation to place too much focus on obtaining highly skilled labour to the exclusion of those involved in the downstream activity that interfaces with the end user.

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