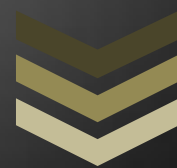


# Annual Report of the Planning Commission Unit for 2010-11



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# Annual Report of the Planning Commission Unit for the year: 2010-11

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## Personnel

**Chair Professor: Dr Sunil Mani**

**Research Assistant: V S Sreekanth, MPhil**

### A. Research projects completed

**i. Bridging the digital divide: The Indian experience in increasing the access to telecommunications services:**

India has one of the fastest growing telecom services industries in the world. Tele density in the country which was less than 1 telephone per 100 people in 1991, when the country unleashed a wave of market reforms, have now increased to about 60 per 1000 people in 2010(October). There are, of course, considerable variations in rural-urban tele densities although this has been narrowed down in an impressive and sometimes unbelievable fashion. This is especially impressive when you take into account two factors: first the industry is dominated by private sector enterprises accounting for about 80 per cent of the services market and second, administrative and financial mechanisms that the government has put in place to increase access to telecom services in rural areas and thereby bridging the digital divide has not met with much success. In the context, the purpose of the present paper is to provide some explanation as to how these reductions in teledensities have been accomplished. My explanation is in terms of increased competition between services providers coupled with some reasonable regulation of their market conduct by an independent regulator. Consequently India has one of the cheapest telecom tariffs in the world making telecom services eminent reachable at the village level. Added to this, a fast growing domestic market has encouraged the handset manufacturers, all of them affiliates of leading MNCs, to invest in R&D to develop cheaper handsets. The success of India's telecom services industry thus reinforces the idea that competition is the key to driving innovations that ultimately leads optimum outcomes from the development point of view.

**ii. Increasing privatisation of generation of innovations and the role of innovation policy, An examination of Indian policies for domestic technology generation during the post liberalisation phase:**

The generation and diffusion of innovations in an economy is characterised by market failures owing to the public goods nature of new knowledge generation. Governments, across the developed and developing worlds, have tried to offset this consequent underinvestment that private sector generators of knowledge are prone to by clearly articulating their innovation policies and putting in place a number of institutions and instruments that encourages private sector to commit more resources to innovative activities. The paper focuses on the generation of innovations in the industrial sector India and shows that over time much of the industrial technology generation is happening within the private sector industry and increasingly within foreign companies operating from India. Further, much of the innovation generating activities are concentrated in five industries. However in order to increase the pace of innovations and also to spread it across a large number of industries, the state has to step in by addressing one major area in which there has been a 'policy vacuum' of sorts until quite recently. The

area is in the policy on increasing the supply of scientists and engineers. In short the paper shows that despite increasing privatisation of the generation of innovations in India, the state still has an important role to play lest the private sector start underinvesting in technology generation efforts.

**iii. The Mobile Communications Services Industry in India: Has it led to India Becoming a Manufacturing Hub for Telecommunication Equipments?:** The growth performance of the Indian mobile communications services industry is now reasonably well recorded. It is one of the few industries in India which has travelled significantly from being a monopolistic and somnolent industry from the innovation point of view to an extremely competitive and technologically speaking dynamic industry. This is despite the fact that it's very recent history has been punctuated by a few financial scams of sorts essentially due to the discretionary powers still wielded by the government in allocating the much needed spectrum and so on. Also notwithstanding the very recent distinction that is made between active users and the total number of subscribers (the former is only 70 per cent of the latter); the industry has witnessed a phenomenal increase in the length and indeed breadth of its coverage. There is also quantitative evidence to show that the extent of urban-rural divide too is on the decline. India now has one of the most competitive telecom services in the world and this has positive implications for its outsourcing industry where significant decline in communications costs is tremendously helpful for making this industry too remaining competitive when other factor prices have been showing an increasing trend. While all these augur well, questions had been raised about the ever rising trade balance in telecom equipments as the phenomenal growth of new subscribers that are added per month (in 2010 it averaged 18 million new subscribers per month) was met with equal amount of equipment imports. The increasing share of equipment imports was due to the weak manufacturing base that India possessed; ironic though as telecom equipment production was one of the first manufacturing industries that the Indian state had sought to develop through explicit state participation right after independence. Subsequently the state even attempted to craft a sectoral system of innovation in the telecom equipment industry. However none of these efforts resulted in India being successful in establishing a manufacturing hub. In the context the paper argues that the growth of market for telecom equipments precipitated by the growth of services has jump started an extremely dynamic manufacturing industry, especially over the last five years or so. The dynamism of the industry can be gauged from the fact that for the first time, India has a positive trade balance in mobile handsets facilitated by India emerging as a manufacturing and export base for cheaper handsets. Although the industry is dominated by MNCs, domestic firms have started making an entry into domestic manufacturing and indeed in innovations as well. However there is some evidence to show that most of the manufacturers are now more of assemblers of imported parts and components than manufacturers per se. This unique story of growth in services leading to the emergence of a manufacturing industry is the focus of attention and analysis in this paper.

**iv. The Indian automotive industry: enhancing innovation capability with external and internal resources:** India's automobile market is one of the fastest growing auto markets in the world. It is one of those manufacturing industries which have grown significantly since the liberalization of India's economy which began in a haphazard fashion way back in the 1980s. The industry is also known for many innovations. The paper undertakes a detailed survey of the differential

performance of domestic and MNCs within the industry with respect to innovations. It then analyses the sources of these innovations in terms of internal and external sources. The resulting analysis shows that while the domestic firms have relied on internal sources, the MNCs have relied far more heavily on external sources. The study also contains case studies of seven of the leading domestic firms.

## **B. Research projects in progress**

i Globalisation of Innovation: Its manifestation, determinants and implications for the emerging economies of China and India (*Abstract already reported in 2008-09*)

-Sponsor : IDRC, Canada

-Other members (if any) : Professor Rakesh Basant, Indian Institute of Management-Ahmedabad and Professor T Jayaraman, Tata Institute of Social Sciences, Mumbai

-Date of commencement: April 1 2009

-Expected date of completion : December 31 2011  
(*I am revising the date reported earlier*):

-Publication plan (in the form of a report or/and research articles):  
series of journal articles

-Seminar/workshop plan (if any): A joint India-China workshop in January 2012.

ii. Advancing knowledge-intensive entrepreneurship and Innovation for Economic Growth: Case of India (AEGIS project)

-Sponsor: European Union

-Date of commencement: April 1 2009

-Expected date of completion: April 30 2011

iii. TRIPS compliance of national IPR regimes and its Effect on Innovative Activity

Sponsor: The Earth Institute, Columbia University

C. Seminar/Conferences/Workshops attended elsewhere:

**International**

- Sunil Mani presented a seminar on “Has China and India become more innovative since the onset of reforms in the two countries”, under the International Seminar Series at the Faculty of Economics and Administration at the University of Malaya, Kuala Lumpur, Malaysia, July 29 2010
- Sunil Mani lead the first meeting of the project on “Patents, innovation and Developing Countries” at The Earth Institute, Columbia University, New York, USA, September 25-26 2010;
- Sunil Mani presented a paper on “ Sectoral System of Innovation of the Indian Aerospace Industry” at the international conference on *‘Innovations in the International Commercial Aircraft Industry’* at the Department of Management and Technology, Université du Québec à Montréal, Montreal, September 2-3 2010;
- Presented a paper, ‘Knowledge-intensive entrepreneurship, Economic Growth in India, An analysis of the post liberalization phase’ at the 4th Plenary Meeting of the research group, AEGIS, Instituto Superior de

Economia e Gestão, Lisbon Technical University, Lisbon, Portugal, October 27-29, 2010

- Presented the ‘Chapter on India’ in the *UNESCO World Science Report 2010*, at the World Science Day, UNESCO Headquarters, Paris, November 10 2010.
- Presented a paper on “TRIPS compliance of national IPR regimes, An analysis of its status and implications across five developing countries’, at the panel on Knowledge Governance TRIPS@10, Mailman School of Public Health, Columbia University in the city of New York, USA, November 16-18, 2010,
- Gave a lecture on “Measuring innovation: conventional vs new indicators” at the Department of Agricultural, Food and Resource Economics, Rutgers University, New Jersey, USA, November 18 2010.
- Participated and presented two papers (Paper 1: *TRIPS Compliance of national patent regimes in developing countries, An analysis of its potential and actual effects*; Paper 2: *On the emergence of new and large firms in India* at the Catch up-DIME workshop, United Nations University-MERIT, Maastricht, The Netherlands, January 25-26, 2011
- Presented a paper, *The Mobile Communications Services Industry in India, has it led to India becoming a manufacturing hub for telecommunications equipments?* at the international workshop, “Celling South Asia: The Mobile Phone’s impact on a region, Institute of South Asian Studies, National University of Singapore, Singapore, February 17-18, 2011
- Presented a paper on Innovations in the *Indian Automotive Industry, Enhancing innovation capability through internal and external sources* at the International workshop on How to Enhance Innovation Capability with Internal and External Resources, Institute of Developing Economies- Bangkok Research Centre, Bangkok, Thailand, February 24-25, 2011

## National

- Gave a lecture on Indian companies going global: An analysis of its determinants, financing and relative profitability at Project Management Institute, Kerala Chapter, Technopark, Trivandrum, April 20 2010, <http://www.pmikerala.org/news>
- Was a resource person at the Capturing the Gains Workshop organised by Duke University, University of Manchester, and Institute for Human Development, Delhi at Agra, May 26-28 2010.
- Delivered the 25<sup>th</sup> Distinguished Lecture on “The Flight from defence to civilian space: evolution of the sectoral system of innovation of India’s aerospace industry’, Institute of Public Enterprise, Hyderabad, June 25 2010.
- Sunil Mani presented three lectures on innovation policy at the elective on ‘Industrial and Trade Policies’ Postgraduate Programme in Management (2009-11 batch) at the Indian Institute of Management Calcutta, Kolkatta, September 22-24 2010.
- Delivered a lecture on “India’s innovation policy” at the Phase IV IAS training programme, Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie, October 20 2010
- Designed and taught a ten lecture elective course on “Innovation and Technology Policy” at the PGPEX, Batch IV, Term VI, Session 2010-11, Indian Institute of Management Calcutta, Kolkatta, December 6-15, 2010.
- Delivered the 2011 Professor K K Francis Memorial Lecture, *India and the Global Economy*, at St Berchman’s College, Changanacherry, January 18 2011
- Delivered the keynote address, *On Mainstreaming the growth performance of the Indian Information and Communications Technology Industry* at the National Seminar on “Digital Economy”, Sacred Heart College, Chalakudy, February 10 2011



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#### **D. Seminar coordinated:**

-Topic: National Conference on *India's Economy: Twenty years of economic liberalization*

-Sponsor(s): Planning Commission

-Date(s): December 1-3 2010

-Number of participants: About 100

The growth performance of India's economy has been the subject of a very lively discussion among academicians, policy analysts and even among the popular press not just in the country but abroad as well. India has now the distinction of being one of the fastest growing economies in the world and her economic growth has shown remarkable resilience even in the context of a continuing global financial crisis. One of the most important causes of this improved growth performance is very often attributed to the process of economic liberalization that was set into motion, albeit on an ad hoc, piecemeal, and unstructured way since 1991. At 2010, it was almost twenty years since this process of reforms have started. Although a number of commentaries and analysis have appeared on the scene, a comprehensive evaluation of the effect of reforms on different sectors and aspects of the country's economy is found wanting. It is in this context, CDS organised an academic gathering in early December to discuss not just the effect of reforms on overall economic growth but also on topical issues such as employment, gender, agriculture, industry, technology and innovation, international trade public finance, and governance. The Conference had a unique structure of sorts. There were ten different sessions and each session focused on a particular sector of the economy or an issue and in each of the sessions the key issues were introduced by the key paper writer. The main paper writers were Pulapre Balakrishnan on inclusive growth, Padmini Swaminathan on gender, A Vaidyanathan on Agriculture, K Pushpangadan on Industry, Sunil Mani on technology and innovation, K J Joseph on international trade, A V Jose on employment, T R Raghunandan on decentralisation and governance and K K George on Public Finance. The only exception was the session on health, where we had a panel discussion: V Raman Kutty, T K Sundari, Sairu Philip and K Vijayakumar were the panellists. The main issues in a specific sector identified by the writer were subjected to a thorough scrutiny, from both theoretical and empirical points of view, by a specially chosen discussant: the discussants and indeed the chairmen of the sessions were drawn from across the country. This was followed by discussions from the floor. In short each issue was discussed for about 1 hour and 30 minutes. The complete proceedings of the conference were brought out in the form of a DVD and are being uploaded on the CDS website. Further, selected papers presented at the conference will be edited to bring out a *Reader on Indian Economy and Policy* targeted essentially at undergraduate students of Indian universities and colleges. In all about 100 researchers, teachers, students and indeed policy makers attended the conference

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## **E. Training programmes conducted/ coordinated**

-Title: Teaching Innovations Programme for College Teachers in Economics- Truncated Version, September 13-17 2010

-Sponsor(s): Academic Staff College, University of Kerala

-Name(s ) of other coordinator(s) Dr M Parameswaran

-Number of participants: 15

b. Title: Teaching Innovations Programme for College Teachers in Economics- Truncated Version 4.0, November 22-December 3 2010

-Sponsor(s): Surplus from the above

-Name(s ) of other coordinator(s) Dr M Parameswaran

-Number of participants: 15

c. Title: Using Internet for Applied Development Research, Version 6.0, May 24-26 2010

-Sponsors: Self- funded through participant fee

-Number of participants: 20

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## **F. Teaching at training programmes:**

Name of training programme: Methods and approaches in migration issues, March 14-19, 2011

-Topic: Economic implications of high skilled migration from India

-Number of sessions: 1

-Organiser: CDS

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## G. Publications

### Journal Articles (International)

- Mani, Sunil, **Guest edited a special issue of International Journal of Technology and Globalization, Vol. 5, Nos: 1&2, 2010.**
- **Mani, Sunil, Are innovations on the rise in India since the onset of reforms of 1991? Analysis of its evidence and some disquieting features',***International Journal of Technology and Globalization*, Vol. 5, Nos: 1 and 2, 2010, pp. 5-42 ;
- **Mani, Sunil, 'Financing of industrial innovations in India: How effective are tax incentives for R&D',** *International Journal Technological Learning, Innovation and Development*, Vol.3, No: 2, 2010, pp. 109-131

### Journal Articles (National)

- Mani, Sunil, 'Diffusion of new technologies and productivity growth in India agriculture, Natural Rubber vs Coconuts', (with V. Santhakumar), *Economic and Political Weekly*, Vol. XLVI, No: 6, 2011, pp. 58-63.

### Chapters in Books

- Mani, Sunil, 'High skilled migration from India: An analysis of its Economic Implications', in S.Irudaya Rajan (ed), *Migration, Identity and Conflict, India Migration Report 2011*, London: Routledge, pp. 309-330.
- Mani, Sunil, 'Industrial Sector In India and Economic Liberalization', in B A Prakash (ed), *The Indian Economy since 1991, Economic Reforms and Performance*, Delhi: Pearson Education, pp. 416-431.

### Other publications

Mani, Sunil, '[India](#)' in *UNESCO Science Report 2010*, Paris: UNESCO, pp. 363-377.

Mani, Sunil, 'An introduction to India's Innovation Statistics', *International Journal of Development and Social Research*, Volume 1, No: 1, 2010, pp. 100-3

### Interview

Mani, Sunil, 'India's pharmaceutical Boom, Interview with Sunil Mani by Shiraz Sidhva, *UNESCO Courier*, January-March, 2011, 25-27.

## H. Institutional Responsibilities (other than teaching and supervision)

- a. Vice Chairman, IT Committee
- b. Team Leader, Master's Programme in Economics
- c. Member, MPhil Advisory Committee

## I. Professional involvement outside Centre

- Visiting Faculty, Indian Institute of Management Calcutta
- Honorary Visiting Professor, Faculty of Economics, University of Ljubljana, Slovenia

- Honorary Visiting Professor, Institute of Public Enterprise, Hyderabad, India (IPE- an ICSSR institution)
- Honorary Fellow, National Institute for Science, Technology and Development Studies (NISTADS- a CSIR Institution )
- Member, Steering group on FDI in R&D, Technology , Technology Forecasting and Assessment Council, Government of India
- **Referee to** : (i) Research Policy; ; (ii) Technovation;(iii) International Journal of Technology and Globalization; ( iv) Edward Elgar ; and (v) Springer and Verlag
- Member of the scientific committee, *Globelics Kuala Lumpur 2010*
- Member, Editorial Board, *Journal of Economic Policy and Research*, Institute of Public Enterprise, Hyderabad
- Member, Editorial Board, *International Journal of Development and Social Research*, XIMB, Bhubaneswar.

## **J.Research plan for 2011-12**

During the year, I plan to complete all the pending research papers, a book and projects, namely:

### **Research Paper:**

Growth of technical education in Kerala. How many engineers does Kerala actually produce?

### **Project**

Globalisation of innovation: Growth of Foreign R&D in India and China

Growth of Knowledge Intensive Entrepreneurship In India

### **Book**

Growing high tech industries in a developing country, Indi's experience