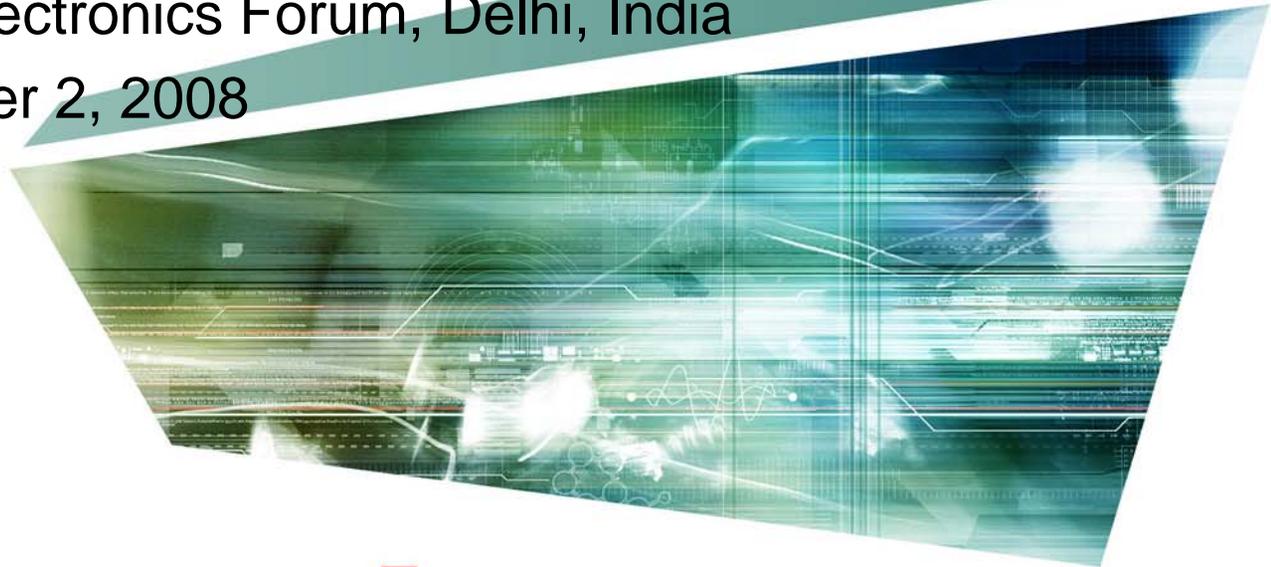


# India – Global Hub for Design and Embedded Systems

Jaswinder S. Ahuja,  
Chairman, India Semiconductor Association  
Corporate VP & MD, Cadence Design Systems

World Electronics Forum, Delhi, India  
December 2, 2008





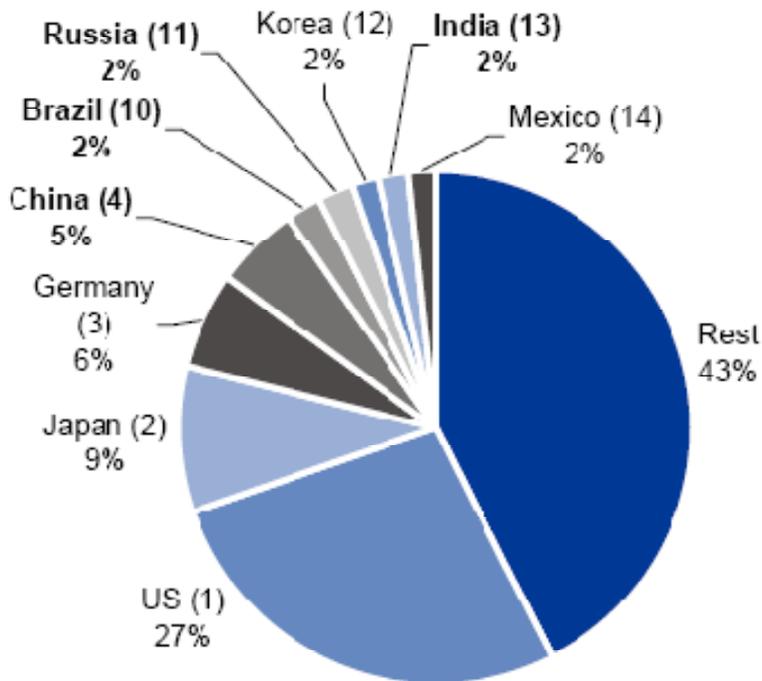
# Agenda

- India in the global economy
- India – World's destination and source too
- Ecosystem Initiatives
- India's evolving ecosystem

# India – 3<sup>rd</sup> Largest Economy by 2050

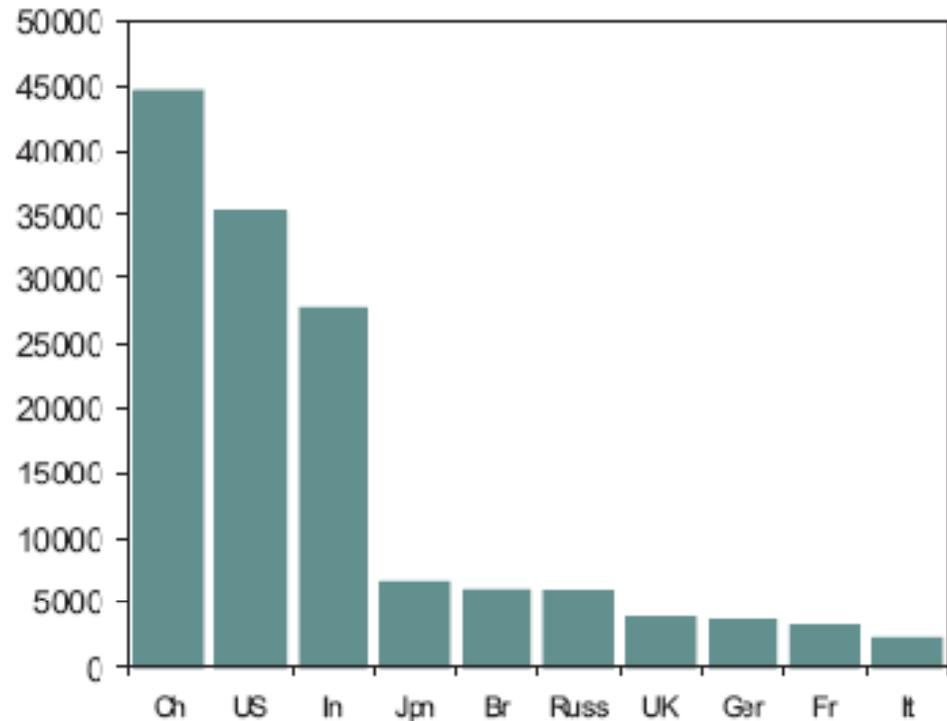
## Nominal GDP

% world total



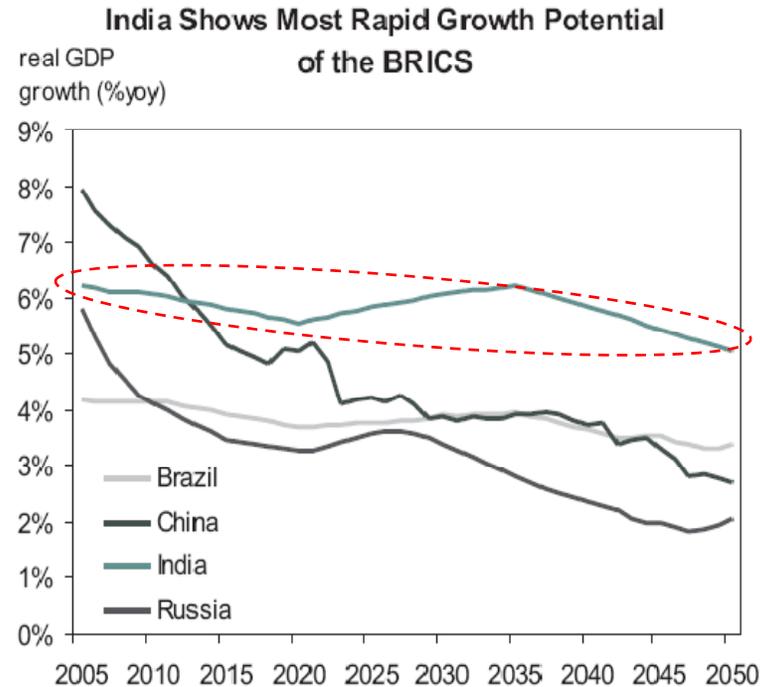
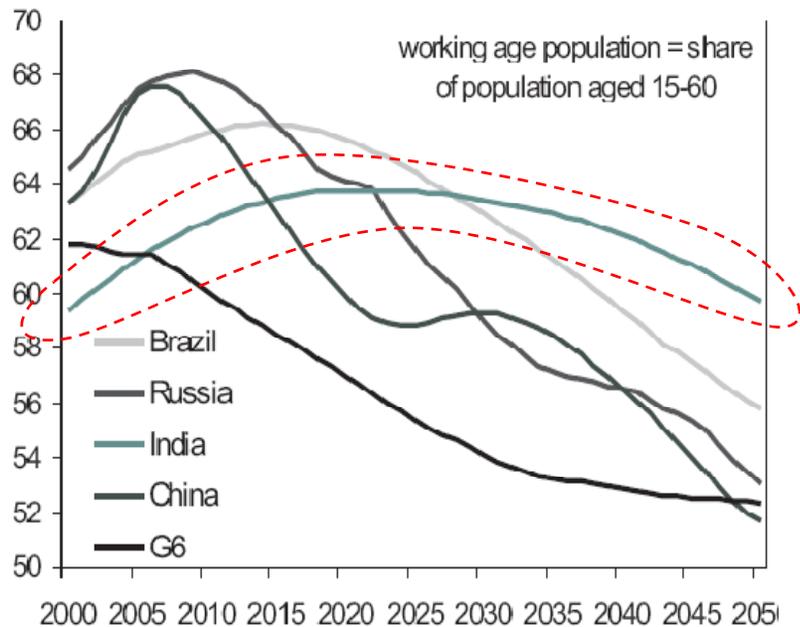
Source: IMF

GDP (2003 US\$bn) The Largest Economies in 2050



Source: Goldman Sachs

# India in Global Economy



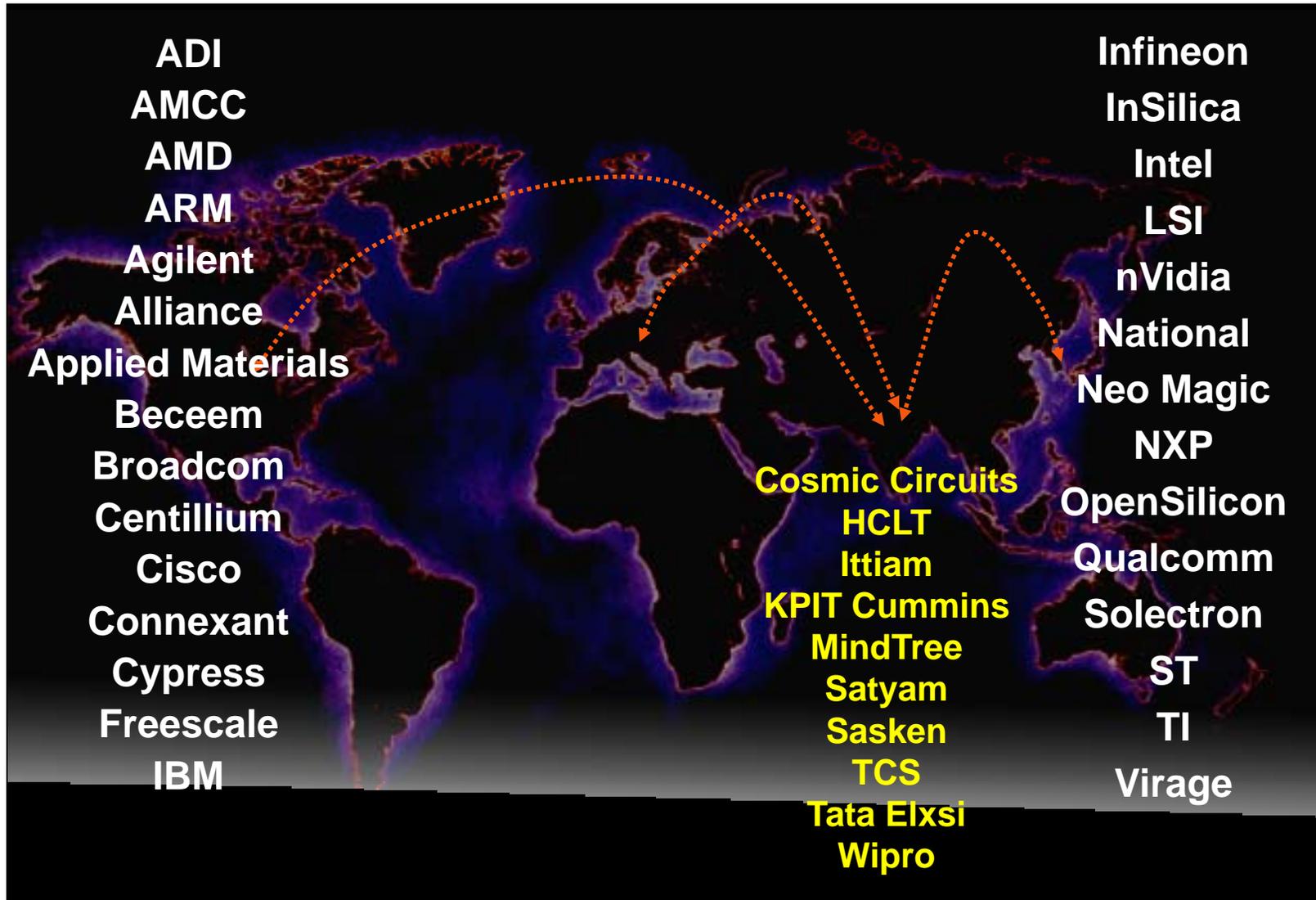
- 1.09 Billion population growing at a CAGR of 1.4%
- GDP (nominal)- \$1.25 Trillion; Real GDP growth rate of 6.6% between 2001-2005, 9.4% - 2006-07
- Third largest in terms of Purchasing Power Parity

Source: Goldman Sachs

4 December 2, 2008 Cadence Confidential: Cadence Internal Use Only

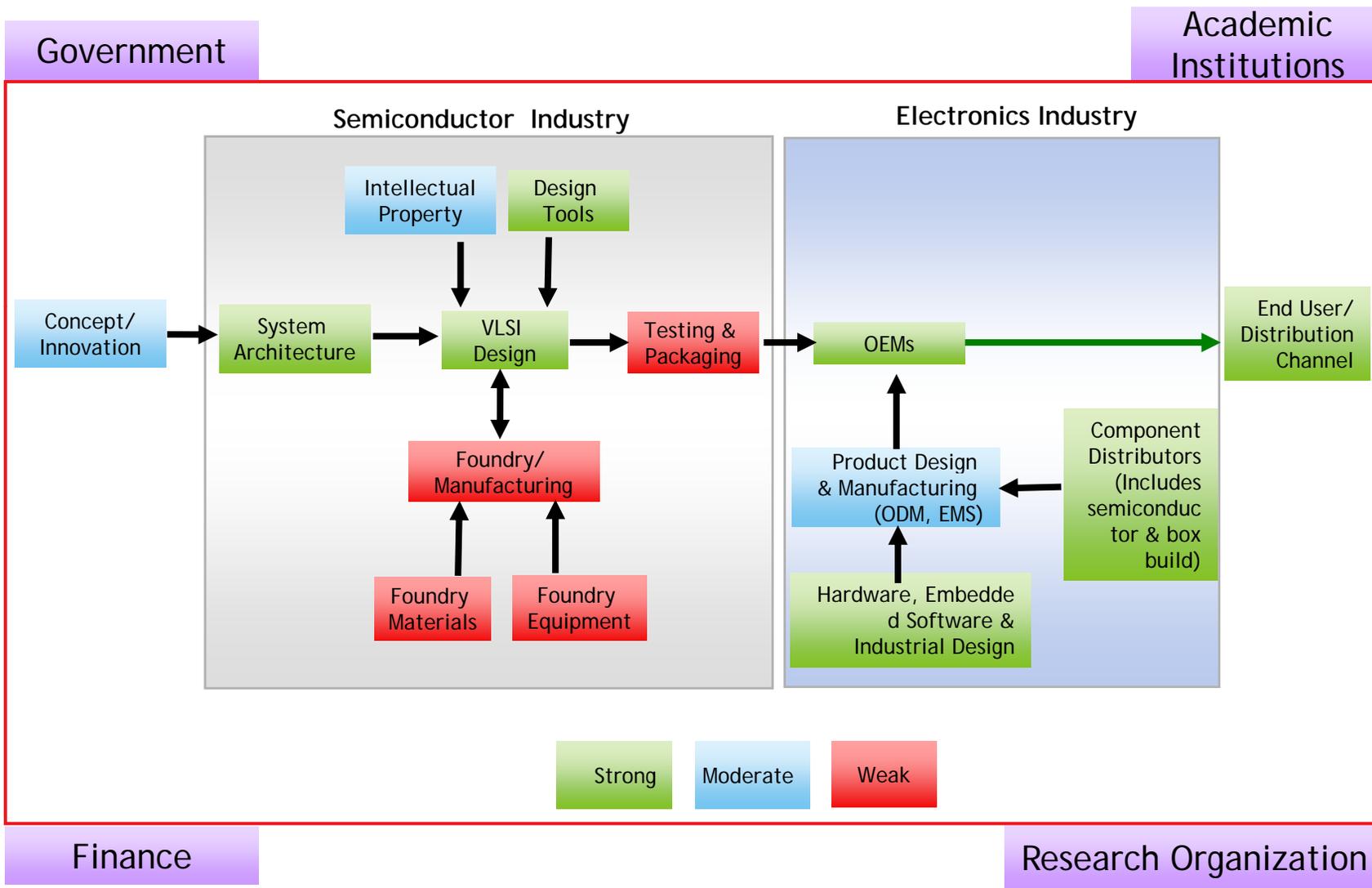
cadence™

# India – World's destination and source too



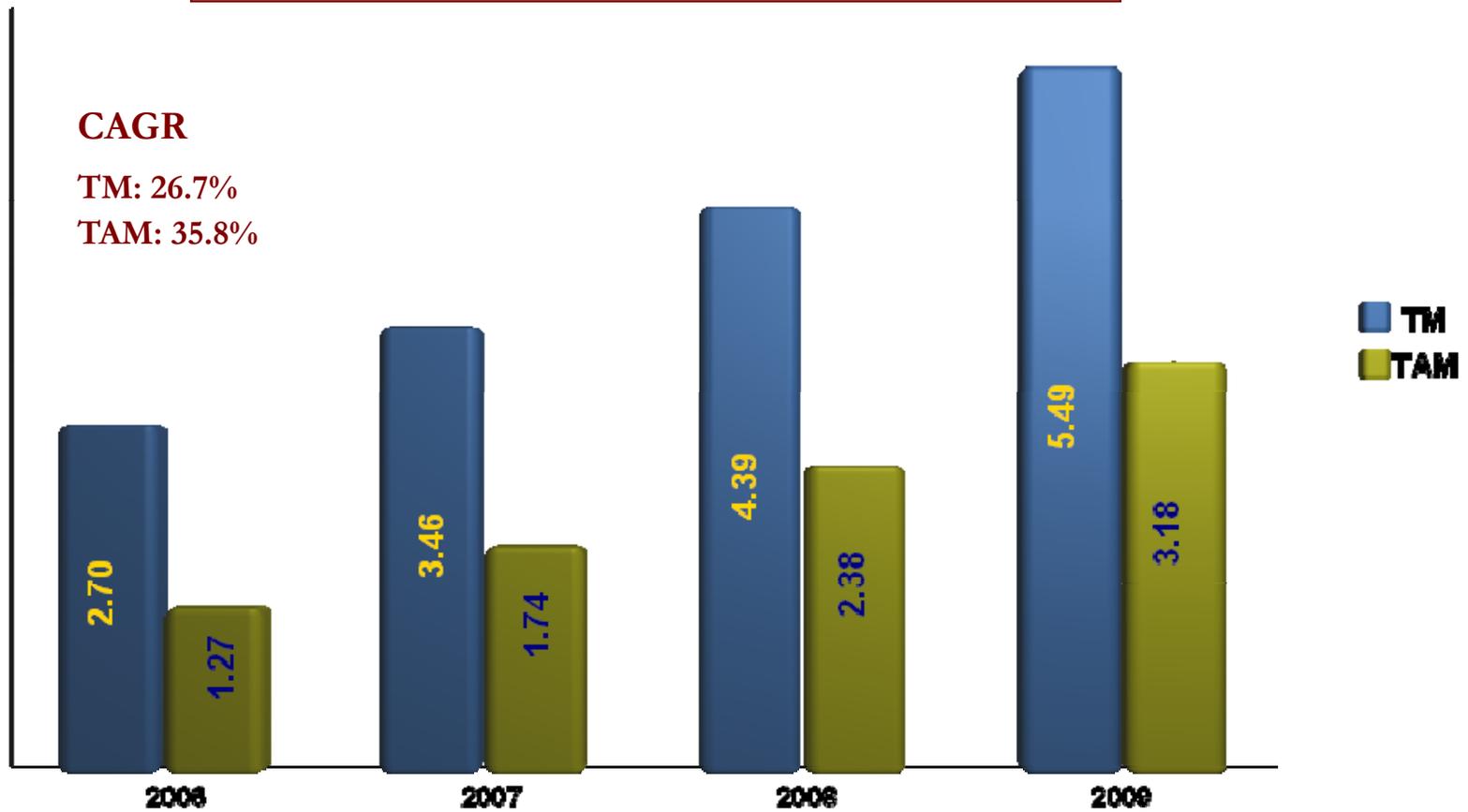
Partial list of companies investing in India

# Electronics & Semiconductor Ecosystem – Current Scenario



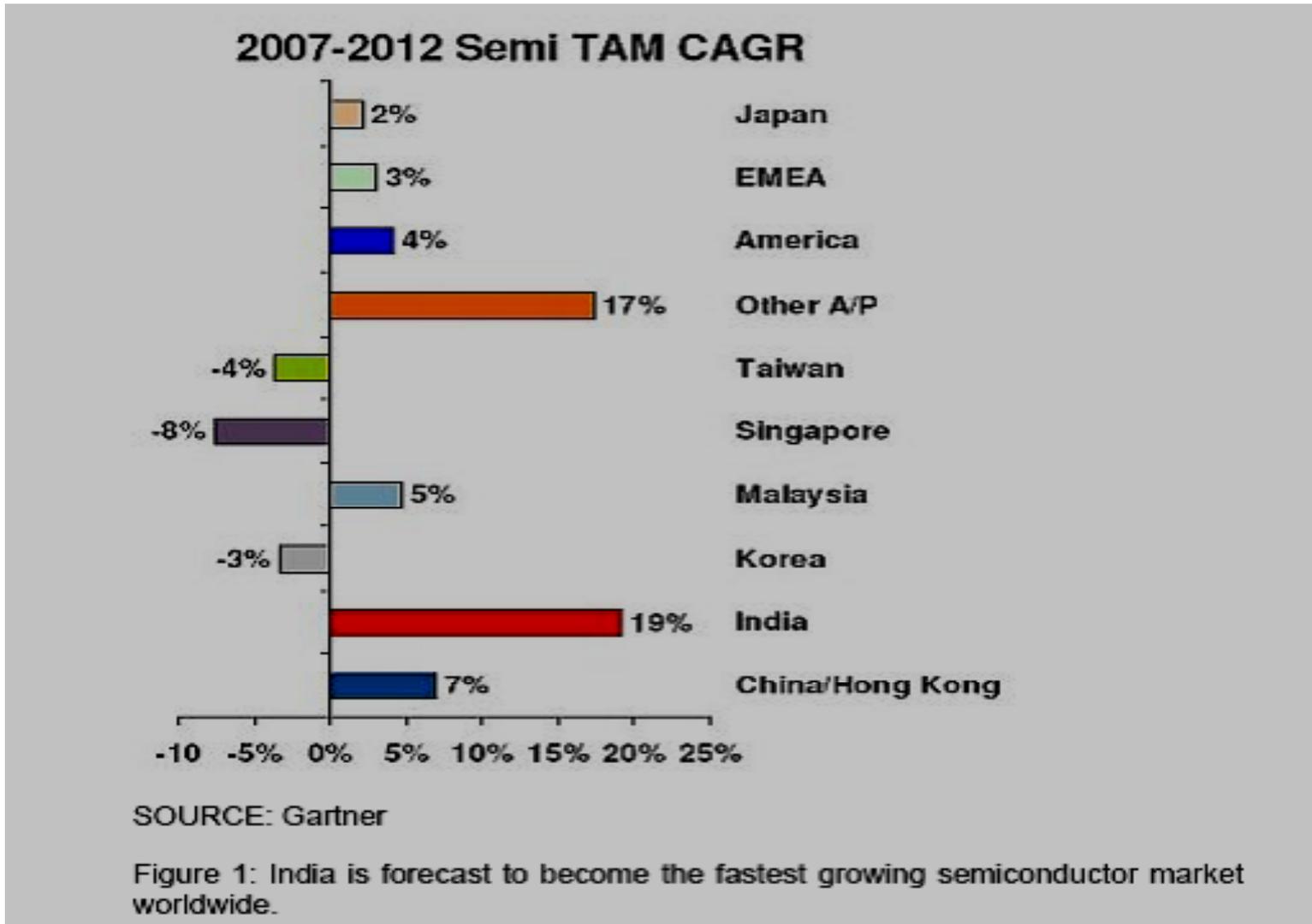
# India Semiconductor TM & TAM Revenues Forecast

India Semiconductor TAM revenues to grow by 2.5 times while TM to double revenues in 2009

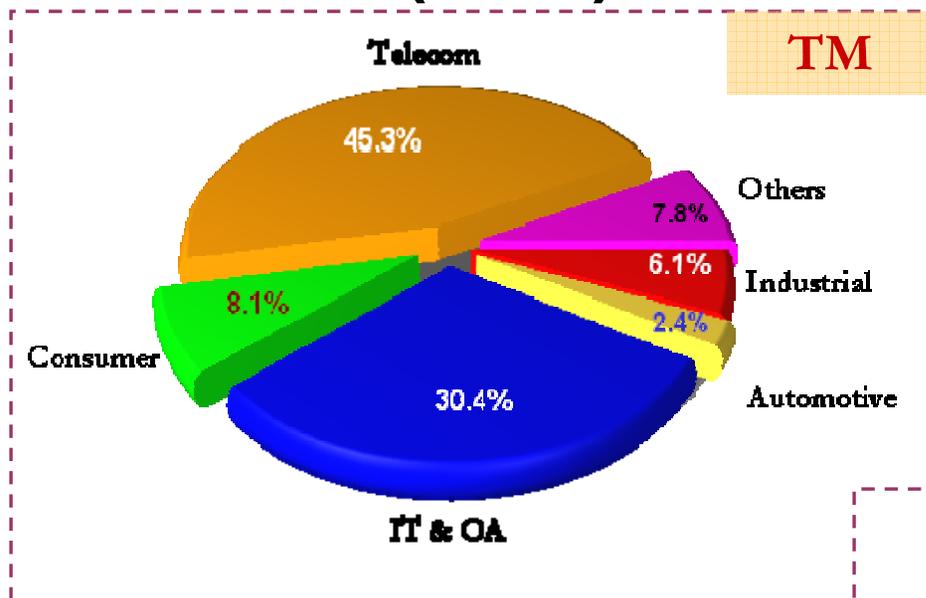


*Values in \$ Billions*

# India – “Fastest Growing Region”



# Share of Application Segments in TM and TAM Revenues (2009)

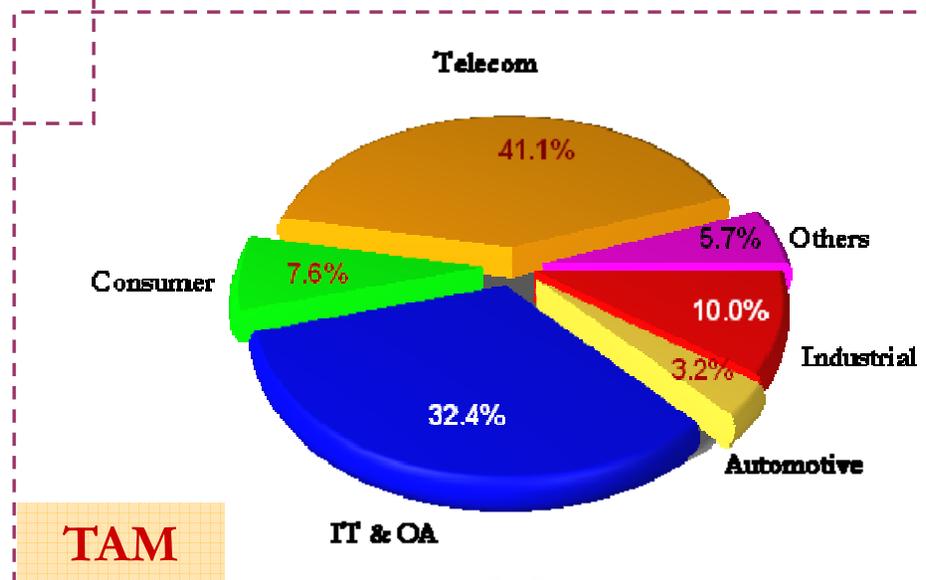


Major Semiconductor categories

- Microprocessors
- Analog
- Memory
- Discrete
- ASIC

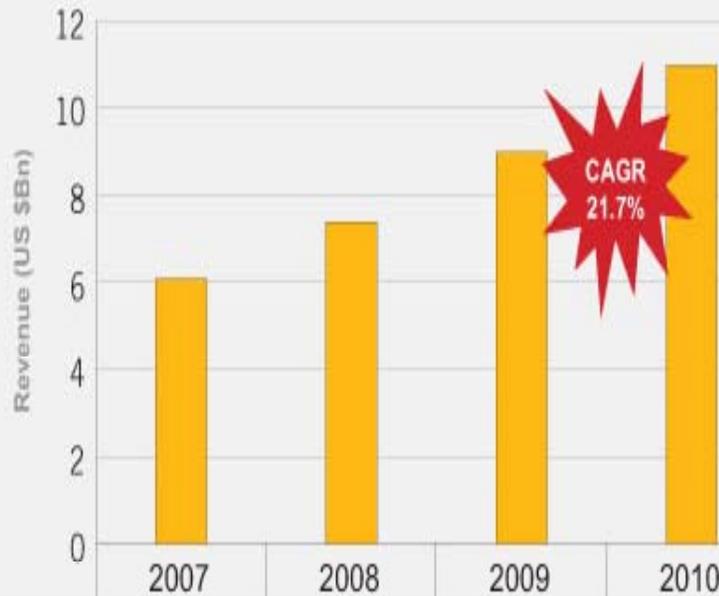
Major End Use Products

- Mobile Handsets
- BTS
- Desktops
- Notebooks
- Set Top Box
- CRT TV



# Indian Embedded Design Industry – Near Term Outlook

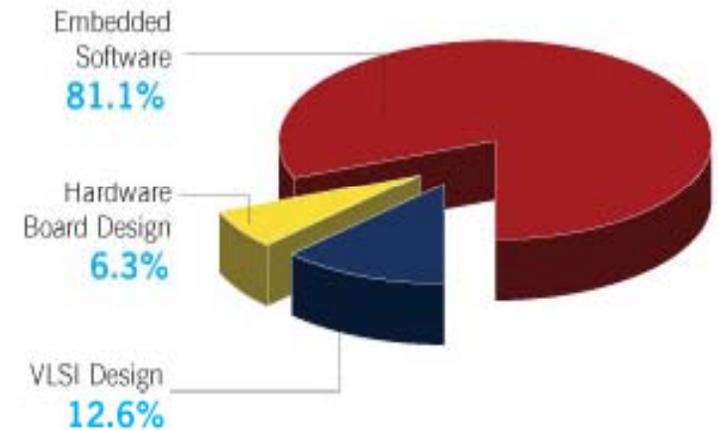
Revenues for VLSI,  
Board Design and  
Embedded  
Software,  
2007-2010  
(US \$Bn)



Source: ISA -IDC, 2008

Total (US \$Bn)	2007	2008	2009	2010
	6.08	7.37	8.97	10.96

Revenues for VLSI, Board Design and  
Embedded Software, 2007 (US \$Bn)



Source: ISA -IDC, 2008



# Global Products – India Design Inside

- Harita Infoserve Ltd. is developing interior parts and conducting computer tests on components for General Motors Corp.
- Ittiam's videophone design will become almost entirely an India story: part of the chip, the product design, the software and, finally, the manufacturing also done here
- Plexion Technologies has worked on the interior design and windows for a DaimlerChrysler (DCX ) bus
- Quasar Innovations designed and developed a dual SIM card— PTL910 mobile phone for Primus, to be launched in European market
  - Mobile phone allows the user to have SIM cards from Primus for two countries, with the phone automatically choosing the correct SIM depending on the user's location
- MindTree designed a feature rich satellite handset with mobile handset form factor for a European company



# Embedded Design Industry – Challenges / Focus Areas

- Manpower
  - Increasing productivity
  - Create readily deployable engineering workforce
  - Focus on developing high end skills
- Moving up the value chain
  - Focus on end-to-end product development
  - Invest in IP development
  - Develop India specific product
  - Partner with OEM's to understand market needs
- Cost Structure
  - Cost management – Increasing infrastructure and salary costs
  - Managing \$\$ impact

# Ecosystem Initiatives.....Making Impact



## Semiconductor Act

- Semiconductor Integrated Circuits Layout Design Act 2000
- Rules for the Semiconductor Integrated Circuits Layout Design Act 2000

## India readies laws to protect IC designs

By K.C. Krishnadas, EE Times  
May 11, 2000 (2:50 p.m. EST)  
URL: <http://www.eetimes.com/story/OEG20000511S0030>

**ISA to organize CEO Panel Discussion on driving growth through product innovations in Indian electronics industry**

## India Semiconductor Association unveils new initiative to catalyze technology innovation amongst industry and the academia.

Bangalore, January 7, 2005 : India Semiconductor Association (ISA), the premier national level platform for the Indian semiconductor industry today proudly unveiled “**ISA Technnovation Initiative**”, a visionary and integrated initiative which seeks to promote technology and innovation in the Indian semiconductor industry. Components of the new initiative are:

### **SPECIAL MANPOWER DEVELOPMENT PROGRAMME FOR VLSI DESIGN & RELATED SOFTWARE (SMDP) – ONGOING PROJECT OF DIT.**

During the IX Plan, Department of Information Technology aimed to increase India's share of global VLSI design market from about 0.5% to about 5.0%. Considering the availability of quality human resource for achieving this target as the key catalyst, DIT started in the year 1998 a “Special Manpower Development Programme in the area of VLSI Design and related Software” involving 19 institutions (7 Resource Centres (RCs) and 12 Participating

Source: DIT, CIOL, EET & other online news portals



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