ISA - FROST & SULLIVAN 2010 - 12

India Semiconductor Market Update

Key findings

Inspired, Integrated Initiative

ISA INDIA SEMICONDUCTOR ASSOCIATION

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EXECUTIVE SUMMARY

ISA-Frost & Sullivan: India Semiconductor Market Update (2010 - 2012)

The ISA-Frost & Sullivan Report provides market estimation and forecasts for the different semiconductor product markets in India till 2012. It highlights growth areas for the period 2010 - 2012. The first ISA-F&S report was released in 2006. This is the fourth update. It is used by industry and government in its planning process.

The application segments studied include:

- Mobile devices
- Telecommunications
- IT & OA
- Consumer electronics
- Industrial electronics
- Automotive electronics and
- Others (aerospace, defense, medical electronics and smart cards).

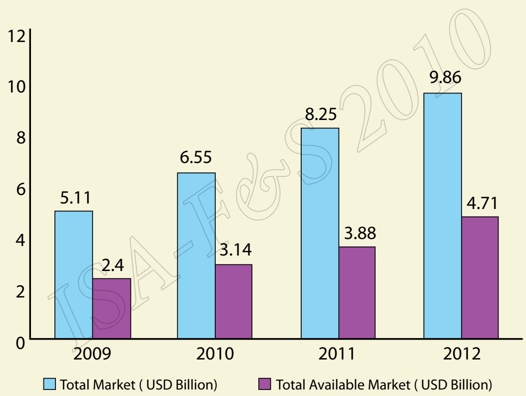
The Report has been released on May 4 2011 at New Delhi by Shri. R Chandrashekhar, IAS, Secretary, Department of Information Technology, Ministry of Communications & Information Technology, Government of India.

Key findings

Overall Indian semiconductor market:

- India's semiconductor market grew by a phenomenal 28.3% in 2010; Global semiconductor market's cyclical trends has minimal impact on India
- Mobile Devices, Telecommunication and IT/ OA contributed 82% to Semiconductor TM in 2010
- Local manufacturing of telecom equipment by OEMs and EMS companies to propel related semiconductor consumption by a massive 50% during 2010 to 2012
- Influenced by regulatory norms and sharpening competition, automotive segment to account for the highest growth in semiconductor demand at 31% from 2010 to 2012
- Sustained gulf between semiconductor TM and TAM from 2010-2012 highlight the urgency to promote local manufacturing to drive higher growth in TAM

Total Indian semiconductor market : TM, TAM revenue forecasts, 2009-2012

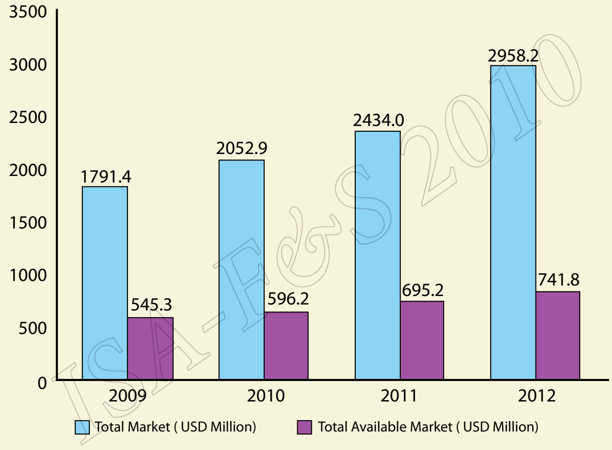


Source: ISA-Frost & Sullivan, 2010 Base Year: 2010

Application segments market

- **IT & OA:**

Indian IT/OA semiconductor market: TM and TAM revenue forecasts, 2009-2012



Source: ISA-Frost & Sullivan, 2010 Base Year: 2010

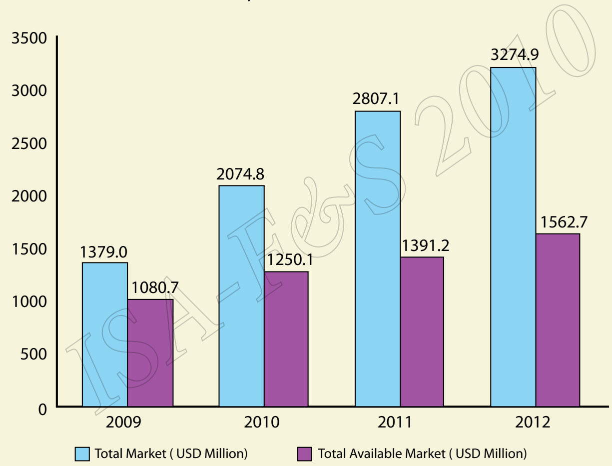
Key drivers:

- TM: Emerging Tablets market; continuing Notebooks penetration; Extensive demand for Flash memory.
- TAM: Sustained demand for desktops emerging from Government's computerization and e-Governance drive.

Year	TM US$ million	TAM US$ million	Manufacturing Index (MI:TAM/TM)
2010	2052.9	596.2	0.29
2012	2958.2	741.8	0.25
CAGR (2010-12)	20%	11.5%	

- **Mobile devices:**

Indian mobile devices semiconductor market: TM and TAM revenue forecasts, 2009-2012



Source: ISA-Frost & Sullivan, 2010 Base Year: 2010

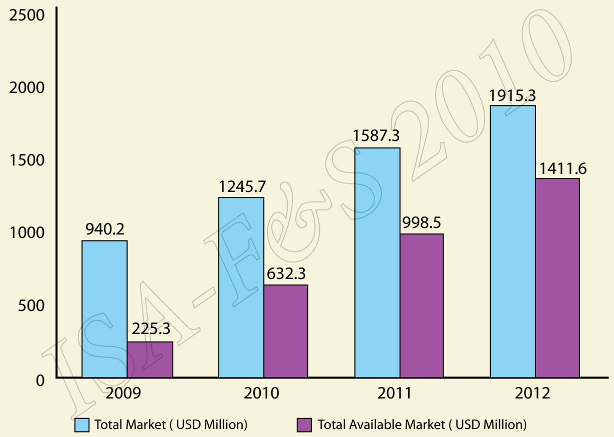
Key drivers:

- TM: 3G and smart phones; Data cards.
- TAM: Influx of local suppliers with aspirations for local production.

Year	TM US$ million	TAM US$ million	Manufacturing Index (MI:TAM/TM)
2010	2074.8	1250.1	0.60
2012	3274.9	1562.7	0.48
CAGR (2010-12)	25.6%	11.8%	

- **Telecommunications:**

Indian communication semiconductor market: TM and TAM revenue forecasts, 2009-2012



Source: ISA-Frost & Sullivan, 2010 Base Year: 2010

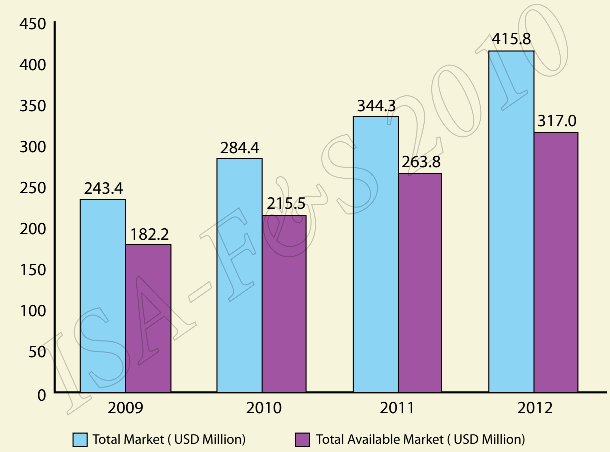
Key drivers:

- TM: National Broadband Plan; expanding telecom infrastructure and enterprise markets.
- TAM: EMS contribution to telecom infrastructure equipment manufacturing

Year	TM US$ million	TAM US$ million	Manufacturing Index (MI:TAM/TM)
2010	1245.7	632.3	0.51
2012	1915.3	1411.6	0.74
CAGR (2010-12)	24%	49.4%	

- **Industrial electronics:**

Indian Industrial Electronics semiconductor market: TM and TAM revenue forecasts, 2009-2012



Source: ISA-Frost & Sullivan, 2010 Base Year: 2010

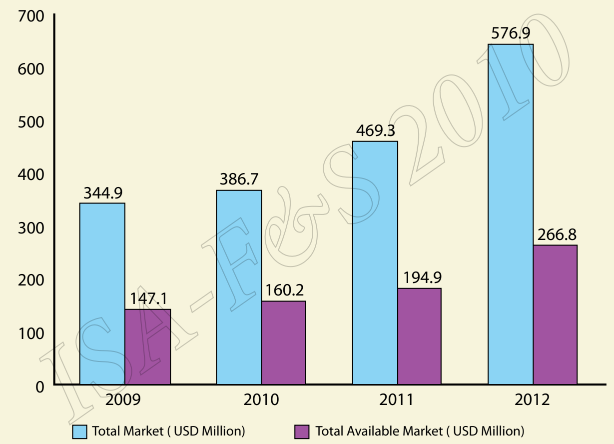
Key drivers:

- TM: Products enhancing energy efficiency key to TM revenue growth.
- TAM: Augmenting capacities for CFL lighting and self sufficiency in metering key for TAM revenue growth.

Year	TM US$ million	TAM US$ million	Manufacturing Index (MI:TAM/TM)
2010	284.4	215.5	0.76
2012	415.8	317.0	0.76
CAGR (2010-12)	20.9%	21.3%	

- **Consumer electronics:**

Indian Consumer Electronics semiconductor market: TM and TAM revenue forecasts, 2009-2012



Source: ISA-Frost & Sullivan, 2010 Base Year: 2010

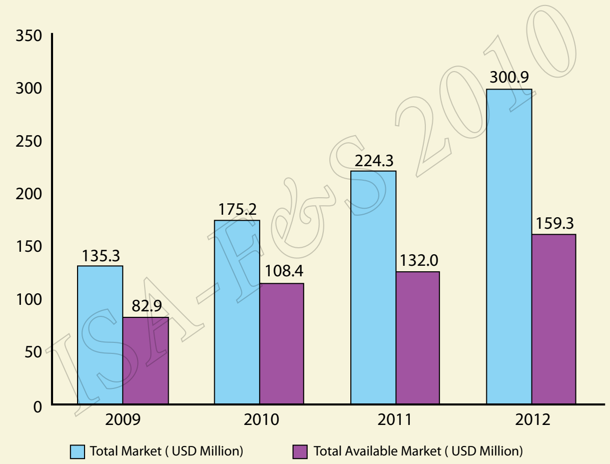
Key drivers:

- TM: Accelerated replacement of CRT TV with FPD TV
- TAM: Increasing proportions of local manufacturing of LCD TV and Set top boxes.

Year	TM US$ million	TAM US$ million	Manufacturing Index (MI:TAM/TM)
2010	386.7	160.2	0.41
2012	576.9	266.8	0.46
CAGR (2010-12)	22.1%	29%	

- **Automotive electronics:**

Indian Automotive Electronics semiconductor market: TM and TAM revenue forecasts, 2009-2012



Source: ISA-Frost & Sullivan, 2010 Base Year: 2010

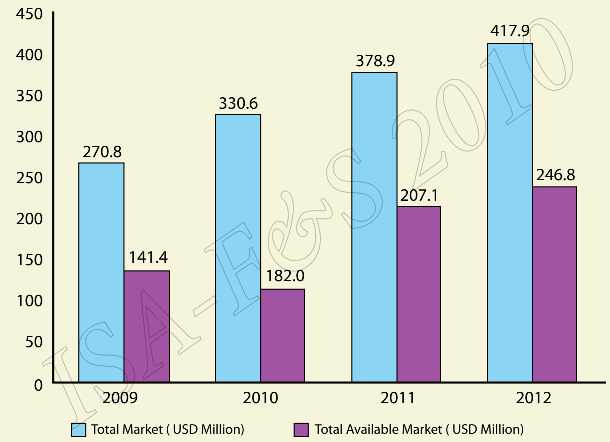
Key drivers:

- TM: Digitization of controls and expanding inclusion of safety and sophistication features.
- TAM: Evolving trend of localization in product procurement by Auto OEMs.

Year	TM US$ million	TAM US$ million	Manufacturing Index (MI:TAM/TM)
2010	175.2	108.4	0.62
2012	300.9	159.3	0.53
CAGR (2010-12)	31.1%	21.2%	

- **Others (aerospace, defence, medical electronics, smart cards) electronics:**

Indian Other Electronics semiconductor market: TM and TAM revenue forecasts, 2009-2012



Source: ISA-Frost & Sullivan, 2010 Base Year: 2010

Key drivers:

- M: ID Programs & Welfare Schemes adopting Smart Cards crucial for TM revenue growth.
- TAM: Growing impetus for 'made in India' medical and defence equipment.

Year	TM US$ million	TAM US$ million	Manufacturing Index (MI:TAM/TM)
2010	330.6	182.0	0.55
2012	417.9	246.8	0.59
CAGR (2010-12)	12.4%	16.4%	

Share of application segments 2010 & 2011:

Segments	% share of TM		% share of TAM	
	2010	2012	2010	2012
IT & OA	31.3	30.0	19.1	15.7
Mobile devices	31.6	33.2	39.8	33.1
Telecommunications	18.9	19.4	20.1	29.9
Consumer electronics	5.9	5.9	5.1	5.7
Industrial electronics	4.3	4.2	6.7	6.8
Automotive electronics	2.6	3.0	3.5	3.4
Others electronics	5.0	4.3	5.7	5.3

Conclusions and future directions:

Following are some imperatives needed for bolstering growth in electronics manufacturing in the country:

- Change in strategy from "'Design led Manufacturing" to "Demand led Manufacturing"
- Promotion of export subsidies to create an environment for electronics exports
- PPP initiatives to develop "integrated electronics parks and clusters"
- Promotion of tax holidays and incentives for EMS companies investing in the country
- Policy to attract investment in setting up of ecosystem companies
- Identification and promotion of "killer application or product" segments for indigenous manufacturing – telecom equipment, mobile handsets, STB, LCD TV, LED lighting, medical devices, and auto-identification products, to name a few

Capitalizing on existing strengths to attract investments is a short-term strategy. However, the long-term vision of developing and sustaining a world-class electronics industry needs more concerted efforts and a planned strategy at the national level. As observed in most of the developed and aspiring countries, identifying and focusing on electronics as a priority sector and coming up with policies and initiatives focused on the industry has been a critical tool for success. Similarly, for the electronics industry to grow in India there is an immediate and pertinent need for the government to introduce a **National Electronics Development Plan (NEDP)**. This national strategy has to be formulated through discussions with key industry stakeholders including existing manufacturers and members of the SME sector, industry associations, respective government departments, and regulatory bodies. It must encompass strategies covering all the aforementioned factors and much more for encouraging the holistic development of the electronics ecosystem in the country.

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