

# China's Emergence In High Tech

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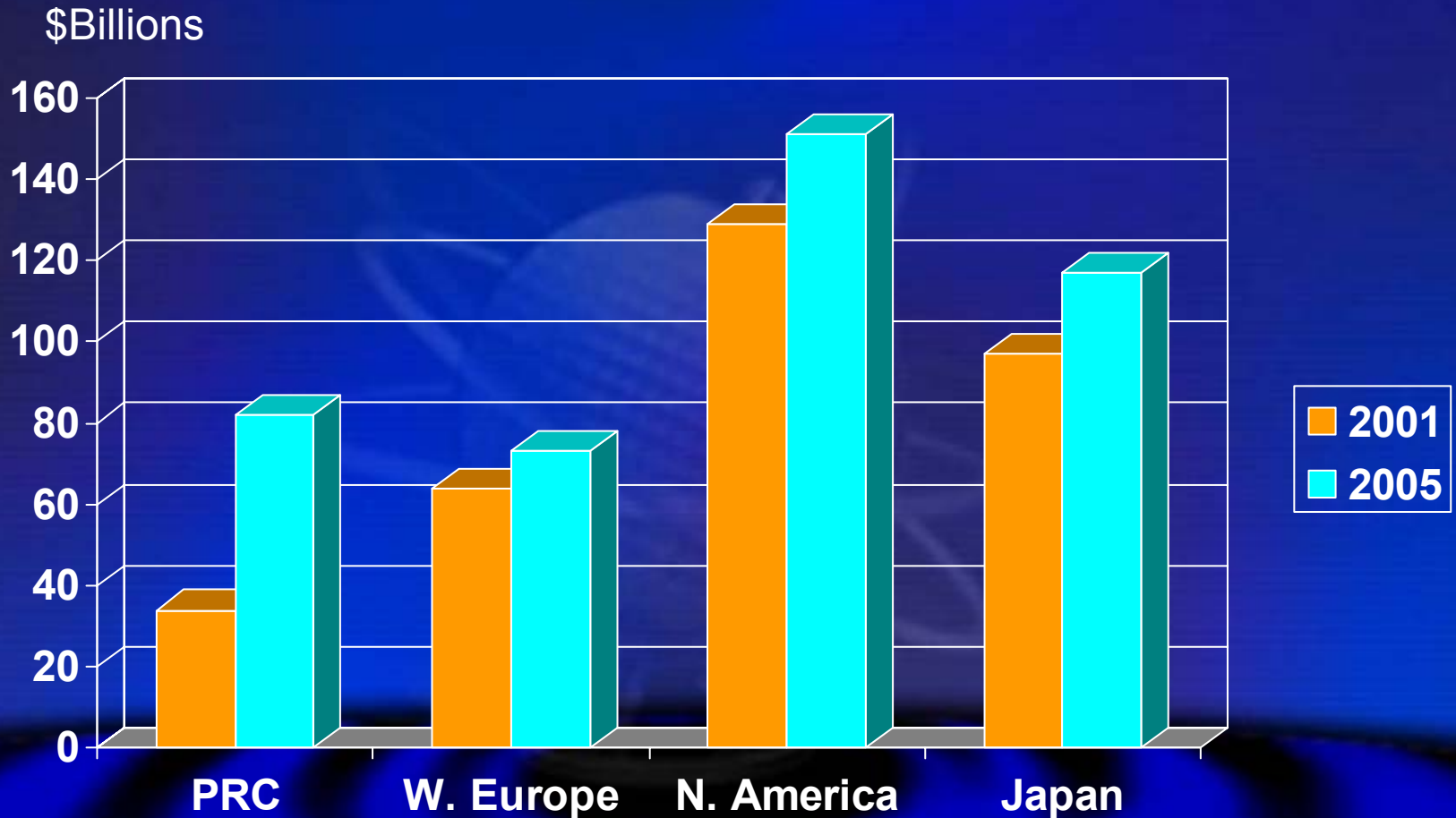
# Main Points

- China has emerged as a high tech force, both as a producer and consumer
- In high tech, the country has pursued a very open strategy.
- China began as an assembler, but is moving into design.
- The Mid-Pacific company is starting to happen.
- PRC is not without challenges.

# Intel In China

- Started in 1985
- Intel's #2 country market
- Chip Assembly/Test operations in Shanghai and Chengdu
- R&D in Shanghai and Beijing
- Sales and marketing offices in 14 cities
- >20 venture capital investments
- 3300 employees

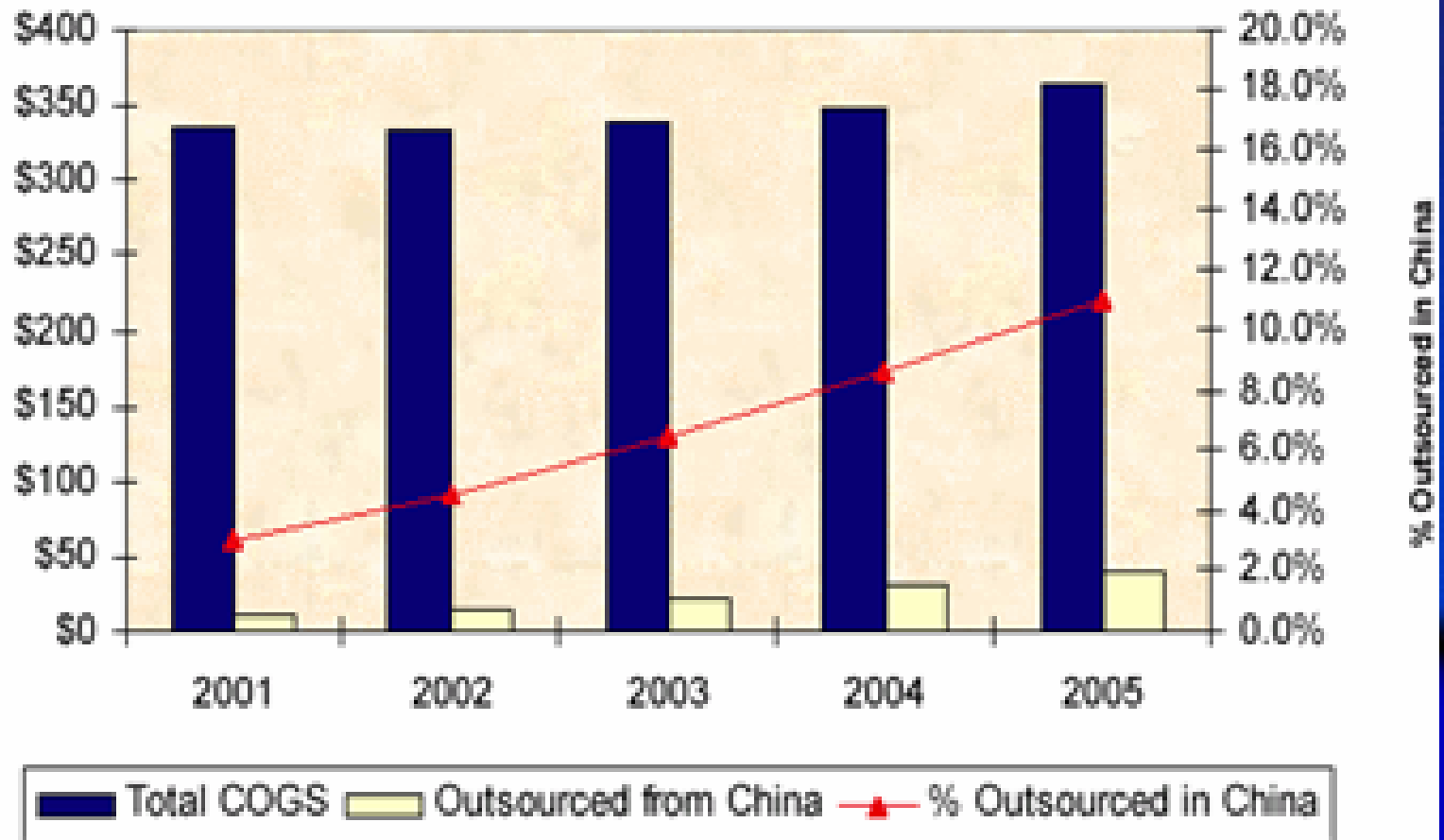
# Electronics Production



# Electronics Outsourcing in PRC

## 11% of COGS to be Outsourced in China by 2005

COGS and CM Revenue from Handset, Notebook, PC and Consumer Electronic Markets Worldwide (US\$B)



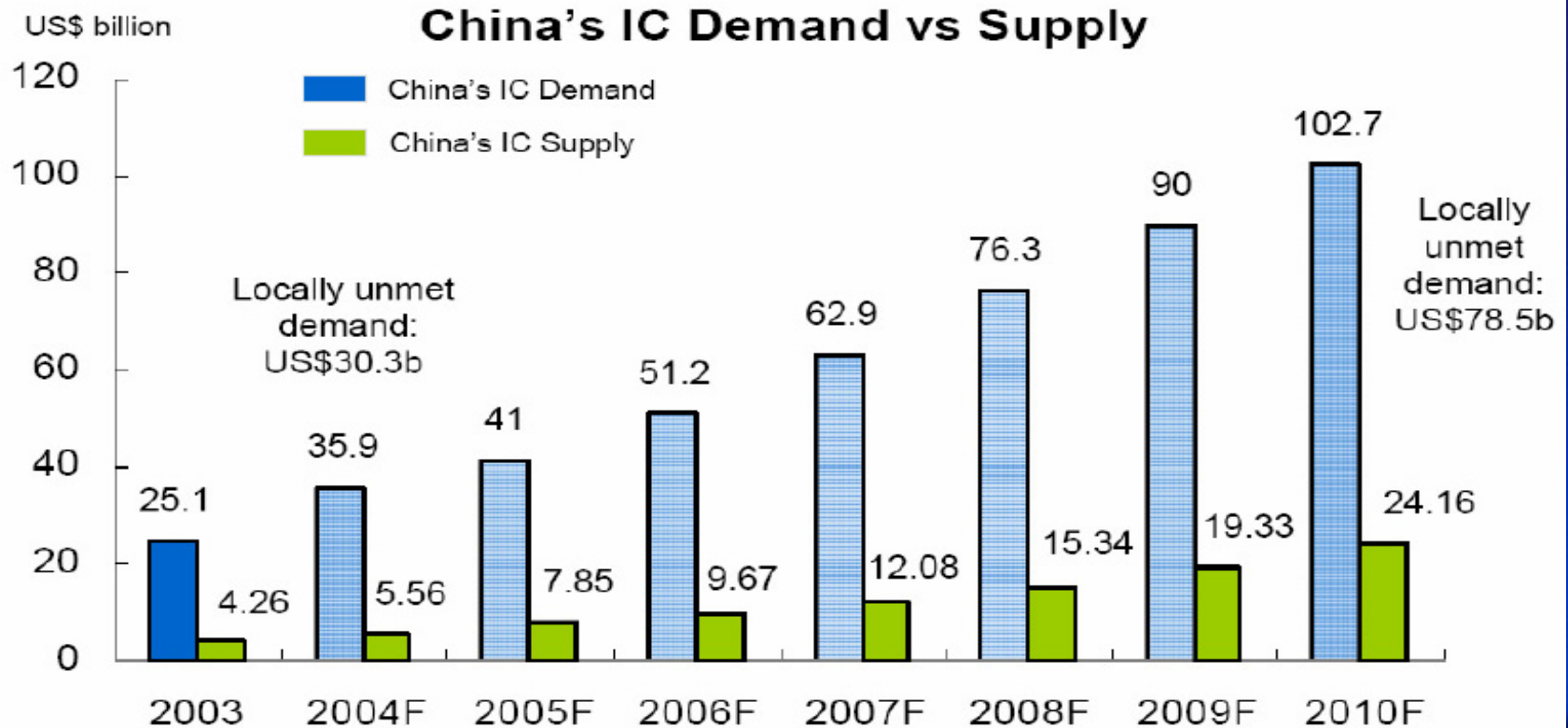
# Built on an Open Policy Base

- IT an “encouraged” industry for FDI
- World-class incentives
- Creating competition: breakup of China Telecom
- WTO accession
- Signatory to Information Technology Agreement: zero tariffs on IT.

# Good Policy Choices In 2004

- WAPI Wireless LAN Standard
  - Abandoned locally developed standard that is incompatible with the international standard
- 3G Technology Neutrality
  - Agreed to let its telecom carriers choose among available technologies; no mandate for Chinese-developed TDSCDMA.
- 2-Level Chip VAT
  - Settled WTO case by announcing plans to end lower VAT on domestically produced chips.

# IC Supply/Demand Imbalance

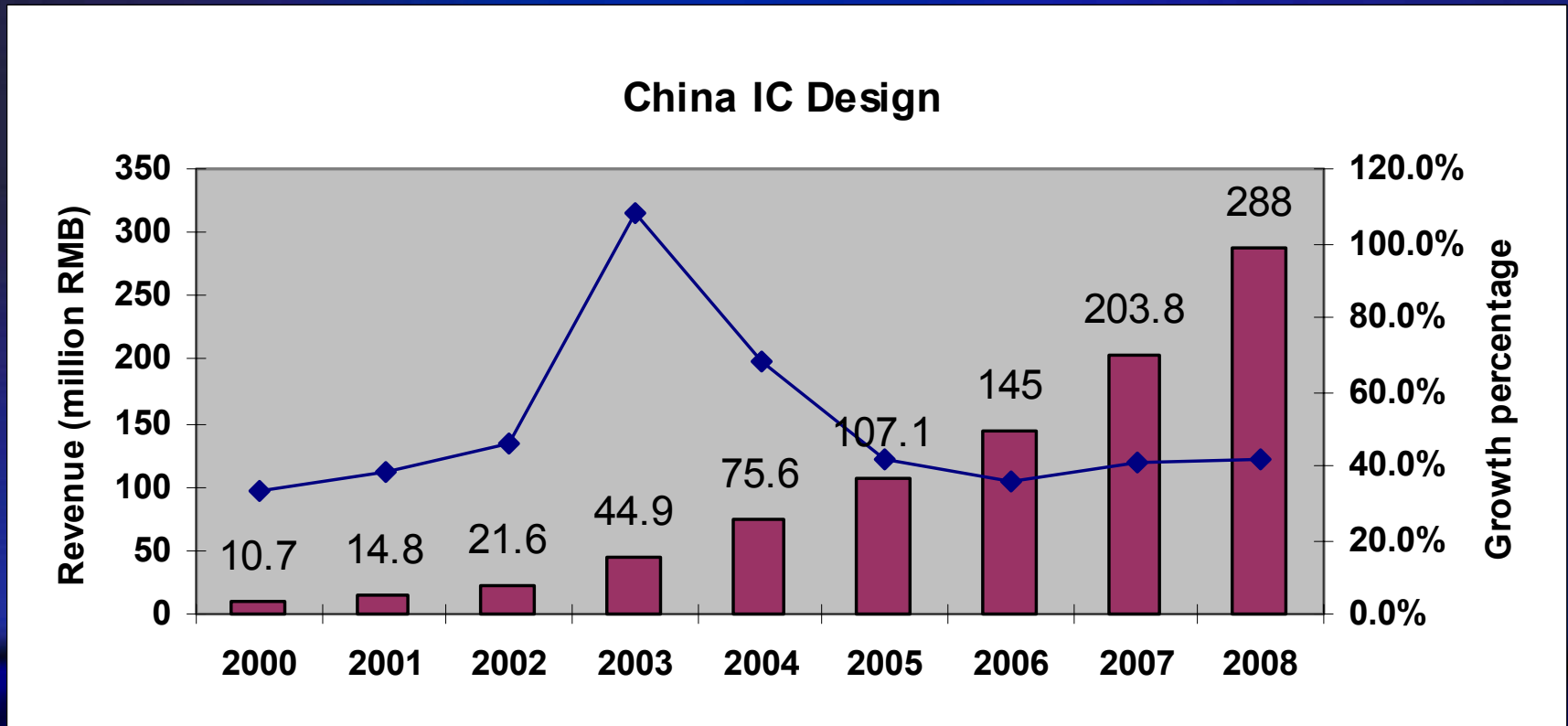


**At present, China can only meet less than 20% of its IC demand  
This demand-supply gap is projected to widen to US\$78.5b by 2010**

# Chip Factory Investments

- \$12 billion invested in last 20 years; 80% foreign.
- Expect cumulative \$36 billion by 2010. Foreign investment percentage to continue.
- 14 < 0.25 micron factories in operation , under construction, or planned.
- Very attractive incentive packages
  - 5 years, no income tax
  - 5 years, ½ income tax
  - Free land

# China IC Design: Rapid Growth



# China PC Makers: >50% Share of Home Market

**Table 1: China's Top 10 PC Vendors in 2003 Ranked by Unit Shipments**

Rank	Company	PC Shipments (Thousands of Units)	Market Share
1	Lenovo	3,545	27%
2	Founder	1,314	10%
3	Tongfang	995	8%
4	Dell	860	7%
5	IBM	642	5%
6	Hewlett-Packard	442	3%
7	TCL	410	3%
8	Acer	215	2%
9	Hedy	200	2%
10	Great Wall	172	1%
	Others	4,245	33%
	Total	13,040	100%

Source : iSuppli Corp. | February 2004



# China as Cell Phone Consumer/Exporter

- World's largest cell phone market: 305 million subscribers; PRC companies at 50% market share.
- PRC largest exporter: 73.41 million units, first 7 months of 2004.
- 96% of exports are JVs' products.
- 40% of Nokia's worldwide units were designed in Beijing; assembled worldwide.

# New: The Mid-Pacific Company

- SMIC Chip Foundry: Based in Shanghai; Incorporated in Cayman Islands, Listed on NASDAQ, International staff, Funding from PRC, U.S. Taiwan, Japan, Singapore
- UTStarcom: Based in Alameda, CA; founded by Chinese graduates of U.S. universities; listed on NASDAQ; \$2 billion in sales, primarily in China. R&D in U.S., China and India.
- North American Chinese Semiconductor Assn.: 3000 members/3000 business plans

# PRC Challenges

- Inadequate IP Protection
  - TSMC sues SMIC in the U.S.
- Avoid Local Standards
- Underdeveloped capital markets
- Energy infrastructure: stable supply critical for chip-making