

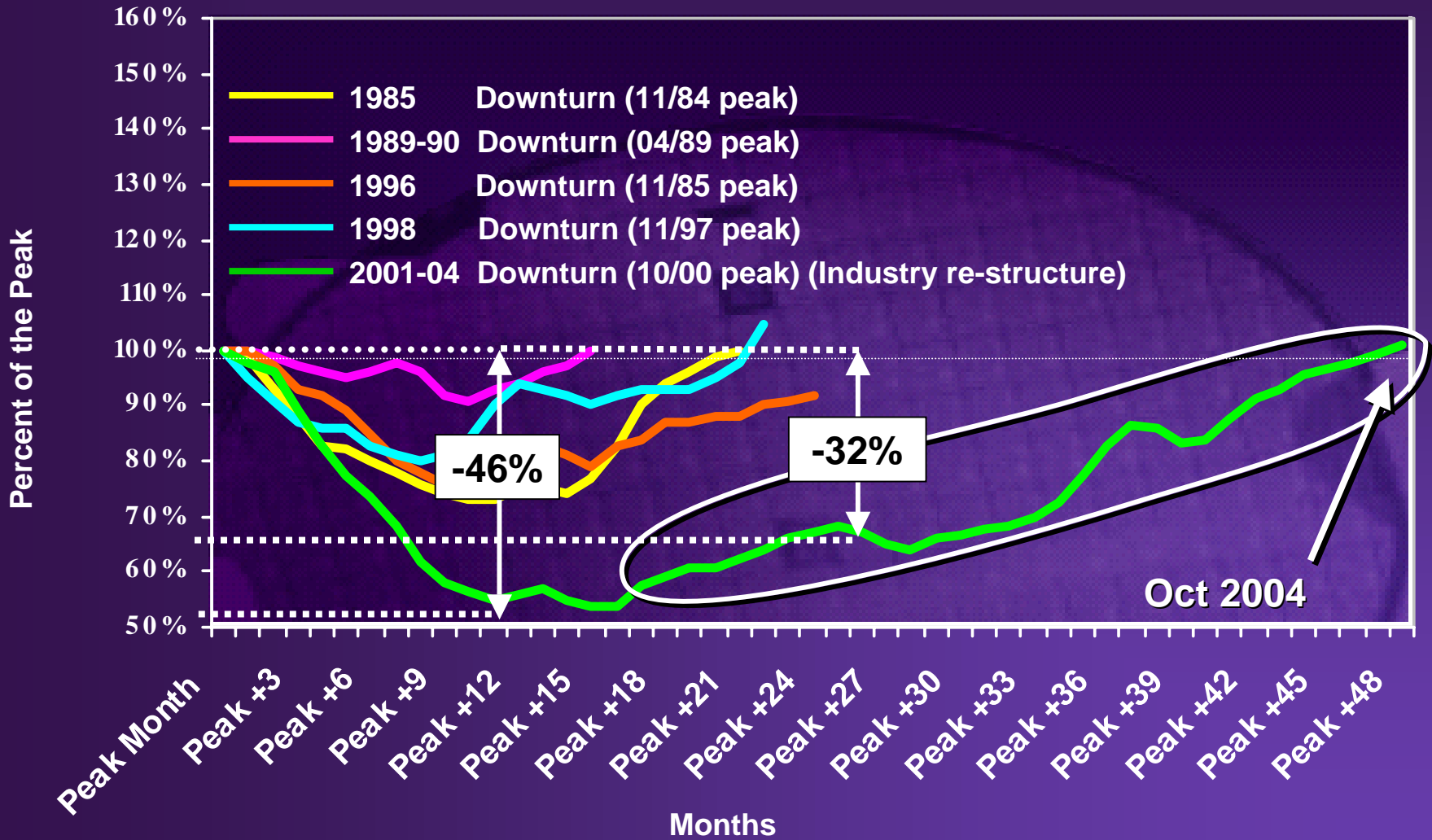
Converge to Silicon Success

Challenges In IC Design: An EDA Perspective

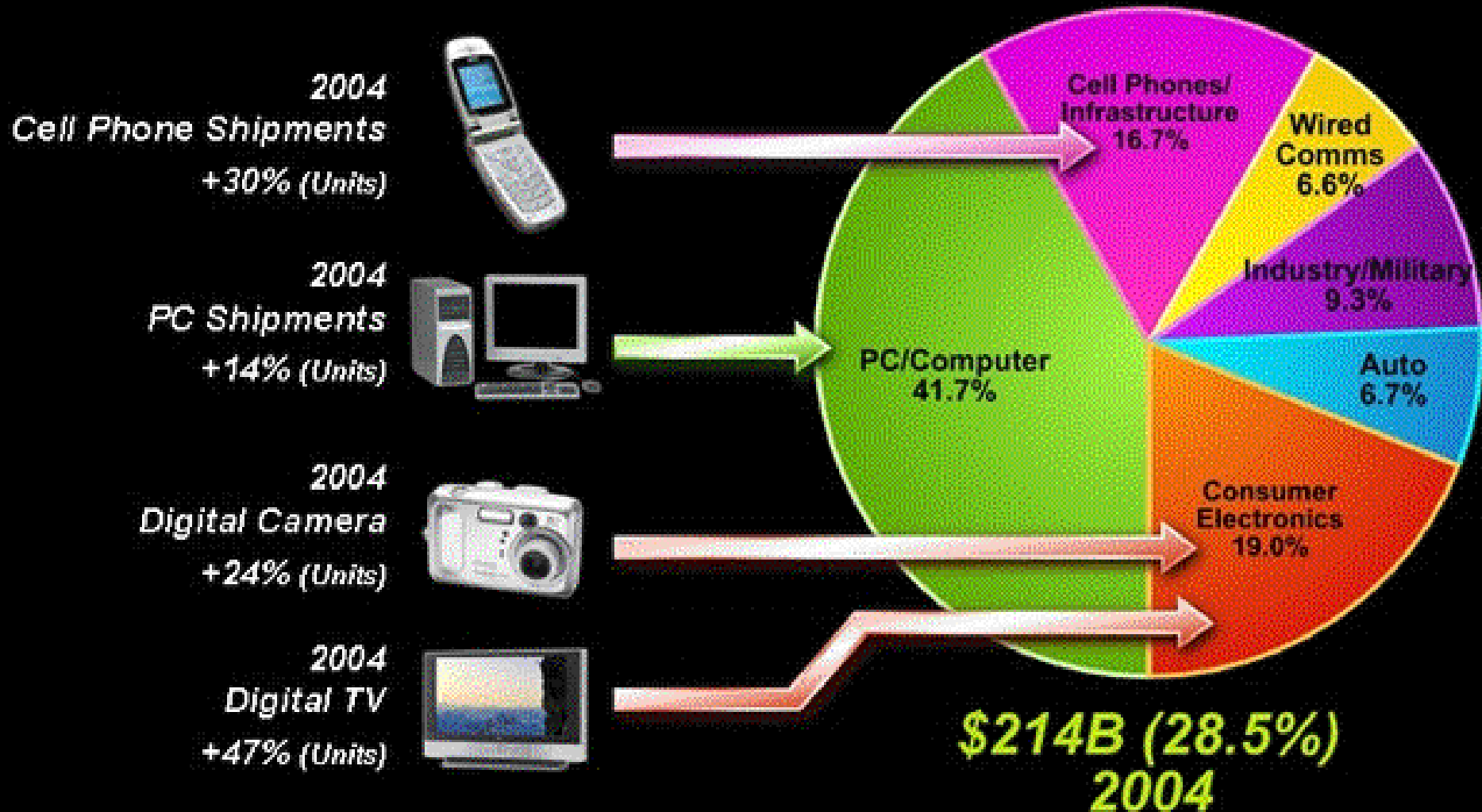
**Dr. Paul Lo
VP Engineering,
Implementation Group**

SYNOPSYS

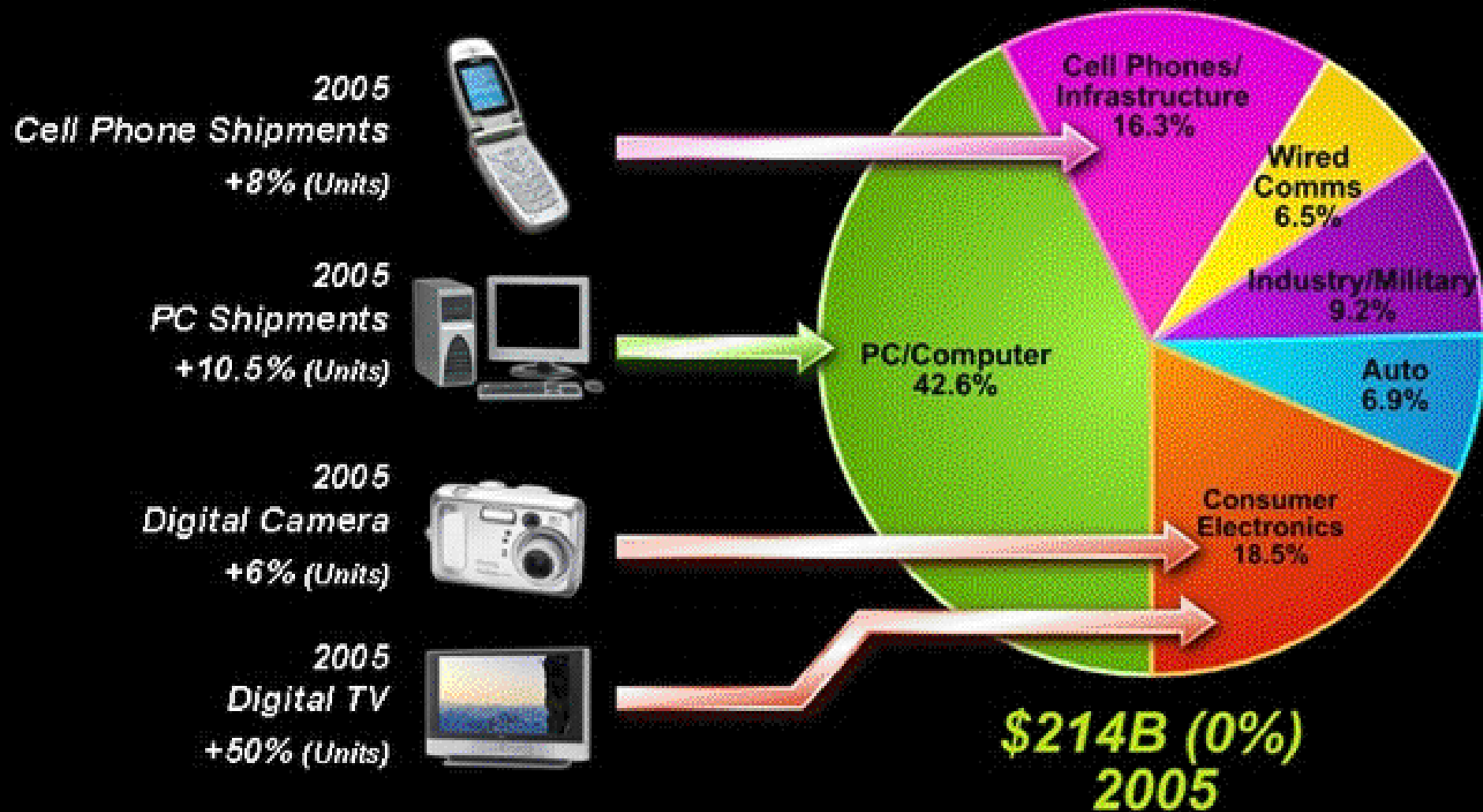
Semiconductor Sales Cycles



Semiconductor Growth: 2004

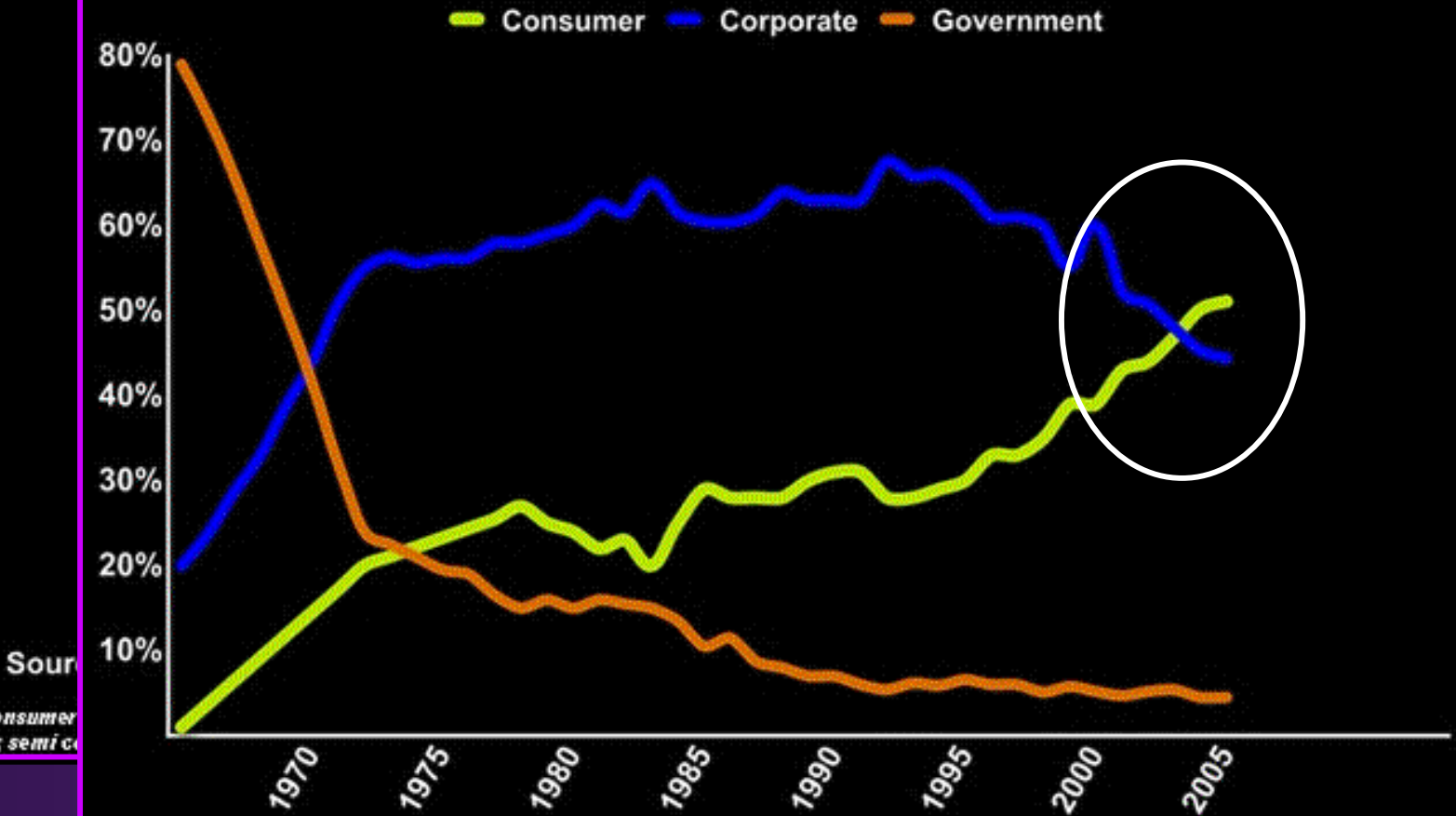


Semiconductor Growth: 2005



2004 Semiconductor Use by End-User

Semiconductor Market Share



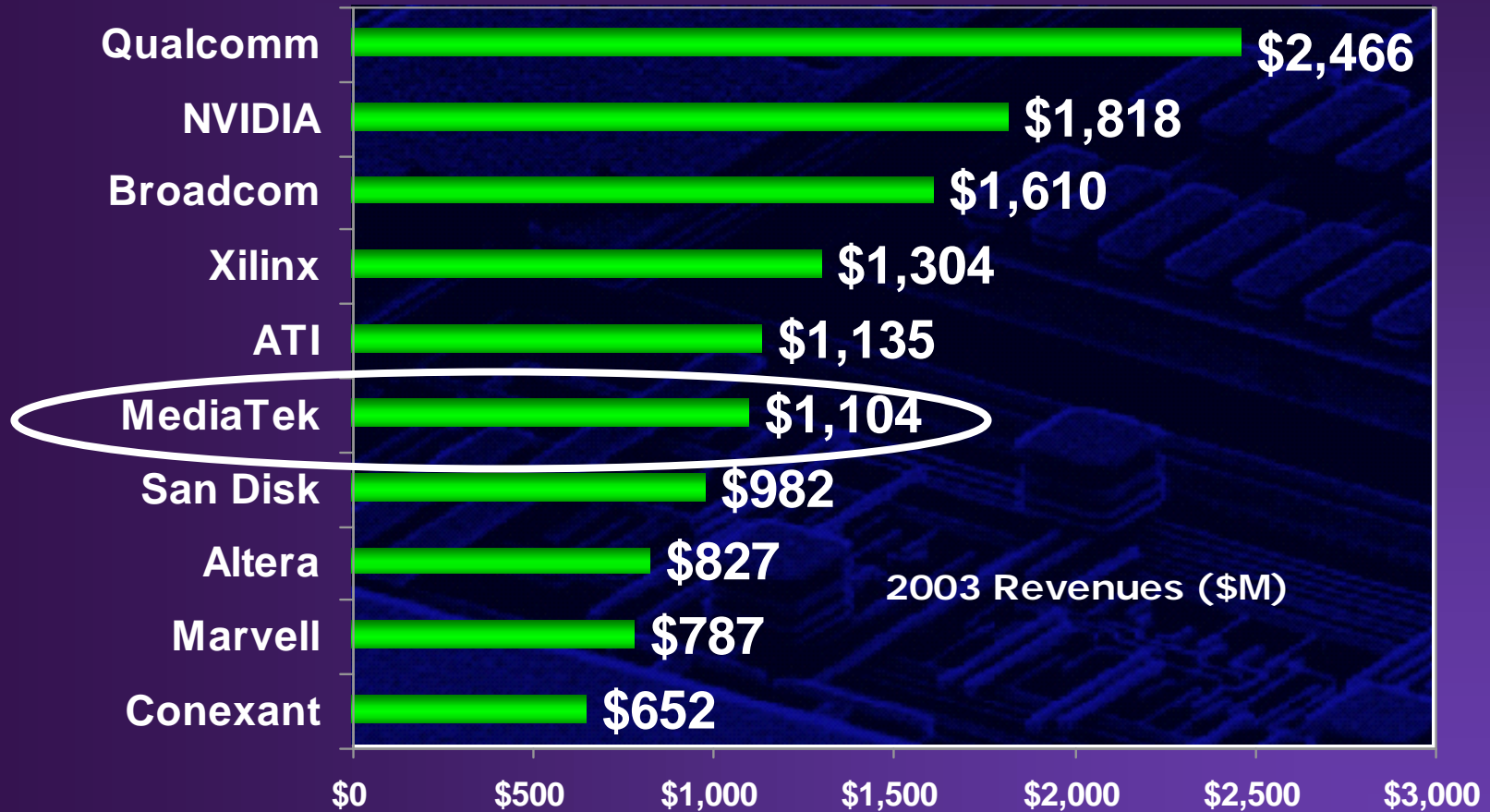
Source:

Note: *Consumer handsets; semi c

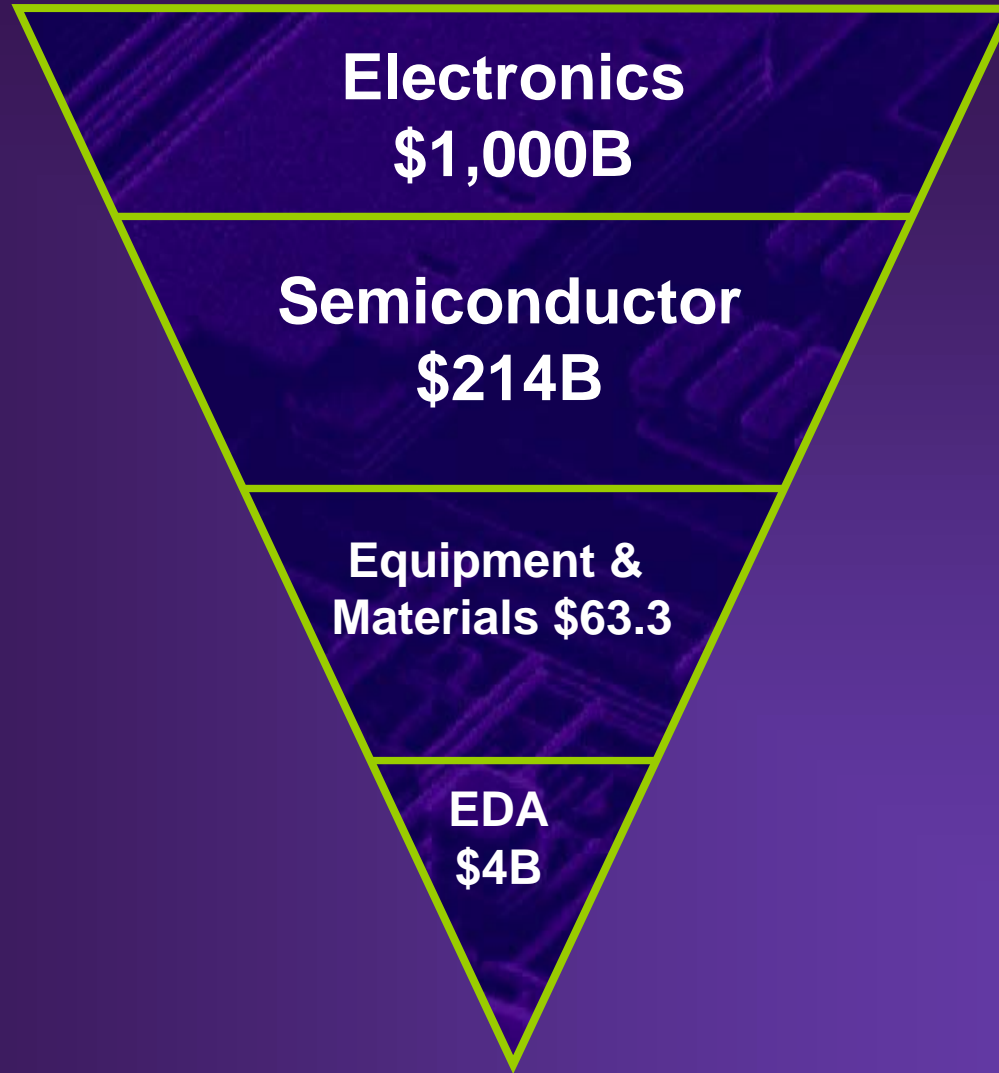
2003 Top 10 Pure Play Foundries (\$M)



Leading Fabless IC Suppliers (2003)



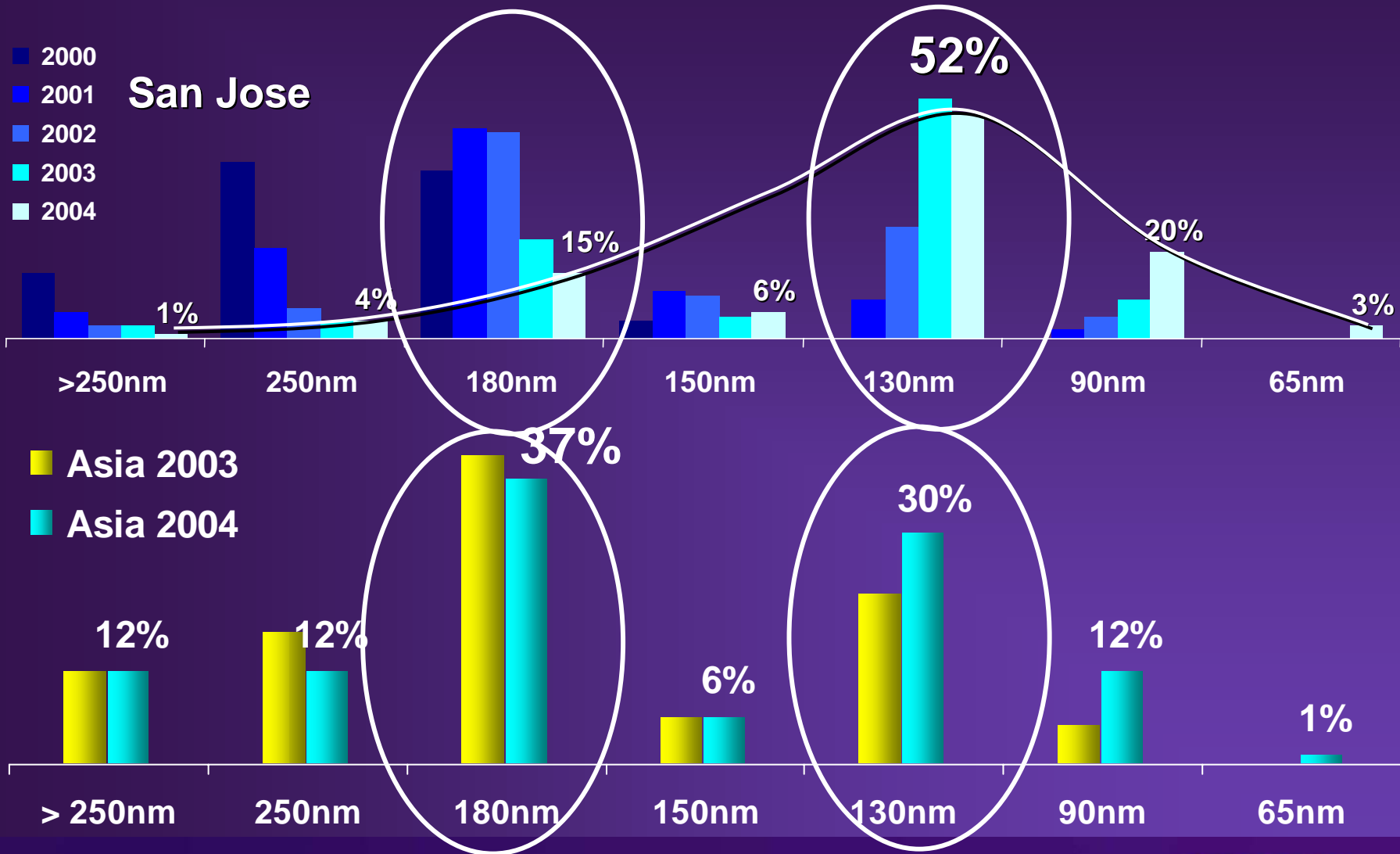
EDA Is STILL At the Heart of Electronics



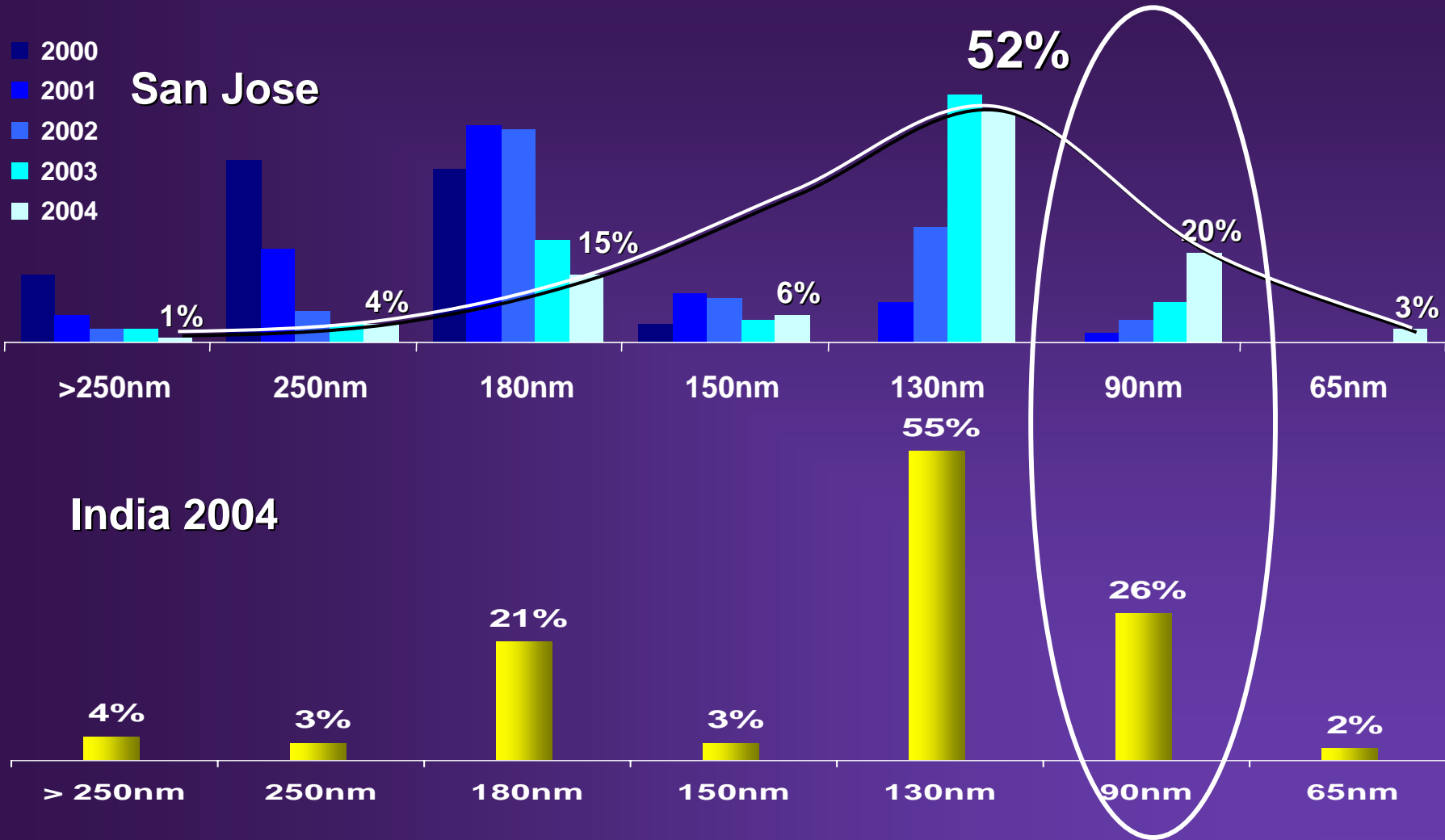
A background image showing a close-up of a microchip or integrated circuit, with a dark purple gradient overlay on the right side.

What's Going on with our Customers' Designs?

Designs Keeps Getting Bigger & Faster



Aggressive Design in India

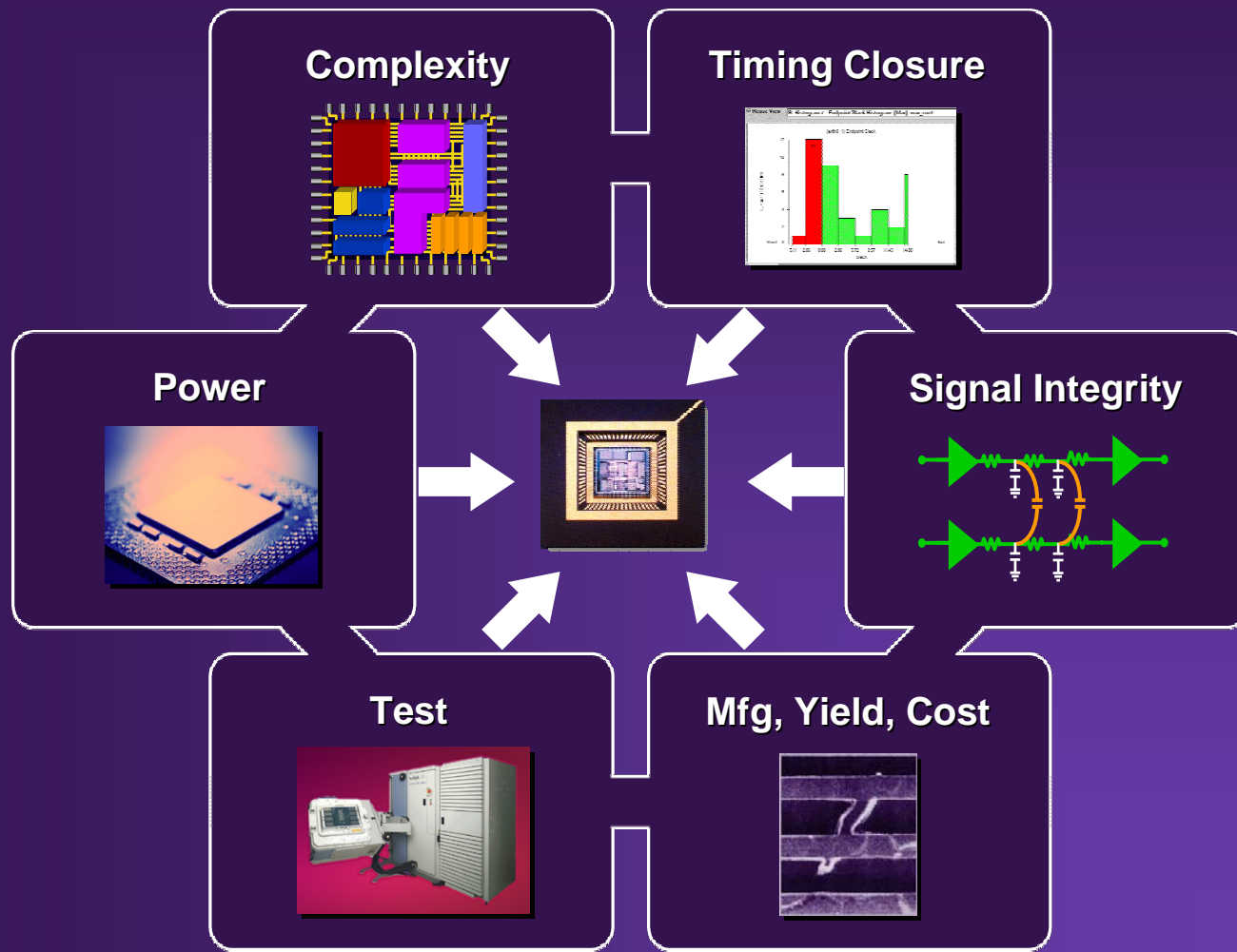


90-nm, 65-nm, and 45-nm SoC Design Statistics

	8/03	11/03	2/04	5/04	8/04
90-nm Designs	118	132	146	194	227
90-nm Tape-Outs	21	41	59	68	80
90-nm SNPS P&R	14	29	39	42	51
65-nm Designs	8	14	16	21	29
65-nm Tape-Outs				1	1
45-nm Designs				1	3

SoC Design Challenges

Are Now Increasingly Interrelated



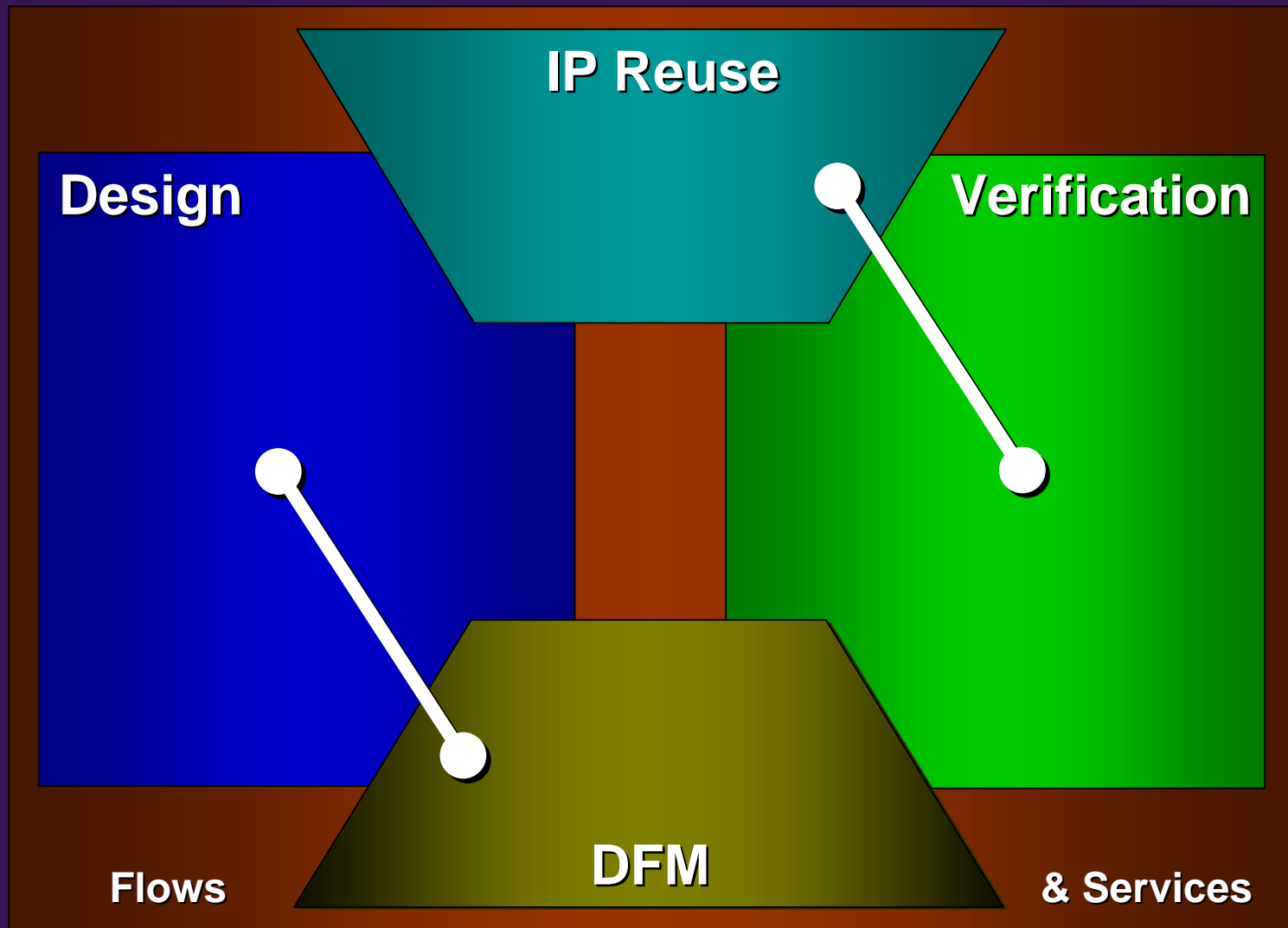
QOR

TTR



COR

The Strength of Synopsys



IC Design in Taiwan

- SNPS in Taiwan since 1990
 - Offices in Taipei & Hsinchu
 - ~ 150 employees
- New VDSM EDA research and development center
- Investing in advantageous industry partnerships for SoC designs
- SoC-critical IP increasingly available
- Developing necessary engineering resources
- Partnerships with foundries (TSMC, UMC)



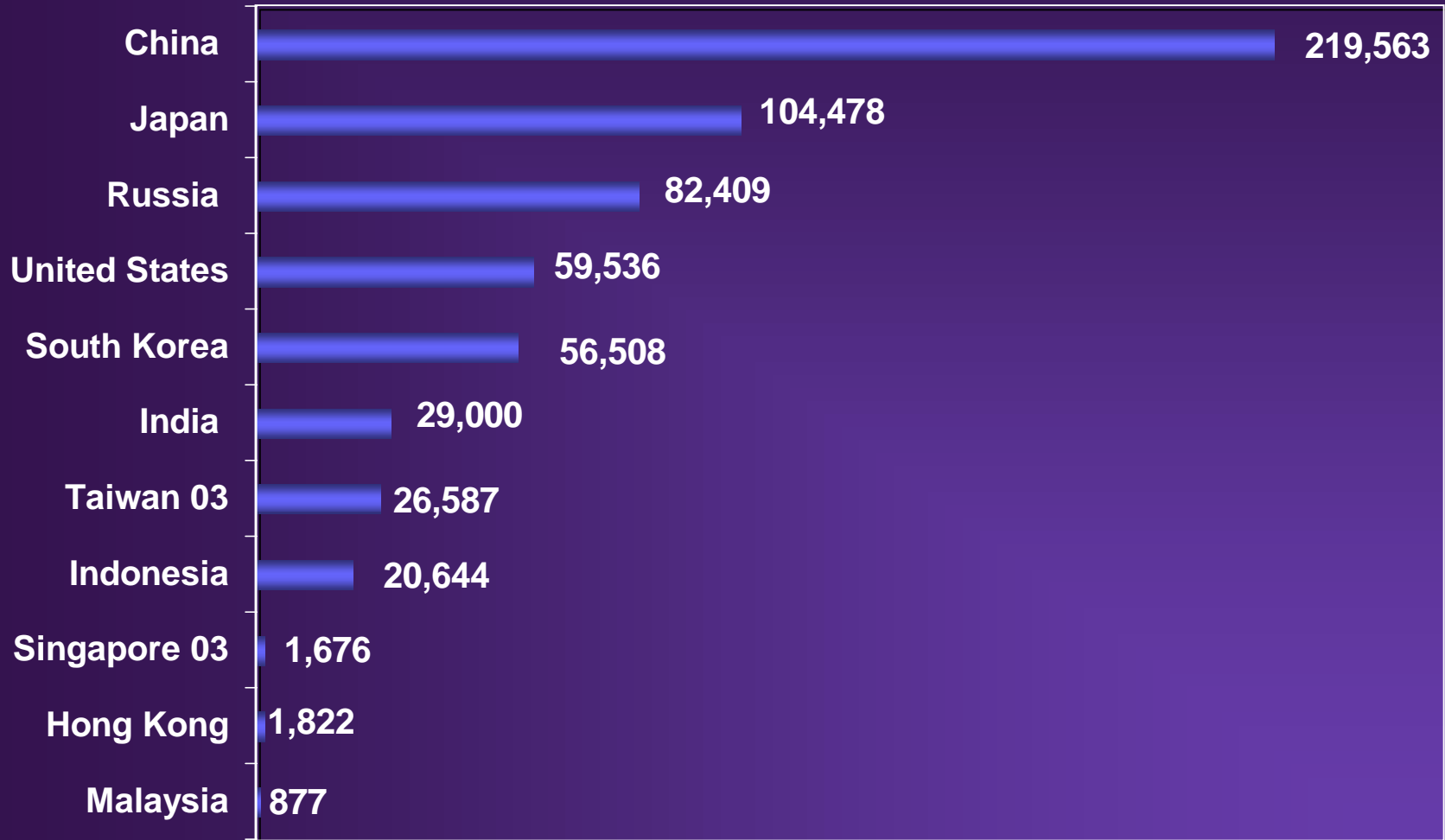
IC Design In China

- **SNPS in China since 1995**
 - **Offices in Shanghai, Beijing, Shenzhen, Hong Kong and Xian**
 - **~ 250 employees**
- **Partnering in design initiatives:**
 - **9 National IC design incubation centers**
 - **University programs at 30 leading universities**
 - **Partnerships with Chinese Academy of Science, Datang Telecom, and SMIC**



Critical Mass of Education & Expertise

Number of First Undergrad Engineering Degrees



Source: National Science Foundation, Science & Engineering Indicators – 2002
2003

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