

# Mentor Graphics Overview


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November 2012

**Mentor  
Graphics®**



**Who We Are**  
Where We Are  
Why We Are Here  
How We Help

# Mentor Graphics

- Electronic design automation (EDA) industry pioneer and global innovator of advanced design solutions
- Founded in 1981 – Over 30 years of EDA history
- Revenues - ~\$1,015m in 2011
- Market Share ~24% of worldwide EDA market
- Second ranking in the EDA industry, fastest growing of the “Big 3” EDA companies
- #1 EDA company in EMEA



# Mentor Graphics – Our Vision and Mission

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- „Mentor Graphics Corporation is a **technology leader** in electronic design automation (EDA). „
  - Focus on **building #1 product positions** and technology leadership through internal development (over 30% R&D re-investment, over 500 patents)
  - Seek **acquisitions** that incrementally build on #1 product positions (e.g. PCB Manufacturing – Valor)
  - Expand technologies to **adjacent markets** (e.g. automotive, embedded software)
-

# Expanding #1 Market Positions from 3 to 17

**1993**

**PCB Design**

- Schematic Capture

**Verification**

- Gate Simulation

**Other Tools**

- Frameworks

**1996**

**PCB Design**

- Schematic Capture

**Verification**

- Gate Simulation
- Coverification
- VHDL Simulation

**DFT**

- ATPG

**Other Tools**

- Frameworks
- IP Softcores

**2001**

**PCB Design**

- Schematic Capture
- PCB Layout
- PCB Signal Integrity

**Verification**

- Emulation
- Coverification
- Mixed-Signal Sim.

**DFT**

- ATPG

**IC Backend**

- DRC/LVS
- RET

**Other Tools**

- Graphical Capture
- Cable Harness

**2005**

**PCB Design**

- PCB Layout
- PCB Signal Integrity

**Verification**

- Formal Analysis
- Coverification
- Mixed-Language Sim.
- Mixed-Signal Sim.

**DFT**

- ATPG

**IC Front-End**

- Graphical Capture
- ESL Synthesis

**IC Backend**

- DRC/LVS
- RET

**Other Tools**

- Cable Harness

**2010**

**PCB Design**

- PCB Layout
- PCB CAM
- PCB Signal Integrity
- PCB Power Integrity
- PCB Thermal Analysis

**Verification**

- Formal Analysis
- Coverification
- Mixed-Signal Sim.
- Intelligent Testbench

**DFT**

- ATPG
- BIST

**IC Front-End**

- Graphical Capture
- ESL Synthesis

**IC Backend**

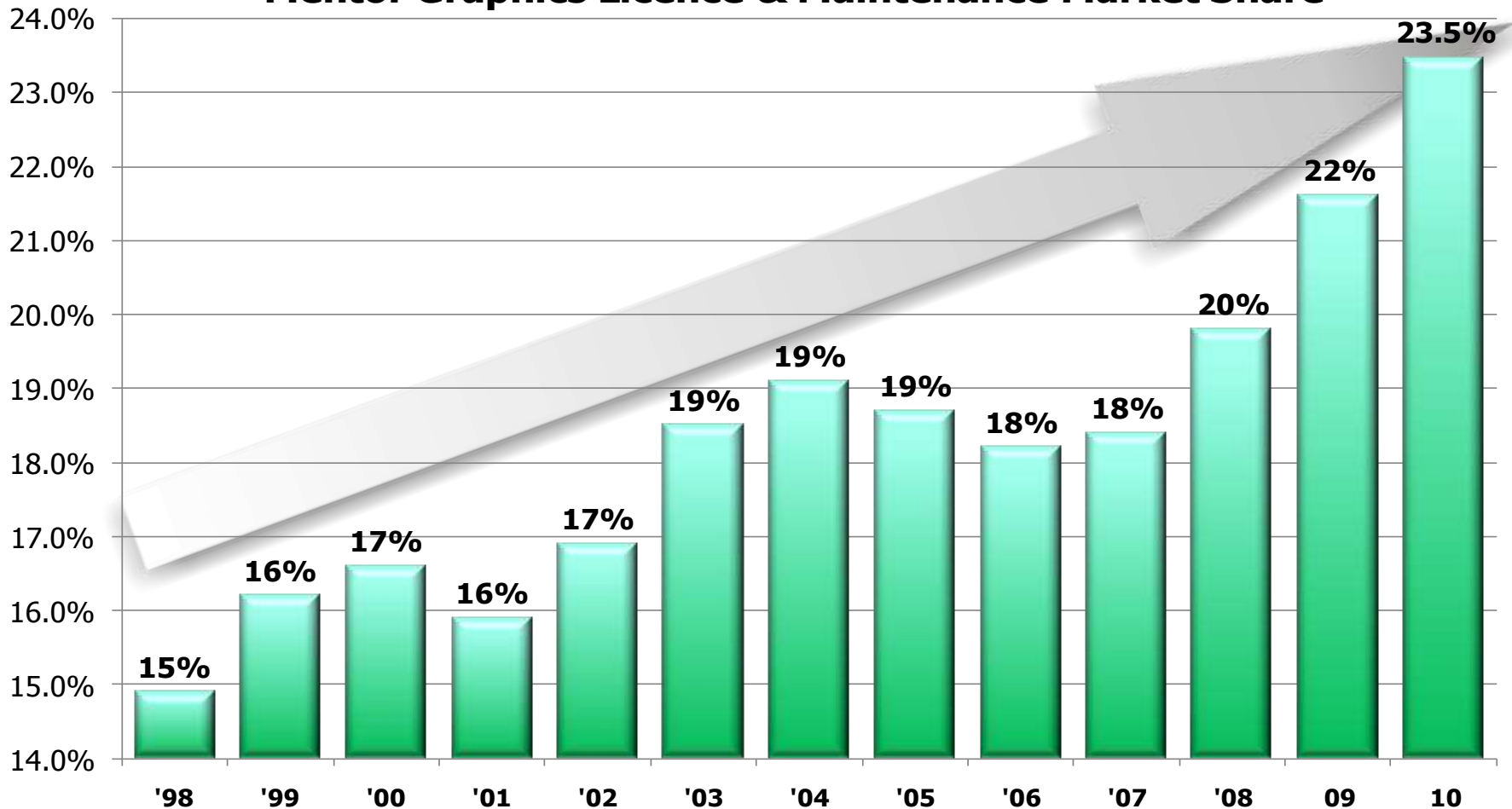
- DRC/LVS
- RET
- DFM


**Other Tools**

- Cable Harness

# Mentor Continues to Gain Market Share

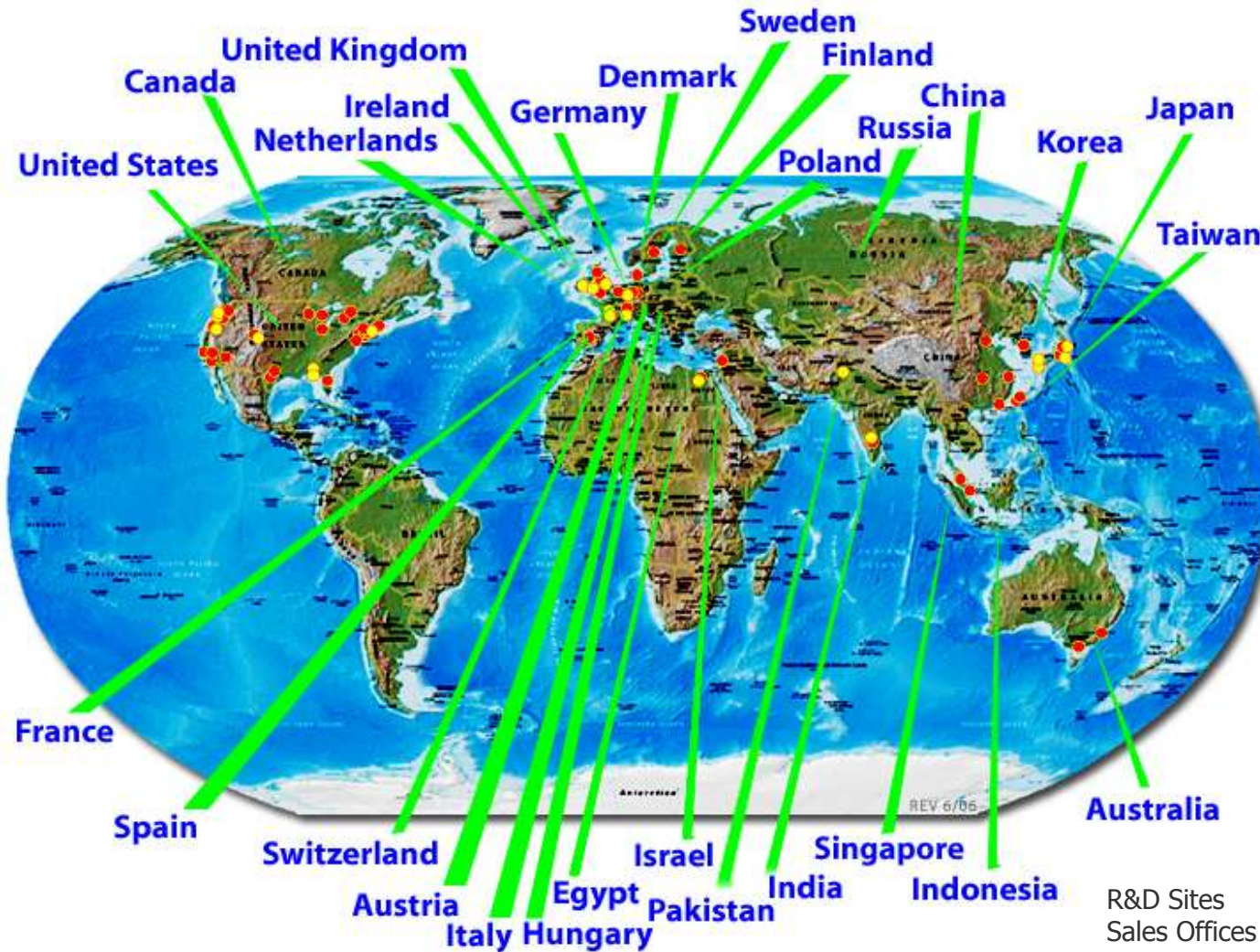
## Mentor Graphics Licence & Maintenance Market Share



The background features a dark blue gradient with numerous thin, bright green and blue light rays radiating from the top and bottom edges towards the center. The text is centered in the middle of the frame.


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**Where We Are**  
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# Mentor Graphics Around the World



- 60% R&D outside NA
- 4700 employees
- 30 R&D locations
- 44 sales offices
- + over 70 expert distributors





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# What Our Customers Keep Telling Us

Reduce Time to Market and Improve Predictability



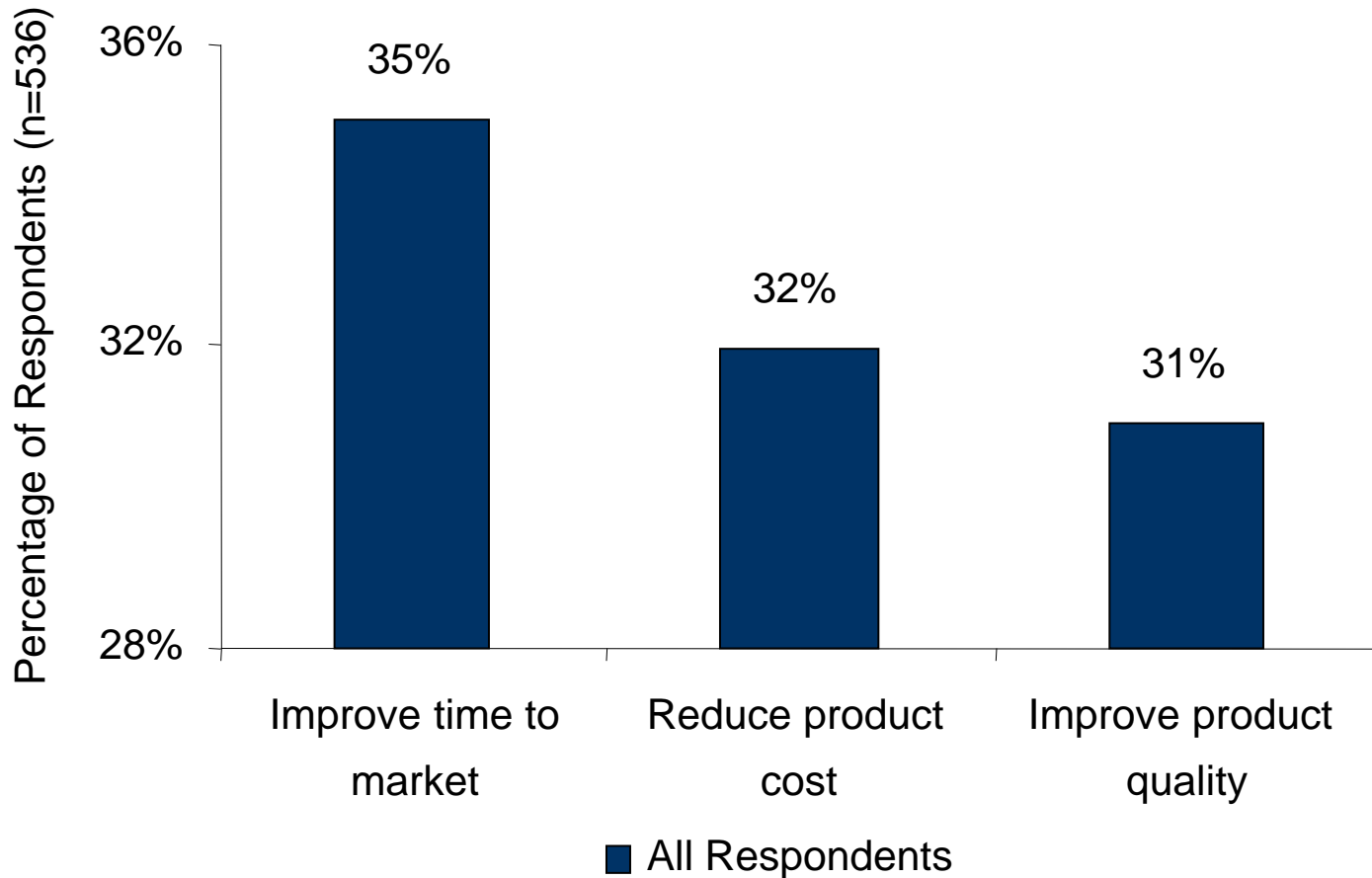
Global Cooperation through Data Management, Reuse and Automation



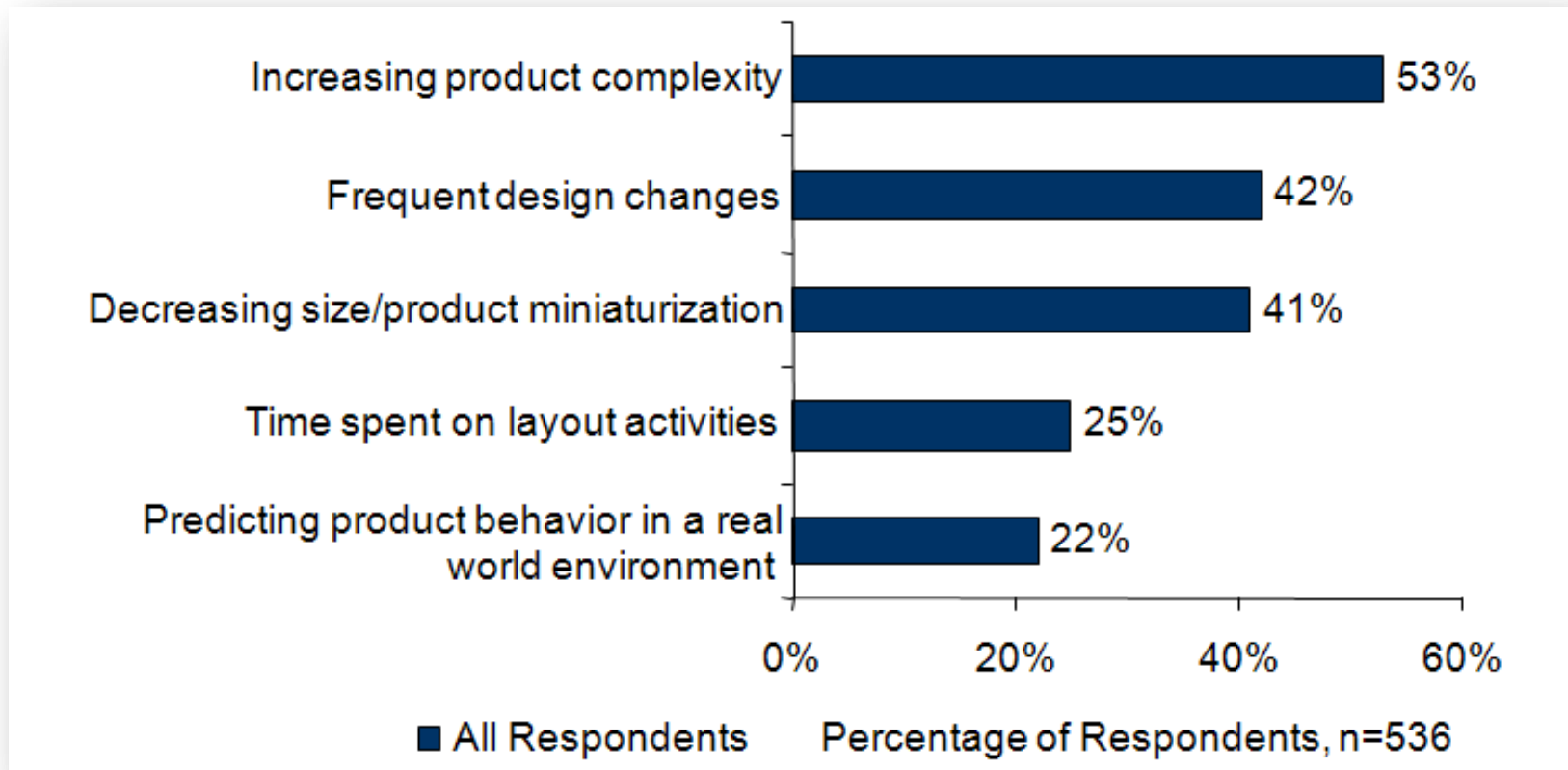
Enable Product Differentiation and Cost Reduction



# Example PCB: Business Drivers for PCB Design Improvements



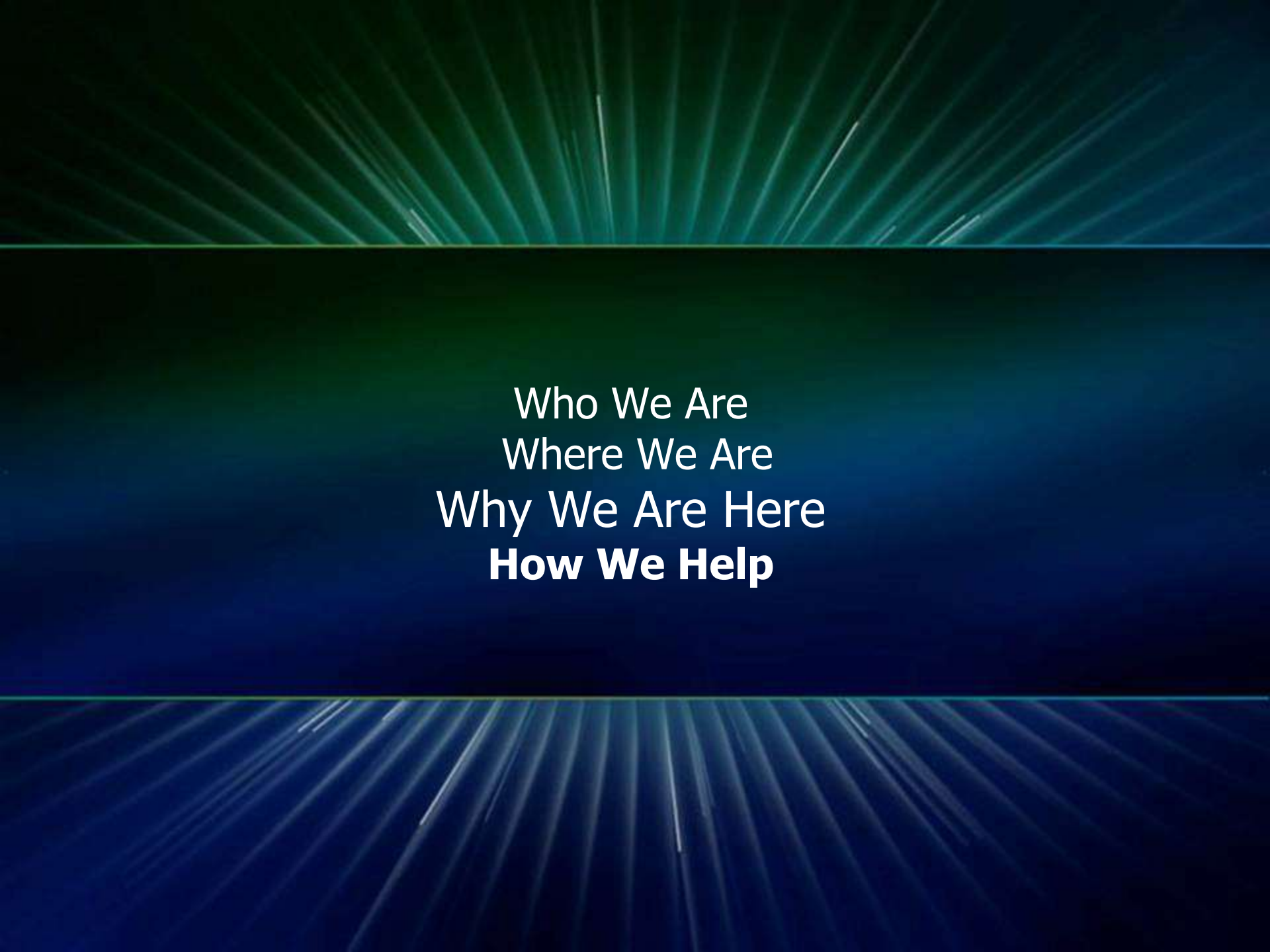
# Why the Hassle with PCB Design?



**→ PCB is often the most expensive hardware item in an end-product**

# Design Trends for PCBs – One Way Only!

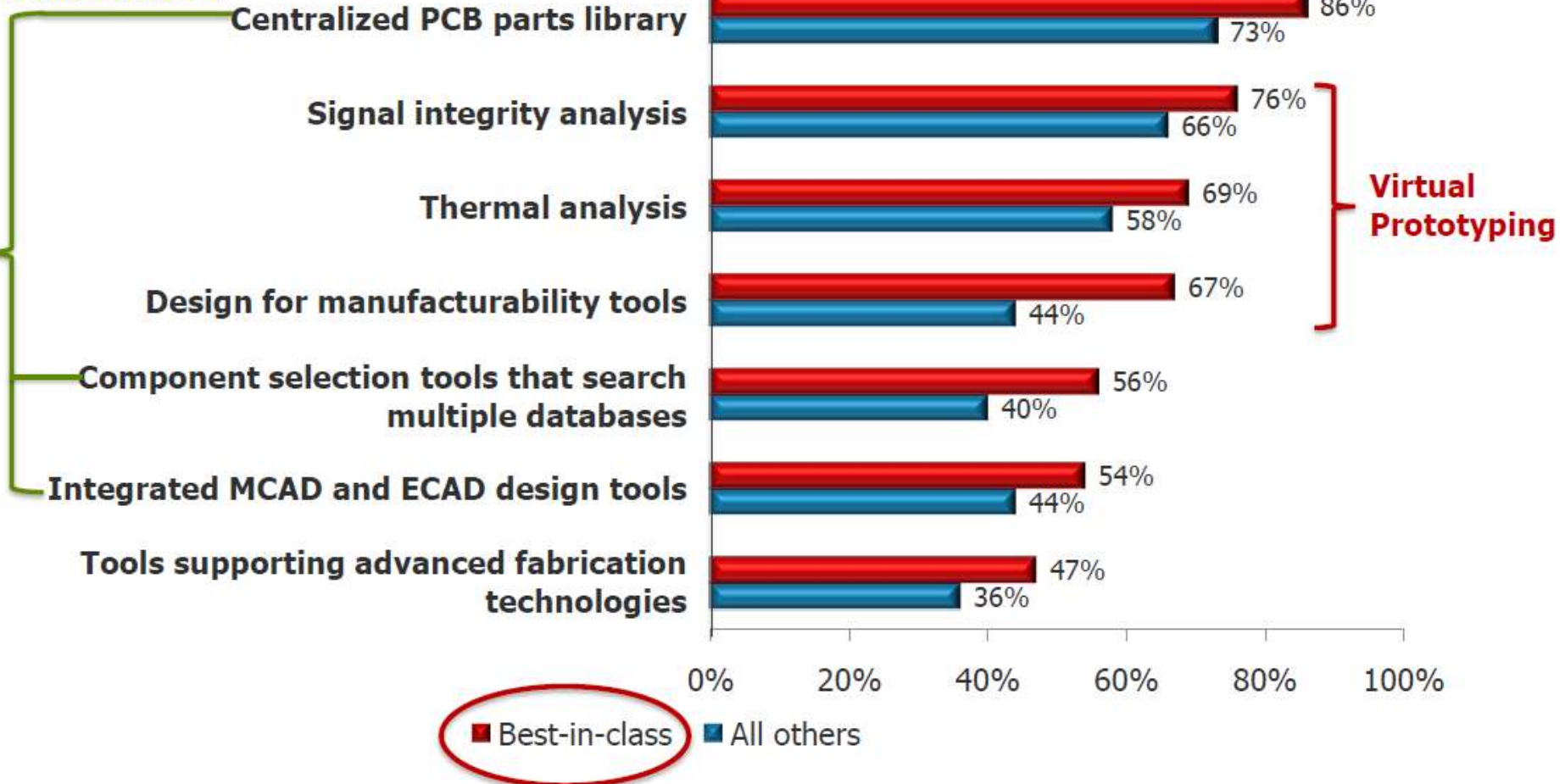
Design Trend	15 years ago	10 years ago	2011
Min trace/spacing (th)	6.5/6.5	5/5	4/4
Total metal layers	8	10	14
Total area (in <sup>2</sup> )	101	76	81
# Nets	1465	1544	2832
# Pin-to-pin connections	5190	7661	13573
# Components	649	1120	3518
# Component pins	4214	5790	13314
Average leads / part	18	5	4
Average leads / in <sup>2</sup>		89	387



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# What Makes Companies Successful

## Concurrency/ Collaboration



# Addressing the Challenges: PCB Development

## Address today's technology challenges

### ■ Improved Time-to-Market

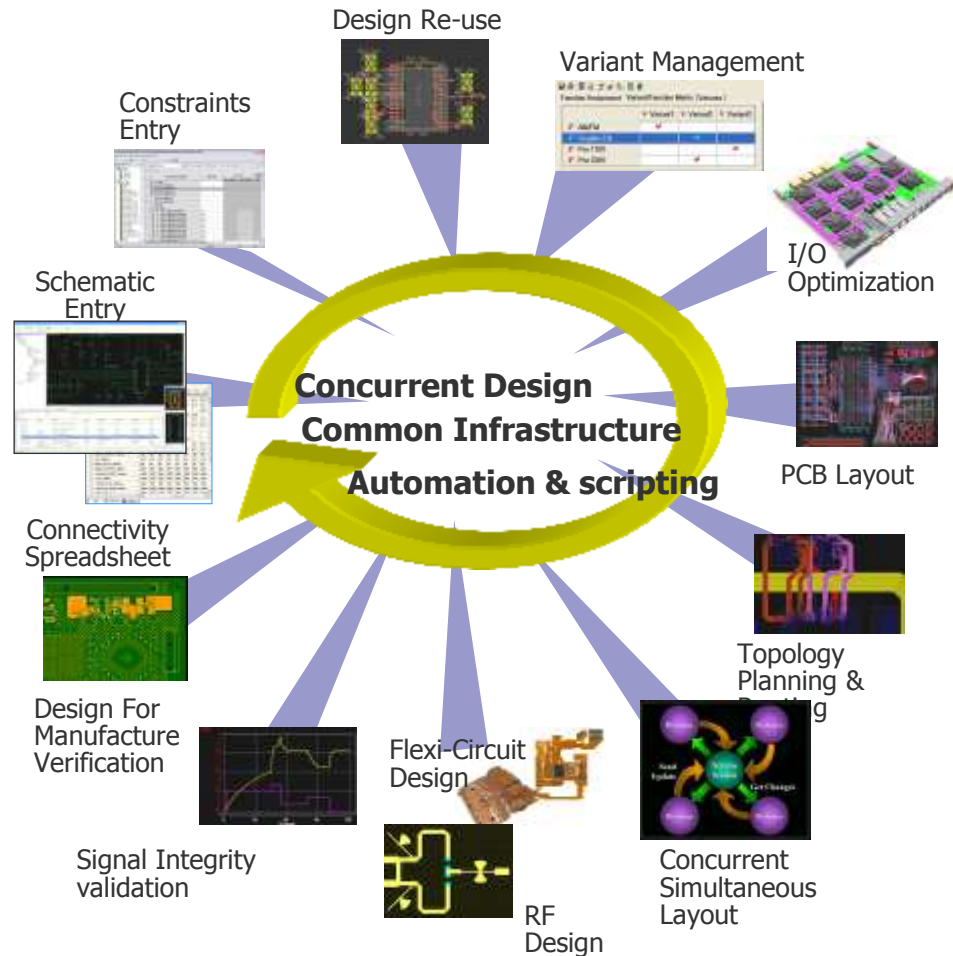
- Concurrent Design and Layout
- Parallel FPGA-PCB Design process
- "First time right" simulation solutions

### ■ Global Cooperation

- Component/Library Management
- Variant Management

### ■ Product/cost differentiation

- High-speed design
- Design Reuse
- DFM/Manufacturing solutions

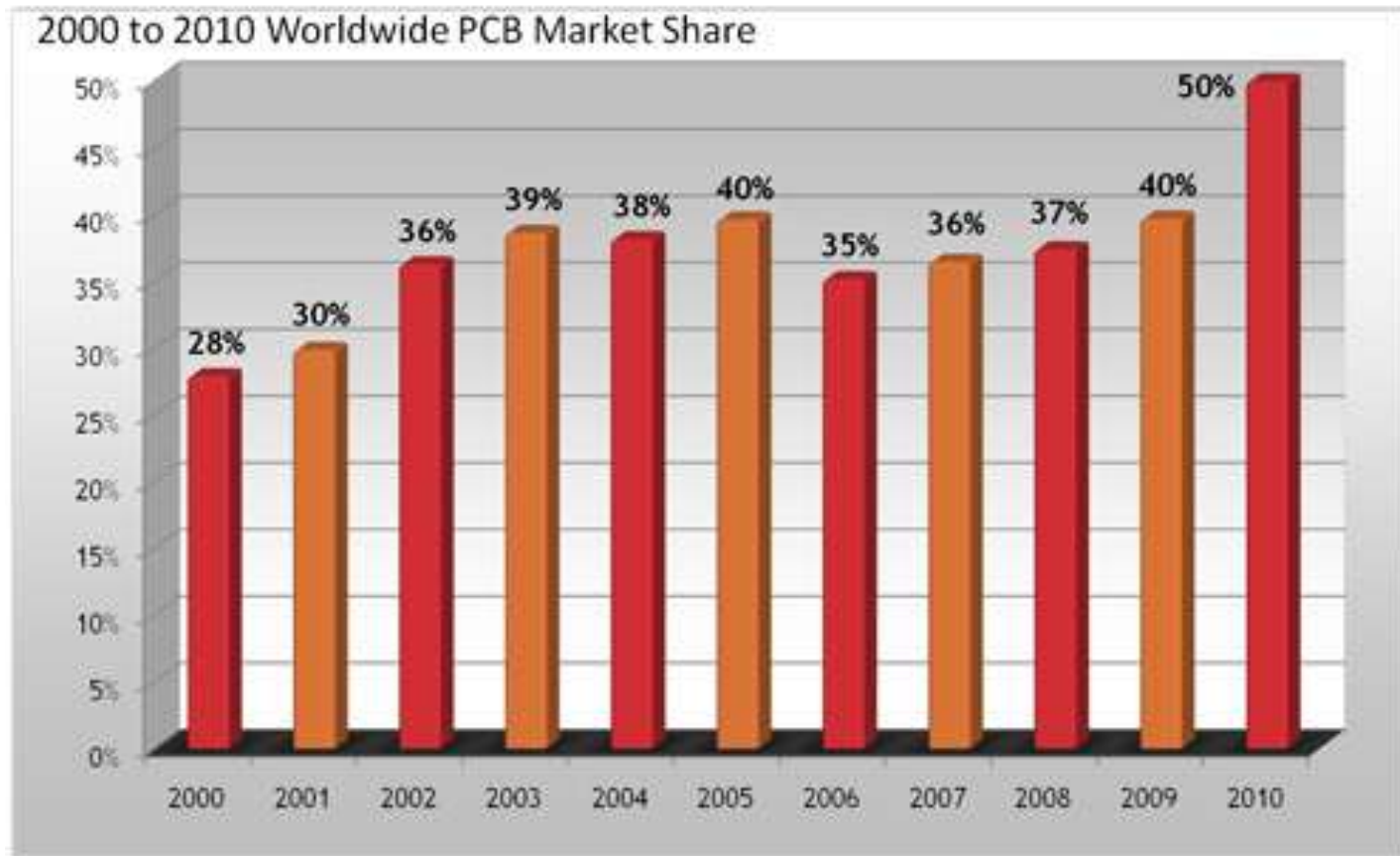




# PCB Market Share

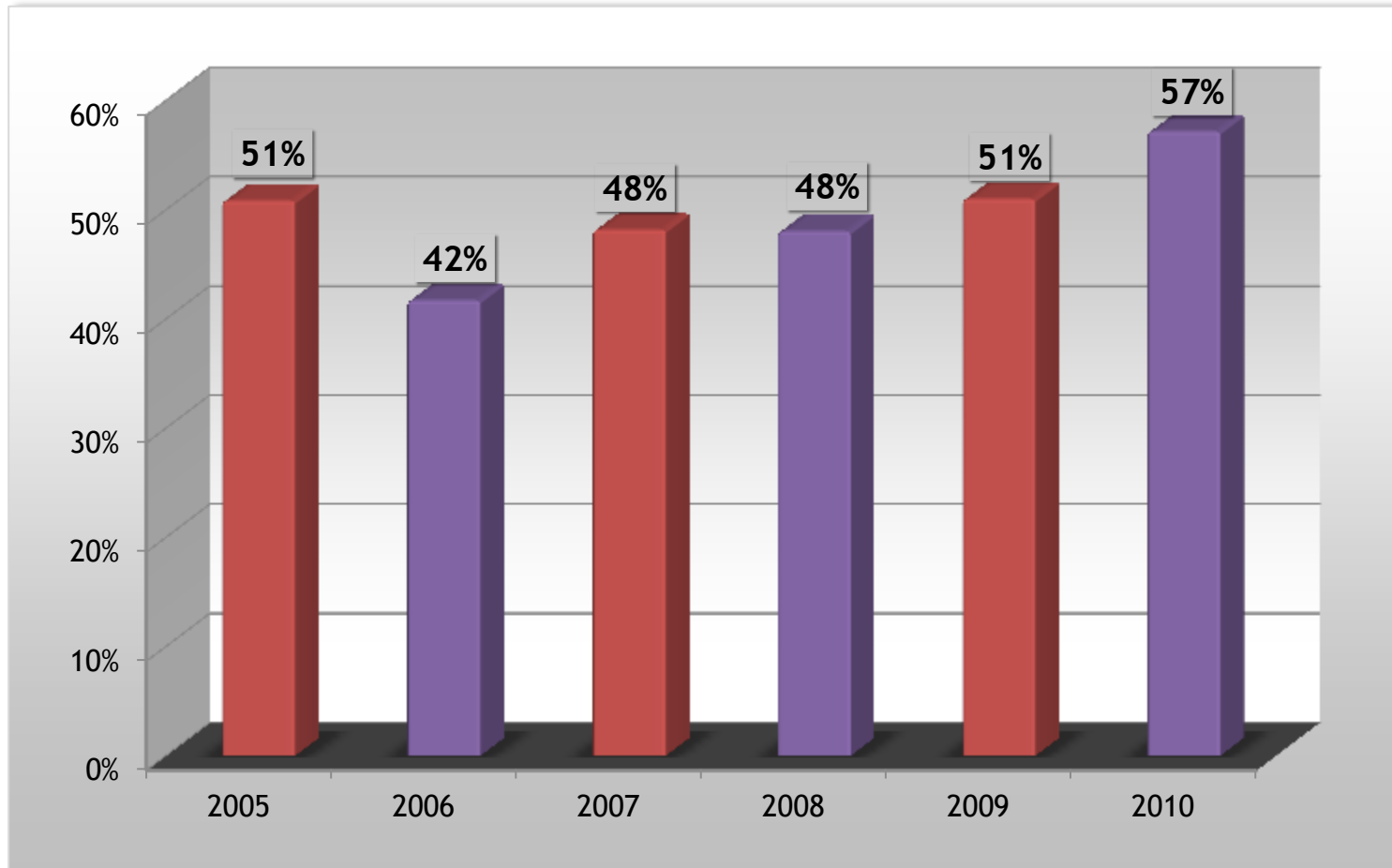
## Worldwide

**Mentor Graphics Achieves 50% Worldwide PCB Market Share!**



# PCB Market Share

Europe





# Wrap-up

# Mentor Graphics Solutions



- Fastest growing top-tier EDA company
- Market Leadership in key segment
- PCB as key focus of Mentor Graphics
- Highest investment in R&D –  
Ongoing product development and acquisitions to ensure scalable state-of-the-art solutions – all available for all customers under maintenance
- Local AND global support that keeps you on track

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**www.mentor.com**