

IC Design Implementation Trends

Learning From Actual Design Experiences

Report Content Description:

Executive Summary (30 pages)

PART I: IC DESIGN TREND ANALYSIS

Design Environment (25 pages)

- Silicon integration trends and design drivers
- Design factory analysis model
- Design system integration approaches
- Deployment of engineering resources
- Design process (flow) planning and execution
- Design tooling and automation
- Design data repository and data languages
- IT infrastructure (HW, SW, delivery systems)
- Embedded software and IP integration
- Design support/development hardware
- Offshoring/outsourcing trends

Design Technology (25 pages)

- Design process execution methodology
- CAD/EDA tools used
- Design models and data acquisition
- Design for manufacturability approaches
- Design kits

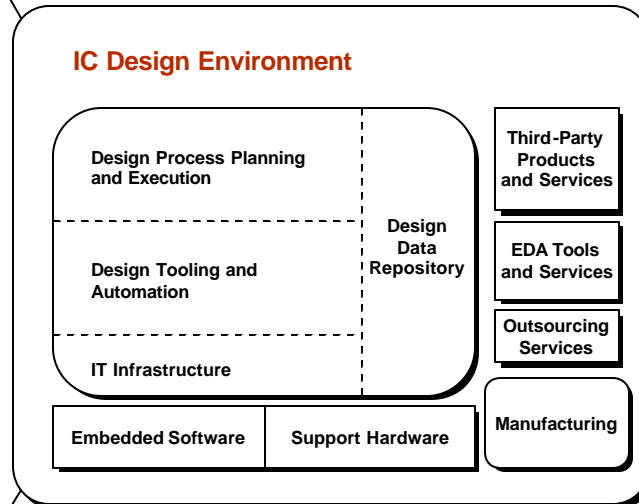
Design Productivity (10 pages)

Design Cost (30 pages)

- Design cost analysis models
- Cost of CAD technology deployment
 - Tools acquisition and maintenance
 - CAD engineering support
- Cost of lithography
 - Data preparation and delivery
 - Reticles (generation and fabrication)
- Cost of infrastructure
 - IT technology (hardware and software)
 - Offshoring/outsourcing services
 - Third-party products and services
- Total cost of design process (flow) execution
 - Design Spin-Factor impact on cost

Mission: To deliver comprehensive qualitative and quantitative insights into actual design implementation trends of systems and component vendors

Scope: IC design trends analysis from four distinct views: design environment, technology (methodology/tools), productivity, and cost—validated with 10 actual design case studies



Report Size: 300 pages (including over 50 figures)

PART II: IC DESIGN CASE STUDIES

Comparative Overview of Ten Cases (10 pages)

IC Design Analysis Models (15 pages)

- Design process execution
 - Functional teams and modus operandi
- Design resources utilization over time
 - Headcount profile and overhead
- Design resource utilization by major task
 - Headcount versus design task
- Design Spin-Factor impact on cycle time

Ten Case Studies—Five Views (125 pages)

- Design environment profile
 - Company business
 - Design environment description
 - Design types and technologies
- End-system applications and markets
- Design case attributes
 - End-product/market application
 - End-product design functionality
 - Design functional content
 - Design complexity (memory/logic, digital/analog content)
 - Design fabrication technology features
 - Design type (digital/mixed-signal, custom, MPU, SoC/ASIC)
 - CAD/EDA tools used for design
 - CAD tools use by design/function type
 - Packaging/interconnect technology
- Design case implementation results
- Lessons learned and implications