GSA OVERVIEW
GSA members represent nearly 75% of the $350B industry and boasts the broadest group of executive membership from the entire semiconductor ecosystem.

- GSA is the only organization that brings together the entire semiconductor ecosystem in order to represent industry-wide interests and thoughts.
- GSA provides a neutral environment for executives within the semiconductor industry to meet and collaborate on ways to improve efficiencies and address industry-wide topics and concerns.
- GSA identifies and discusses emerging trends & opportunities, and how our membership can best participate and impact change.
- GSA encourages and supports entrepreneurship through various Leadership Councils, Working Groups and Resources.
- GSA promotes the visibility of our members and their contributions to our industry.
| **Membership** | GSA represents nearly 350 leading companies in 35 countries with 200 executives participating in a GSA leadership role |
| **Groups, Councils, and Committees** | GSA organizes multiple working groups, councils, round tables, and committees to discuss common issues and concerns as well as accelerate the adoption of specific technology and ideas |
| **Events** | GSA hosts the most widely recognized global and regional events tailored specifically for the semiconductor industry |
| **Research** | GSA provides numerous resources, surveys, and reports unique to GSA membership |
Nearly 350 Member Companies
GSA’s Board of Directors and Leadership Council’s are designed to provide a private and non-competitive environment that allows like executives to:

- Discuss current and evolving trends that are impacting the direction of the industry
- Initiate pre-competitive discussions surrounding business and technology
- Explore possible areas of collaboration in common areas of interest
EMEA Leadership Council

- Dr. Maria Marced
  TSMC Europe
  GSA Chairwoman

- Daniel Artusi
  Intel Corporation

- Dr. Jalal Bagherli
  Dialog Semiconductor

- Stan Boland
  Bluprint Technologies, Inc.

- Graham Budd
  ARM

- Guillaume d’Eyssautier
  SureCore

- Dr. Udo-Martin Gomez
  Bosch Sensortec

- Dr. Georges Karam
  Sequans Communications

- Pascal Langlois
  Tronics

- Svein-Egil Nielsen
  Nordic Semiconductor ASA

- Dr. Juergen Rebel
  Infineon Technologies
# Technology Steering Committee

"Ensuring that GSA focuses on the areas of interest that are most important to our members"

Jodi Shelton, President & Co-Founder GSA

### Vision
- Encouraging the advancement and adoption of leading technology and practices for the betterment of GSA constituents

### Mission
- Provide general oversight and guidance to GSA’s working groups, committees, research, and events, as it pertains to key technological trends and their implications on the semiconductor ecosystem.

### Objectives
- Ensure GSA’s focus is aligned with the key technologies and practices that can have the most positive impact on its members
- Accelerate industry adoption of the emerging technologies and practices that are most significant to GSA members
- Support GSA’s efforts to encourage and promote entrepreneurship by providing counsel and guidance to nascent start-ups

### Members
- A cross section of senior technical leadership (VP Engineering/CTO) from GSA’s core constituency
GSA provides its members with non-competitive, neutral forums for leading executives in the semiconductor ecosystem to discuss topical issues that affect the entire industry and explore resolution.

- Congregation of like executives from the same discipline
- Designed to stimulate discussion and exchange ideas on subject matter uniquely specific to individual disciplines within the semiconductor industry
- Each discipline meets on a biannual to quarterly basis
- Roundtables may result in establishing a specific Panel, Forum, Working Group or Peer Advisory Committee
GSA provides various ways to enhance our members Corporate Marketing campaigns by providing increased exposure through our events, Web site, and periodicals.

- **Company Exposure**
  - Member spotlight on GSA home page
  - Member spotlight in monthly GSA e-newsletter
  - Member news feed
- **GSA Forum - Quarterly Magazine**
  - Featured articles
  - Private Showing
  - Print advertising opportunities
- **Event Sponsorship**
  - Leverage leading global and regional events to that complements your marketing strategy and increases your companies visibility and brand exposure
- **Event Participation**
  - Numerous keynote speaking opportunities
  - Moderate or participate on a wide variety of panels
  - Host and/or participate in a Working Group meeting
GSA provides its members with opportunities to participate in content rich programs that focus on senior level involvement

- Address the evolving technologies and end markets that are most important to our members.
- Promote the global advancement of, and collaboration within the semiconductor industry
- Provide uniquely exclusive networking opportunities for global leaders within the semiconductor ecosystem
- Address key GSA initiatives and regionally specific topics
2017 Global Events

North America

**GSA Q1 Meet-Up**
Silicon Valley, CA
Wednesday, FEB 22

**GSA Silicon Summit (Technology Conference)**
Computer History Museum
Mtn. View, CA
Wednesday, JUN 14

**US Executive Forum (Invitation-only)**
Menlo Park, CA
Thursday, SEP 26

**Awards Dinner Celebration**
Silicon Valley, CA
Thursday, DEC 7

**Council Meetings**
San Jose, CA
Throughout the year

**Technology Steering Committee**
San Jose, CA
Throughout the year

**CxO Roundtables**
San Jose, CA
Throughout the year

**GSA Meet-Ups**
San Jose, CA
Throughout the year

EMEA

**GSA European Executive Forum**
Munich, Germany
Tuesday & Wednesday, APR 4 and 5

**GSA Entrepreneurship Conference**
London, United Kingdom
Tuesday, OCT 17

**EMEA Dinner Series**
Location: TBD
Date: TBD

**EMEA Council Meetings**
Regional rotation
Throughout the year

ASIA

**GSA Memory+ Conference**
Shanghai, China
Thursday, JUN 1

**Asia-Pacific Executive Forum**
Taipei, Taiwan
Wednesday, NOV 8

**CEO Roundtables**
Regional rotation
Throughout the year
GSA provides an opportunity for our members to join quarterly Meet-Ups to address the technical and business challenges unique to the industry.

- Discuss common issues and concerns
- Utilize GSA’s networking platform
- Increase efficiencies/solutions
The goals of SemisMatter.com are to raise the profile of the semiconductor industry to increase general awareness amongst other business sectors, the media, students, and government, to enhance the image of the industry in order to promote interest and encourage STEM participation at all levels of the education system and to create a better understanding of the contribution of the industry to help influence policy makers, regulators, and investors.

- Features dozens of GSA Member contributed videos, articles and reports.
- Includes Students page with career testimonial videos and employment data.
Available Resources

GSA provides its members with...

- Comprehensive reports regarding industry issues and technology
- Business tools to improve efficiencies
- Financial analysis to enable semiconductor companies to track performance via industry peers, spot trends, and forecast market health
- Comprehensive directory and abstract for all known public and private semiconductor companies
- Quarterly and annual industry news magazines and resource guides

### Financial Analysis
- Analysts’ Industry Forecasts
- Quarterly Economic Review by Dan Niles
- Financial Tracker
- GSA Market Watch

### Reports & Surveys
- CEO Sentiment Index
- Wafer Fabrication & Back-End Pricing Reports

### Directories & Publications
- Semiconductor
- Supplier & Service Partner
- GSA Forum
- IC Foundry Almanac
- 3D IC Tour Guide
- IoT Report

### Tools
- A/MS Checklists
- IP Source Selection Tool
- IP ROI Calculator
- 3DIC Packaging Best Practices
- Supply Chain M&A Due Diligence
Dan Niles, Chief Investment Officer at Alpha One Capital Partners, has partnered with GSA since 2009 to provide a series of webcast sessions that allow our most important global CEOs, CFOs and other executives to monitor the industry’s position in the cycle.

Each quarter he provides updates on his economic outlook for the technology industry, providing a number of issues affecting the semiconductor market and where we are in terms of a cycle. Each webcast covers the following:

- Trends in U.S. unemployment, home sales/ownership, retail sales, personal savings, GDP growth, industrial production, money supply, etc.
- Monthly Semiconductor Industry Sales
- Total Semiconductor Revenue vs. Total Capital Expenditure % Growth
- Predictions for the following quarter and overall year

www.gsaglobal.org/gsa-resources/financial-analysis/dan-niles-quarterly-economic-review/
TRACKS MORE THAN 6,000 DATA POINTS FOR 260+ COMPANIES

This quarterly downloadable Excel spreadsheet and executive summary includes over 6,000 financial data points, such as revenue, net income and market capitalization, for more than 260 semiconductor companies (fabless and IDM).

- Tracks 35 different financial metrics for every publicly traded semiconductor company on a quarterly basis
- 29 different avenues of data sort capabilities.
- Included in GSA membership
- Available to all GSA member company employees.

GSA provides the industry with timely data on semiconductor investment activity in the private and public sector and releases a quarterly update and a downloadable, sort-able Excel spreadsheet of all funding, initial public offering (IPO), and merger and acquisition (M&A) activity for fabless companies, IDMs and semiconductor suppliers.

**Semiconductor Funding sortable by:**
- Date
- Company
- Company Type
- Location
- Amount Raised
- Round
- Investors

**Semiconductor IPOs sortable by:**
- Date Priced/Filed
- Company
- Location
- Amount Priced/Price Range
- Shares Offered
- Underwriters
- Stock Exchange
- Ticker
- Annual Revenue

**Semiconductor M&As sortable by:**
- Type of Entity Acquired - Entire Company, Company Division/Product Line or Foundry Facility
- Announcement Date
- Acquirer
- Entity Acquired/Merged
- Amount Paid
- Payment Type
Internet of Things

McKinsey & Company and the Global Semiconductor Alliance (GSA) recently collaborated to understand the implications of the Internet of Things (IOT) for the semiconductor industry and the economy as a whole. This effort was overseen by a steering committee of 11 senior executives from GSA member companies and McKinsey. It involved the following methods:

- Interviewing 30 GSA members who were senior executives at semiconductor companies or at companies in adjacent industries that are part of the IOT ecosystem, such as network equipment and industrial automation
- Surveying 229 semiconductor executives at GSA member companies
- Assembling a fact base on the IOT, focusing on issues relevant to semiconductor companies.

Among other insights, we found that semiconductor companies are well positioned to help the IOT gain momentum, despite the obstacles ahead, provided that they embrace innovation and rethink their traditional business model.

McKinsey & Co and GSA Report

Charting a New Course for Semiconductors

Rambus and the Global Semiconductor Alliance (GSA) recently collaborated to explore the current market dynamics in the semiconductor industry. With numerous reports illustrating the slowing in sales and profits, companies have begun consolidating and re-shifting priorities and strategies. As we look at the future of the market, this report identifies several key factors and paths to monetization that will help shape our industry going forward.

With this report, there is great opportunity for the industry to come together to discuss and evaluate how each company can play an open, collaborative role in helping to chart a more sustainable course for the industry and beyond.

http://www.gsaglobal.org/gsa-resources/publications/charting-a-new-course-for-semiconductors/
The **Wafer Fabrication Pricing Report** provides the user thousands of price data points for wafer and mask sets, from fabless semiconductor companies, and integrated device manufacturers (IDMs). The data is collected confidentially and tabulated in aggregate by an audit firm using a weighted industry average approach.

The Wafer Fabrication Pricing Report includes a written analysis of the survey results as well as interactive, online results showing rolling average, min, max, and median wafer and mask set prices for four consecutive quarters by:

- Process Geometry
- Process
- Wafer Size
- Company Type
- Foundry Location
- Metal Layers
- Poly Layers
- Mask Layers
- Epitaxial
- Development Stage
- Volume of Wafers Purchased
- Pricing by Leading Revenue-Producing Fabless Companies

The **Assembly Pricing Report** is available as a stand-alone report or as a section to the Wafer Fabrication Pricing Report. This Report provides the user thousands of price data points that fabless and IDMs are paying for outsourced assembly services. The data is collected confidentially and tabulated in aggregate by an audit firm.

The Assembly Pricing Report includes a written analysis of the survey results as well as interactive, online results showing rolling average, min, max, and median assembly prices for four consecutive quarters by:

- Company Type
- Manufacturing Location
- Package Family
- Leads
- Units Per Week
- Drop-In Heat Spreader Used
- Substrate Cost
- Substrate Technology
- Substrate Layers
- Wafer Size (for WLP only)

Participants receive the report(s) for free. The interactive reports are available to subscribers online, allowing users to easily and quickly find the exact pricing information needed.
Monthly survey gauging the temperature of the industry. Index began in January 2009 and closely mirrors overall industry sentiment.

Survey consists of 10 multiple-choice questions which are sent via e-mail during the last week of each month. **Total survey takes roughly 1 minute to complete.**

Only participating CEOs and CFOs will have access to the results each month. All data collected is kept strictly confidential and results will be released only in aggregate numbers.

As a further safeguard and for your convenience, the data will be collected via a secure Web site.
The industry’s premier publication delivers a combination of business, technology and financial news, as well as important industry trends and market forces that impact operations and product development throughout the semiconductor supply chain.

Each quarterly issue contains:

- **Featured Articles** — contributed articles by industry experts on various technical- and business-related topics
- **Private Showing** — featured private semiconductor member companies
- **GSA Forum Archives**

www.gsaglobal.org/forums
GSA and IC Insights have collaborated to produce a comprehensive guide to the global IC foundry market. This resource combines IC Insights’ analysis of market growth and capacity trends with GSA's wafer pricing trends, comprehensive company tracking information and its global reach across semiconductor companies and the foundry sector.

Report includes a foundry-segment analysis, five-year forecasts, wafer-pricing trends from outsourcing semiconductor suppliers and supplier-profile data.

**IC Foundry Analysis**
- IC Foundry Industry Analysis
- IC Foundry Sales Analysis
- IC Foundry Capacity

**Wafer Fabrication Pricing & Mask Cost Trends**
- Average and median wafer pricing and mask cost by:
  - 150mm, 200mm, 300mm wafers
  - Manufacturing process
  - Process geometry
  - Metal layers
  - Poly layers
  - Development stage
  - Epitaxial
  - Volume purchased

**IC Foundry Service Provider Company Profiles**
- Company Contact Information
- Percent Manufacturing Capability
- Technologies Offered
- Geometries
- Metal Layers
- Wafer Sizes
- Wafer Output per Month
- Design Services Offered
- Back-end Services Offered
- IP Cores Offered
- Customers and Partners

www.gsaglobal.org/gsa-resources/publications/ic-foundry-almanac/
This directory contains comprehensive profiles of more than 1,000 emerging and established fabless and IDM semiconductor companies worldwide. Profiles include a company description, the company’s market and product detail, industry type, and key management.

Online sorting features and downloadable excel spreadsheet include:

- Year Founded and Number of Employees
- Financial Detail
- Company Description
- Industry Type
- Market Type
- Product Detail
- Key Management

www.gsaglobal.org/gsa-resources/company-profiles/
GSA’s Supplier and Service Partner Profiles cover more than 1,300 industry suppliers and partners, segmented by service offerings (e.g., wafer foundry, intellectual property (IP), electronic design automation (EDA), etc.). Profiles include Year Founded and number of employees, company description, service offerings and key management.

Sort by:
- Year Founded & Number of Employees
- Company Description
- Service Offerings
- Key Management

www.gsaglobal.org/gsa-resources/company-profiles/
AMS PDK Quality Checklist & User’s Guide
This checklist provides the analog / mixed signal designer a quality check on all elements of the foundry Process Design Kit. This drives enhanced communication between foundries and design teams, allowing both to obtain a better understanding of the source data, completeness and quality of the PDK. The checklist addresses everything from contact information to document version control, including software release numbers.

Intellectual Property (IP) Source Selection Tool
IP blocks are a standard part of most designs. IP can be acquired from multiple sources: Internal Design, Internal Existing, or from a Third Party. Whatever the source, there are inherent risks. This tool allows the team to analyze Risk, Performance, and Cost; and thereby mitigate the risk.

Supply Chain Merger & Acquisition Due Diligence and Integration Checklist
This checklist defines a broad spectrum of items that must be considered by Supply Chain management in a merger or acquisition. This initial release is targeted toward the Supply Chain Professional and is not yet all encompassing. Future work will extend the checklist to include Legal, Financial, Human Resources, and IT aspects.

Quality Monitors Checklist
This checklist provides the quality framework for semiconductor testing before product is shipped. Defines tests and parameters required to minimize the level of bad product shipped to an end customer. This is not meant to be a comprehensive list, but can be useful to:
- Analyze gaps in testing
- Provide the top 3-5 test areas for each line of defense against shipping low quality product
- Improve Customer Awareness, by providing a guideline for customers to better understand the test environment
How do members benefit?

**Exposure**
- GSA hosts the largest cross section of executives from the semiconductor ecosystem
- Speaking engagements at targeted forums and events
- Exchange ideas and network with the global leaders of the semiconductor community

**Discussion**
- Commercial and technical trends in the semiconductor & technology industries
- Challenges and issues unique to the semiconductor industry

**Resources**
- Public and Investor Relations Services
- Resource Portals
- Leadership, technology interest groups, and committees
- Forums and events
- Research: public & private financial analysis, reports, surveys, profiles
Dues Structure

General Membership

<table>
<thead>
<tr>
<th>Annual Revenue</th>
<th>$0M - $20M</th>
<th>$20M - $50M</th>
<th>$50M - $100M</th>
<th>$100M - $500M</th>
<th>&gt; $500M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Dues</td>
<td>$5.5K</td>
<td>$10K</td>
<td>$15K</td>
<td>$20K</td>
<td>$25K</td>
</tr>
</tbody>
</table>

General Membership is available to all semiconductor manufacturers and suppliers, including: Fabless, IDM, IP, EDA, Foundry, Packaging and Test, and Design Services. Dues are based on the company’s annual revenue.

Partner Alliance

GSA’s Partner Alliance is available to all companies that support GSA’s overall goals and mission by providing products and services that enable an environment for growth of the global semiconductor industry.

- **Industry Partner**
  Available to all technology companies outside of the semiconductor ecosystem such as OEMs, ODMs, and internet companies. Annual dues are USD $7,500.

- **Service Partner**
  Available to all companies who provide services to semiconductor companies including venture capital companies, investment banks, consulting/research, law firms, executive search groups, and insurance companies. Annual dues are USD $5,500.

- **Organizations, Associations, Government, Educational Partners and PIA**
  Available to organizations, associations, government entities, educational institutions, and publications/industry analysts. Annual dues are USD $3,500.