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TECHNOLOGY

Semiconductor Executives Temper Growth Expectations

January 2012

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We are pleased to present the results of KPMG's Global Semiconductor Survey. This study, now in its seventh year, identifies trends and issues influencing the global semiconductor market today, as well as opinions of leading executives about industry growth over the next three years.

Our bellwether Semiconductor Business Confidence Index indicates a less optimistic view of industry revenue than we have seen during the past two years. The index suggests more of a speed bump than the return of a severe downturn, such as the one the industry experienced in 2008. Executives are planning a number of defensive measures, including reductions in the growth of R&D and capital expenditures, to improve profitability.

The survey results also reflect the growing importance of the United States, now trailing only China, as a leading market for growth, perhaps reflecting an improvement in economic conditions in the U.S.

As in past years, executives cite mobile communications, computing, and consumer electronics as important applications driving industry growth.

We hope you find this report useful, and appreciate any feedback you would like to offer.

Sincerely,

Gary Matuszak
Global Chair
KPMG Technology, Media and Telecommunications practice

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Partner in Charge
KPMG Global Semiconductor Practice

Executive Summary

After two strong years of impressive growth, global semiconductor industry executives have become less optimistic about the industry's prospects for 2012.

The KPMG Semiconductor Business Confidence Index (described in detail on the next page) stands at 46, indicating–for the first time since the 2008 downturn–negative sentiment about industry conditions in the coming year.

Although executives are expressing pessimism, this year's results suggest more of a speed bump for the industry than the double dip downturn. For example, the confidence index stood at 36 in 2008 before rebounding to 61 in 2009 and 60 in 2010.

Semiconductor executives still expect revenue growth in 2012, but expectations about the rate of that growth are significantly more muted. Most executives expect growth rates below 10 percent, and the number of respondents expecting growth rates greater than 10 percent has fallen substantially.

In response to lower revenue projections, respondents say their companies are reducing the growth rate of their investments in employee headcounts, research and development, and capital equipment.

Which is not to say the news is all bad, or that industry executives are as pessimistic as we saw in 2008.

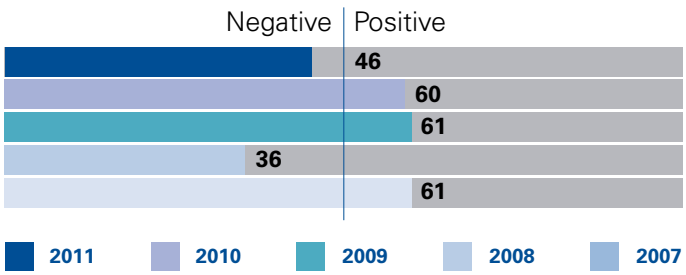
As in recent years, semiconductor executives expect growth drivers to be led by mobile communications, computing, and, to a slightly lesser extent, consumer electronics. Computing moved ahead of consumer electronics in this year's results, possibly driven by factors including continued PC demand in developing markets, the enterprise IT refresh cycle, private cloud deployments, and the growing adoption of tablet devices.

These applications are likely to serve as leading sources of industry growth next year, and for the next three years as well.

China was again cited by survey respondents as the most important market for semiconductor revenue growth. The United States was rated as the second-highest growth market, a noticeable improvement over last year's results.

The influence of counterfeiting is a new topic in this year's survey, with executives citing counterfeiting as an industry challenge. A third of the respondents say counterfeit semiconductor activity impacts global revenue by 5 percent or more, and suggested more sophisticated identification, testing, and verification procedures as among the measures they will be deploying over the next year.

Semiconductor Industry Business Confidence Index: 2011 – 2007



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An index value of 50 indicates a neutral perception about the industry and its prospects. Index value above/below 50 indicate a positive/negative perception. 'Revenue growth in the primary application market' is not included in the 2009, 2010 and 2011 index calculation; however, the overall component of revenue growth included in the index is weighted proportionally the same as in previous survey years.

KPMG's Semiconductor Confidence Index expresses, in a single figure, responses to a standard set of questions about executives' outlook on the following:

- Total company semiconductor revenue growth for the next fiscal year
- Capital spending for the next fiscal year
- Global workforce growth for the next 12 months
- Change in R&D spending for the next fiscal year over the current year

Since it was introduced in 2006, the index has been a bellwether of the industry's future fortunes, and has been a remarkably reliable barometer of future financial and operational trends in the semiconductor industry

An index value above 50 can be interpreted as an optimistic outlook on the business environment for the next 12 months; conversely, an index value below 50 reflects a pessimistic view.

Survey Highlights

Revenue Growth
Reflecting the muted expectations in this year's survey results, 26 percent of respondents are calling for semiconductor industry revenue growth between 6 and 10 percent, compared with 39 percent in last year's results.

Profitability
Thanks in part to cost containment efforts, 30 percent of respondents forecast profitability growth between 1 and 5 percent. Twenty-one percent expect profitability growth between 6 and 10 percent, and 9 percent expect growth in excess of 10 percent.

Application Markets
Wireless handsets and mobile technology (62 percent) again tops the respondents' list of application markets most likely to provide industry growth over the next year. Computing (59 percent) has replaced consumer electronics (third, at 51 percent) as the second-leading growth driver this year.

Geographic Growth
China was cited as the leading area for future growth by 60 percent of respondents, compared with 70 percent in 2010 and 78 percent in 2009. The United States, in contrast, has seen its importance climb from 42 percent in 2009 to 50 percent this year, and is now identified as the second-most important region for growth.

Workforce
This year's muted outlook for revenue growth can also be seen in the respondents' expectations for employment, with the majority of companies calling for headcount levels to remain flat (30 percent), increase by 5 percent or less (29 percent), or decrease (22 percent). Last year, 6 percent of respondents expected an employment decline.

Counterfeiting and Intellectual Property Infringement
A third of this year's respondents say the impact of counterfeiting affects at least 5 percent of the industry's revenue.

More than half of the respondents (53 percent) expect the cost of responding to semiconductor IP infringement cases to increase over the next three years, perhaps due to the increased globalization of IP litigation and other factors.

Mergers & Acquisitions
Muted expectations about 2012 also apply to respondents' thoughts for semiconductor M&A activity, with 70 percent saying they don't believe their company will be involved in any divestitures.

Research and Development
In this year's results, 65 percent expected their company to increase investments in R&D, compared with 83 percent in last year's results and 72 percent in 2009. The amount of respondents who expect spending to remain the same nearly doubled this year (29 percent, versus 16 percent in 2010).

Capital Spending
As with R&D, respondents are less optimistic about their companies' investment in capital equipment and software over the next year. Only 51 percent expect capital spending to increase, compared with 63 percent in the 2010 survey.

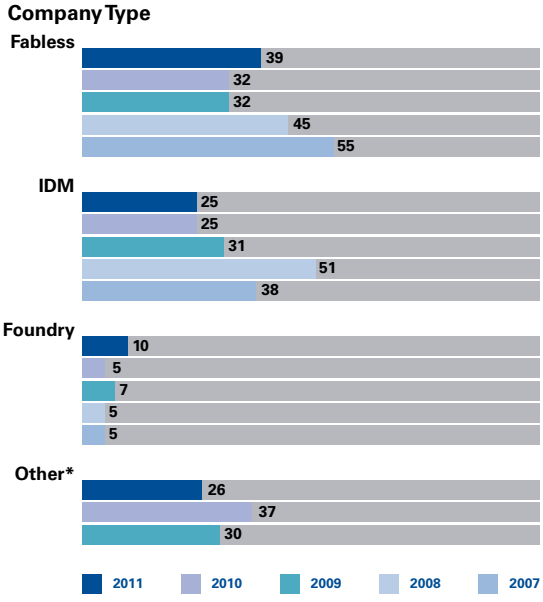
Technology Transitions
Thirty-nine percent of respondents believe the industry will shift to 450mm wafers, despite the high costs of equipping fabs. Slightly more than half believe the transition to 450mm wafers will take place between 2013 and 2016. Forty percent of the respondents believe production at a sub-20nm technology node will have a greater impact on the industry than the production of 450mm wafers.

Demographics and Methodology

KPMG conducted an online survey from October to December 2011, and canvassed 155 senior executives – more than half (53 percent) of the respondents were C-level- from the top global semiconductor companies. Also, half (50 percent) of the respondents represented companies with sales of over $1 billion and 16 percent have sales of $10 billion or more.

The majority (64 percent) represented both integrated device manufacturers (IDMs) and fabless companies, 26 percent came from other types of manufacturers, and 10 percent from foundries.

Which of the following best describes your company?



* Data not available in either 2007, 2008, 2009, 2010 or 2011

Some charts may not equal 100% due to rounding

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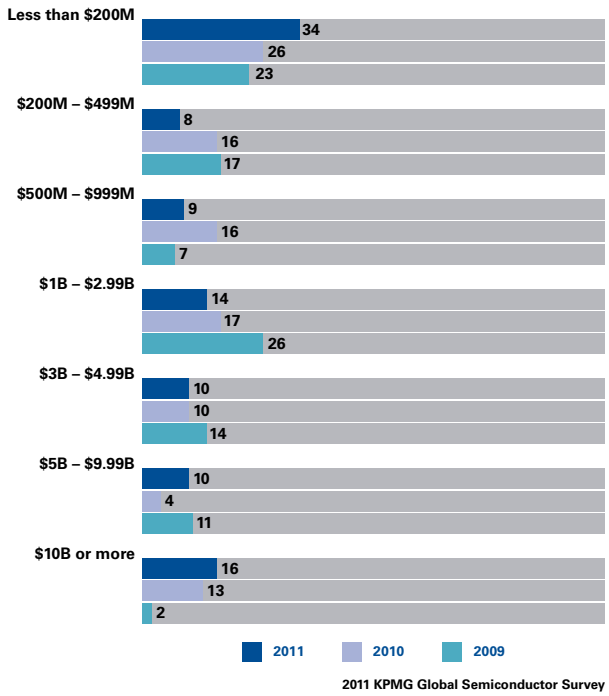
Which of the following best describes your company's annual revenue in 2010?



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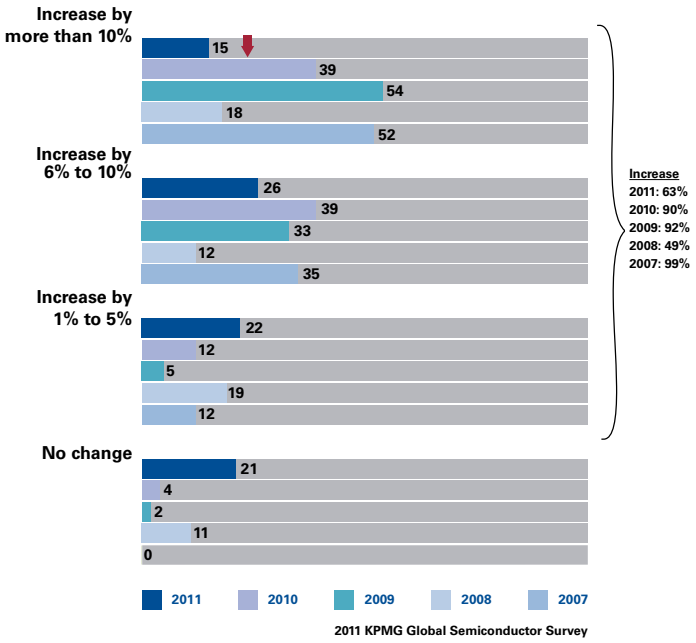
Detailed Findings

Revenue Growth

What is your outlook for your company's semiconductor revenue growth in the next fiscal year?

Substantial Falloff (of - 24 points) in Companies Semiconductor Revenue Growth Projection for the Next Fiscal Year, Especially in the over 10% Category (24 Points)



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Reflecting the muted expectations in this year's survey results, 26 percent of respondents are calling for semiconductor industry revenue growth between 6 and 10 percent, compared with 39 percent in last year's results. The decline was more significant for higher growth expectations, with only 15 percent of respondents projecting revenue growth above 10 percent, compared with 39 percent last year.

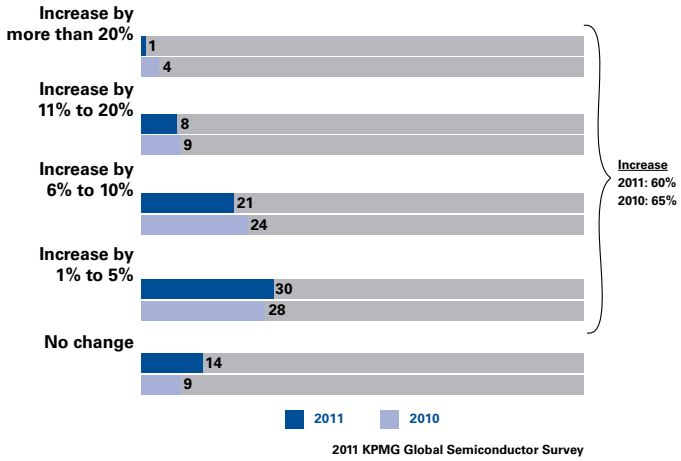
These less-optimistic revenue growth expectations were also reflected at the lower ends of the scale. Twenty-two percent of respondents expect growth between 1 and 5 percent, compared with 12 percent last year.

Sixteen percent of the respondents are projecting revenue declines, compared with 6 percent last year.

Profitability

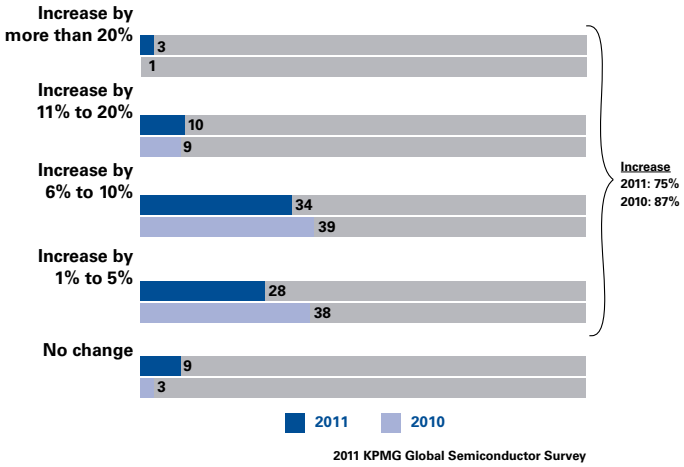
What is your estimate for the change in the profitability of the global semiconductor industry over the next year?

Profitability of the Global Semiconductor Industry Expected to Increase over the Next Year Due to Cost Controls



What is your estimate for the change in the annual profitability of the global semiconductor industry over the next three years?

Many Continue to Expect the Annual Profitability of the Global Semiconductor Industry to Increase over the Next Three Years



Despite lower expectations for revenue growth, semiconductor executives are more optimistic about the industry's profitability over the next year. Thanks in part to cost containment efforts, 30 percent of respondents forecast profitability growth between 1 and 5 percent, and 21 percent expect profitability growth between 6 and 10 percent. Nine percent expect profitability to increase by more than 10 percent.

Fourteen percent expect the industry's profitability to remain the same over the next year, and 26 percent are indicating profitability will decline.

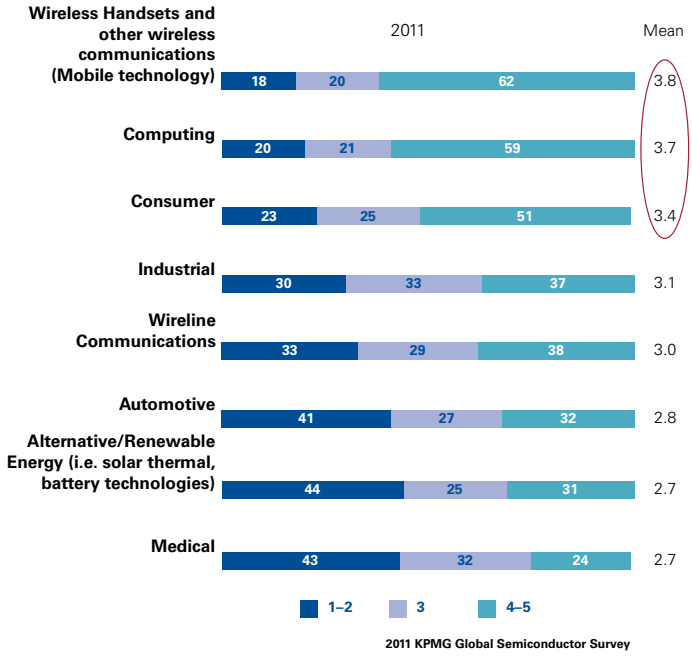
Looking at the next three years, 75 percent expect profitability to increase, compared with 87 percent in last year's results.

Nine percent of the respondents expect growth to remain flat, and 15 percent are forecasting profitability to decline. This compares with 3 percent who expected no change in last year's survey, and 9 percent who expected profitability to decrease.

Application Markets

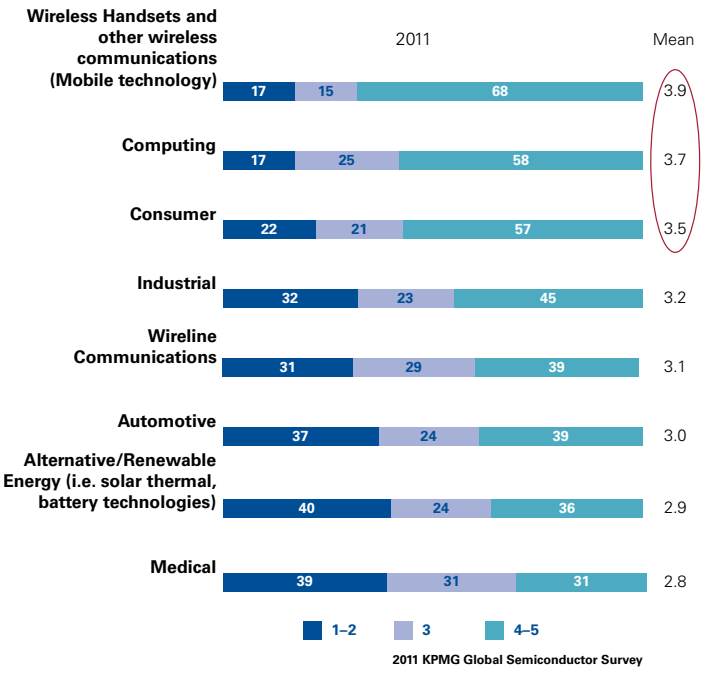
How important are each of the following application markets in driving your company's semiconductor revenue stream over the next year? Rate on a 1–5 scale where 1 = not at all important and 5 = very important.

Wireless Handsets/Mobile Technologies, Computing and Consumer Application Markets Remain Most Important Semiconductor Revenue Drivers over Next Year



How important are each of the following application markets in driving your company's semiconductor revenue stream over the next three (3) years? Rate on a 1–5 scale where 1 = not at all important and 5 = very important.

Wireless Handsets/Mobile Technologies, Computing and Consumer Application Markets Remain Most Important Semiconductor Revenue Drivers – Next Three Years



As was the case in 2010 and 2009, wireless handsets and mobile technology (62 percent) top the respondents' list of application markets most likely to provide industry growth over the next year. Computing (59 percent) has replaced consumer electronics as the second-leading growth driver this year, possibly reflecting the growing popularity of tablet devices, strong PC demand in emerging markets, private cloud deployments, and the continuing enterprise IT refresh cycle.

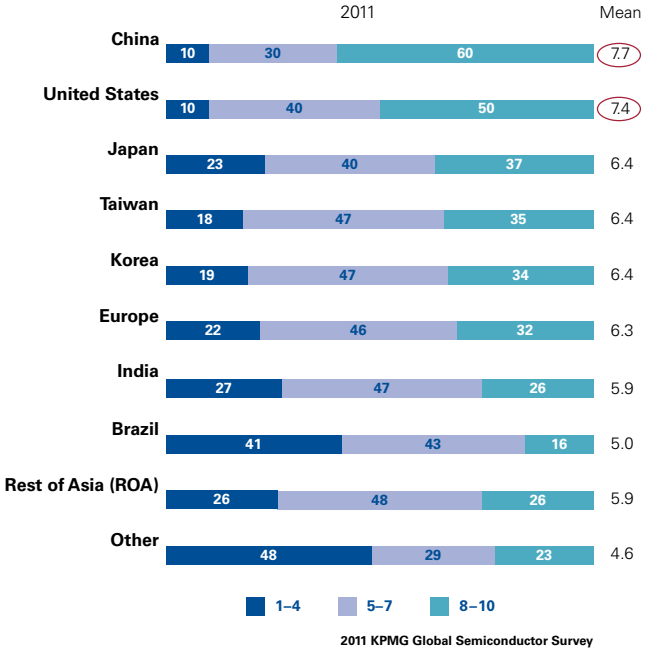
Consumer electronics was third, at 51 percent, followed by wireline communications (38 percent) and industrial applications (37 percent). Consumer growth was cited by 65 percent of respondents last year, and this year's decline may reflect lower demand for LCD televisions and dedicated digital music players, as well as broader macroeconomic concerns among consumers.

Respondents expected wireless, computing, and consumer to remain leading industry growth drivers for the next three years as well.

Future Geographic Growth

Please rate the importance of the following geographic areas in terms of semiconductor revenue growth for your company three years from today. Rate on a 1–10 scale where 1 = Least important for Revenue Growth and 10 = Most important for Revenue Growth.

Significant Majority Continue to Rate China Most Important Geographic Area for Semiconductor Revenue Growth Three Years from Today, U.S. Second



While China was again cited, for the sixth consecutive year, as the most important geographic area for semiconductor revenue growth over the next three years, its ranking in this year's results has slipped for the third consecutive year.

This year, China was cited as the leading area by 60 percent of respondents, compared with 70 percent in 2010 and 78 percent in 2009.

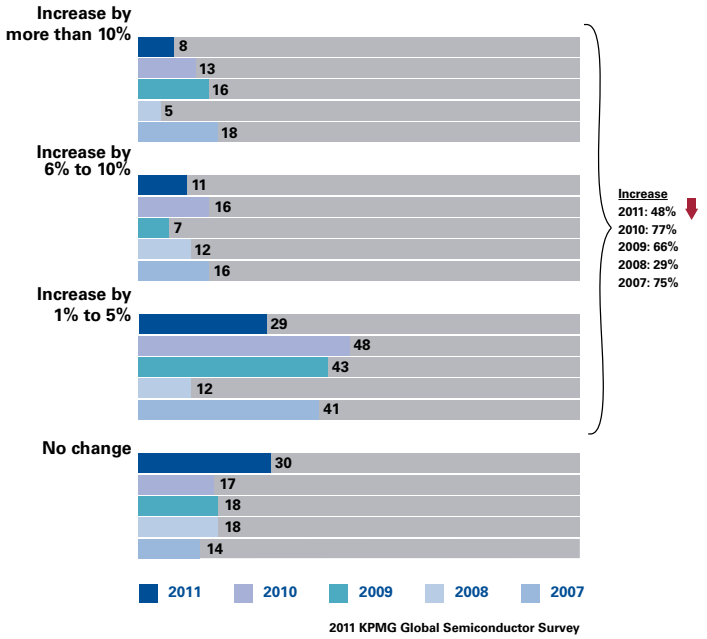
The United States, in contrast, has seen its importance climb from 42 percent in 2009 to 50 percent this year, when it was cited as the second-most important region for growth, possibly reflecting improved economic conditions in the U.S.

Japan, at 37 percent, climbed into the third position this year, followed by Taiwan (35 percent this year, versus 49 percent in 2010) and Korea (34 percent in 2011, and 39 percent in 2010).

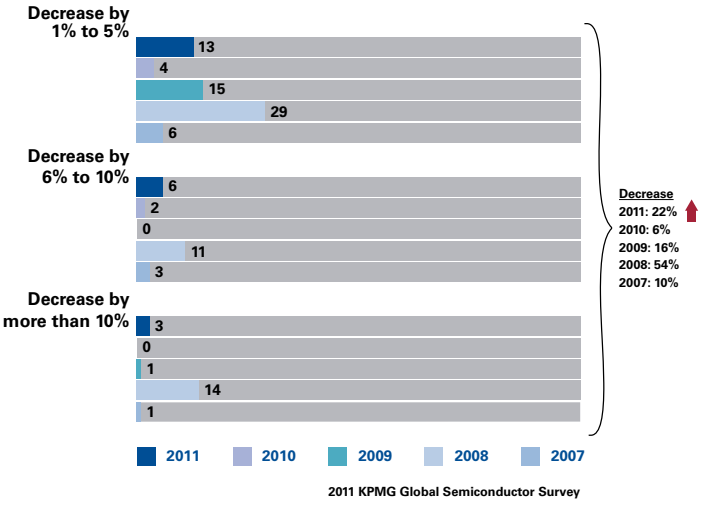
Workforce

During the next 12 months do you expect your company's global semiconductor workforce to expand or contract? Select the percentage that most closely approximates your expectation.

Expected Job Growth in the Global Semiconductor Workforce for the Next 12 Month Decreased by 29 Points 2011 vs. 2010



Significant Increase (16 Points) in Those Expecting a Decrease in Jobs



This year's muted outlook for revenue growth can also be seen in the respondents' expectations for workforce growth, with the majority of companies calling for employment to remain flat (30 percent) or increase by 5 percent or less (29 percent).

This is a notable contrast from last year's more optimistic results, when more than three-quarters of the respondents reported expectations of workforce expansion.

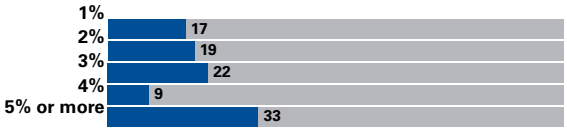
Perhaps more telling, the percentage of respondents expecting employment to decrease jumped from 6 percent in 2010 to 22 percent in the 2011 survey.

Looking at the locations where respondents planned to add headcount, China topped the list at 70 percent, followed by the United States (44 percent), India (37 percent), and Taiwan (27 percent).

The Counterfeiting Challenge

What is your estimate for the impact of counterfeit semiconductor activity on global semiconductor revenue?

One-Third Estimate Counterfeit Semiconductor Activity Will Impact Global Semiconductor Revenue by 5% or More



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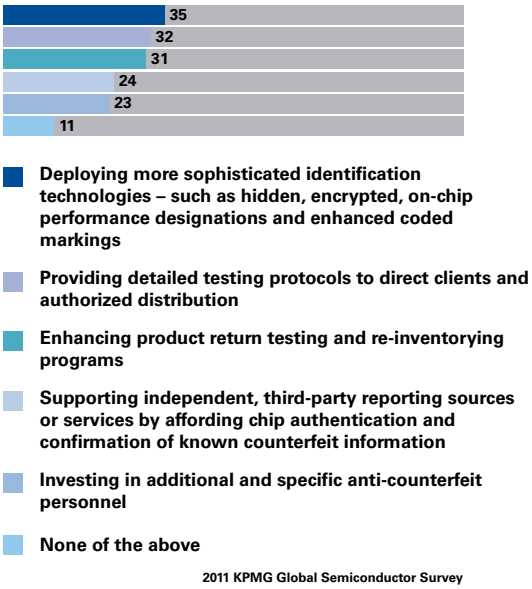
What steps will your company be taking in the next fiscal year to combat counterfeit semiconductors?

Actions to Combat Counterfeit Semiconductors in the Next Fiscal Year



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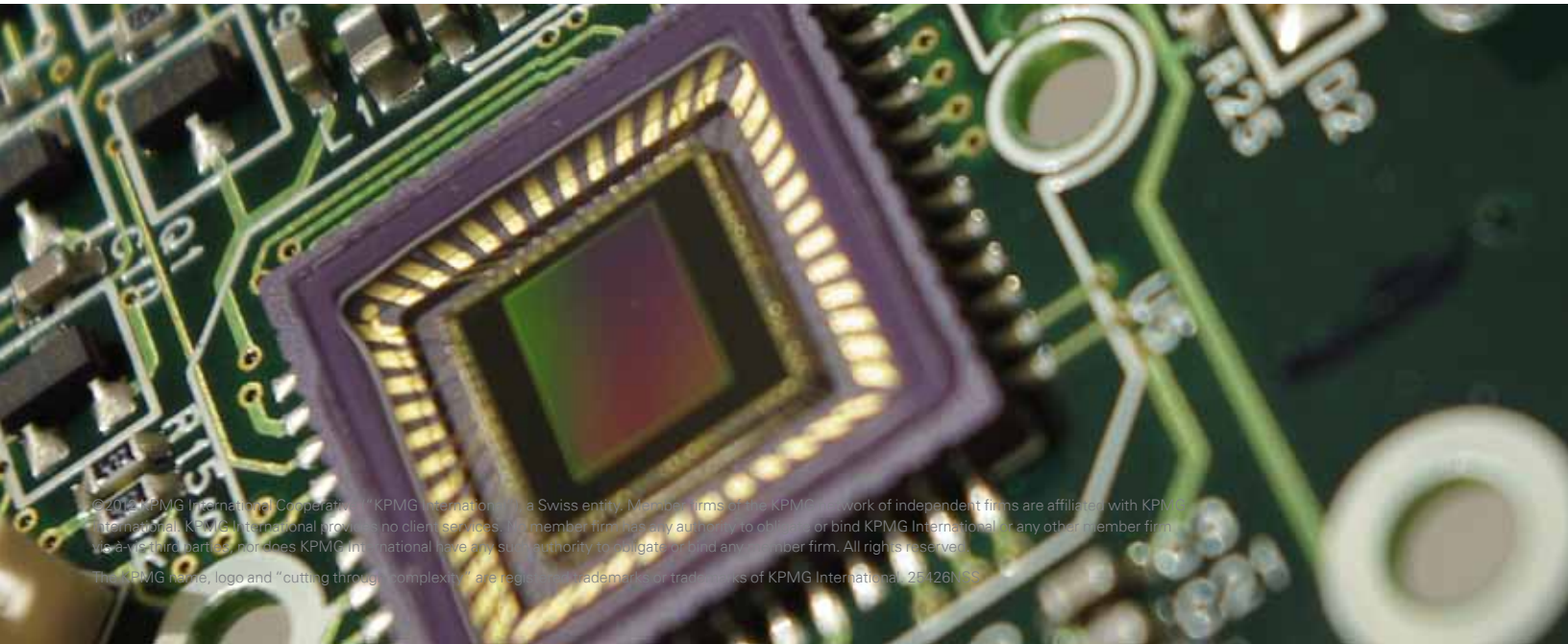
Counterfeiting, a new topic in the survey this year, was cited as a challenge by most of the respondents, with a third saying the impact of counterfeiting affects at least 5 percent of the industry's revenue.

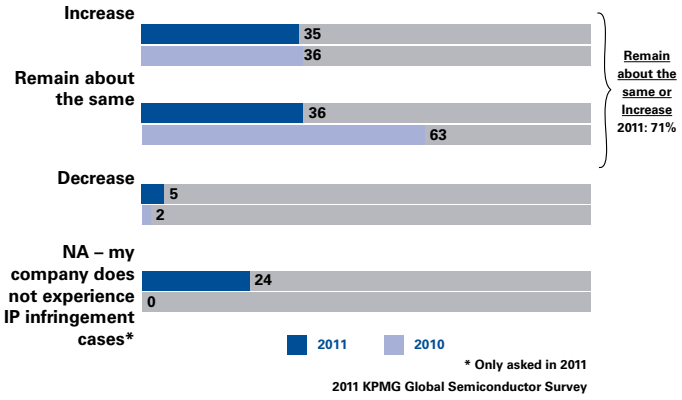
In response to the counterfeiting challenge, companies are taking a number of steps, including the use of more sophisticated identification technologies; providing detailed testing protocols to direct clients and authorized distributors; enhancing product return testing; and other defensive measures.



Intellectual Property Infringement

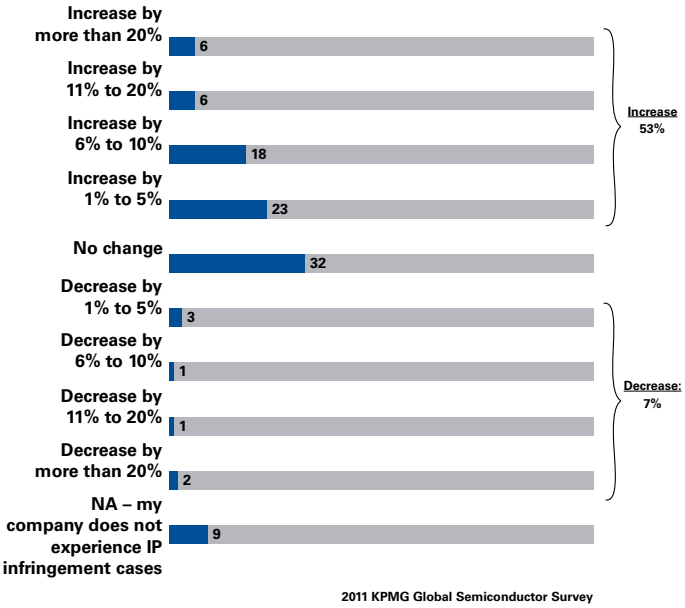
Over the next 12 months, will the number of semiconductor intellectual property infringement cases with which your company is involved increase, decrease, or remain about the same?

Many Say the Number of Semiconductor Intellectual Property Infringement Cases Will Remain about the Same or Increase over the Next Year



What is your estimate for the change in cost your company will incur over the next three years to respond to semiconductor intellectual property (IP) infringement cases?

Over Half Expect an Increase in Cost to Respond to Semiconductor IP Infringement Cases over the Next Three Years



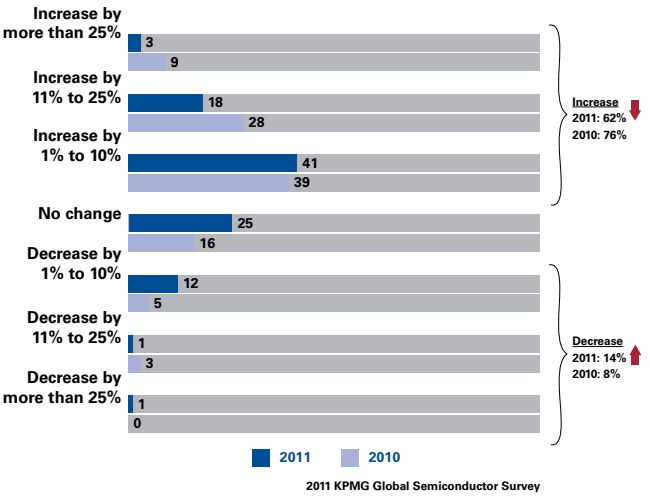
Respondents were divided about the potential growth of semiconductor-related intellectual property cases, with 36 percent saying the number of cases would remain about the same, and 35 percent expecting an increase.

Fifty-three percent of the executives expect the cost of responding to semiconductor IP infringement cases to increase over the next three years, perhaps due to the increased globalization of IP litigation and other factors.

Mergers and Acquisitions

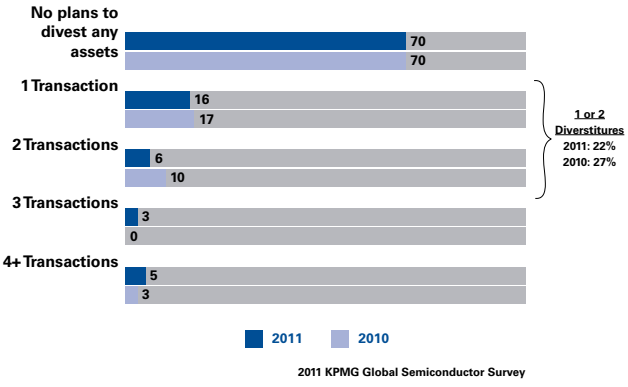
What is your prediction for the expected rate of change in the number of global M&A deals in the next fiscal year (2012), based on the three year average between 2008 and 2010? Expected change in rate of M&A Activity (%)

Those Expecting Global M&A Deals to Increase, Declined Year-over-Year



What is your company's expectation with respect to divesting certain business units or intellectual property assets in 2012 (calendar year)?

Fewer Diverstitures Expected in 2012



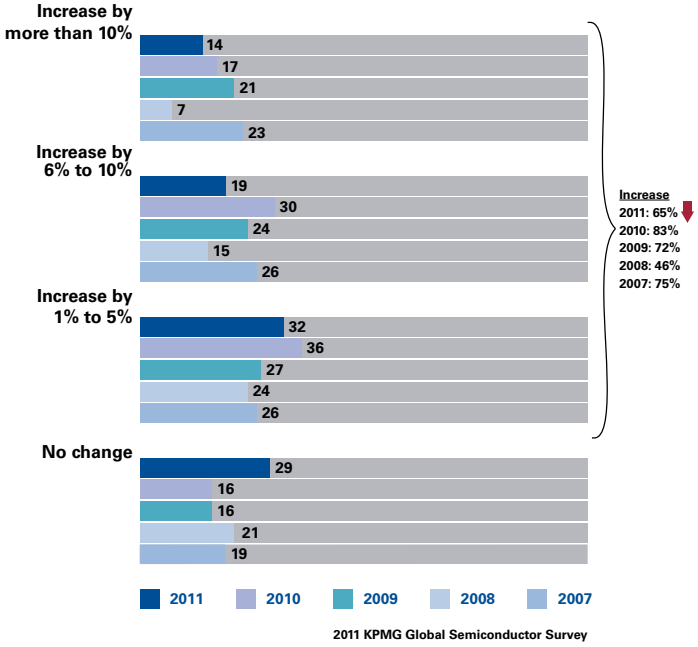
Muted expectations about 2012 also apply to respondents' thoughts for semiconductor M&A activity, with 66 percent calling for little or no growth in the number of transactions, compared with 55 percent in last year's survey.

Asked about their company's plans on acquisitions, 55 percent say they have no plans to acquire any assets. Similarly, 70 percent say they have no plans to divest any assets in 2012.

Research and Development

What is your expectation for the change in semiconductor R&D spending by your company for the next fiscal year over the current year?

Growth Rate for Semiconductor-Related R&D Spending Also Expected to Decrease in the Next Fiscal Year



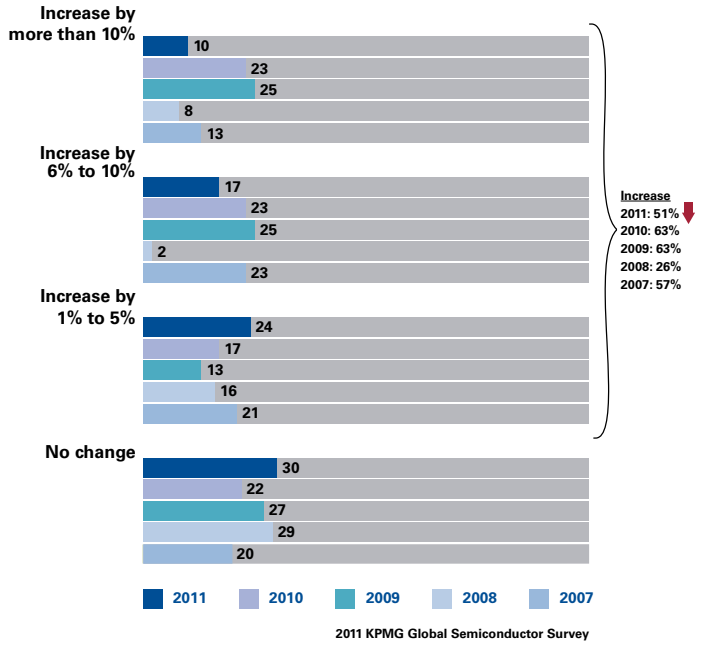
As the industry prepares for lower revenue, respondents say companies are likely to respond in part by curtailing growth in R&D spending. In this year's results, 61 percent of respondents expected spending to remain flat or to increase by 5 percent or less, compared with 52 percent in 2010.

Respondents who forecast R&D spending cuts rose from 2 percent in 2010 to 7 percent this year.

Capital Spending

What is your outlook for semiconductor-related capital spending by your company (both equipment and software) for the next fiscal year compared with your company's current year spending?

Growth Rate for Semiconductor-Related Capital Spending (Both Equipment and Software) Is Expected to Decrease for the Next Fiscal Year



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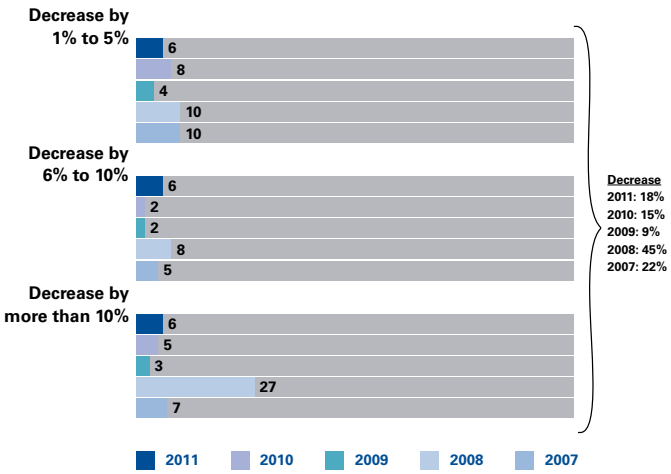
What is your outlook for semiconductor-related capital spending by your company (both equipment and software) for the next fiscal year compared with your company's current year spending?

Soft Outlook for Semiconductor-Related Capital Spending (Both Equipment and Software) for the Next Fiscal Year



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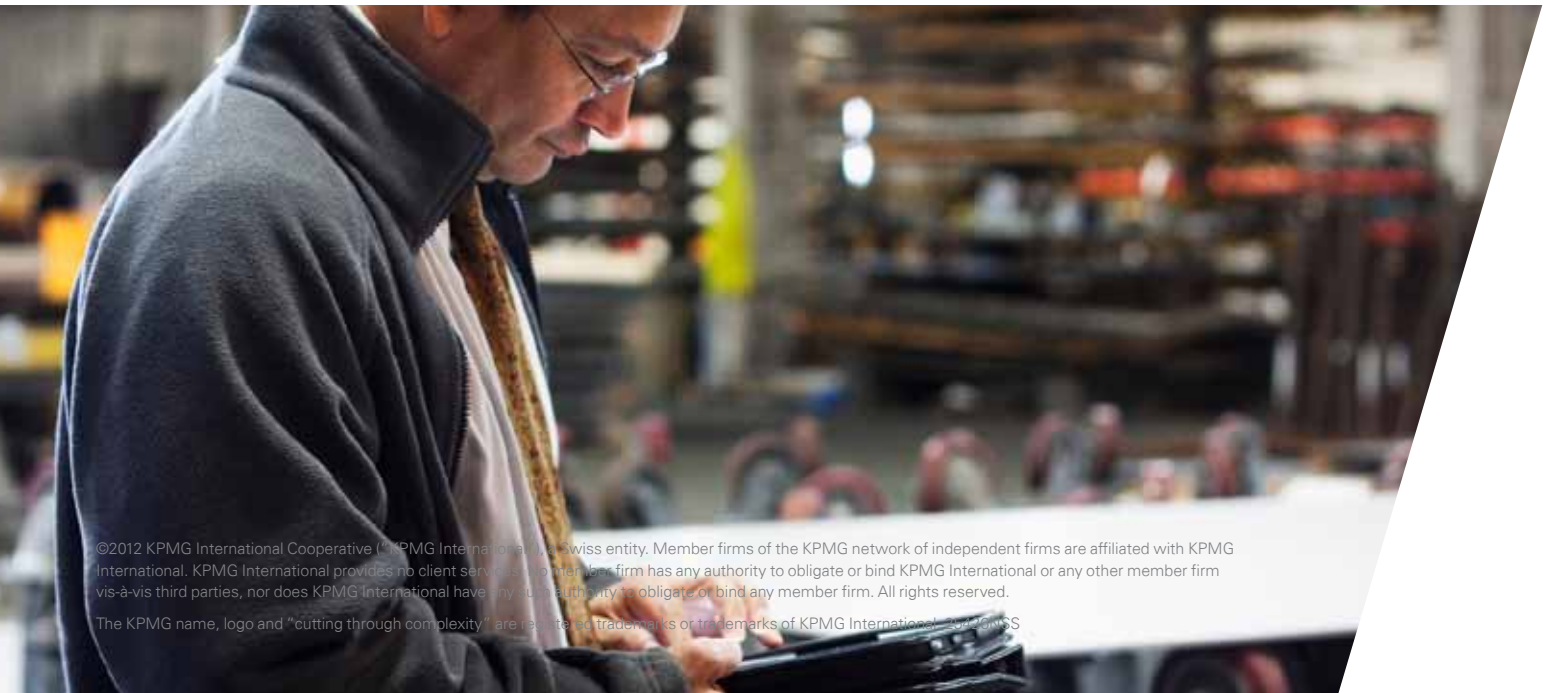
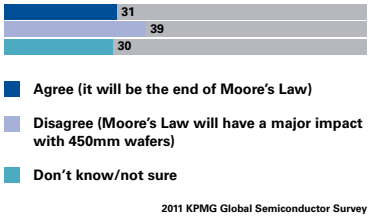
As with R&D, respondents are less optimistic about their companies' investment in capital equipment and software over the next year. Only 51 percent expect capital spending to increase, compared with 63 percent in the 2010 survey. Thirty percent expect spending levels to remain flat, compared with 22 percent last year, and 18 percent expect capital spending to decrease (compared with 15 percent in 2010).



Technology Transitions

Please indicate your agreement with the following statement: Given the high cost of equipping a 450mm wafer fab, the industry will remain at 300mm for the foreseeable future.

4 in 10 Say the Industry Will Move to 450mm Wafers Despite the High Cost and Not Remain at 300mm



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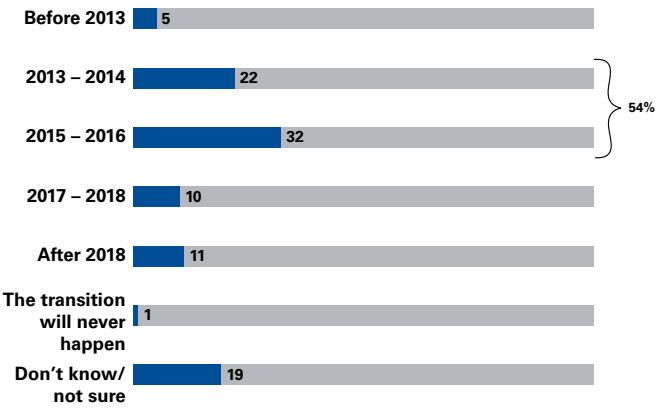
When do you think the transition to the 450mm wafer will occur?

Majority Expect the Transition to the 450mm Wafer Will Occur between 2013 and 2016



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Looking at technology transitions, 39 percent of respondents believe the industry will shift to 450mm wafers, despite the high costs of equipping fabs. Asked about timing, 54 percent believe the transition to 450mm wafers will take place between 2013 and 2016.

Asked whether the introduction of sub 20nm production processes would have a greater effect than the production of 450mm wafers, 40 percent of respondents cited sub-20nm and 27 percent cited 450mm wafers. A third of respondents said both would have the same impact for the industry.

KPMG: An Experienced Team, a Global Network

KPMG's Technology professionals offer skills, insights, and experience culled from a long history of work with semiconductor companies to deliver the services you need to help you succeed wherever you compete in the world.

We offer customized, industry-tailored audit, tax, and advisory services that can lead to wide-ranging value-added help for your most pressing business requirements.

KPMG, through its global network of highly qualified professionals in the Americas, Europe, the Middle East, Africa, and Asia Pacific, can help you reduce costs, mitigate risk, improve controls over a complex value chain, protect intellectual property, and meet the myriad challenges of the a global economy.

Contributors

We acknowledge the significant contribution of the following individuals who assisted in the development of this report:

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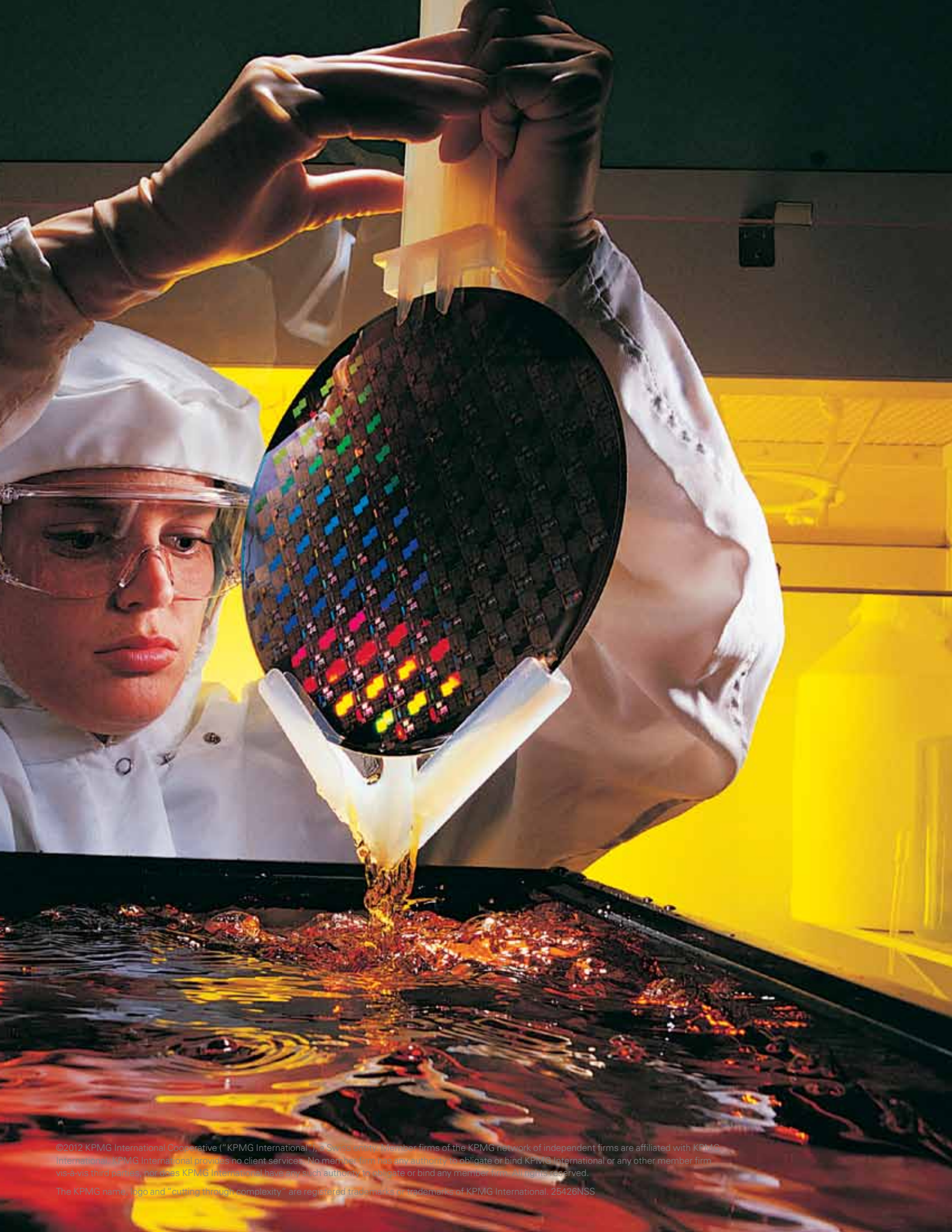

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