Manufacturing Barometer

Business outlook report
October 2015

Special topic:
Investment in IT systems

pwc

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Quarterly highlights

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Chief quarterly findings

Significant changes occurred in the third quarter of 2015 which created a volatile forward planning cycle for industrial manufacturing panelists.

First, while optimism about the US economy's prospects over the next 12 months was off 9 points from 69 percent to 60 percent, optimism about the world economy's prospects dropped sharply from 38 percent to 23 percent (off 15 points). And pessimism rose to an equal level with optimism (23 percent). These darker and more uncertain prospects for the global economy, as well as the impact of the Chinese economy and its monetary effects on the US dollar, have created serious underlying fears in the year ahead.

Yet own-company revenue forecasts rose to a moderately high 5.3 percent pace for the next 12 months, similar to a year ago (5.6 percent), but with fewer predicting positive growth.

A volatile pattern is also seen in international sales. In 3Q 2015, international sales growth turned nearly 3 to 1 negative although the majority, 54 percent, stayed about the same. However, forward 12-month forecasts reflected a 31 percent contribution from international sales among those selling abroad, on pace with a year ago (30 percent). Yet fewer panelist firms are planning expansion abroad in the year ahead (only 8 percent).

In the wake of this volatility, new hiring has gone to minus 0.2 percent, with only 37 percent now planning to hire over the next 12 months (off from 52 percent a year ago). And concern about a lack of qualified workers has dropped sharply as a potential barrier to 10 percent. This could be a reaction to lower expectations in calendar-year 2015, and fewer new business initiatives cited; and it could change dramatically in the next few quarters.

In contrast, CapEx and operational spending over the next 12 months are reportedly continuing on pace, led by new product and service introductions, R&D, and facilities expansion.

Similarly, the US dollar's monetary exchange rate is now cited as the leading headwind to growth, along with the more typical lack of demand, legislative/regulatory pressures, and decreasing profitability.

Finally, while margins remained positive in 3Q 2015, and costs were lower, price flexibility has largely disappeared in the last quarter.

Optimism about the world economy drops sharply

While optimism about the US economy's prospects over the next 12 months among the industrial manufacturing panelists dropped slightly from 69 percent in second quarter to 60 percent (off 9 points), few were pessimistic (only 3 percent) and 37 percent uncertain. This attitudinal pattern is somewhat better than a year ago when 57 percent were optimistic and 7 percent pessimistic.

In sharp contrast, only 23 percent of panelists selling abroad are optimistic about the world economy's prospects over the next 12 months, and the same number, 23 percent, are now pessimistic. This is a sharp drop-off from the prior quarter when 38 percent were optimistic and only 8 percent were pessimistic. Of further concern was the 3Q 2015 perception of 40 percent that the world economy was declining, up 25 points quarter to quarter. And only 15 percent viewed global growth (off 11 points). Yet the most typical attitude remains as "unchanged," cited by 45 percent of those selling abroad.

Own-company growth on pace for 12-month forecast

The projected average revenue growth rate over the next 12 months among panelists was a moderately strong 5.3 percent, nearly a half point higher than the prior quarter's 4.9 percent and nearly on par with a year ago (5.6 percent). Seventy-three percent expect positive revenue growth for their own companies, with 10 percent forecasting double-digit growth and 63 percent forecasting single-digit growth. Eight percent forecast negative growth, 7 percent forecast zero growth, and 12 percent were not reported. While fewer reported positive revenue growth than a year ago (86 percent, 13 points higher), the overall mean growth rate stayed only slightly lower.

It is also noteworthy that calendar-year 2015 forecasts are nearly 1½ points lower than the 12-month forecasts, 3.8 percent versus 5.3 percent, indicating a strong pickup in revenue growth expected in the first 3 quarters of 2016 – right up to the time of the US presidential election.

International sales down but on pace for next 12 months

Of respondents selling abroad, the projected contribution of international sales to total revenue over the next 12 months rose to the 31 percent level, 4 points above the prior quarter, and 1 point higher than a year ago. It is noteworthy that despite the 3Q15 falloff in international sales for 38 percent of these panelists, the overall 12-month mean contribution is expected to remain on pace.

Key findings

New hiring cut back sharply

Only 37 percent of industrial manufacturers plan to add employees to their workforce over the next 12 months, down 15 points from the 52 percent in the second-quarter 2015, and a year ago (52 percent). Only 8 percent plan to reduce the number of full-time equivalent employees (up 1 point) and 55 percent will stay about the same. Total net workforce growth projection was minus 0.2 percent this quarter, below the last quarter's plus 0.2 percent and last year's plus 0.4 percent, indicating further cutbacks in hiring among these industrial manufacturing firms.

Monetary exchange rate moves into the first place as headwind to growth

Significantly, monetary exchange rate has become the leading headwind to growth over the next 12 months, up 1 point to 38 percent. A year ago, it was 14 percent (24 points lower), a very weak factor.

The two typically chief barriers to growth were lower as monetary exchange rate took front stage. Lack of demand was at 32 percent (off 7 points) and legislative/regulatory pressures was at 25 percent (off 14 points). Also off sharply was lack of qualified workers, 10 percent (off 14 points) and taxation policies, 17 percent (off 12 points). In contrast, decreasing profitability rose 1 point to 25 percent and fear of the Fed raising the interest rates, 12 percent (up 5 points).

Spending continues apace through the volatility

The stronger dollar may play a role in the continued spending over the next 12 months. Overall, 37 percent of US industrial manufacturers surveyed plan major new investments of capital during the next 12 months, up 3 points from the prior quarter's 34 percent and last year's 36 percent. The mean investment as a percentage of total sales was a moderately high 5.6 percent, well above last quarter's 3.3 percent and on par with the 5.7 percent a year ago. These findings indicate a continuity in the number of panelist firms planning CapEx spending over the next 12 months, and they are planning to spend at moderately higher levels.

Looking ahead over the next 12 months, operational spending increased: 82 percent of respondents plan to increase operational spending, up 7 points quarter to quarter. Leading increased expenditures were new product or service introductions (48 percent, up 4 points), research and development (37 percent, up 3 points), business acquisitions (23 percent, up 3 points), and information technology (22 percent, same). Plans for facilities expansion rose 10 points to 20 percent and geographic expansion increased slightly to 13 percent (up 1 point). Marketing and sales promotion remained low, at 10 percent.

Yet fewer panelists are planning new business initiatives, 43 percent (11 points lower). But a similar number of panelists are planning M&A activity over the next 12 months, 27 percent (off 2 points from the last quarter). They are mostly planning to purchase another business (22 percent), although some are planning to sell part or all of their own business (7 percent). Plans for expansion to new markets abroad dropped off to 8 percent (off 4 points), with 5 percent planning new facilities abroad. Reductions abroad were reported by the same number, net 8 percent, with closing/reduction of facilities abroad cited by 7 percent and reduced activities abroad by 7 percent. New joint ventures are planned by 13 percent (off 6 points), with far fewer planning new strategic alliances, 13 percent (off 16 points).

Gross margins continue but price flexibility disappears

While gross margins in 3Q 2015 remained positive (net plus 9 percent, off 8 points) and costs were lower (net plus 3 percent, off 7 points), price flexibility has largely disappeared at net minus 7 percent, off 17 points from the prior quarter.

A quarter-over-quarter comparison of key indicators shows the business outlook for the next 12 months and how the views of the panel have changed each quarter (see chart 1.1). The pages that follow provide a detailed look at each question for the past five quarterly surveys.

Special topic: Investment in information technology

Investment in information technology

Eight in ten (80 percent) of industrial manufacturers report having a multiyear plan (3-5 years) that addresses business capabilities and processes as well as IT systems. Only 16 percent do not and 4 percent were not reported.

Significantly, 78 percent of total panelists claim that their current IT systems support their 3-5 year business strategy. Only 18 percent do not and 4 percent were not reported. Nearly all of the 18 percent negative claim to have plans to address this constraint over the next 12-18 months (89 percent).

Overall, 84 percent claim their IT budget is sufficient (72 percent) or more than sufficient (12 percent) to support their 3-5 year business strategy. Only 10 percent say their current IT is not sufficient and 6 percent are not certain/not reported.

Industrial manufacturing companies' IT investments are made primarily to both reduce costs (84 percent) and support growth (72 percent), with far fewer (40 percent) to support regulatory compliance. Cloud-based technologies are part of the technology strategy among 62 percent of panelist firms and are business ready in 52 percent.

Information security risks (72 percent), financial costs (68 percent), and lack of clear value proposition (66 percent) are the greatest barriers to panelist companies' investments in IT. Constraints on IT resources was at 58 percent with more citing it as "critical" (24 percent).

The greatest barrier to executing IT initiatives in panelist companies is old technologies/legacy systems (68 percent). Also important are lack of clear plan (60 percent) and lack of properly skilled teams (54 percent). Inefficient third-party partners was cited by 48 percent.

Overall, 90 percent are planning to invest in IT technologies over the next 12-18 months, with upgrading infrastructure the leader at 82 percent. Also mentioned are cloud (34 percent), ERP (26 percent), and mobile (26 percent). A limited number mentioned eCommerce (10 percent).

Operations (86 percent) and finance (58 percent) are the priority business functions with highest mentions for IT investments over the next 12-18 months. Next are sales (44 percent), marketing (30 percent), and human resources (24 percent).

Importantly, 44 percent of industrial manufacturers expect their companies' IT investments to increase over the next 12-18 months – an average of 9.1 percent. (This reflects an overall increase of 4.4 percent for the total panel over the next 12-18 months.) Only 6 percent expect a decrease and 38 percent expect to stay about the same. Not certain were 12 percent.

Key indicators for the business outlook

Chart 1.1 Key indicators for the business outlook

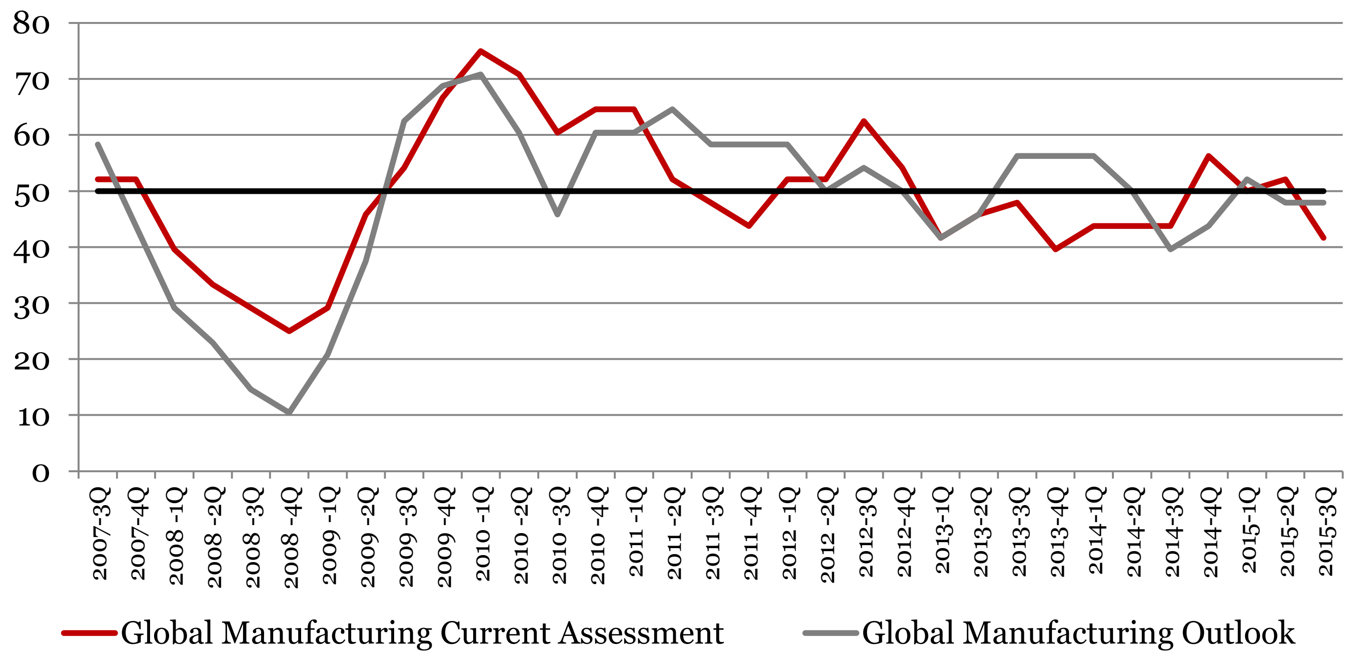
A quarter-over-quarter comparison of the survey's key indicators shows how the 12-month outlook has changed each quarter. The change column indicates the movement of opinion of those surveyed over the past two quarters.

Business outlook, next 12 months among industrial manufacturers	2014		2015			Change	Page
	3Q'14	4Q'14	1Q'15	2Q'15	3Q'15	2Q'15–3Q'15	
Optimistic about US economy	57%	68%	76%	69%	60%	↓	11
Optimistic about world economy	30%	38%	42%	38%	23%	↓	12
Expect positive revenue growth	86%	85%	83%	81%	73%	↓	20
Average growth rate expected	5.6%	5.8%	5.1%	4.9%	5.3%	↑	20
Planning major new investments	36%	43%	52%	34%	37%	↑	22
New investments as a % of sales	5.7%	3.3%	3.3%	3.3%	5.6%	↑	22
Planning to hire	52%	60%	52%	52%	37%	↓	21
New workers as a % of workforce (net)	0.4%	1.1%	0.5%	0.2%	-0.2%	↓	21
Expected barriers to growth:							
• Monetary exchange rate	14%	15%	21%	37%	38%	↑	23
• Lack of demand	43%	35%	29%	39%	32%	↓	23
• Legislative/regulatory pressures	59%	32%	33%	39%	25%	↓	23
• Decreasing profitability	22%	20%	21%	24%	25%	=	23
• Oil/energy prices	22%	22%	26%	22%	20%	=	23
• Taxation policies	31%	27%	24%	29%	17%	↓	23
• Pressure for increased wages	7%	10%	17%	12%	12%	=	23
• Competition from foreign markets	21%	15%	17%	17%	12%	↓	23
• Capital constraints	16%	12%	14%	14%	12%	=	23
• Higher interest rates	14%	7%	10%	7%	12%	↑	23
• Lack of qualified workers	26%	33%	35%	24%	10%	↓	23

PwC global manufacturing current assessment and outlook indices

The manufacturing outlook held steady relative to second quarter results, while the current assessment showed a notable decline. As both indices are calculated using a four-quarter moving average, these results mask some growing areas of concern. In fact, the non-smoothed current assessment dropped to 16, its weakest reading since 2013. This result reflects a broad weakening across most major input factors. The unsmoothed outlook figure did improve off a very weak result in the prior quarter. Company investment and operational spending improved slightly while other categories weakened.

While the overall indices have been weak, executives are actually fairly optimistic about the current condition and outlook for the US economy over the next 12 months. In fact, both of the US surveys achieved the highest levels in five years in the first quarter before the pull back in the second and third quarters. In other words, while the momentum is trending downward, current levels of optimism remain high relative to history. The bigger concerns remain evident on the international side where concerns about trade volume, geopolitical uncertainty, and currency volatility weigh on sentiment.



PwC global manufacturing current assessment and outlook indices

The US economy had previously seemed resilient in the face of a broad international slowdown. Second quarter real GDP growth rebounded strongly, while employment gains continued to impress. However, the labor market clearly slowed in the third quarter. Wages and the number of hours worked added to the disappointment.

There are several reasons to still be optimistic about the US economy. The first is that the amount of slack in the labor force continues to improve markedly.

The second reason for optimism is that the service sector and the US consumer remain strong. While oil and gas, exporters, and related industries continue to cut spending, indicators of service sector health remain much stronger. In addition, real consumer spending was 3.2 percent higher than a year ago in August. Lower gas prices, a stronger dollar, and solid, albeit slower, employment gains will drive future consumer spending, which accounts for nearly 70 percent of US economic output.

Until we see evidence of a weaker consumer and a slower service sector, we remain confident that the US economy will accelerate modestly in 2016.

Background/methodology

PwC has surveyed global manufacturing executives since 2003 with the results published in our *Manufacturing Barometer* publication. The responses to these survey questions have been used to measure the sentiment of manufacturers by creating current assessment and outlook indices. The Global Manufacturing Current Assessment Index measures current trends in pricing, margins, employment, and capital expenditures, while the Global Manufacturing Outlook Index measures expectations for revenue, employment, operational spending, and capital expenditures. These results are calculated as a four-quarter moving average of diffusion indices which measure the degree to which their equal-weighted components move in the same direction at the same time. The indices are scaled between 1 and 100 with above 50 indicating more positive sentiment and below 50 indicating more negative sentiment.

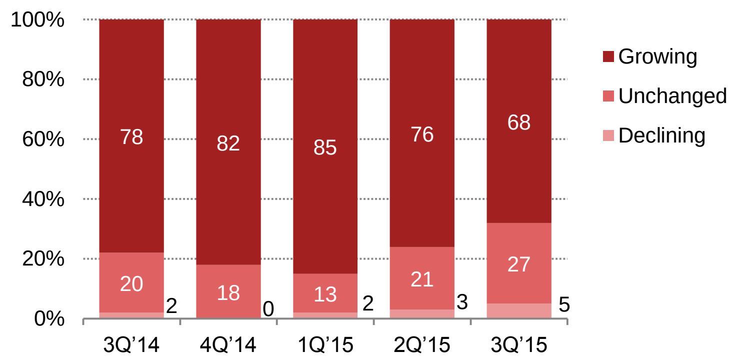
Economic views

View of the US economy, this quarter

Which best describes your view of the US economy this quarter?

In third-quarter 2015, 68 percent of US industrial manufacturers surveyed believed the US economy was growing, off 8 points from the prior quarter's 76 percent. Five percent believed it was declining and 27 percent saw no change from second-quarter 2015.

Chart 2.1 View of the US economy, this quarter



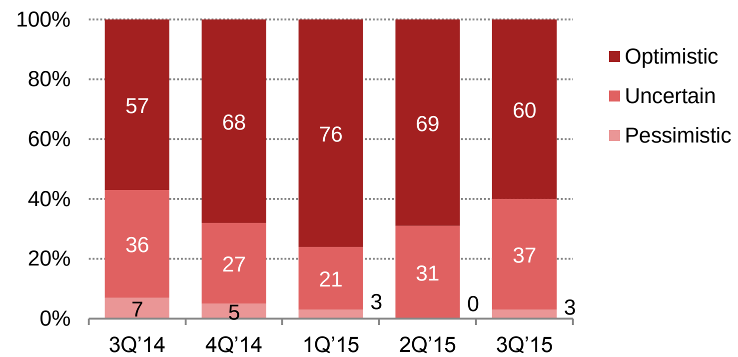
Note: In 3Q 2015 total respondents = 60

View of the US economy, next 12 months

Looking at the next 12 months, how do you feel about the prospects for the US economy?

Looking ahead, 60 percent of respondents expressed optimism about the 12-month outlook for the US economy, down 9 points from the prior quarter's 69 percent. Three percent were pessimistic (up 3 points from last quarter), while 37 percent were uncertain. A year ago, 57 percent were optimistic, only 3 points lower.

Chart 2.2 View of the US economy, next 12 months

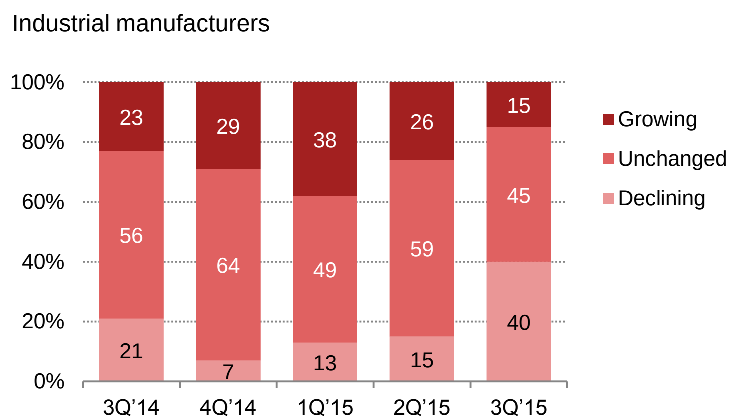


View of the world economy, this quarter

Which best describes your view of the world economy this quarter (international marketers only)?

In third-quarter 2015, only 15 percent of the panelists marketing abroad viewed the world economy as growing, a decrease of 11 points from the prior quarter's low 26 percent. Significantly, 40 percent believed it was declining (up 25 points from the prior quarter). Forty-five percent said they saw no change. Currently, perceptions of the world economy's decline is nearly 3 to 1; a year ago, it was at a 1 to 1 rate (growth versus decline).

Chart 2.3 View of the world economy, this quarter



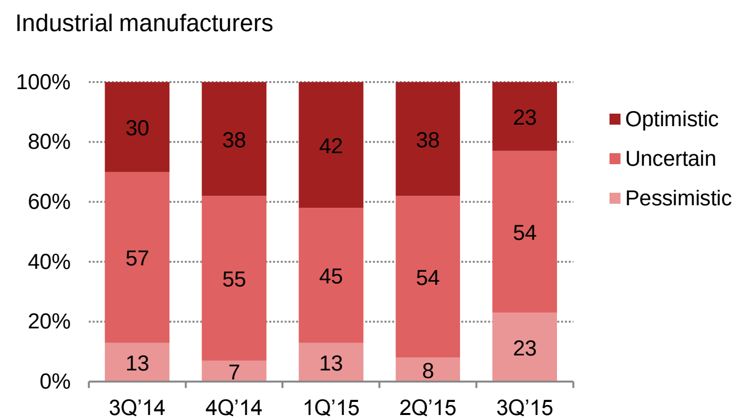
Note: In 3Q 2015 total respondents marketing abroad = 53

View of the world economy, next 12 months

Looking at the next 12 months, how do you feel about the prospects for the world economy (international marketers only)?

Looking ahead, only 23 percent of US-based industrial manufacturers who market abroad are optimistic about the prospects for the world economy over the next 12 months, off 15 points from the prior quarter's 38 percent. Twenty-three percent are pessimistic (15 points higher), while 54 percent are uncertain. A year ago, 30 percent were optimistic (7 points higher) and fewer were pessimistic (13 percent, 10 points less).

Chart 2.4 View of the world economy, next 12 months



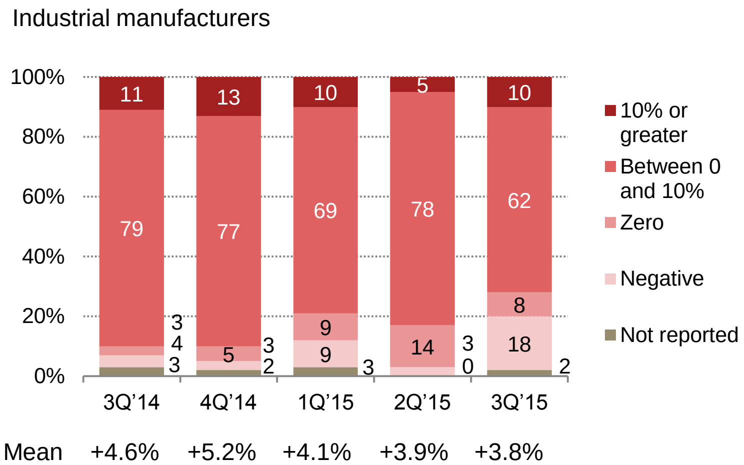
Company performance

Company revenue growth, calendar year

What is your company's estimated revenue growth rate for the calendar year?

The composite average growth estimate for own-company revenue in the calendar-year 2015 is at 3.8 percent, on par with the 3.9 percent in the second quarter for calendar-year 2015 but below the 4.6 percent a year ago. Seventy-two percent of respondents said they expect positive own-company growth, with 10 percent expecting double-digit growth and 62 percent anticipating single-digit growth. Eighteen percent were on the negative side (up 15 points), while 8 percent expected zero growth and 2 percent were not reported.

Chart 3.1 Company revenue growth, calendar year



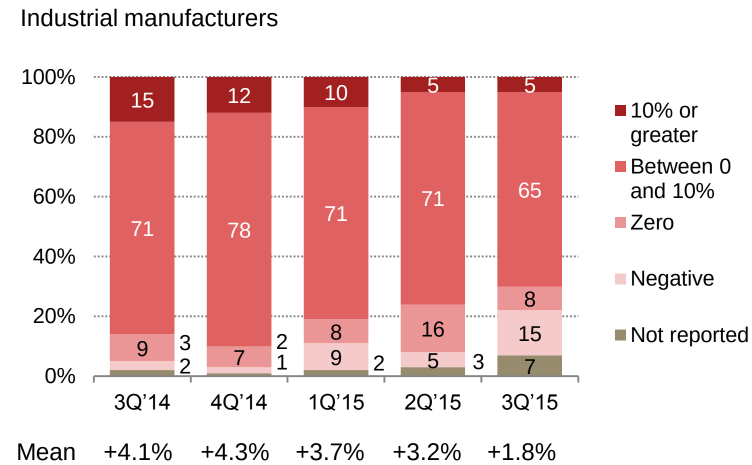
Note: In 3Q 2015 total respondents = 60

Industry growth, calendar year

What is your industry's estimated growth rate for the calendar year?

Estimated industry growth rate for calendar-year 2015 dropped to 1.8 percent, well over a point below the second quarter's 3.2 percent for calendar-year 2015 and far below the 4.1 percent a year ago. Seventy percent of panelists reported positive industry growth for 2015 (5 percent double-digit growth and 65 percent single-digit growth). Fifteen percent were on the negative side (up 10 points) and 8 percent expected zero growth for this year. Seven percent was not reported.

Chart 3.2 Industry growth, calendar year

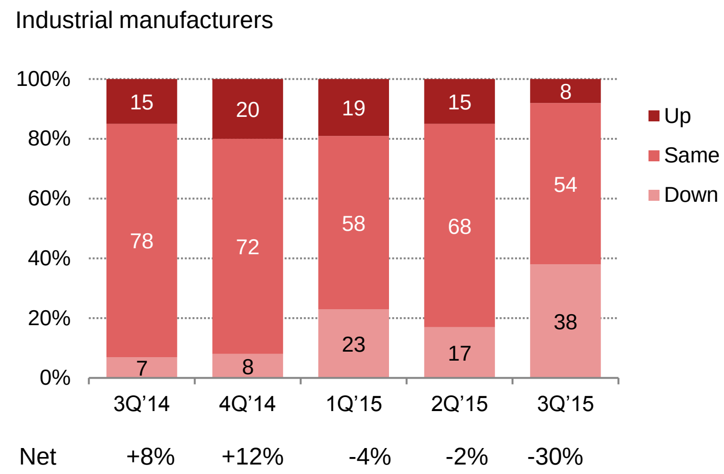


International sales

Are international sales up, down, or the same compared with three months ago (international marketers only)?

US-based industrial manufacturers that sell abroad reported a sharp downward movement in international revenue in third-quarter 2015, with only 8 percent reporting an increase in sales, and 38 percent reporting a decrease, for a net 30 percent decreasers (28 points below the previous quarter). The remaining 54 percent said sales stayed about the same quarter to quarter. Note that this appears to reflect a quarterly low in international sales among these panelists.

Chart 3.3 International sales



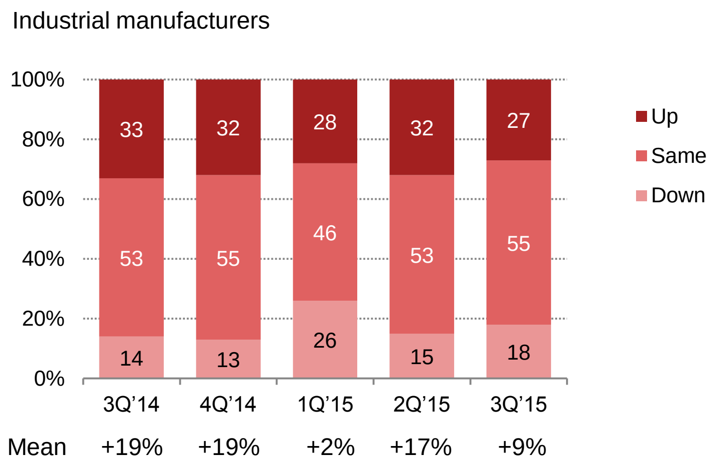
Note: In 3Q 2015 total respondents marketing abroad = 53

Changes in gross margins

Are gross margins up, down, or the same compared with three months ago?

In third-quarter 2015, gross margins remained positive, but slightly lower. They were higher for 27 percent of panelists and lower for 18 percent, for a net plus 9 percent, 8 points below the prior quarter's plus 17 percent. Fifty-five percent stayed about the same.

Chart 3.4 Changes in gross margins



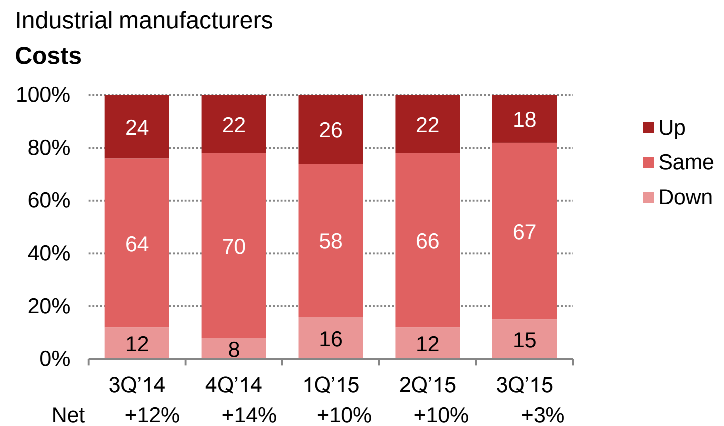
Note: In 3Q 2015 total respondents = 60

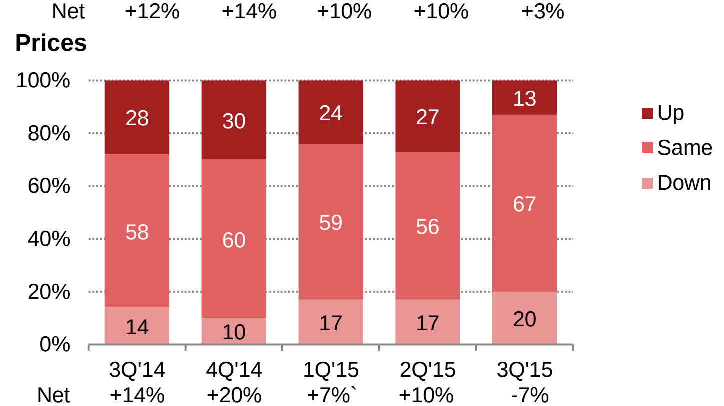
Changes in costs and prices

Are costs up, down, or the same compared with three months ago? prices?

In third-quarter 2015, costs were lower while prices were off sharply. Eighteen percent of US-based industrial manufacturers reported higher costs (off 4 points) and 15 percent reported lower costs (up 3 points), for a net plus 3 percent change, 7 points below the prior quarter's plus 10 percent. On the price side, 13 percent raised prices (off 14 points) and 20 percent lowered them (up 3 points), for a net minus 7 percent reporting higher prices (17 points below the prior quarter) as price flexibility virtually disappeared.

Chart 3.5 Changes in costs and prices



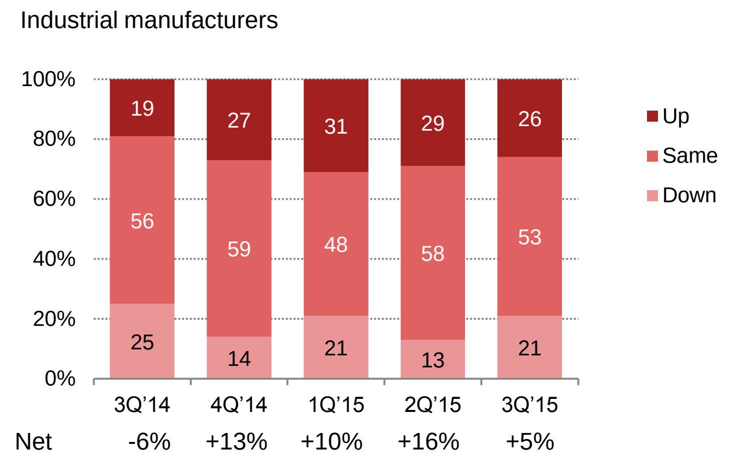


Inventory movement

Are finished inventories as a percentage of sales up, down, or the same compared with three months ago?

Inventories as a percentage of sales grew for 26 percent of US-based industrial manufacturers in the third quarter, 3 points below the prior quarter. Levels were down for 21 percent (up 8 points), for a net plus 5 percent higher inventory growth in third-quarter 2015, a decrease of 11 points. Interestingly, there was a similar drop-off a year ago in 3Q14, when inventories dropped to net minus 6 percent.

Chart 3.6 Inventory movement



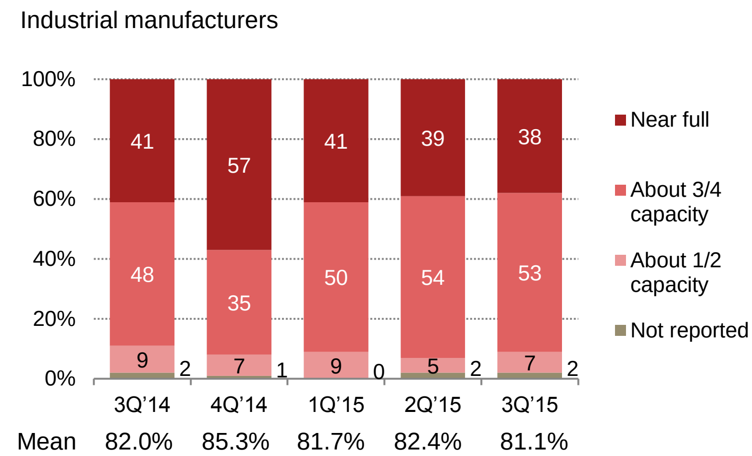
Note: In 3Q 2015 total respondents = 60

Level of operating capacity

What is your organization's current operating capacity?

Operating capacity is an estimate of the current level of permanent staffing and operations compared with what is needed for full-capacity output. In the third quarter, the mean was off slightly to 81.1 percent of capacity, with 38 percent of industrial manufacturers surveyed claiming to be at or near full capacity, on par with the prior quarter and a year ago.

Chart 3.7 Level of operating capacity



Note: In 3Q 2015 total respondents = 60

Business outlook, next 12 months

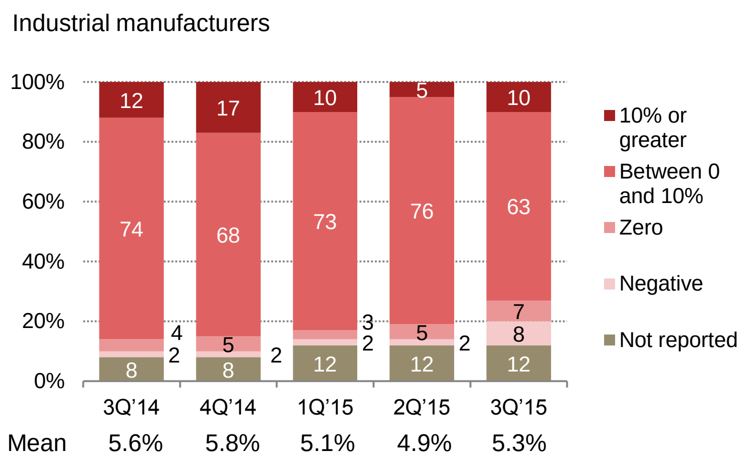
Revenue growth, next 12 months

International sales, next 12 months

What is your organization's estimated revenue growth rate for the next 12 months?

The projected average revenue growth rate over the next 12 months among panelists was a moderately strong 5.3 percent, half a point higher than the prior quarter's 4.9 percent but slightly below a year ago (5.6 percent). Seventy-three percent expect positive revenue growth for their own companies, with 10 percent forecasting double-digit growth and 63 percent forecasting single-digit growth. Eight percent forecast negative growth, 7 percent forecast zero growth, and 12 percent were not reported. While fewer reported positive revenue growth than a year ago (86 percent, 13 points higher), the overall mean growth rate stayed only slightly lower.

Chart 4.1 Revenue growth, next 12 months

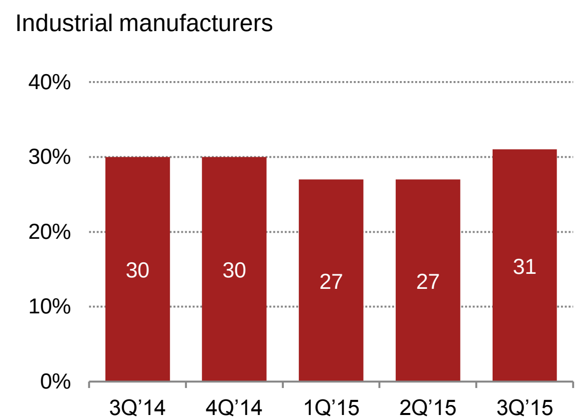


Note: In 3Q 2015 total respondents = 60

What percentage of your business's total revenue over the next 12 months do you expect to be derived from international sales (international marketers only)?

Of respondents selling abroad, the projected contribution of international sales to total revenue over the next 12 months rose to the 31 percent level, 4 points above the prior quarter, and 1 point above a year ago. It is noteworthy that despite the 3Q15 falloff in international sales for 38 percent of these panelists, the overall mean contribution is expected to remain on pace.

Chart 4.2 International sales, next 12 months



Note: In 3Q 2015 those marketing abroad = 53

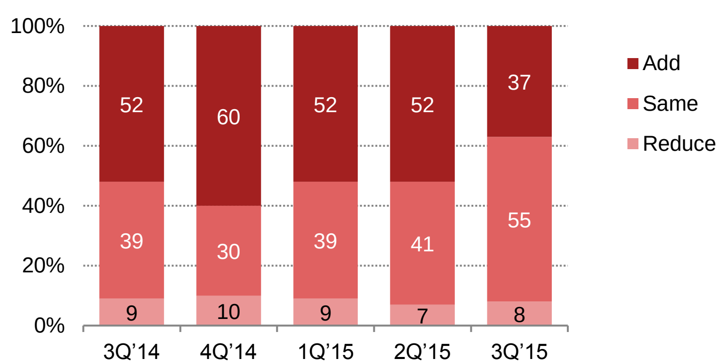
Percent planning to hire

Do you plan to add or reduce the number of full-time equivalent employees over the next 12 months?

In total, only 37 percent of industrial manufacturers plan to add employees to their workforce over the next 12 months, down 15 points from the 52 percent in the second-quarter 2015, and a year ago (52 percent). Only 8 percent plan to reduce the number of full-time equivalent employees (up 1 point) and 55 percent will stay about the same. Total net workforce growth projection was flat-to-negative this quarter at minus 0.2 percent, below the last quarter's plus 0.2 percent and last year's plus 0.4 percent, indicating further cutbacks in hiring among these industrial manufacturing firms.

Chart 4.3 Percent planning to hire

Industrial manufacturers



Mean	+0.4%	+1.1%	+0.5%	+0.2%	-0.2%

Note: In 3Q 2015 total respondents = 60

Percent planning to hire by type of employee

What types of employees do you plan to add over the next 12 months?

Among the far fewer 37 percent of panelists planning to hire within the next 12 months, the most sought-after employees will be blue collar/skilled labor (23 percent, down 16 points) and professionals/technicians (25 percent, down 4 points). Limited white collar support (5 percent) and sales/marketing hiring is planned (3 percent), along with middle management at 7 percent. Note the new category splits below.

Chart 4.4 Percent planning to hire by type of employee

Industrial manufacturers

	3Q'14	4Q'14	1Q'15	2Q'15	3Q'15
Planning to hire (net)	52%	60%	52%	52%	37%
• **Blue collar workers**	33%	35%	33%	39%	23%
• Skilled/specialized workers	-	-	-	29%	17%
• Semi-skilled or unskilled workers	-	-	-	22%	15%
• **Professionals**	26%	32%	21%	29%	25%
• Technology/engineering	-	-	-	29%	25%
• Sales/marketing	10%	9%	9%	12%	3%
• Business/finance	-	-	-	10%	3%
• **White collar support**	10%	12%	10%	19%	5%
• **Middle management**	-	-	-	12%	7%
• **Senior management**	-	-	-	3%	2%

Percent planning major new investments of capital

Percent planning to increase operational spending

Are you actively planning any major new investments of capital over the next 12 months? If so, what percentage of total sales do you expect to invest?

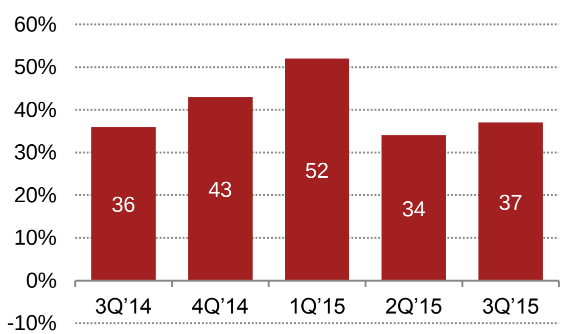
Overall, 37 percent of US industrial manufacturers surveyed plan major new investments of capital during the next 12 months, up 3 points from the prior quarter's 34 percent, and slightly above last year's 36 percent. The mean investment as a percentage of total sales was a moderately high 5.6 percent, well above last quarter's 3.3 percent and on par with the 5.7 percent a year ago. These findings indicate a continuity in the number of panelist firms planning CapEx spending over the next 12 months, and they are planning to spend at moderate levels.

Over the next 12 months, where do you expect to increase spending?

Looking ahead over the next 12 months, operational spending increased: 82 percent of respondents plan to increase operational spending, up 7 points quarter-to-quarter. Leading increased expenditures were new product or service introductions (48 percent, up 4 points), research and development (37 percent, up 3 points), business acquisitions (23 percent, up 3 points), and information technology (22 percent, same). Plans for facilities expansion rose 10 points to 20 percent and geographic expansion increased slightly to 13 percent (up 1 point). Marketing and sales promotion remained low, at 10 percent.

Chart 4.5 Percent planning major new investments of capital

Industrial manufacturers



Mean investment as a % of total sales	+5.7%	+3.3%	+3.3%	+3.3%	+5.6%

Note: In 3Q 2015 total respondents = 60

Chart 4.6 Percent planning to increase operational spending

Industrial manufacturers

	3Q'14	4Q'14	1Q'15	2Q'15	3Q'15
Percent planning to increase spending (net)	69%	82%	83%	75%	82%
• New product or service introduction	43%	52%	55%	44%	48%
• Research and development	36%	47%	40%	34%	37%
• Business acquisition	16%	22%	28%	20%	23%
• Information technology	29%	28%	33%	22%	22%
• Facilities expansion	17%	20%	19%	10%	20%
• Geographic expansion	19%	27%	19%	12%	13%
• Marketing and sales promotion	9%	15%	9%	9%	10%
• Internet commerce	2%	5%	3%	7%	5%
• Advertising	2%	8%	1%	2%	---

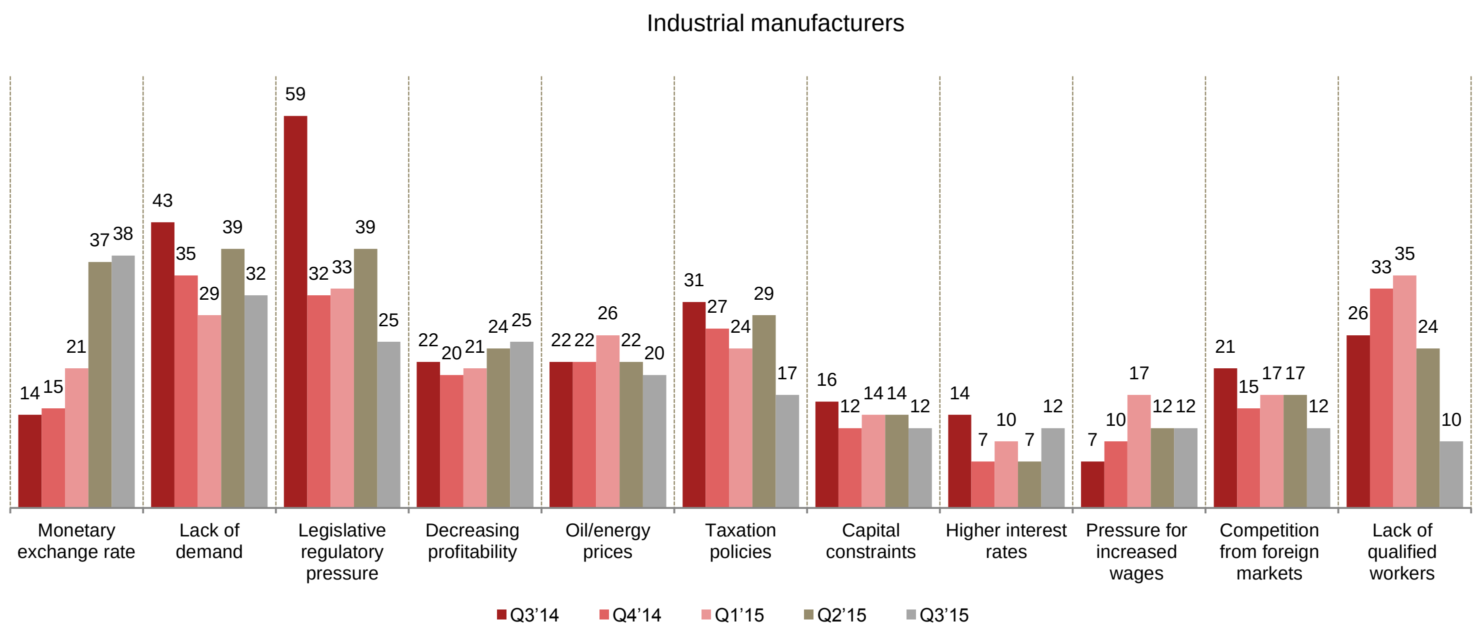
Expected barriers to business growth

Over the next 12 months, will any of the following represent barriers to business growth?

Significantly, monetary exchange rate has become the leading headwind to growth over the next 12 months, up a point to 38 percent. A year ago, it was 14 percent (24 points lower), a very weak factor.

The two typically chief barriers to growth were lower as monetary exchange rate took front stage. Lack of demand was at 32 percent (off 7 points) and legislative/regulatory pressure was at 25 percent (off 14 points). Also off sharply was lack of qualified workers, 10 percent (off 14 points), and taxation policies, 17 percent (off 12 points). In contrast, decreasing profitability rose 1 point to 25 percent and fear of the Fed raising the interest rates, 12 percent (up 5 points).

Chart 4.7 Expected barriers to business growth



Note: In 3Q 2015 total respondents = 60

Plans for M&A and other business initiatives

Over the next 12 months, do you expect to participate in any of the following new business initiatives?

Fewer panelists are planning new business initiatives, 43 percent (11 points lower). A similar number of panelists are planning M&A activity over the next 12 months, 27 percent (off 2 points from the last quarter). They are mostly planning to purchase another business (22 percent) and some are planning to sell part or all of their own business (7 percent). Plans for expansion to new markets abroad dropped off to 8 percent (off 4 points), with 5 percent planning new facilities abroad. Reductions abroad were reported by a net 8 percent, with closing/reduction of facilities abroad cited by 7 percent and reduced activities abroad by 7 percent. New joint ventures are planned by 13 percent (off 6 points), with far fewer planning new strategic alliances, 13 percent (off 16 points).

Chart 4.8 Plans for M&A and other business initiatives

Industrial manufacturers

	3Q '14	4Q '14	1Q '15	2Q '15	3Q '15
New business initiatives (net)	48%	53%	57%	54%	43%
• M&A activities (net)	26%	33%	43%	29%	27%
• Purchase another business	19%	25%	29%	19%	22%
• Sell part/all own business	7%	8%	16%	14%	7%
• Equity carve-out/spin-off	4%	5%	3%	---	2%
• New strategic alliance	21%	23%	17%	29%	13%
• New joint venture	21%	25%	19%	19%	13%
• Expand to new markets abroad	14%	22%	19%	12%	8%
• Reduce activity in markets abroad	9%	5%	3%	7%	7%
• Close/reduce facilities abroad	9%	7%	3%	10%	7%
• New facilities abroad	9%	18%	12%	9%	5%

Note: In 3Q 2015 total respondents = 60

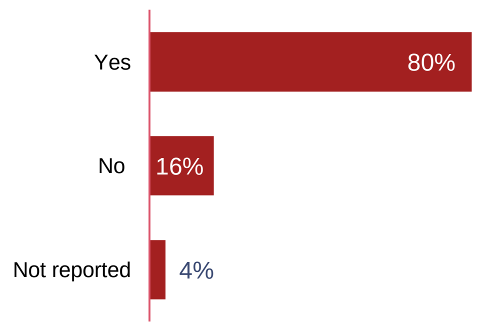
Special topic: Investment in information technology

Multiyear plan including IT systems

Does your company have a multiyear plan (3 to 5 years) that addresses business capabilities and processes, as well as information technology systems?

Eight in ten (80 percent) of industrial manufacturers report having a multiyear plan (3-5 years) that addresses business capabilities and processes as well as IT systems. Only 16 percent do not and 4 percent were not reported.

Chart 5.1 Company has multiyear IT systems plan

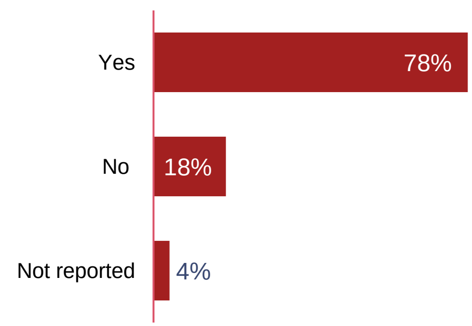


IT systems supporting business strategy

Will your current IT systems support your 3-5 year business strategy?

Significantly, 78 percent of total panelists claim that their current IT systems support their 3-5 year business strategy. Only 18 percent do not and 4 percent were not reported. Nearly all of the 18 percent negative claim to have plans to address this constraint over the next 12-18 months (89 percent).

Chart 5.2 IT systems support 3-5 year strategy



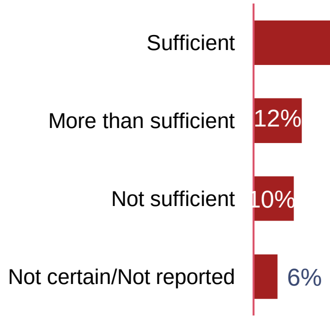
Note: In 3Q 2015 total respondents = 50

Sufficiency of IT budget

Is your IT budget sufficient, more than sufficient, or not sufficient to support your 3-5 year business strategy?

Overall, 84 percent claim their IT budget is sufficient (72 percent) or more than sufficient (12 percent) to support their 3-5 year business strategy. Only 10 percent say current IT is not sufficient and 6 percent are not certain/not reported.

Chart 5.3 Sufficiency of IT budget to support business strategy



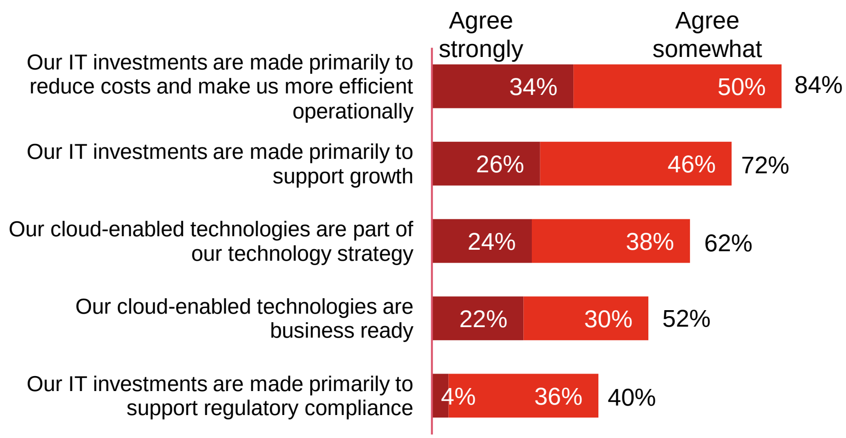
Note: In 3Q 2015 total respondents = 50

Agreement about IT investments

To what extent do you agree or disagree with the following statements about your company's IT investments?

Industrial manufacturing companies' IT investments are made primarily to both reduce costs (84 percent) and support growth (72 percent), with far fewer (40 percent) to support regulatory compliance. Cloud-based technologies are part of the technology strategy among 62 percent of panelist firms and are business ready in 52 percent.

Chart 5.4 Agreement about companies' IT investments

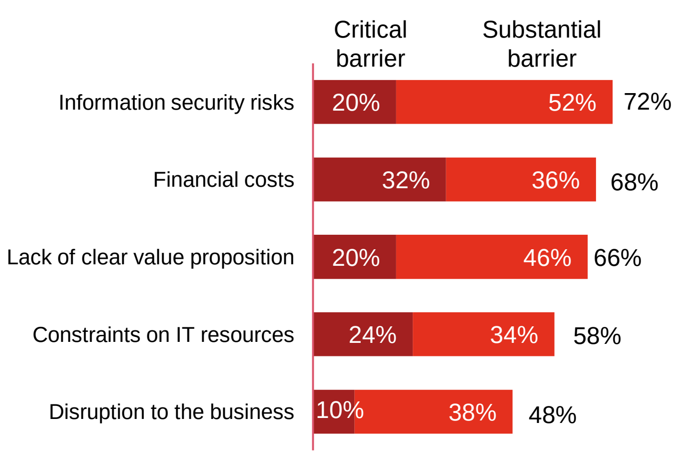


Critical barriers to IT investments

What, in your view, are critical barriers to your company's investments in information technology?

Information security risks (72 percent), financial costs (68 percent), and lack of clear value proposition (66 percent) are the greatest barriers to panelist companies' investments in IT. Constraints on IT resources was at 58 percent with more citing it as critical (24 percent).

Chart 5.5 Critical barriers to IT investments



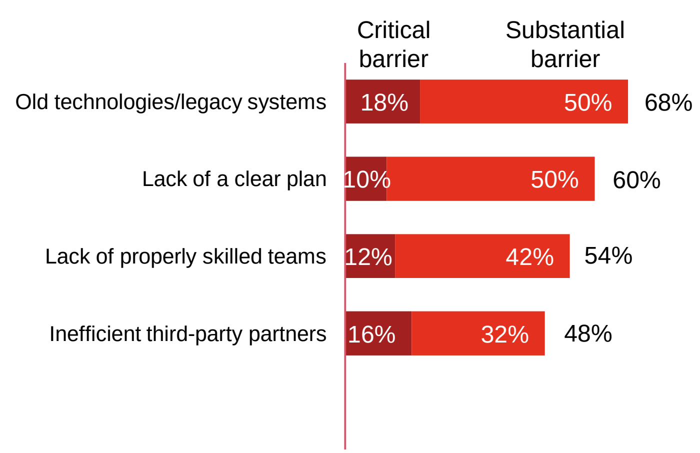
Note: In 3Q 2015 total respondents = 50

Critical barriers to IT execution

What, in your view, are the greatest barriers to executing your information technology initiatives successfully?

The greatest barrier to executing IT initiatives in panelist companies is old technologies/legacy systems (68 percent). Also important are lack of a clear plan (60 percent) and lack of properly skilled teams (54 percent). Inefficient third-party partners was cited by 48 percent.

Chart 5.6 Critical barriers to IT execution

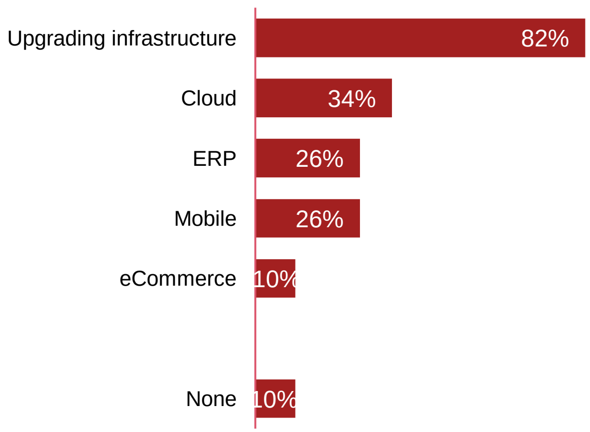


IT technologies planning to invest in

What IT technologies are you planning to invest in over the next 12-18 months?

Overall, 90 percent are planning to invest in IT technologies over the next 12-18 months, with upgrading infrastructure the leader at 82 percent. Also mentioned are cloud (34 percent), ERP (26 percent), and mobile (26 percent). A limited number mentioned eCommerce (10 percent).

Chart 5.7 IT planning to invest in over the next 12-18 months?



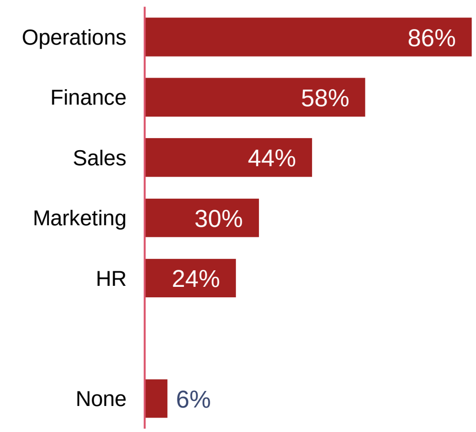
Note: In 3Q 2015 total respondents = 50

IT priority business functions

What business functions are the priorities for your technology investments over the next 12-18 months?

Operations (86 percent) and finance (58 percent) are the priority business functions with highest mentions for IT investments over the next 12-18 months. Next are sales (44 percent), marketing (30 percent), and human resources (24 percent).

Chart 5.8 IT priority business functions over the next 12-18 months?

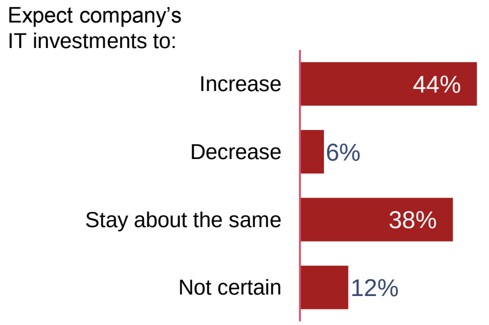


Planned IT investments over the next 12-18 months

Do you expect your company's IT investments to increase, decrease, or stay about the same over the next 12-18 months?

Importantly, 44 percent of industrial manufacturers expect their companies IT investments to increase over the next 12-18 months – an average of 9.1 percent. (This reflects an overall increase of 4.4 percent for the total panel over the next 12-18 months.) Only 6 percent expect a decrease and 38 percent expect to stay about the same. Not certain were 12 percent.

Chart 5.9 Planned IT investments over the next 12-18 months



Note: In 3Q 2015 total respondents = 50

Survey demographics and research methodology

Demographics	
Who	Senior executives of US-based industrial manufacturing organizations
Interview dates	June 24, 2015 to September 28, 2015
	Industrial manufacturers (60)
Average number of employees at location	7,192
Average business unit revenue	$3.26 billion
Average enterprise revenue	$8.75 billion
Market capitalization	$11.18 billion
Industry sectors	Products 100% Manufacturing 100%

Methodology	
	PwC's *Manufacturing Barometer* is a quarterly telephone survey conducted by the independent research firm BSI Global Research Inc. Our regular survey panel consists of senior executives from a geographically balanced sample of large companies in the United States. Ninety-five percent of the panelists hold titles such as president, CEO, CFO, VP of finance, treasurer, controller, internal audit director, or other related title.

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About the research:

The *Manufacturing Barometer* is one in a series of quarterly business outlook surveys from PwC. The survey provides a view on the 12-month outlook for revenue growth, new investments, new hiring plans, emerging business barriers and more. In addition to the business outlook, we hear from our panelists about special issues they face as the business climate changes. Results of the quarterly business outlook surveys and special issue surveys are available at *www.barometersurveys.com*.

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