Plugging the skills gap
Shortages among plenty
A report from the Economist Intelligence Unit
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>About this report</td>
<td>2</td>
</tr>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>1 Pinpointing skills shortages</td>
<td>4</td>
</tr>
<tr>
<td>The divided West</td>
<td>6</td>
</tr>
<tr>
<td>2 The corporate response: calm and anxiety</td>
<td>8</td>
</tr>
<tr>
<td>3 Conclusion: what lies ahead?</td>
<td>12</td>
</tr>
<tr>
<td>Appendix: survey results</td>
<td>13</td>
</tr>
</tbody>
</table>
About this report

Plugging the skills gap: shortages among plenty is an Economist Intelligence Unit report, sponsored by SuccessFactors. It explores the issue of the scarcity of skills in a variety of industries, namely construction and engineering, energy and natural resources, life sciences, IT/technology and manufacturing. It also looks at skills gaps in various job functions—and how these are being addressed.

The Economist Intelligence Unit bears sole responsibility for the content of this report. The findings do not necessarily reflect those of the sponsor.

The paper draws on two main sources for its research and findings:

- A global survey of 248 executives, conducted in March 2012. Forty percent of respondents were C-level or board-level executives, and 62% were from companies with annual revenue in excess of US$500m. Thirty percent of respondents were from Asia-Pacific, 28% from Western Europe and 25% from North America. The remainder hailed from Latin America, Middle East and Africa (6% each), and Eastern Europe (4%). The following industries were surveyed: energy and natural resources/oil and gas (23%), construction and engineering (21%), healthcare, pharmaceutical and biotechnology (20%), IT and technology (19%) and manufacturing (17%).

- A series of in-depth interviews with senior executives from a number of major companies listed below.
  
  Kris Gopalakrishnan, co-founder and chairman, Infosys
  Jeff Joerres, chairman and CEO, ManpowerGroup
  Juergen Maier, managing director for the UK and Ireland, Siemens
  Hugh Mitchell, chief human resources and corporate officer, Royal Dutch Shell

We would like to thank all interviewees and survey respondents for their time and insight.

The report was written by David Bolchover and edited by Gilda Stahl.
“It’s time to retire retirement” declared the headline of a *Harvard Business Review* article in 2004. The authors maintained that the baby boomer generation—the large cohort of people born in the two decades following the second world war—would soon start retiring in droves within the developed world, and there weren’t enough young workers to replace them. Unless the corporate world radically changed its attitude towards older workers and retirement, the article continued, skills shortages would abound and many companies would fall “straight off a demographic cliff”.

The available statistics, which reveal just how quickly the workforce in North America and Western Europe is ageing, do not allay these fears. Between 1997 and 2007, for example, the number of workers aged 55 or over in the US increased by 60%, but the corresponding rise in the 16-24 age group was merely 3.5%.

However, the picture may not be nearly as one-dimensional as some would believe. An extensive executive survey conducted by the Economist Intelligence Unit in March 2012, sponsored by SuccessFactors, reveals a far more nuanced reality.

For most job functions, panic about skills shortages is actually limited. Just 5% of survey respondents say it is “very difficult” to find sufficiently skilled workers for human resources and marketing positions, and only 8% say the same about finance and sales roles. But widespread shortages within two specific areas—the technical/engineering and strategy/corporate development functions—potentially threaten the expansion plans of companies, thereby stifling the growth of the global economy.

Given these prospective shortages, and the dangers they pose, companies will clearly need to fight off intense competition to retain the skilled workers they do possess. However, the survey reveals an alarmingly widespread senior-level disregard for the importance of the quality people management that would surely serve to boost retention.

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Executives are most worried about shortages of technical and engineering staff. More than three in five survey respondents admit that it is challenging to find skilled workers in this category (see chart). This unease was felt across all regions and all five industries surveyed.

As the effects of changing demographics reverberate throughout the economy, other factors must explain this particular shortage of technicians and engineers. Hugh Mitchell, chief human resources and corporate officer at Royal Dutch Shell, a global oil and gas company, highlights one contributing factor: technical skills are more likely to be specific to the industry concerned. “We cannot recruit an experienced field project manager, or a skilled petrophysicist, from outside our sector,” he explains. “But if we are ever short of talent on the commercial side, there is a much deeper pool to draw on.”

Moreover, if shortages of sales or marketing specialists do appear, training new recruits or existing staff to perform these jobs is a viable option. Preparing workers with no relevant experience to fill specialist technical roles,
however, is a different proposition. “Outside technical disciplines, the overall pipeline is much larger because we can potentially train technical workers, as well as those with commercial experience, to do these jobs,” explains Juergen Maier, managing director of Siemens, a global engineering company, for the UK and Ireland. “But training someone without a technical background to do a technical job would take too long, and therefore becomes financially prohibitive.”

Another factor exacerbating skills shortages is the much greater incidence of innovation within technical disciplines compared with other job functions. The advent of cutting-edge technologies can provide great commercial opportunities for companies in many different sectors. However, by virtue of being new, there are few specialists available to handle them. For example, the US Bureau of Labor Statistics forecasts that careers in green technology will grow by about 20% a year until at least 2018—an illustration of how quickly demand for specific technical skills can skyrocket.

Oddly, the pace of change can also create shortages of the skills required to handle older technologies that are still in use. Technical workers coming into the workforce see the recent technology innovations, and are naturally drawn to what they perceive as the future. Existing workers migrate to newer technologies for the same reason. “There are few people willing to work in legacy areas,” says Kris Gopalakrishnan, co-founder and co-chairman of Infosys, a global technology services company, headquartered in India. “We tell people that this is a rare skill set that will look good on their résumé. But although we persuade some, most are unenthusiastic.”

**Long-term challenges**

Although Infosys has so far successfully addressed skills shortages via an extensive internal training system (see page 9), Mr Gopalakrishnan is concerned that the situation will become less manageable unless governments start to plan more effectively for future job requirements. “Countries like India are developing so fast, and the composition of many economies has changed so markedly, that service industries like IT now comprise an ever-larger proportion of their GDP,” he says. “To avoid substantial shortages in the long term, governments need to work with the corporate sector and academic institutions to create an education system to produce the workforces we need.”

Mr Gopalakrishnan expresses these misgivings even though China churns out more than 1m engineering graduate each year, and India over 500,000. Research indicates, however, that only about 10% of engineering graduates in China qualify by international standards. The same holds true in India.

While technical qualifications are undoubtedly a challenge, the Economist Intelligence Unit survey indicates that what candidates lack most of all is so-called “soft” skills. More than half of survey respondents bemoan the lack of creativity, adaptability and developed interpersonal communication skills among prospective employees.

The “2011 Global Talent Index”, written by the Economist Intelligence Unit in May 2011 and published by Heidrick & Struggles, supports this finding. More than half the executives polled for that study believe “limited creativity in overcoming challenges” is the primary shortcoming of management-level hires and other specialist workers in Asia-Pacific. Soft skills are

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**Do you agree or disagree with the following statement? —It becomes progressively more difficult to find the skills we need higher up in the ranks of the organisation.**

(% respondents)

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>68</td>
<td>25</td>
<td>7</td>
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</table>

Source: Economist Intelligence Unit survey, March 2012.
arguably becoming increasingly important because the flatter management structures of modern organisations require employees to work more autonomously. For example, Unilever, a consumer goods company, used to have as many as 36 layers of management at the turn of this century; now, according to some estimates, it only has six.5

“Workers are now less supervised than they were, meaning that they have to show initiative, flexibility and independent critical thinking in their everyday work,” says Jeff Joerres, chairman and CEO, ManpowerGroup, a global leader in employment services. “Meanwhile, managers are responsible for much larger teams. One-to-one supervision is therefore impractical; they have to be more of a coach and leader rather than a taskmaster.”

Apart from the technical and engineering function, the only other major area of concern is strategy and corporate development, with more than half of the executives surveyed revealing that

The perception of skills shortages is far from uniform within the Western world, according to an Economist Intelligence Unit survey conducted in March 2012. There is less pessimism about finding sufficient workers of requisite quality in Western Europe than there is in North America (see chart). The discrepancy in responses can be explained by the very different levels of demand, indicated by general growth forecasts for the respective regions. The Economist Intelligence Unit anticipates US GDP to grow by 3 percentage points more than that of the euro zone in 2012, and foresees that the US will continue to outperform the euro zone over the following years.6

Indeed, 62% of North American companies predict an increase in their workforces in the next three years. This is an identical result to that in the rapidly growing Asia-Pacific region, but notably higher than in Western Europe, where only 38% of respondents foresee a similar expansion.

### The divided West

<table>
<thead>
<tr>
<th>Region</th>
<th>Very Confident</th>
<th>Confident</th>
<th>Very Pessimistic</th>
<th>Pessimistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>40</td>
<td>11</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Western Europe</td>
<td>40</td>
<td>11</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>36</td>
<td>5</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Latin America</td>
<td>43</td>
<td>7</td>
<td>6</td>
<td>14</td>
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<tr>
<td>Middle East and Africa</td>
<td>31</td>
<td>13</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>30</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Economist Intelligence Unit survey, March 2012.

5. The Economist, “In praise of David Brent”, August 27 2011

6. The Economist Intelligence Unit, “World Economy: forecast summary”
Workers are now less supervised than they were, meaning that they have to show initiative, flexibility and independent critical thinking in their everyday work.

Jeff Joerres, chairman and CEO, ManpowerGroup

their companies find it difficult to recruit people of sufficient quality to fill these posts. The perceived shortage of workers with strategic insight is confirmed elsewhere in the survey. More than two-thirds of respondents believe that it becomes progressively more difficult to find the requisite skills the higher up the organisation you go. When asked why, respondents point to a lack of “strategic vision” and “ability to handle complexity” (see chart).
Survey respondents in the energy and IT/technology industries are more likely to plan to increase the size of their workforces than executives in the other industries surveyed. To illustrate the disparity, 36% of respondents in IT/technology and 28% in energy envisage a large net increase in staff numbers over the next three years compared with just 10% in manufacturing and 6% in life sciences.

One might surmise that both industries would be equally concerned about recruiting large numbers of workers, given the perceived shortage of skilled technical and engineering staff. However, there is a marked difference in the responses from the two industries, with IT/technology appearing more confident. In the latter industry, 21% of respondents express pessimism that their organisation will have sufficient skills in their organisation to meet objectives—only 1% more than the average proportion in other industries—

Q How has the global economic downturn affected your organisation’s staffing levels over the last three years? (% respondents)

- We have maintained staff numbers at approximately the same levels
- We have experienced a large net increase in staff numbers
- We have experienced a small net increase in staff numbers
- We have experienced a large net decrease in staff numbers
- We have experienced a small net decrease in staff numbers

Source: Economist Intelligence Unit survey, March 2012.
but 46% are optimistic. In the energy industry, in contrast, 27% are pessimistic and 39% are optimistic.

Several factors may explain this divergence. The most obvious reason is that the IT/technology industry is already accustomed to a high volume of recruitment and the resulting challenges. More than one-quarter of respondents report a large net increase of employees over the last three years, more than three times the proportion in the energy industry (see chart, previous page).

Indeed, employment in the energy industry appears to have responded to the volatility of crude oil prices, which fell dramatically in 2008 and 2009 and have now rebounded. Because energy companies suddenly find themselves in a position where they have to identify, recruit, absorb and retain large numbers of new employees, there is clearly some degree of concern that they will not be able to adjust quickly enough in a highly competitive climate. “Energy prices are high, companies are growing rapidly, and we are all chasing the same skills to enable this growth to continue,” says Mr Mitchell of Shell.

The fact that there are so many new developments in the energy sector makes the search for the right skills even more problematic. As we have seen, there are by definition few people with the experience to handle technologies that have only recently emerged. Mr Mitchell points to massive growth in the onshore gas industry, and new discoveries of shale gas, both of which require specialist, and still rare, skills.

One also has to bear in mind that the technical skills in demand in the IT industry are “horizontal”, meaning that they are applied in many other industries, and are hence widespread. “There are web designers and e-commerce specialists everywhere,” says Mr Joerres of ManpowerGroup. “Banks, government institutions, curtain manufacturers—they will all have IT engineers. In energy, the skills are more likely to be relevant only in that particular industry.”

**Internal development**

As the IT/technology industry is already so accustomed to skills gaps, it has built internal training systems to bring existing workers up to speed. For example, the Indian IT industry has established what the entrepreneur and academic Vivek Wadwha refers to as “a surrogate education system”.

According to Mr Gopalakrishnan, Infosys has established a large corporate university that can train 14,000 people a year to ensure that university graduates bridge the gap between what the company needs and what the education system has provided. “The industry has learned how to build its own workforce,” he says. “Four percent of our revenue goes into education and training. Seventy percent of our recruitment is at the graduate level, and then we have to create the skilled workers we need.”

The survey also reveals that the IT/technology industry is more likely than the others to use the global nature of the business world to plug skills gaps. If this strategy has been considered successful, it may also explain the industry’s

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7. www.infomine.com

8. *Foreign Policy*, “Chinese and Indian entrepreneurs are eating America’s lunch”, December 28 2010
relative confidence about having sufficient skilled workers to meet objectives in the coming years. Forty percent of respondents say that “moving people around the world” is one of the main methods their company uses to resolve shortages (see chart, previous page). Meanwhile, more than one-quarter are offshoring “parts of the business to regions where the required skills are more readily available”.

One final reason for the IT/technology industry’s greater comfort with shortages may lie in the psychological, rather than practical, domain. Mr Joerres believes that the business world as a whole has become accustomed to skills shortages, hence the widespread confidence in finding good workers for most functions. “The ‘new normal’ has settled in,” he says. “Filling positions is still difficult, but the novelty of this predicament has faded. Companies are no longer so perturbed by it.” This may be particularly true of the IT/technology industry, which has been expanding its workforce for several years amid prevalent shortages.

Skills retention and management neglect

Part of the battle to combat skills shortages involves retaining the skilled workers companies already possess and making them more productive. The survey indicates that companies use a variety of strategies to achieve these goals (see chart below).

The size of the company concerned is likely to influence heavily which strategies are favoured. For example, nearly half of companies with a turnover of less than US$500m grant autonomy to workers as a talent management tool, a proportion that declines steadily as the size of the company increases and the organisation becomes more bureaucratic (see chart, next page).

Larger companies are predictably much more likely to offer frequent job moves to workers with the most potential. “We are so large and diverse that we can offer employees the same variety they would experience working for five different

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“The ‘new normal’ has settled in. Filling positions is still difficult, but the novelty of this predicament has faded.”

Jeff Joerres, ManpowerGroup
A mere 9% of respondents believe that excellent people management throughout the organisation is an essential element of a talent management strategy to retain skilled workers and improve their productivity. Yet senior executives are not always attuned to the issue of retention. A mere 9% of respondents (just 4% of C-suite executives, and one sole executive in the life sciences industry) believe that excellent people management throughout the organisation is an essential element of a talent management strategy to retain skilled workers and improve their productivity. This constitutes an overwhelming executive rejection of much available evidence and expert opinion. For example, one extensive Gallup survey, with more than 1m cross-industry respondents, concluded that “how long an employee stays and how productive he is while he is there is determined by his relationship with his immediate supervisor.”

9. For details on the Gallup survey, see “First, Break all the Rules” (2001) by Marcus Buckingham and Curt Coffman.
We may be able to cream off the best graduates ourselves, but it is doubtful whether there are enough skills around to allow the market as a whole to reach its fullest potential, given the sheer number of engineers, in so many different areas, which the economy will require.

Juergen Maier, managing director for the UK and Ireland, Siemens

The Economist Intelligence Unit survey reveals real concern about finding sufficient skilled employees in technical and engineering job functions over the next three years. This pessimism is only likely to grow in the future.

Mr Maier maintains that Siemens can always attract quality people because of its brand and what he says is its culture of commitment to people and their development. Moreover, he believes that the company’s investment in HR resources enables large-scale training that can nullify both short- and long-term shortages.

But he is more worried about a skills deficit over the long term in the overall industry. “We rely on a lot of small suppliers and partners,” he says. “We may be able to cream off the best graduates ourselves, but it is doubtful whether there are enough skills around to allow the market as a whole to reach its fullest potential, particularly given the sheer number of engineers, in so many different areas, which the economy will require. We are therefore very committed to the various national engineering skills initiatives to ensure that the whole industry can thrive.”

In other words, unless state education systems produce the requisite quantity and quality of graduates, growth will be restricted. “Responsible companies engage in structured and disciplined workforce planning; governments need to do the same,” says Mr Gopalakrishnan of Infosys.

However, this does not absolve companies from their responsibility to do more to ease their own difficulties as shortages bite. The almost total disregard for the benefits of people management was perhaps one of the most surprising findings of the survey. This undoubtedly contributes to reduced retention, forcing companies to struggle in a highly competitive recruitment climate, incurring substantial avoidable costs in the process. It may be, as Mr Joerres says, that constant supervision in flatter organisations is no longer possible. But a sudden abandonment of “get your hands dirty” old-fashioned management in favour of the more fashionable and glamorous-sounding “leadership” may well result in skills-hungry companies “chasing their tails” for many years to come.
Appendix: survey results

Percentages may not add to 100% owing to rounding or the ability of respondents to choose multiple responses.

How has the global economic downturn affected your organisation’s staffing levels over the last three years? (% respondents)
- We have maintained staff numbers at approximately the same levels: 27%
- We have experienced a large net increase in staff numbers: 15%
- We have experienced a small net increase in staff numbers: 24%
- We have experienced a large net decrease in staff numbers: 16%
- We have experienced a small net decrease in staff numbers: 18%
- Don’t know: 1%

How will the global economic downturn affect your organisation’s staffing levels over the next three years? (% respondents)
- We have maintained staff numbers at approximately the same levels: 18%
- We have experienced a large net increase in staff numbers: 18%
- We have experienced a small net increase in staff numbers: 19%
- We have experienced a large net decrease in staff numbers: 34%
- We have experienced a small net decrease in staff numbers: 15%
- Don’t know: 7%
How confident are you that your organisation will have sufficient skilled workers within its ranks to achieve its objectives over the next three years? (% respondents)

- Very confident: 29
- Confident: 38
- Neither confident nor pessimistic: 32
- Very pessimistic: 7
- Pessimistic: 13
- Don’t know: 0

What makes you confident that your organisation will have sufficient skilled workers over the next three years? Select all that apply. (% respondents)

- Our organisation’s brand attracts people of the required calibre: 50
- Our pay and benefits package attracts people of the required calibre: 43
- Retention of skilled staff at our organisation is high: 42
- There is generally a large pool of available workers with the right skills: 34
- Our organisation has an excellent training and induction system that brings new workers up to the required skill level very quickly: 23
- Other: 7

What makes you pessimistic that your organisation will have sufficient skilled workers over the next three years? Select all that apply. (% respondents)

- There is generally an insufficient pool of available workers with the right skills: 82
- Our pay and benefits package does not attract people of the required calibre: 31
- Retention of skilled staff at our organisation is poor: 24
- Our organisation’s brand does not attract people of the required calibre: 16
- Our organisation lacks a training and induction system of sufficient quality to bring new workers up to the required level very quickly: 16
- Other: 12
What are the main commercial implications of any skills shortages your company suffers from, or may suffer from in the future? Select up to three.

(\% respondents)

- Loss of opportunities for expansion
- Hindering the execution of the company strategy
- Increase in the cost of labour
- Deterioration in quality of products and services
- Lack of potential leaders of the required quality to drive the business
- Lack of the necessary innovation
- Deterioration of customer service
- Effects on existing workforce, such as burnout from overwork and attrition
- Increased cost of training
- Other

How easy or difficult is it for your organisation to find skilled workers within the following specific functions?

Rate on a scale of 1 to 5, where 1=Very easy and 5=Very difficult.

(\% respondents)

<table>
<thead>
<tr>
<th>Function</th>
<th>Very easy</th>
<th>Neither easy nor difficult</th>
<th>Very difficult</th>
<th>Don't know</th>
<th>Not applicable</th>
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<tbody>
<tr>
<td>Sales</td>
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<td>Marketing/Public relations</td>
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<td>Human resources</td>
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<td>Engineering/technical</td>
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<td>Finance</td>
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<td>Customer service</td>
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<td>Logistics and distribution</td>
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<tr>
<td>Strategy and corporate development</td>
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</table>

Do you agree or disagree with the following statement?

—It becomes progressively more difficult to find the skills we need higher up in the ranks of the organisation.

(\% respondents)

- Agree: 68
- Disagree: 25
- Don't know: 7
What skills are the most difficult to find in prospective candidates for senior executive positions at your organisation? Select up to two.

What skills are the most difficult to find in prospective candidates for senior executive positions at your organisation? Select up to two.

Strategic vision
- Analytical skills/Ability to handle complexity: 55
- Ability to inspire others: 36
- Soft skills, such as creativity, adaptability and good interpersonal communication: 29
- Ability to manage people well: 26
- The required technical or industry knowledge: 23
- Other: 17

In your opinion, what are the main weaknesses in skills of those who apply for roles at your organisation? Select up to two.

Lack of soft skills, such as creativity, adaptability or good interpersonal communication: 54
- Lack of technical expertise: 41
- Lack of the necessary work experience: 40
- Poor cultural fit with the organisation: 26
- Lack of the necessary educational qualifications: 13
- Lack of the requisite language skills: 6
- Other: 2

To what extent does your organisation use the following strategies to cater for skills shortages?

Recruitment
- Main method: 31
- One of the main methods: 42
- Used sometimes: 20
- Rarely: 5
- Never: 1
- Don't know: 1

Moving people around the world to fill gaps
- Main method: 7
- One of the main methods: 26
- Used sometimes: 14
- Rarely: 15
- Never: 2
- Don't know: 7

Training
- Main method: 11
- One of the main methods: 46
- Used sometimes: 30
- Rarely: 9
- Never: 2
- Don't know: 3

Internal talent management strategies to boost retention
- Main method: 11
- One of the main methods: 40
- Used sometimes: 27
- Rarely: 13
- Never: 5
- Don't know: 4

Acquisition of companies that contain people with the required skills
- Main method: 2
- One of the main methods: 14
- Used sometimes: 17
- Rarely: 29
- Never: 34
- Don't know: 4

Offshoring parts of the business to regions where the required skills are more readily available
- Main method: 5
- One of the main methods: 29
- Used sometimes: 18
- Rarely: 23
- Never: 30
- Don't know: 5
Does your organisation use the following strategies to cater for skills shortages more or less than it did three years ago?

<table>
<thead>
<tr>
<th>Strategy</th>
<th>12%</th>
<th>29%</th>
<th>47%</th>
<th>8%</th>
<th>3%</th>
<th>1%</th>
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<tbody>
<tr>
<td>Recruitment</td>
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<tr>
<td>Moving people around the world to fill gaps</td>
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<tr>
<td>Training</td>
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<tr>
<td>Internal talent management strategies to boost retention</td>
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<tr>
<td>Acquisition of companies that contain people with the required skills</td>
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<tr>
<td>Offshoring parts of the business to regions where the required skills</td>
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</table>

If offshoring is one of the main methods your organisation uses to cater for skills shortages, what is the main benefit of this strategy?

<table>
<thead>
<tr>
<th>Benefit</th>
<th>37%</th>
<th>36%</th>
<th>14%</th>
<th>14%</th>
<th>14%</th>
<th>14%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower cost of labour</td>
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<tr>
<td>Access to a greater number of people with the required skills</td>
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<tr>
<td>Access to expert knowledge of a new market</td>
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<tr>
<td>Other</td>
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</tbody>
</table>

Which internal talent management strategies does your company use most frequently to retain skilled workers and improve their productivity? Select up to three.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>35%</th>
<th>29%</th>
<th>28%</th>
<th>27%</th>
<th>27%</th>
<th>24%</th>
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<th>21%</th>
<th>21%</th>
<th>9%</th>
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<tbody>
<tr>
<td>Grant autonomy to employees in their everyday work</td>
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<td>Offer higher salaries and benefits than the market norm</td>
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<td>Provide a mentoring system with senior staff</td>
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<td>Offer frequent internal job moves to workers with the most potential</td>
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<td>Offer financial incentives (bonuses) for excellent individual performance</td>
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<tr>
<td>Build and provide frequent clear communication to skilled workers about their career opportunities and path</td>
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<td>Use productivity and collaboration tools to improve staff efficiency and knowledge sharing</td>
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<td>Place a particular emphasis on training and development</td>
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<tr>
<td>Set out a compelling strategic vision that inspires employees</td>
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<td>Ensure that managers throughout the organisation have excellent people skills</td>
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<td>Other</td>
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</tbody>
</table>
What is your primary industry? (% respondents)

- Energy and natural resources / Oil & gas: 23
- Construction and engineering: 21
- Healthcare, pharmaceuticals and biotechnology: 20
- IT and technology: 19
- Manufacturing: 17

In which country are you personally located? (% respondents)

- United States of America: 21
- India: 13
- United Kingdom: 6
- Australia: 5
- Canada, Germany, Singapore, Spain: 4
- Italy, Switzerland, Nigeria, France, Portugal: 2
- Argentina, Belgium, Brazil, Czech Republic, Mexico, Philippines, Sweden, United Arab Emirates, Finland, Hong Kong, Indonesia, Ireland, Japan, Malaysia, New Zealand, Russia, Slovakia, Taiwan, Thailand: 1

In which region are you personally located? (% respondents)

- Asia-Pacific: 30
- Western Europe: 28
- North America: 25
- Middle East and Africa: 6
- Latin America: 4
- Eastern Europe: 4

What are your company’s annual global revenues in US dollars? (% respondents)

- $500m or less: 38
- $500m to $1bn: 13
- $1bn to $5bn: 15
- $5bn to $10bn: 8
- $10bn or more: 26

Which of the following best describes your title? (% respondents)

- Board member: 5
- CEO/President/Managing Director: 17
- CFO/Treasurer/Comptroller: 12
- CIO/Technology Director: 2
- Other C-level executive: 6
- SVP/VP/Director: 16
- Head of business unit: 7
- Head of department: 13
- Manager: 15
- Other: 9
What are your main functional roles?
Select up to three.
(% respondents)

<table>
<thead>
<tr>
<th>Role</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>General management</td>
<td>37</td>
</tr>
<tr>
<td>Strategy and business development</td>
<td>36</td>
</tr>
<tr>
<td>Finance</td>
<td>27</td>
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<tr>
<td>Operations and production</td>
<td>21</td>
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<tr>
<td>Marketing and sales</td>
<td>16</td>
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<tr>
<td>R&amp;D</td>
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<td>IT</td>
<td>10</td>
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<td>Risk</td>
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<td>Customer service</td>
<td>7</td>
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<td>Information and research</td>
<td>7</td>
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<td>Human resources</td>
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<td>Supply-chain management</td>
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<td>Legal</td>
<td>5</td>
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<td>Procurement</td>
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<td>Other</td>
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