



Antoine Rostand
Global Managing Director,
Schlumberger Business
Consulting (SBC)



“Developing local talent in emerging countries and preparing them for an international as well as national career should be a top priority”

HUMAN RESOURCES IN OIL AND GAS: MANAGING TECHNICAL TALENT FOR PRODUCTION GROWTH

The exploration and production (E&P) sector has a history of boom-or-bust cycles when it comes to managing its people. The economic crisis in the mid-1980s saw a mass shedding of jobs while from 2004 to 2008, recruitment into the industry soared and most companies struggled to fill vacant positions. The latter has been a wake-up call for an historically conservative industry that had naively ignored the importance of people, especially in the technical disciplines such as geoscientists and petroleum engineering, and suddenly faced unprecedented growth in oil prices, demand for oil and gas and the need for new projects. The latest economic downturn led merely to a brief pause, and the need for upstream technical talent remains one of the biggest challenges facing the industry today.

Two major occurrences will likely make the shortage of experienced technical personnel even more acute – the Macondo oil spill and its consequences on operational regulations, and the nuclear disaster at Fukushima and the after-effects in terms of project cancellations or permanent shutdown of nuclear plants. The resulting impact of these events is still too uncertain to be able to quantify in numbers of additional headcount required by the oil and gas industry. There is no doubt, however, that reinforced safety and security measures will require more people, and the number of gas projects – especially for shale gas in Europe – will increase to offset the loss of nuclear-based energy.

However, there is a trend that is clearly measurable: the retirement of an entire generation of senior petrotechnical professionals (PTPs) – geoscientists and petroleum engineers – from the E&P industry in the coming five years. The concept of “a big crew change” is no longer simply the idea of employment and management consultants. It is now a reality: it has begun and is intensifying.

In March 2011, the SBC Energy Institute released the results of its 2010 Oil & Gas HR Benchmark survey based on the responses of 29 oil and gas companies and 77 universities. The results highlighted two major trends. First, that the major demographic shift now underway will markedly alter the age and experience profile of the E&P industry,

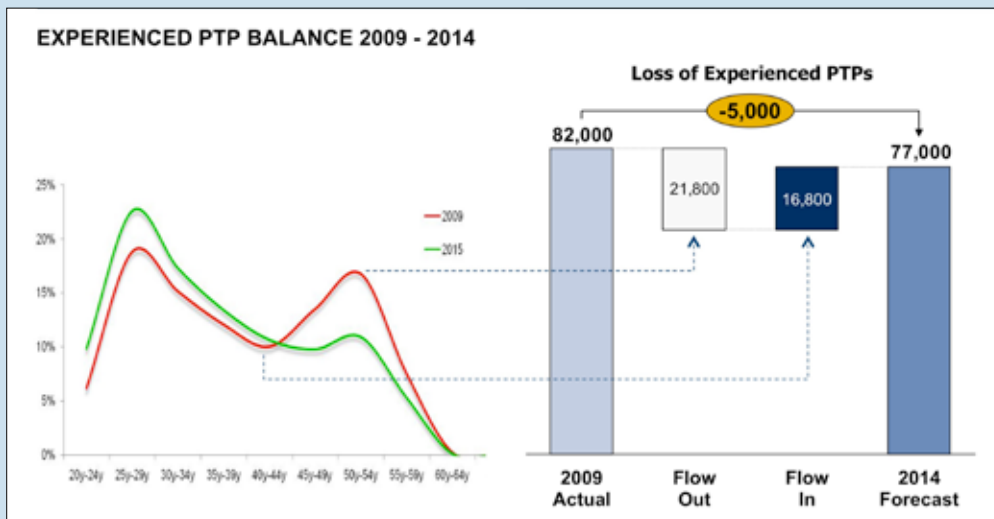


Figure 1

and second, that technical talent is a strategic enabler for delivering production and future growth. I would now like to examine both of these.

In terms of demography, the most common structure of E&P companies in the last decade will soon no longer exist. By 2015, the typical major or independent will have moved from a demographic profile where seniority prevailed to one in which young PTPs are in the majority. This is a major shift for many companies in Europe, and in North and South America. Companies in emerging regions such as Asia, the Middle East and Africa already have a majority of young PTPs in their talent pools. The trend in demographics is not primarily driven by differences between national oil companies (NOCs) and international oil companies (IOCs), but is more regional. South American oil and gas companies are among the most "ageing" companies and are largely NOCs, while NOCs in the Middle East have much younger demographics.

This demographic shift will have consequences in terms of management. The new generation joining the industry is different from its predecessor with career perspectives, the image of the oil and gas industry, and lifestyle considerations being at least as important to newcomers as compensation and benefit packages. Upstream companies will need to adapt to the highest requirements of the new generation in terms of career management and mobility. Universities report rising numbers of students willing to join the energy sector, but to work in the green technology industry – not in fossil fuels. This image problem may have been compounded by Macondo and Fukushima, and will lead to even greater challenges in the recruitment of young talent into the E&P sector. In this context, companies that succeed in appealing to the younger generation will have a big competitive advantage over their peers.

The approach to leadership will also have to adapt. Younger CEOs will emerge at the top of large oil and gas companies where traditionally top-level jobs were awarded more on seniority.

On a global basis, a quarter of PTPs currently employed by E&P companies are over 50 years of age and the vast majority will retire in the next five years. They represent the generation of professionals

who joined the industry during the late 1970s and early 1980s at the peak of the oil and gas expansion cycle. The crisis of 1986 marked the brutal end of this expansion and the beginning of a long period of anemic recruitment that lasted nearly two decades and created an irreversible void in the ranks of today's mid-career professionals. The vigorous up-cycle of 2004-2008 triggered a rapid and important rise in graduate recruitment amounting to a three-fold increase between 2004 and 2008. This also shaped the sector's demographic profile with a recognisable double-hump of young and senior PTPs surrounding a gap of mid-career professionals (see Figure 1).

The right-hand hump of this will soon disappear. Detailed demographic statistics obtained through the Oil & Gas HR Benchmark survey provide an insight into the mechanisms at play; from a quantitative perspective, the total number of autonomous PTPs (autonomous in the sense of capable of making decisions without supervision) will decrease by about 6 per cent (i.e. - 5,000 PTPs) by 2014. This is a relatively small loss that hides a much larger outflow of about 27 per cent of the current pool of experienced PTPs (i.e. ~22,000 PTPs), which is partially offset by the inflow of younger PTPs that are reaching autonomy (i.e. 17,000 PTPs). Upstream companies should already have transfer provisions in place to ensure that the transition between the 22,000 veteran PTPs and the 17,000 less experienced PTPs does not result in a huge loss of knowledge and experience from the industry.

On the left hand-side of the demographic profile, we start to see other challenges facing the industry – finding, recruiting and developing the growing number of young PTPs needed to address the challenges of producing more and more complex hydrocarbons.

Three positive signposts emerged from this year's benchmark survey for which action and planning today will bring sustained success later.

First, graduate recruitment targets are rising. This year, E&P companies reported recruitment targets for 2011 up by 15 per cent compared with the same targets reported in the 2009 survey.

Second, the global supply of graduates in both geosciences and petroleum engineering disciplines

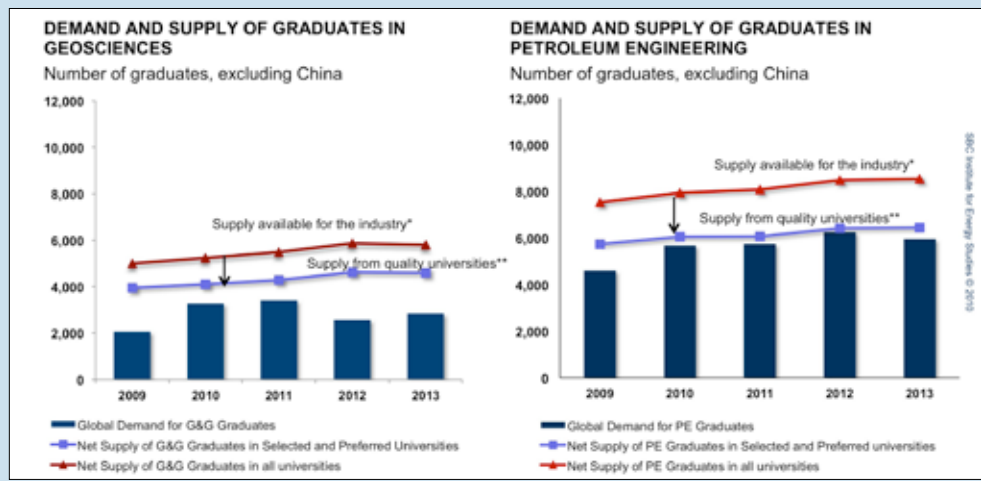


Figure 2

exceeds the total demand from operators. Even when removing the high percentage of the graduates not intending to join the upstream sector – more than half of geoscience graduates in North America – there is still an adequate supply to cover demand. The difficulty arises around quality. The supply of graduates from the subset of higher-ranked universities that have traditionally provided the oil and gas industry young talent barely covers demand (see Figure 2).

This apparent global balance of supply and demand hides alarming regional imbalances. For example, Angola produces approximately 100 PTP graduates per year but local demand is tenfold higher.

Collaboration with educational institutions and channeling the best PTP graduates towards the oil sector should be one of today's top priorities for policy-makers and companies.

The third positive sign is that females represent a pool of untapped talent. While companies employ on average 15 per cent of women PTPs, the proportion of female students in geosciences and petroleum engineering is higher at more than 40 per cent in Asia – which represents a large pool of young talent in absolute numbers, more than 35 per cent in Latin America, but less than 20 per cent in North America.

Turning now to technical talent as a strategic enabler, E&P companies have long felt the impact of a paucity in technical talent, yet few have recognised this as a strategic issue that will curb their development ambitions. The "big crew change" means it will become increasingly important to develop and maintain internally the right number of PTPs to deliver current production and to enable future growth.

The 2010 SBC Oil & Gas HR Benchmark survey explored the notion of PTP Intensity, the ratio between the number of PTPs and the number of operated barrels of production. At the first level, this ratio reflects a relatively good correlation between production and PTP headcount. There is a strong correlation between PTP Intensity and operated production growth. Faster-growing companies have a higher PTP Intensity than those with slower growth.

By comparing companies with similar a PTP Intensity, four distinct groups emerge: (1) Western independents have the highest PTP Intensity and the highest growth rate; (2) majors and (3) international NOCs have a lower PTP Intensity and lower growth

rates, and (4) NOCs with the lowest PTP Intensity have relatively stable production. A more careful analysis of these four groups shows that they share more than just similar PTP Intensity and growth rates, they also tend to have similar demographic profiles, similar HR challenges and comparable HR practices.

PTP Intensity can therefore be used as a leading indicator of the growth potential of each group. The forecast trend for the next five years suggests that Western independents will be in a position to reinforce their growth leadership and NOCs will regain some growth capacity, while majors will lose some growth capacity.

Being aware of the need for change is a step in the right direction. Implementing changes will require strong involvement from top management and a drastic review of HR practices in critical sectors.

Developing local talent in emerging countries and preparing them for an international as well as national career should probably be a top priority for management as it will become more and more a non-negotiable condition for operating companies.

Changing perceptions of the E&P industry at the school and campus level will be imperative to attract students towards oil-related disciplines. A different language and mindset will be needed as well as a clear map for career opportunities. The industry must take heed of the concerns of the new generation in both business practices and life style. These concerns range from the reduction of carbon emissions and of water consumption, to the importance of life style, dual careers, modern training, and the acceleration of time to gain responsibility.

Dealing with a very stretched mid-career talent reservoir will put pressure on compensation and benefits packages but the key differentiator will be the quality of career opportunities. Being able to offer technical talent a credible career with management-level rewards, such as in many technology driven industries, is becoming a serious issue.

Complex projects involving several companies and a large variety of technical disciplines will demand a full review of fundamental behaviours such as teamwork and accountability. The resistance to change will not come from the new generation but from the old guard and it is the most critical test for today's management in the oil and gas sector. ■