

Taming the **TALENT** **PIPELINE**

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With the natural gas industry poised for continued global growth, talent may be more important than ever before. Here's how labor market science can help.



We live in an era of market momentum, price volatility, and fierce global competition. As the development and consumption of natural gas spiral upward in both mature and rapidly emerging economies—and as pipeline and gas-to-liquids projects multiply—this sector appears poised for a period of continued global growth. And with that growth comes a challenging demand for talent that will allow a company to take advantage of its vast opportunities.

Around the world, and in the natural gas industry in particular, there is a clear mismatch between the talent that is available and what is needed (see sidebar, page 29). Employers today must find new ways to build agile workforces that are ready and able to respond to evolving business needs and opportunities.

The solutions for the natural gas industry include both talent mobility, which generally involves moving both jobs to people and people to jobs, and a need to change the approach to talent management—and this goes for local as well as multinational producers and distributors of all sizes. Specifically, they need to become as scientifically disciplined and foresighted in managing the processes by which they find, develop, and deploy their workforces as they are with the processes by which they develop and produce shale gas.

These are more than mere musings about the future. The energy giant Saudi Aramco (see sidebar, page 26) has moved aggressively to bring an engineering-like discipline to managing and deploying its talent pipeline. Saudi Aramco understands that the ability to deliver on its growth plans depends on its success at securing the right workforce—in terms of numbers, occupational mix, and the quality of skills, knowledge, experience, and competencies—and deploying it efficiently. To help achieve this goal, it uses an evidence-based approach to strategic workforce management and planning that helps identify, measure, and mitigate talent risks. If an organization as dominant and flush with resources as Aramco recognizes the need to take command of its talent pipeline by applying sophisticated analytical methods to workforce planning, can others sit on the sidelines and leave their talent needs to chance?

Indeed, the evidence-based approach to strategic workforce management and planning can help organizations address their current talent challenges and preempt future talent

gaps. It enables them to better navigate the external labor markets with which they interact and more effectively manage their own, internal labor markets to shape their workforces to their business needs. Companies can thereby gain a lasting competitive advantage in the global competition for talent.

At a time when business success is increasingly dependent on the effectiveness of human capital management, gaining a competitive advantage on the talent side can be a ticket to competitive advantage overall.

An Empirical Edge

The hallmark of the new approach is its heavy reliance on empirical evidence to support decision making. We are living in what *The Economist* magazine has called the “era of big data.” Staggering amounts of digital data related to virtually all dimensions of business and customer activity are being produced, disseminated, and stored at less and less cost. Across many disciplines—finance, operations, marketing, health management, and others—organizations have learned the power of using those data to better understand the sources of business value and, thereby, be able to target the investment of resources to high-yield areas. So, for instance, marketing departments use sophisticated statistical analyses to mine transactions data to effectively segment customer markets and align product or service offerings with the customers most likely to buy.

Similarly, baseball clubs have tapped into the burgeoning field of sabermetrics (as famously described by Michael Lewis in the book and subsequent hit film *Moneyball*) to take advantage of their data-rich environment and scientifically determine which players are most likely to perform and which combination of players is most likely to deliver victories. The observations and “gut feel” of baseball scouts is being displaced by rigorous data analysis that helps

clubs gain or maintain their competitive edge. No matter what the industry, business optimization in the information age is contingent on the growing business competency of data management and data analysis.

In few places are the dividends derived from this competency as great as in the area of talent management. Data—comprising workforce demographics, experience, education, training, job status, career trajectories, pay and performance histories, among other things—abound in company HRIS systems. Combined with data on business performance and customer behavior,

these data actually tell the story of an organization's workforce: what kind of capabilities the organization is developing, where the value of human capital to the organization resides, and where that value is most at risk.

Properly developed and tapped, this is the kind of information that can mean the difference between winning and losing in the competition for talent. With high growth stoking fierce competition, nowhere is the applicability of evidence-based management as pivotal as in the energy sector, in particular natural gas.

The empirical emphasis of evidence-based



Case Study **Saudi Success**

One company's experience with strategic workforce planning

Saudi Aramco is the largest oil and gas company in the world and the dominant economic power in Saudi Arabia. Managing proven reserves of 260 billion barrels of crude oil and the fourth-largest gas reserves in the world, Saudi Aramco and its affiliates operate joint ventures and subsidiaries in China, Japan, the Netherlands, the Republic of Korea, Malaysia, Singapore, the United Arab Emirates, the United Kingdom, and the United States.

Current and projected shortages of seasoned petroleum engineers and technical experts, combined with an anticipated increase in retirements, have increased pressure on the company to optimize its use and management of talent to prepare the next generation effectively and tap into new talent markets around the world.

In response, Saudi Aramco developed and implemented a state-of-the-art strategic workforce planning methodology, the Corporate Manpower Planning Model (CMPM). Encompassing the company's full-time workforce of nearly 55,000, the planning model forecasts talent needs, anticipates gaps and identifies effective strategies to close those gaps. The company then uses this informa-

tion to guide finely calibrated recruiting and mobility decisions.

Saudi Aramco makes massive investments in training and development in excess of US\$ 10,000 per employee annually, sometimes beginning before employment and extending across an employee's career. For example, sponsoring employees and non-employees to pursue university degrees is common practice. The focus is on leading Saudi universities and top-tier education institutions in the United States, Europe, China, the Far East, and Australia.

Out-of-company assignments are another key tool used to develop leadership and technical skills in the Saudi workforce. The company collaborates with its alliance partners throughout the world to place Saudi employees in their firms, exposing them to world-class practices and more diverse technology. About 12 percent of its workforce is non-Saudi, bringing experience in critical oil and gas skills, project management, construction, healthcare, finance, IT, and HR.

A key element of the company's workforce planning and development practices is its strong adherence to evidence-based methods for measuring and monitoring the impact of human capital management practices. The company deploys sophisticated workforce metrics and analytics to

optimize the return on HR investments and quickly adjust them to changing business needs. The workforce planning system shows, by almost 400 job families, the number of fully qualified employees that each business line needs in each year going forward. The process allows leaders to test different alternatives for critical workforce gaps through redeployment, reskilling, recruiting Saudis and expatriates, or using contractors.

Saudi Aramco's workforce planning process is recognized internationally as one of the most sophisticated, far-reaching and reliable workforce planning models in use anywhere. Over the years, it has become pivotal to Saudi Aramco's staffing success. The CMPM elicits information from business lines on the level and mix of talent required to meet future needs. It also develops projections of internal and external supply. But it goes well beyond the norm in deploying sophisticated algorithms to show how the company's internal labor market can be equilibrated through shifts of talent from areas of excess supply to areas of excess demand.

This case study is excerpted from the World Economic Forum/Mercer report, Talent Mobility Good Practices: Collaboration at the Core of Driving Economic Growth, January 2012



A Strategic Workforce Planning Approach

Traditional approaches to workforce planning include a myriad of qualitative and quantitative methods of tracking succession, designing staffing plans, work scheduling, applicant tracking system, competency based assessments, and evaluating workforce needs through perceptual instruments such as employee surveys. However, traditional approaches do not apply rigorous forecasting or conduct a comprehensive analysis of a company's entire workforce.

Strategic workforce planning is a systematic process for forecasting an organization's future workforce and determining the most effective practices and policies to close gaps to meet future workforce needs.

Taking into account both the internal and external labor markets, this planning process details specific gaps at the job level for each location. Here's how to look at it:

Identify human capital requirements.

Demand forecasting in the natural gas industry is more easily estimated than in most other industries; the more difficult step is understanding how needed skills might change as new technologies are implemented.

Identify critical jobs. This takes into account scarcity in the labor market, learning curves that may be as much as eight-plus years, feeder jobs that are effective development routes, and positions important to operations and safety.

Forecast your future workforce and labor market outlook.

Based on past recruiting and retention patterns, understand at the job level how many workers you will likely have by job family and location. Bring in forecasts for local and regional labor markets to understand if future labor markets will be more difficult for certain skills.

Determine current and forecast future workforce gaps. For critical and non-critical jobs over the next five to 10 years.

Identify internal/external drivers of current workforce composition and engagement. This is the most important and most overlooked part of the process, as it is insufficient to simply quantify the gap without understanding the processes and practices that will most effectively fill these gaps based on a statistical analysis of your workforce history.

Formulate workforce plans. Based on the analysis in the prior step, this includes the most effective way to fill the gaps, specific actions, responsibilities, timeline, and a proposed way to measure each solution's effectiveness.

Execute and monitor interventions.

talent management plays out for both the demand and supply sides of workforce planning.

On the demand side, the key development is integration of quantitative and qualitative data on workforce requirements. Quantitative methods can be applied to help estimate the size of the workforce that will be required under different growth scenarios. These more traditional methods of forecasting headcount requirements tap into consistent relationships between revenue growth and FTE levels, adjusting for anticipated changes in workforce productivity. They would also tap into information on upcoming capital projects that might affect both the volume of business and workforce productivity. Moreover, demand forecasting must consider alternative price scenarios that will affect value added per employee.

But modern workforce planning goes beyond the forecasting of headcount. It must anticipate and help drive changes in the mix and quality of capabilities, behaviors, and attitudes that will be required in and from the future workforce. Since workforce planning is about the future (for which there are no hard data), expert opinion about future workforce requirements is essential. More sophisticated tools for eliciting expert opinion, such as conjoint analysis, can be used to help leaders carefully think

through the human capital implications of their business design. Conjoint analysis is a survey methodology used primarily to determine how people value different features of a product or service offering.

On the talent side, it is frequently applied to help better understand what components of a reward package or the company's so-called employee value proposition employees most value. Traditional surveys use close-ended questions (with Likert response scales) asking to what extent employees value such components as their retirement program, their health benefits, eligibility for their incentive plans, learning opportunities, paid time off, and more.

With nothing to effectively force choice, such survey techniques make it easy for respondents to classify everything as highly important. Conjoint addresses that issue by offering a series of paired comparisons from which employees are asked to indicate their preferences. This series of comparisons in effect obliges choices and helps both the respondent and the analyst gauge the consistency of valuations,

In so doing, conjoint analysis essentially simulates the reality of constrained choice, in which budget limitations and the existence of multiple alternative options obligate a determination of what is most important. This helps



When designing an SWP process to support talent management...

- ✓ Recognize that **it takes years to build a well-functioning SWP process**. You can gradually build workforce planning capabilities over years—deriving value at each step, and decide as you implement the level and sophistication of the process and workforce planning tools your business requires.
- ✓ **SWP will not replace your other talent processes** (or fix those that are broken), but it should provide clearer direction and priorities for processes such as sourcing, training, succession planning, and head-count control.
- ✓ **Finding experienced workforce planning resources** is a fool's errand (most retired over a decade ago). Instead, look at the underlying skills and experience required to manage SWP. Recognize you will rarely find in a single individual the combination of process and technical skills to support your organization. There-

fore, consider splitting these roles.

- ✓ **Forecast** where current practices are leading your workforce and compare that to business projections.
- ✓ **Stop copying others**; look inside for the keys to success and leverage the data you've been collecting in your HRIS and other talent systems. Go beyond what others are doing, and determine the best fit for you based on your workforce facts.
- ✓ Keep the process and tools **simple** and easy to use.
- ✓ Create a **single workforce data source** with consistent definitions.
- ✓ **Engage the business leaders in workforce requirements** and likely business scenarios, but don't expect them to articulate detailed workforce requirements—that's your role.

When creating your workforce plan ...

- ✓ **Keep workforce plans concise and understandable** by business partners.
- ✓ Focus on **long development lead-time and hard-to-fill positions** to anticipate and address potential workforce gaps.
- ✓ Workforce planning should **show clear priorities**. You generally don't need to make wholesale changes, but keep the big picture in mind. Your analysis must reveal not only the critical gaps, but which actions will be most effective in filling them. It should also spotlight policies and practices that may be working against delivering the workforce you require.
- ✓ The best actions **often focus on the unique differences** in the workforce or the business needs. These tend to be more successful than competing head-on for talent.

get around the problem of traditional closed-ended surveys where everything can be rated "important," allowing for real prioritization of actions.

Applied to the demand side of workforce planning, conjoint analysis can be useful in obliging leaders to carefully think through what specific workforce capabilities and behaviors are truly essential to driving business success, rather than simply offering up nondiscriminating responses that paint an idealized view of what the workforce should be and do. For example, an energy company with which we worked used a formal survey process based on conjoint analysis to elicit input from business leaders and their HR partners across the segments. Specifically, they were asked to indicate which workforce characteristics and behaviors were most important to future business performance, selected from among a group of paired comparisons offered in the survey.

The company learned that the more generic capabilities and behaviors—such as technical knowledge, teamwork, and adaptability to change—were universally judged to be critical across business segments, whereas firm-specific factors—such as employee tenure and breadth of experience in the company—were

judged to be of little value.

This was particularly striking given the strong orientation of the company's talent and reward strategies toward the development and retention of firm-specific capabilities. In a nutshell, the company rewarded long tenure, homegrown knowledge, individual performance, and adherence to hierarchical management, when what it most needed, apparently, was more state-of-the-art technical knowledge, teamwork and collaboration, initiative, and workforce agility. It thus became evident that the current strategies and rigid hierarchical structure were not geared to deliver the capabilities and behaviors that business and HR leaders believed were required for future business success.

The same empirical approach is possible with respect to questions about the labor supply. The proliferation of workforce data both inside and outside organizations, along with advances in modeling capabilities, makes possible powerful quantitative assessments of labor supply and effectiveness. Perhaps the most compelling advance relates to methods to understand the dynamics of those all-important labor markets that reside inside organizations—"internal labor markets," or what we call ILM Analysis™.



For example, an organization we'll call UtilityCo is a large gas and electric utility that was deeply concerned about the impending loss of more than 25 percent of its workforce within five years. Due primarily to an aging workforce, these losses represented an exceptional change for a company accustomed to single-digit turnover. The costs were estimated at up to \$85 million, not including an estimated \$57 million loss in human capital investments made in these departing employees. When combined with a shrinking supply of new recruits in certain skill groups, this meant increasing competition for critical labor.

Having the right people in the right places at the right time was a business necessity. To identify future gaps and create a prioritized plan to fill shortfalls meant putting a reliable workforce planning process in place. The urgency is underscored by the increase in technological skill and training required to operate the next generation of computerized industrial equipment that is replacing earlier forms of automation in the natural gas industry.

UtilityCo defined its workforce needs—which parts of the business were expected to grow and which jobs within the business were critical to the ongoing operation of the company. Next, using the historical flows of employees in, through, and out of the company, we forecasted the future workforce using ILM Analysis and External Labor Market (ELM) Analysis™ and determined for each job and location when and where shortfalls would occur. Finally, using the insights from the ILM Analysis, workforce plans were prepared with the action steps needed to fill the gaps, tailored to each business unit's needs. These plans established metrics to track the progress and success of workforce planning interventions.

No longer is UtilityCo dependent on anecdote to manage its workforce or plan for its future. Moreover, projected savings in turnover and retained human capital amount to tens of millions of dollars, strengthening the business case for current and future workforce investments.

Mapping Internal Flow

Understanding your internal labor market(s) starts by mapping the flows of talent in, through, and out of the organization over time. These are the core talent flows that characterize the organization's internal labor markets. They determine who your workforce is today and what it will become tomorrow.

Because these flows capture a dynamic process, they also provide the basis to proj-

ect what your workforce will look like in the future, under current or alternative scenarios. Such projections can show how employees will be distributed across career levels, what the demographic and occupation mix will likely be, as well as the associated cost of that workforce, given anticipated trajectories of pay. This kind of analysis can meaningfully examine job levels from executives on a multinational and national level, down through middle management and technical leaders, to regional and local supervisory levels.

But energy organizations need to do more than describe their internal labor markets; they also need to explain them. By understanding what actually drives the critical dynamics within their internal labor markets, organizations can effectively change the drivers in ways that can deliver, reliably, the workforce they require. ILM Analysis statistically models the dynamic process behind these talent flows and associated compensation. Specifically, it identifies and measures the drivers of such workforce outcomes as attraction, retention, promotion, pay, and performance. Statistical estimation of these models can help organizations know the answers to such key questions as:

Who are we attracting into the organization, and are they the right kinds of people?

Are we succeeding in getting from the available talent pools, the kind of people who will be

The urgency is underscored by the increase in technological skill and training required to operate the next generation of computerized industrial equipment.



Help Wanted

Key jobs that the industry will need to fill over the next couple years, based on its continued growth.

The competition for experienced workers in our industry will continue to increase, even without an economic rebound, due to a combination of impending retirements, the majority of new plants in the U.S. being natural gas, far outpacing renewable sources, and the dramatic increase in shale gas.

Since the U.S. is the leader in shale gas, anyone with experience in hydraulic fracturing going back five years should be in high demand in North America and Europe. The key jobs employers are struggling to fill are **experienced geoscientists, piping engineers**, and most **environmental positions**. In addition, while not as difficult to find, **process engineers** and **operations managers/supervisors, mechanics, welders, and pipefitters** are being heavily recruited for new operations, and replacements for retiring workers. Specific skills that are in limited supply are engineers with major **project management experience, gas distribution engineering**, and **EH&S** experience.



Securing the right workforce is one thing. Engaging that workforce in a way that makes it productive, innovative, and able to quickly adapt to changing market conditions is another matter entirely and is certainly no less important to business success.

successful in our enterprise and bring with them the capabilities, experience, and aptitudes required for us to be successful?

Who are we retaining and why? Are we keeping the employees we most need? Are there changes we can make in our reward package or employment proposition that can enhance our ability to minimize unwanted turnover?

How vulnerable are we to changes in labor market conditions? Would turnover rise substantially if labor markets in the areas in which we operate or from which we source our talent get tighter?

What do we actually reward? What is the profile of people who do well in our organization, as measured by advancement and/or pay? Is this the right profile given our business needs?

How do careers actually unfold in our organization, and are there ways to effectively accelerate employee development? What are the common job transitions, and how long do they typically take? Is there evidence of alternative transitions or learning opportunities that make for faster, more productive development?

These are fundamental questions. It is not sufficient to simply quantify the gaps. Workforce planning must prioritize the specific solutions that will be most effective in filling critical gaps.

Engagement Strategy

Securing the right workforce is one thing. Engaging that workforce in a way that makes it productive, innovative, and able to quickly adapt to changing market conditions is another matter entirely, and it is certainly no less important to business success. Research shows that employee engagement took a hard hit during the financial crisis, with feelings of loyalty, commitment, and trust in leadership dipping dramatically in many organizations.

To assess this challenge, we reviewed data from a recently completed study of employee engagement around the globe to show how such information can be tapped to strengthen decision making around talent. Not surprisingly, what is important to employees varies by geography and across generations. Mercer used conjoint analysis to determine a prioritized ranking for each of 13 key value propositions in each of 17 markets around the globe.

When natural gas employers in North America consider the labor market with these results in mind, it is apparent that providing top-tier total remuneration is key to the attraction and retention of talent, particularly for the experi-

enced segment of the workforce. “The type of work I do” is the third-most important element, with employees age 55 and older most likely to cite it as important.

In Asia-Pacific, the value proposition offered to employees beyond pay should be emphasized in order to achieve a high level of employee engagement. While base pay was the first or second most important element of the value proposition in each country, other elements varied widely in importance by country.

As natural gas employers increasingly move toward a globally mobile workforce, the organization that understands both the values and mind-set of its current and prospective employees, including variations by age group, should enable modification or development of compensation and career development programs that will maximize the return on investment in human capital.

Lip Service Is Not Enough

Businesses need to embed workforce-planning processes into their organization in order to provide an evidence-based guide for budgeting, sourcing, training, and changes to rewards and career structure. While certain aspects of the work can be contracted out, such as labor market intelligence and statistical expertise, it is important to build a basic process capability and workforce analytics function within the organization, most typically within the human resource function.

In today’s economy—and especially because of such factors as price volatility and fierce global competition in the energy sector—organizations in the natural gas industry can no longer just give lip service to the idea that “people are our greatest asset.” They need to start managing their workforce as if it is truly an asset, applying the same discipline and quantitative mind-set that they bring to other asset management decisions. Fortunately, the tools to accomplish this now exist, and most organizations actually have all the data they need—from internal and, to a lesser extent, external sources such as demographic trends regarding age and availability of talent in specific geographies—to deploy an evidence-based approach and turn their workforce management into a lasting source of competitive advantage. 

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