



Chemicals Industry Leaders: Are You Ready For The Workforce of the Future?

David W. De Long

- *"We've already lost 10 to 20 percent of our senior scientists in the last three to four years. And we stand to lose another 10 to 15 percent in the next five years. A lot of these people are back now on a consulting basis."* —Polymers planner for basic and intermediate chemicals company.
- *"We do worry about retention, the same way we worry about being competitive in hiring chemical engineers. But, if you're looking for fast upward mobility, the issue is how do we keep people challenged and wanting to remain with us?"* —Director of organizational effectiveness, diversified chemical company.
- *"The key issue for us in Europe is rebuilding our presence in the external recruitment marketplace and our attractiveness as an employer. In one country, we've been looking for twenty-five chemical engineering recruits and we'll probably get three."* —Global HR manager of talent pipeline, petrochemical company.

With few exceptions, most global chemical companies are looking at major changes in their workforces in the next five to ten years. According to an ongoing study at the Accenture Institute for Strategic Change, many challenges to sustaining workforce capabilities are going to be created by an increase in retirements of older workers who have survived a decade of cost-cutting initiatives in this increasingly consolidated and technology-driven industry.

But interviews with dozens of chemical company executives in the US, Europe, and Japan show that retirements are just part of the problem. At the other end of the talent pipeline, a

younger cohort of engineers, research scientists, and plant operators are joining up with a different set of values and expectations. This evolution from an older, traditional, highly experienced workforce to a younger, more mobile employee base poses major challenges for chemical company leaders, particularly when set in the context of ongoing pressures to cut costs. This research note describes the key drivers that are shaping the workforce of the future in global chemical companies and outlines areas where management will have to make difficult decisions to build and sustain the human capital needed to achieve strategic objectives.

External Drivers

Exhibit 1 shows the organizational factors described by many of the executives we interviewed, as well as the external drivers that are already shaping the workforce. Mapping organizational needs and external drivers helps clarify where management attention and resources are most critical. These are some of the external forces shaping the future workforce:

An aging workforce. The demographic data are undeniable. The population in all the world's developing countries is aging at unprecedented rates. In the US, for example, the percentage of workers age 45 and over will increase from 33 percent of the labor force in 1998 to 40 percent in 2008, adding seventeen million workers to this age group. Meanwhile, those aged 25 to 44 will decline from 51 to 44 percent, reflecting three million fewer workers in this age bracket. The shifting age distribution of workers in chemicals companies is exacerbated by the relatively low levels of hiring that have occurred in the last decade. "We have an atrocious lack of people below the age of 35 in our company," said one executive. As a result, many firms have workforces older than demographic figures would predict. One major global firm reported the average age of its employees was currently 47. An older workforce requires more careful attention to knowledge transfer norms and processes. In addition, HR policies may have to be adapted to meet the needs of this older work force, e.g., more flexible job design, mentoring programs, etc.

A shrinking and more diverse labor pool. The birth rate in all major developed countries is now below the rate necessary to



Exhibit 1: Key Factors for Managing Human Capital in the Chemicals Industry



sustain current population levels. And not only is the labor pool growing more slowly as a result, but it is also becoming more diverse in developed countries. In the US, for example, white non-Hispanic men, who once represented the majority of the labor force, now make up only about 40 percent of it. Meanwhile, the proportion of women in the workforce has risen from 42 to 47 percent in the last twenty years. And, in that time, minority group members have grown from 17 to 25 percent of the labor force. Thus, the workforce of the future in chemicals will draw from a smaller and more diverse labor pool, which means attracting qualified candidates will require considerably more effort in recruiting and retention.

More options for potential employees. As the pool of qualified professional employees grows more slowly, recruiting for qualified candidates has become increasingly intense in both the US and Europe. Not only do chemical companies have to cope in some circles with an image as environmentally unfriendly, but top-rated college graduates today are also receiving offers from a wider variety of potential employers, such as investment banks, large consulting firms, and high technology firms. This intense competition means employers must pay much more attention to their "brand image" in the employment marketplace and to the quality of their recruiting processes.

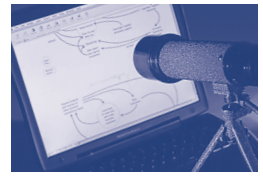
Younger workers' different values. A common theme in our interviews is that new employees have very different attitudes and expectations than the more experienced baby boomers, who are likely to have been with a firm twenty to thirty years. "Generation Y is simply different," said one HR manager. "What we've got to understand is these people want to come in to learn and grow. And the faster they do that the better.

So the culture shift for us is we've got to challenge people more when they come in, and give them more opportunities to grow, and not make assumptions about the limits of their skills and capabilities." Many companies have learned the hard way that these workers expect faster advancement, more challenging work, and ongoing training to upgrade their skills. If these expectations are not met, younger employees will leave. Realistically, chemical companies must expect higher levels of turnover in their future work force.

Organizational Needs Shaping Workforce Strategies

In the course of our interviews, we discovered four overriding organizational needs that will impact the building of professional talent pools in the years ahead.

Resources required for business growth. Despite the ongoing emphasis on cost cutting, many chemicals executives are now concerned about the viability of their firm's future workforce and the implications for the implementation of growth strategies. Business objectives should dictate HR needs. But in some cases, problems with recruiting, retention, and retirement are already posing a serious threat to the strategy implementation. "The issue has gotten management's attention because of our growth strategy," explained one executive. "Not only can we not support our growth plans, but the experience is leaving. We need to add 2,000 people in the next two years, but can we get the bodies we need? And can we assimilate them and make them productive?"



The conflict is most readily felt by operating unit managers who are being told to continue cutting costs, but also to meet recruiting goals to support future business needs. Because external drivers no longer guarantee that an adequate number of professionals will be available to support growth, a new premium is being placed on recruiting, retention, and knowledge management activities.

Globalization. Firms that seek to expand their operations globally to remain competitive face a series of HR challenges. First, they need to recruit professionals capable of operating across a variety of cultures and markets. Operating in an international business environment also requires more training and foreign assignments to develop leaders with a global perspective. Equally important, going global places a new burden on some companies who must change their organizational cultures in support of their workforce diversity. Finally, globalization also poses special challenges for companies trying to create and manage recruiting, retention, and knowledge sharing processes on a worldwide scale.

More sophisticated manufacturing. The waves of automation, such as process control systems, that have been applied in chemicals manufacturing have produced major productivity gains in the last decade, reducing the number of operators needed to run most manufacturing units. "When you look at productivity in the chemicals industry, we have almost tripled the outputs of these plants, while cutting staff 40 to 50 percent," says the vice president of engineering and manufacturing for one diversified chemicals company. But the increasing technological sophistication of plant operations means that those running the heavily automated systems must be much more highly trained. Several companies, for example, noted that they no longer hire operators with only high school degrees. And these advanced manufacturing skills can be particularly hard to find in developing countries.

Need to replace retirees. A growing reliance on retirees returning as contractors, and an increase in the use of "experienced hires" are two notable trends found in many chemical companies trying to cope with an aging workforce. "Historically, we have been a company that grows its own," said one director of staffing. "But with the demographic shift we have to go out and back fill." Losing experienced talent so fast has left some companies with no choice but to increase their hiring of veteran engineering, technical, and research professionals. One company said its number of experienced hires has jumped from 10 to 35 percent of new employees. Not only does this often challenge long-held norms about developing

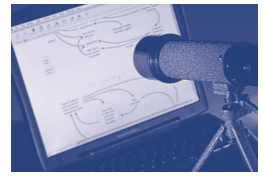
talent within the firm, but experienced hires are more likely to challenge a firm's traditional culture. This issue is reflected in assimilation problems and increased attrition.

The need to hire retirees back as contractors is an increasingly common way of retaining access to scarce knowledge. But unless the retirees are able to transfer critical knowledge to younger employees, this approach can create a false sense of security that the organization still controls special competencies. Expanding the number of contractors also risks hiding true labor costs in a growing class of workers whose aggregate costs are poorly understood.

Implications for Management

The combination of these internal and external drivers is already shaping workforces in the chemicals industry. What should management be doing today to make sure it is building the HR capabilities needed for the future? Our study identified four areas requiring management's attention:

- 1. Develop processes and systems to capture and share the critical knowledge held by those who are becoming eligible for retirement.** Some companies may lose up to 50 percent of their R&D and engineering staffs over the next five to ten years. Thus, management needs to explore new ways to minimize the knowledge that will be lost when these employees leave. Of course, the first step is to identify what knowledge in your organization is most at risk.
- 2. Explore new outsourcing models for core tasks.** The looming talent deficit is already leading some executives to look for new ways of getting work done, especially when they recognize that shortages of skilled professionals are likely to undermine their growth strategies. For example, one company has always had the engineering resources to build its own plants, but aggressive growth plans will make it necessary to outsource much of this work in the future. The firms that come to terms earliest with the realities of the emerging labor crunch will have a head start in restructuring how they actually get key core tasks performed.
- 3. Make sure your culture is aligned to support your future work force.** Many of the firms we interviewed recognized the need to create what some called a "retention culture." This included changes to be more supportive



of diverse ways of thinking brought to the firm by an increasing number of women and minorities in professional positions. It also means designing more explicit and interesting career paths, providing more professionally relevant training, and removing barriers that lead people not to feel challenged in their work.

- 4. Reinvent recruiting processes.** This is probably the area getting the most attention in chemicals firms today, particularly in those companies that have not been aggressively hiring in recent years because of downsizing initiatives. The competition for professional talent in the years ahead is going to be so fierce that companies are now recognizing the need to rethink their presence on college campuses, their image among potential candidates, and what they actually have to offer those they want to hire. Firms that aren't proactively rethinking and investing in their recruiting efforts are likely to find it harder and harder to catch up.

Conclusion

Most chemical industry executives recognize the challenges posed by changing workforce demographics, and they know they must act. But the current economic climate, which creates continued pressures for cost cutting, makes devoting attention and resources to building capabilities for the future much more difficult. An essential first step is building a compelling business case, one that will clearly communicate to the organization why investing in recruiting, retention, and knowledge-transfer initiatives today is the only way to ensure long-term survival.

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