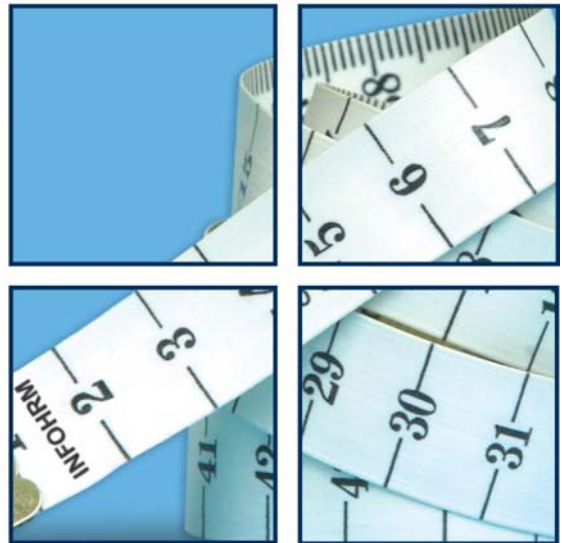


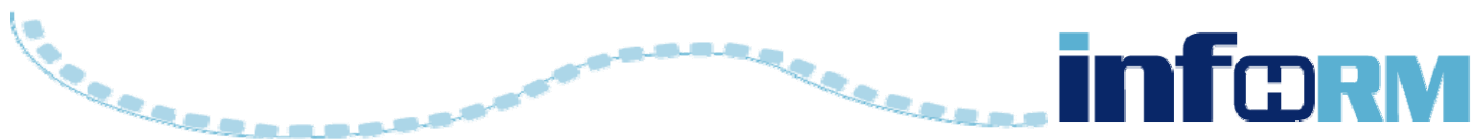
# Aging Workforce Study

INFORMATION ■ INSIGHT ■ IMPACT



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## IF YOU DO NOT KNOW WHERE YOU ARE GOING.... ANY ROAD WILL TAKE YOU THERE<sup>1</sup>.

When the future becomes the present where will your organization be? Will the advice that you, and your colleagues in Human Resources, provide to your executive today, put your organization on the right track for tomorrow? In 2010, will you have enough of the right *Critical Talent* to ensure the success of your organization?

### ***Critical talent***

The term '*Critical Talent*' refers to: “. . .groups and individuals that drive a disproportionate share of their company’s business performance and generate greater-than-average value for customers and shareholders. They possess highly developed skills, knowledge and abilities for the work of today. They know how to make things happen and are central to your organization’s competitive advantage. Without these people, organizations could not achieve their strategies”.<sup>2</sup>

Is there an organizational need, or sense of urgency within your firm, driving the development of an action plan for the management of *Critical Talent* in your organization? What are the potential implications of trends in the external labor market on your firm’s success?

### ***The labor market is changing!***

Demographic and social change in the external labor market and the effects of globalization demand that organizations prepare for a reconfiguration of their workforce profile. Current skills shortages will continue and are forecast to become worse, due to two major trends:

- Workforce Aging
- Labor Supply Gap

### ***The aging workforce***

Population aging is a global phenomenon. In March 2005, the proportion of the population aged 65 years and over in G7 countries represented between 20 – 30 percent of the population, in the G7, aged 20-64 years. By 2030 the dependency ratio (the ratio of the population aged 65 years and over to those aged 20 to 64 years) will have shifted to between 30 - 50 percent<sup>3</sup>.

<sup>1</sup> Chesire Cat, Alice in Wonderland.

<sup>2</sup> Deloitte Research. (2005). Becoming a global talent magnet. Global and Luxembourg talent pulse survey results 2005. Available <http://www.deloitte.com/dtt/article/0,1002,sid%253D17973%2526cid%253D94970,00.html> Accessed December 12, 2005.

<sup>3</sup> On average for the OECD, the dependency ratio increased moderately, from 23 per cent to 26 per cent during the 1990s. A sharp increase is projected during the next 20 -25 years

Over the next 15 years, 80% of the workforce growth will occur among people 50 years or older and by 2050, 40% of Europe's total population and 60% of its working age population will be over 60 years of age<sup>4</sup>.

These trends remind of the stark possibility that a large proportion of the (global) skilled and experienced workforce will, in the next two decades, move into retirement. Indeed, some of the 'older' members of the baby boom generation have already retired from the workforce. Forecasts suggest that by the year 2030 the last of the baby boomers will have exited from full-time employment.

More specifically, in the USA since 1900, the percentage of Americans aged 65 years or older increased from 4.1% of the population to 12.4% in 2004. In 2003, the older population (persons aged 65 years or older) in the US numbered 35.9 million, an increase of 3.1 million 1993. This trend will continue with forecasts predicting that by 2030, the older population in the USA will more than double to 71.5 million<sup>5</sup>.

In Europe, the trend towards population aging could be particularly potent due to sustained low birth rates in the past decades contributing to a shortage of new entrants into the labor force. Worldwide, the average fertility rate for developed countries has fallen from 5.0 to 1.6 in the last 30 years.<sup>6</sup> In China the single child policy is a complicating factor and in Japan negative population growth is forecast.

### Implications

In the developed world, research suggests that the forecast retirement of a large cohort of the Baby Boomer generation will contribute to:

- a decline in total labour supply,
- skill shortages
- increased competition for talent,
- wage rises,
- knowledge loss, and
- productivity shortfalls.

### *Labor supply gap*

The U.S. Department of Education estimates that 60% of all new jobs in the 21<sup>st</sup> century will require skills that are possessed by only 20% of the current workforce. Over the next 10 years, jobs requiring higher levels of formal education and training are projected to grow more than twice as fast as jobs requiring low to moderate levels of training. At the same time, employers' expectations for workers are also changing,

<sup>4</sup> Deloitte 2005. Companies in the World Face Economic Crises Due to Shrinking Workforces [http://www.deloitte.com/dtt/press\\_release/0,1014,sid%253D10351%2526cid%253D91912,00.html](http://www.deloitte.com/dtt/press_release/0,1014,sid%253D10351%2526cid%253D91912,00.html)

<sup>5</sup> Bureau of the Census. Current population reports. Available <http://www.census.gov/prod/1/pop/p25-1130/p251130.pdf>

<sup>6</sup> Centre For Strategic and International Studies. (2000). *Global aging. The challenge of the new millennium*. Available [http://www.csis.org/component/option.com\\_csis\\_pubs/task.view/id.892/](http://www.csis.org/component/option.com_csis_pubs/task.view/id.892/). Accessed December 12, 2005

Increasingly, employers require workers who can adapt their skills as their jobs evolve<sup>7</sup>.

In the United States, colleges will graduate only 198,000 students to fill the shoes of the 2,000,000 Baby Boomers scheduled to retire between 1998 and 2008<sup>8</sup>. Not enough students in the USA and other large developed economies are pursuing science and engineering qualifications. In the United States, Germany and Japan, the percentage of students graduating with science and engineering degrees hovers in the single digits, far below the figures for China and India. For example, 42% of students in China earn undergraduate degrees in science and engineering while only 5% of students in the U.S. students earn similar degrees. And in Germany, the number of engineering students has declined by almost one-third, since 1995, to about 36,000. This represents just 1/10 the number of graduate engineers produced by Chinese Universities<sup>9</sup>.

These 'educational outcomes' trends are further complicated by the impact of sustained low fertility rates in the developed world, which are contributing to shortages of new entrants to the labor force and, even more disturbing, a decline in educational standards. In the US for example, trend data shows that only 70% of high school students graduate and of those who do, only 32% leave high school qualified to attend four year colleges. (For African-American and Latinos, the graduation rate is 50% and less than 20% have the qualifications necessary to continue their education in college).

## Implications

These various demographic, social and educational trends have contributed to skills shortages across a number of industry sectors<sup>10</sup>. For example, in:

**Education:** There are not enough science teachers available to teach the next generation of Chemists or Physicists:

**Health Care and Pharmaceutical:** There is a shortage of Nurses (an estimated shortage of 1 million Nurses by 2012), Pharmacists, Scientists and Clinicians

**Manufacturing:** There are shortages of machinists, who must perform with precision to Six Sigma standards; craft workers and technicians; as well as engineering/technical managers. In the automotive industry 40% of all managers will be eligible to retire within the next five years.

**Aerospace and Defense:** There are shortages of Engineers with deep technical skills for design and maintenance/repair:

**Oil and Gas:** Geologists and petroleum engineers who find and extract oil are in short supply

**Retail:** There is a shortage of inventory managers must get the right goods, in the right store at the right time, in the right quantities and at the right price.

<sup>7</sup> Deloitte Research. (2005)

<sup>8</sup> Carnevale, A. & Desrochers, M. *The missing middle. Aligning education and the knowledge economy*. Available <http://www.ed.gov/about/offices/list/ovae/pi/hs/carnevale.doc>

<sup>9</sup> Deloitte Research. (2005)

<sup>10</sup> Deloitte Research. (2005)

Of interest these ‘shortages’ are not just a concern for organizations operating in continental US. Shortages of technical workers, health care professionals, educators and engineers are a global phenomenon. In particular, shortages in science and engineering are attracting the attention of Governments, professional bodies and businesses across the globe.

### ***What is the potential impact of these trends in your organization?***

Are you in an industry that is particularly vulnerable to disruptions in the supply of *Critical Talent*? For example, is your organization’s success reliant upon the ongoing availability of an experienced pool of engineering and science professionals? Do you really understand your *Critical* workforce risks and vulnerabilities? What is your organization’s workforce data telling you? Do you have the necessary analytic tools and techniques to analyze external and internal trend data to create a compelling story?

If you are the person responsible for ensuring the continuity of *Critical Talent* in your organization, your focus should be on the development of strategies and on taking action to manage critical resources, rather than wasting time and resources attempting to coordinate and make sense of raw and often unstructured data. Indeed, measuring, modeling and monitoring your workforce and age related metrics is essential to:

- understanding and managing the workforce
- understanding your workforce risks and vulnerabilities
- providing insight into the effectiveness of HR activities

### ***Determining your workforce direction***

So, HOW DO YOU (the person responsible for ensuring the continuity of *Critical Talent* in your organization) DETERMINE WHICH ROAD TO TAKE? The answer to this question resides among a combination of the following factors:

- Do you have timely, credible data on your organization’s workforce?
- Do you have the necessary technology online database, data warehouse, automated online reporting and self service?
- Do you have the analytical skills within our team to collect, conduct, analyze, interpret, and communicate the meaning of the analysis to support the development of actionable plans?
- Do you know what data to collect and analyze?
- What internal (operational/financial) data is available to you?
- What external data (benchmarks) and Key Performance Indicators are available and relevant?
- Do you have an understanding of legal privacy issues and data security requirements?
- Do you know what is valuable to your organization?
- Can you readily distribute the data (and interpretations) to the right person, at the right time and in the most usable format?

- Do you have executive buy-in?

To assist you to navigate the complexity of ‘determining your future workforce direction’ a proven methodology to assist you to analyze your Critical Talent and to formulate actionable plans has been developed. By accessing human capital data and metrics, in conjunction with an analytical capability, you can enable your organization to make more effective strategic business and related workforce decisions.

By knowing where potential problems exist and where problems in the future may emerge, you can then take action to allocate human and financial resources appropriately, across competing HR priorities, to support your organization’s business needs now and into the future.

### ***Case Study***

The following case study on McKee<sup>11</sup>, an Aerospace & Defense Contractor has been developed by Infohrm<sup>12</sup> as an example, of the workforce analysis we believe that firms need to be undertaking on a systematic basis. Using McKee data the following data tools and techniques are applied to reveal the story of ‘workforce aging’ and the ‘labor supply gap’ for the McKee workforce:

- Workforce demographic profiling
- Data disaggregation
- Workforce trend analysis
- Forecasting
- Skill profiling

Using analytic techniques, trend data can be extracted from the McKee workforce data warehouse to reveal whole-of-workforce insights. This information can be further dissected and analyzed to reveal key insights about McKee’s *Critical Talent*.

### ***McKee’s workforce demographic profile***

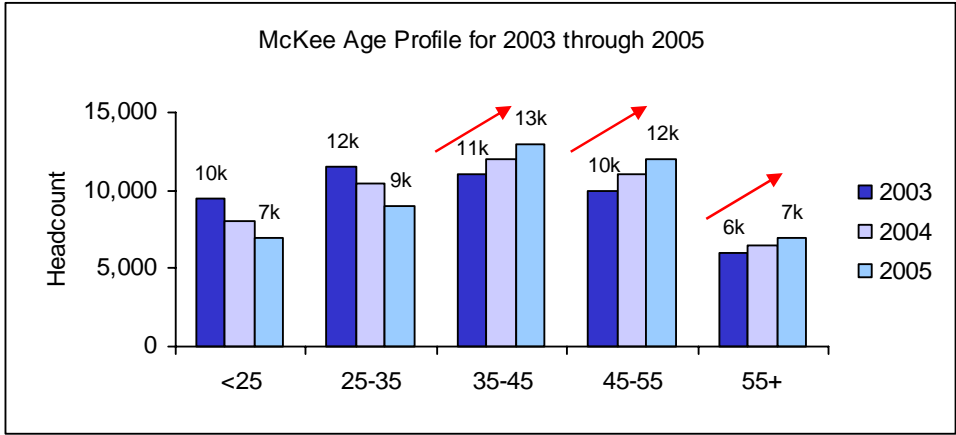
McKee’s first step is to develop an age profile of their workforce. Figure 1 suggests that during the period 2003-2005, the McKee workforce became older. In 2003, 10,000 McKee workers were aged 45 - 55 years, whereas in 2005, 12,000 were aged 45 - 55 years. In the 55 years or older age group the proportion of McKee employees in this older age group grew from 6,000 to 7,000.

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<sup>11</sup> McKee is a pseudonym

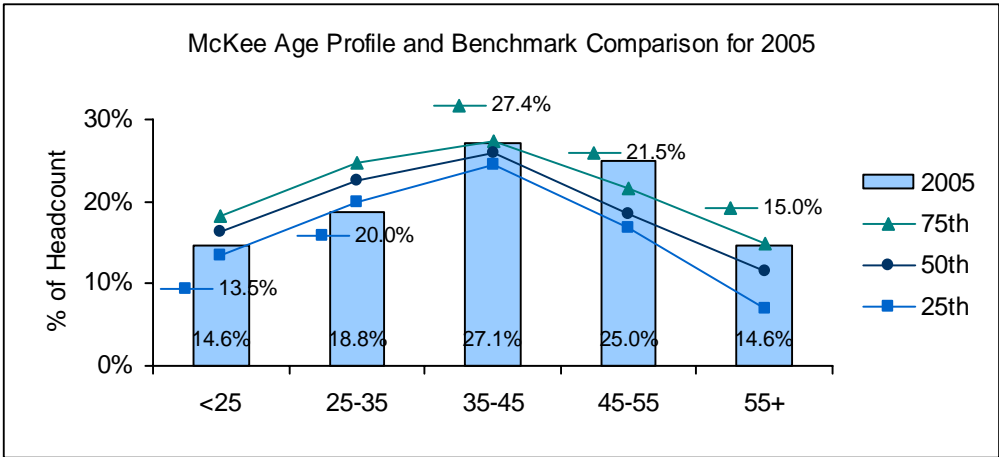
<sup>12</sup> Infohrm acknowledge the support provided by SAP America in undertaking this project

Figure 1: McKee Workforce Age Profile



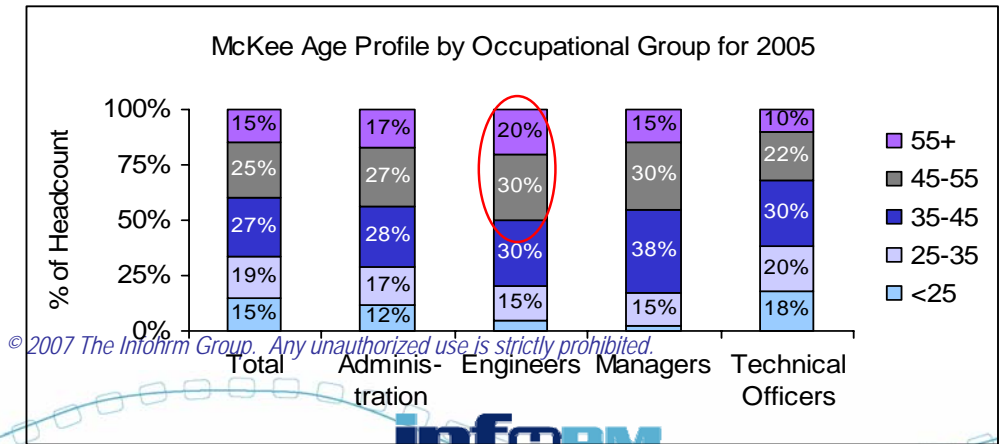
By utilizing Defense Contractor benchmarks McKee is also able to compare its workforce age profile against the age profiles of their competitors. A benchmark comparison, Figure 2, reveals that the McKee workforce is older than their competitors’.

Figure 2: McKee Age Profile Benchmark Comparison



In Figure 3, McKee’s age profile is “disaggregated” by occupational group. Internal variations can now be observed. These variations, reveal more of the story about the McKee workforce - 50% of McKee Engineers are aged 45 years or older!

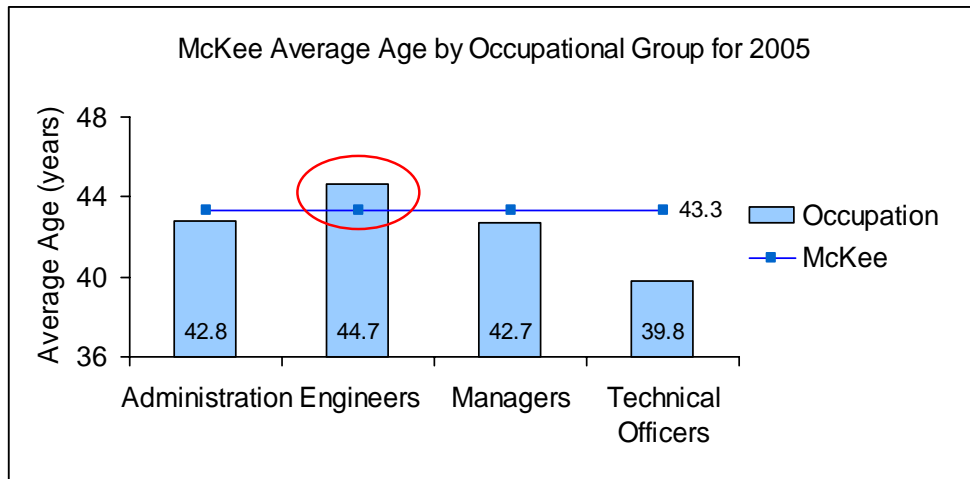
Figure 3: McKee Age Profile by Occupational Group



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As Engineers are a *Critical Talent* within McKee and they represent over 37% of the workforce (chart omitted), the age profile of Engineering (their average age is 44.7 years – Figure 4), points to a need to take action to protect against the risks associated with the potential retirement of a large proportion *Critical Talent*. If you are the person responsible, where do you focus your effort.

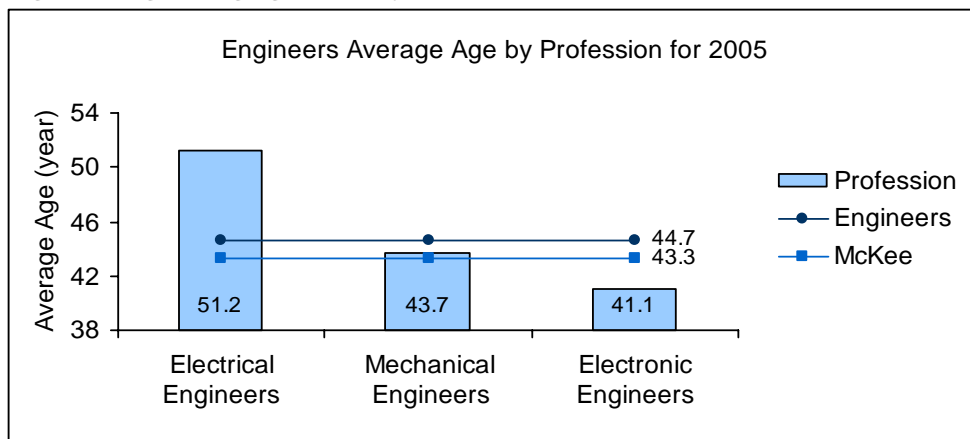
**Figure 4: Average Age by Occupational Group**



### Drilling Down

By disaggregating McKee workforce data by occupational group (drill-down), further insights are revealed. In this instance, the drill-down to occupational group data indicates that Electrical Engineers are significantly older than their colleagues in Mechanical and Electronics engineering (Figure 5).

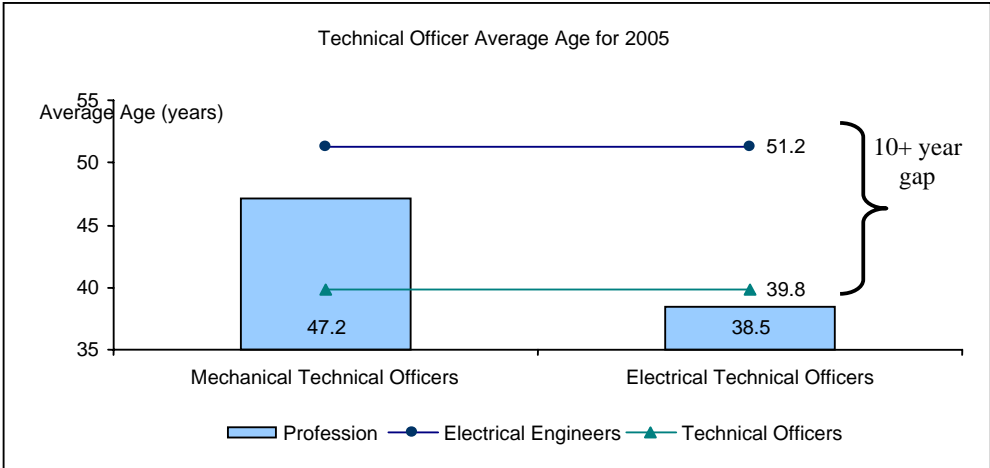
**Figure 5: Engineering Age Profile by Profession**



Next, McKee completes an analysis of Electrical Technical Officers (a possible feeder group for Electrical Engineers). This analysis (Figure 6) determines that the average age of Technical Officers is much lower than the average age of Electrical Engineers.



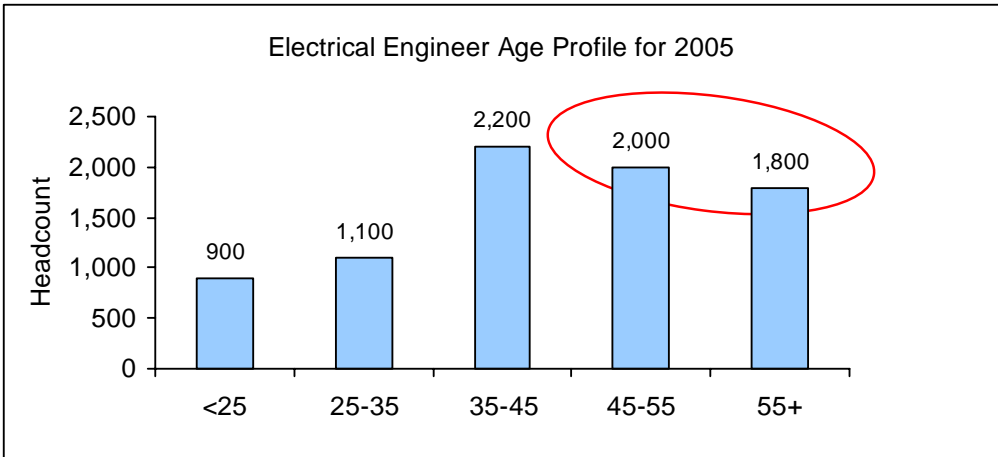
Figure 6: Technical Officer Average Age



Now McKee can filter the age profile to only look at Electrical Engineers (Figure 7), observing that a large number (3,800) are in the older categories (45- 55 years and 55 years or older).

**Electrical Engineers: A Workforce Hot-Spot**

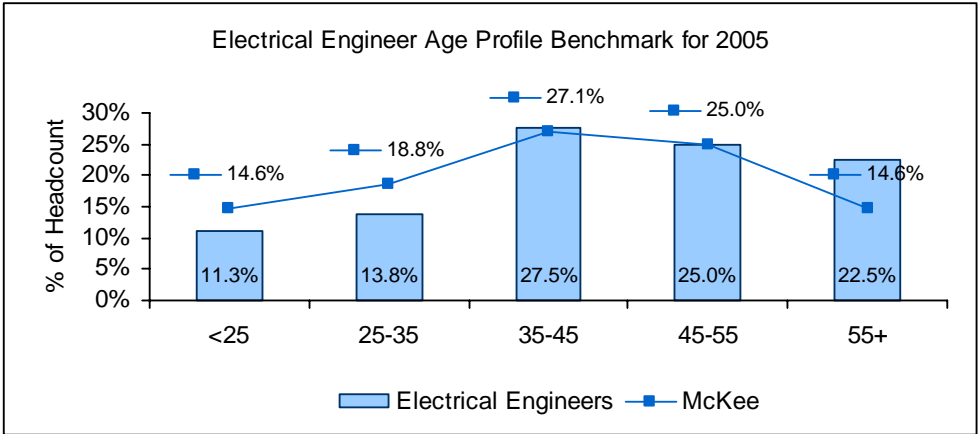
Figure 7: Electrical Engineer Age Profile



A benchmark comparison of the Electrical Engineer age profile by Industry (Figure 8) reveals that there is a significantly higher percentage of McKee Electrical Engineers, aged 55 years and over, than the average in the industry<sup>13</sup>.

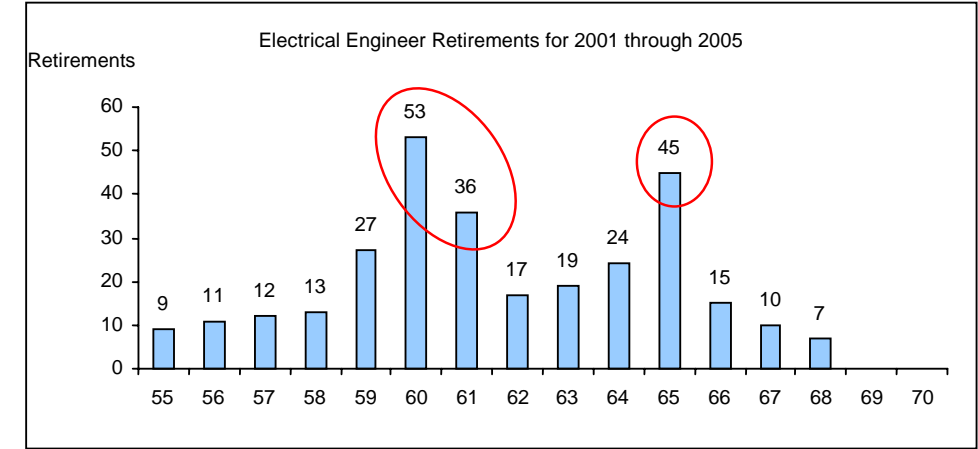
<sup>13</sup> Based on the Infohrm Industry Benchmarking data base.

**Figure 8: Electrical Engineer Age Profile Benchmark**



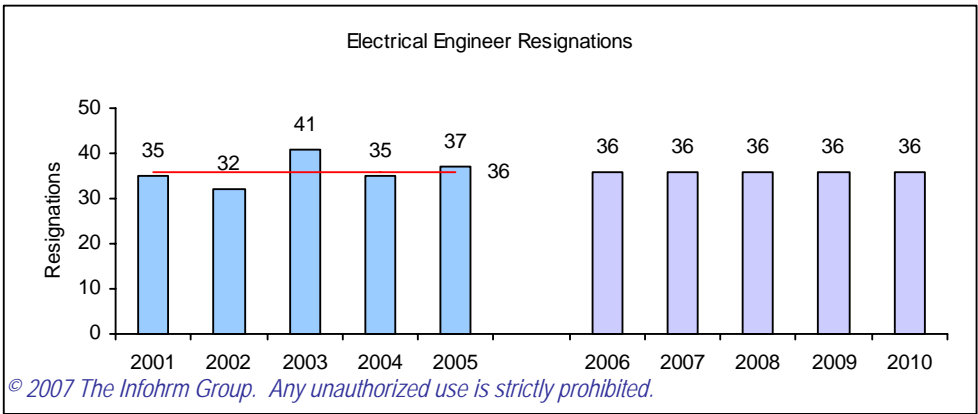
Now McKee must analyze their historical patterns of retirement and resignations. This analysis (Figure 9) shows that during the last five years, retirements of Electrical Engineers have tended to occur more often at the ages of 60, 61 and 65 years.

**Figure 9: Electrical Engineer Retirements**



The trend in resignations over the last five years suggests that a smaller number of Electrical Engineers are resigning from McKee compared to the number retiring. For example, during the last five years, on average, 36 Electrical Engineers resigned each year (Figure 10).

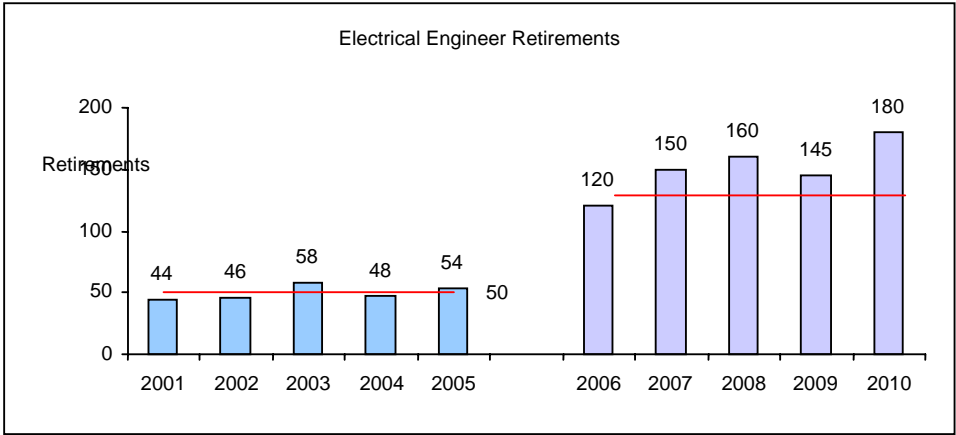
**Figure 10: Electrical Engineer Resignations**



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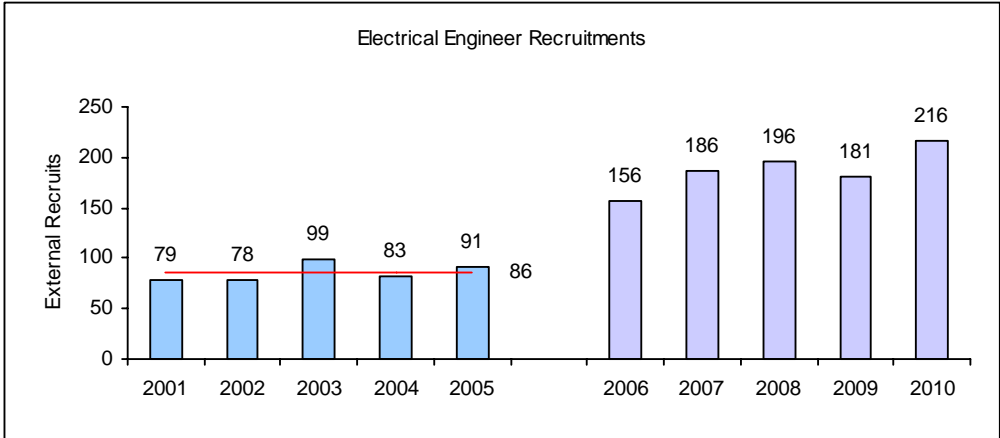
By modeling McKee workforce retirement trends and workforce demographic data, a retirement forecast can also be constructed. (This model assumes that the past is predictive of the future). The model predicts that in the next five years, McKee Electrical Engineers are likely to retire at a rate of over 120 retirements per year (Figure 11).

Figure 11: Electrical Engineer Retirements



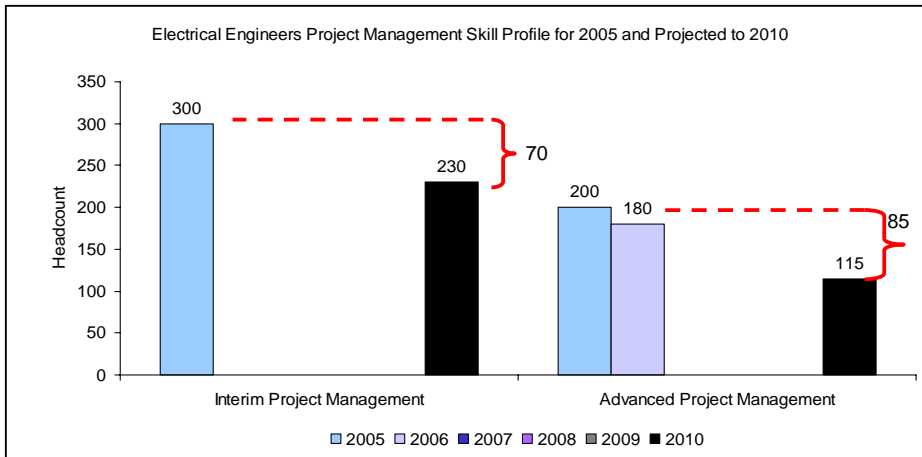
Currently, McKee recruit, on average, 86 Electrical Engineers each year. By combining retirement trend data with resignation data, the analysis points to a need for McKee, to significantly lift its Electrical Engineer recruitment rate (Figure 12).

Figure 12: Electrical Engineer Recruitment



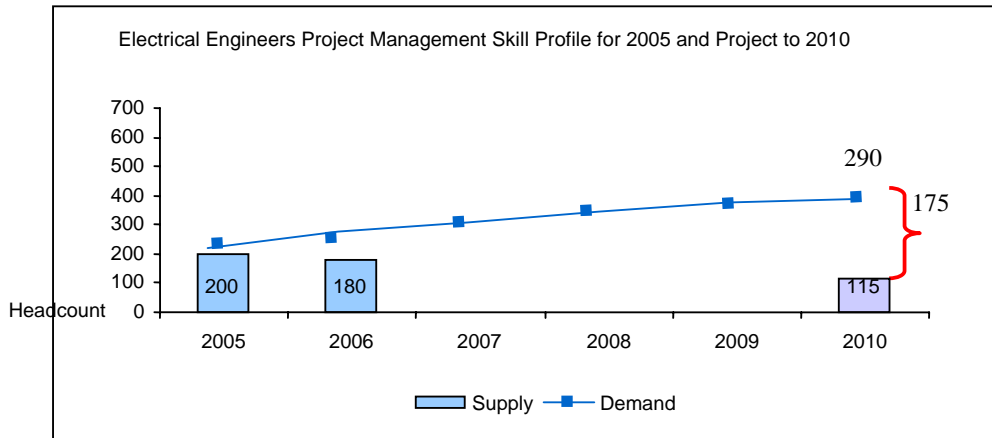
Now, another element of concern for this defense contractor is the availability of Electrical Engineers with the critical skill of project management (Figure 13). Such key information should be available in qualification (competency catalogues) and from performance appraisals.

**Figure 13: Electrical Engineer Skill Profile – Project Management**



Now, McKee combines their workforce planning goals with business growth objectives to determine their competency requirements in the future. The analysis reveals a MAJOR gap in the supply of Electrical Engineers with the requisite project management skills (Figure 14).

**Figure 14: Skill Profile - Business Growth Projection**



**HR Action**

By utilizing its data warehouse and analytic capability, McKee are able to validate emergent concerns regarding the ongoing availability of its *Critical Talent* in Electrical Engineering. The outcomes from the analysis tells a potent story providing McKee’s HR and business planners with actionable knowledge, to create a ‘sense of urgency’ and to build the business case for taking targeted action.

Given the findings revealed in the analysis, McKee could undertake further analysis to determine the average tenure of engineers in their positions (to determine potential issues with career paths). McKee could also take steps to identify the availability of Electrical Technical Officers (either with Electrical Engineering degrees or in courses of engineering study). Workforce demographic data as supplied by various public

agencies (Bureau of Labor Statistics) could also be accessed to determine the size and quality of the pool of potential recruits available in the external labor market.

However, the net result of the profiling, benchmarking, modeling and forecasting activities demonstrated here will shape the Talent Management strategies for McKee's *Critical Talent*. In this case, taking action will require a change of direction – a new road.

On the old road, when the availability of critical skills get tight most organizations start the 'hunt' for external candidates (attraction) and attempt to convince current employees to stay (retention). Often, these attraction and retention programs focus on offers of more money, benefits and perks and new challenges. In the US however, too much attention is often focused on the acquisition of new employees rather than a mix of strategies that include a balance of acquisition, development ('grow your own') and retention initiatives. For McKee, in particular given the global trends of workforce aging, the growing labor supply gap and the demographic profile of its workforce the data reveals a need for McKee to:

1. Boost external recruitment of Electrical Engineers. Five year forecasts point to a need for McKee to recruit between 120 to 150 Electrical Engineers per year. McKee should consider offering competitive recruitment offers and growing its employment brand. Other options include investigating new sources of recruitment, including international sources, partnering with Universities and Colleges and offering new modes of entry into the Electrical Engineering profession. This includes offering internships, cadetships, scholarships and graduate entry programs.
2. Delay Electrical Engineer retirements. By offering new employment arrangements to Electrical Engineers such as part-time work, compressed work week, project based work, sabbaticals and phased retirement (coupled with knowledge elicitation strategies) and mentoring/coaching McKee may be able to retain a higher proportion of Electrical Engineers for a longer period of time.
3. Rehire retired Electrical Engineers. Recently resigned and/or retired staff may be prepared to return to work for McKee. The introduction of an alumni program, rehiring incentives, contingent workplace practices for retirees and the provision of flexible conditions will assist McKee to meet its requirements for Electrical Engineers into the future. Rehired retirees could also perform the roles of mentor and coach to guide the development of inexperienced Electrical Engineers.
4. Develop career paths from Electrical Technical Officers to Electrical Engineers. This includes formal means such as tuition reimbursement programs, sponsored study and the use of learning banks and time off for educational leaves etc. Informal means include offering additional opportunities to Technical Officers to work on new projects – to expand their knowledge and skill set. These types of activities would be supported by coaching and mentoring support and individual development planning.

This parcel of strategies, enabled by access to a data warehouse and an analytic capability<sup>14</sup>, will assist McKee to take the right road and to arrive at the right destination.

#### “About the Authors”

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**Senior Consultant**

Prior to his role with Infohrm, Brad held project management and research positions within the private and public sector, including Principal Adviser (Research and Innovation) for Education Queensland; and the Deputy Director of Workforce Structures for the Royal Australian Air Force. In early 2005 Brad completed a professional doctorate and has worked as a senior consultant and labour market researcher at Infohrm since then. Brad has responsibility for the project management of large and small scale consulting assignments, including workforce planning projects and project-specific workforce research and analysis. In his role as workshop presenter Brad is responsible for workshop design, development and delivery and is the network coordinator for the Infohrm on-line workforce planning partnership program. In his research roles Brad is responsible for labour market research, trend analysis and reporting.

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<sup>14</sup> Note: The McKee case study has been developed by Infohrm, based on Infohrm’s consulting services and analytical technology. For information visit Infohrm at [www.infohrm.com](http://www.infohrm.com)