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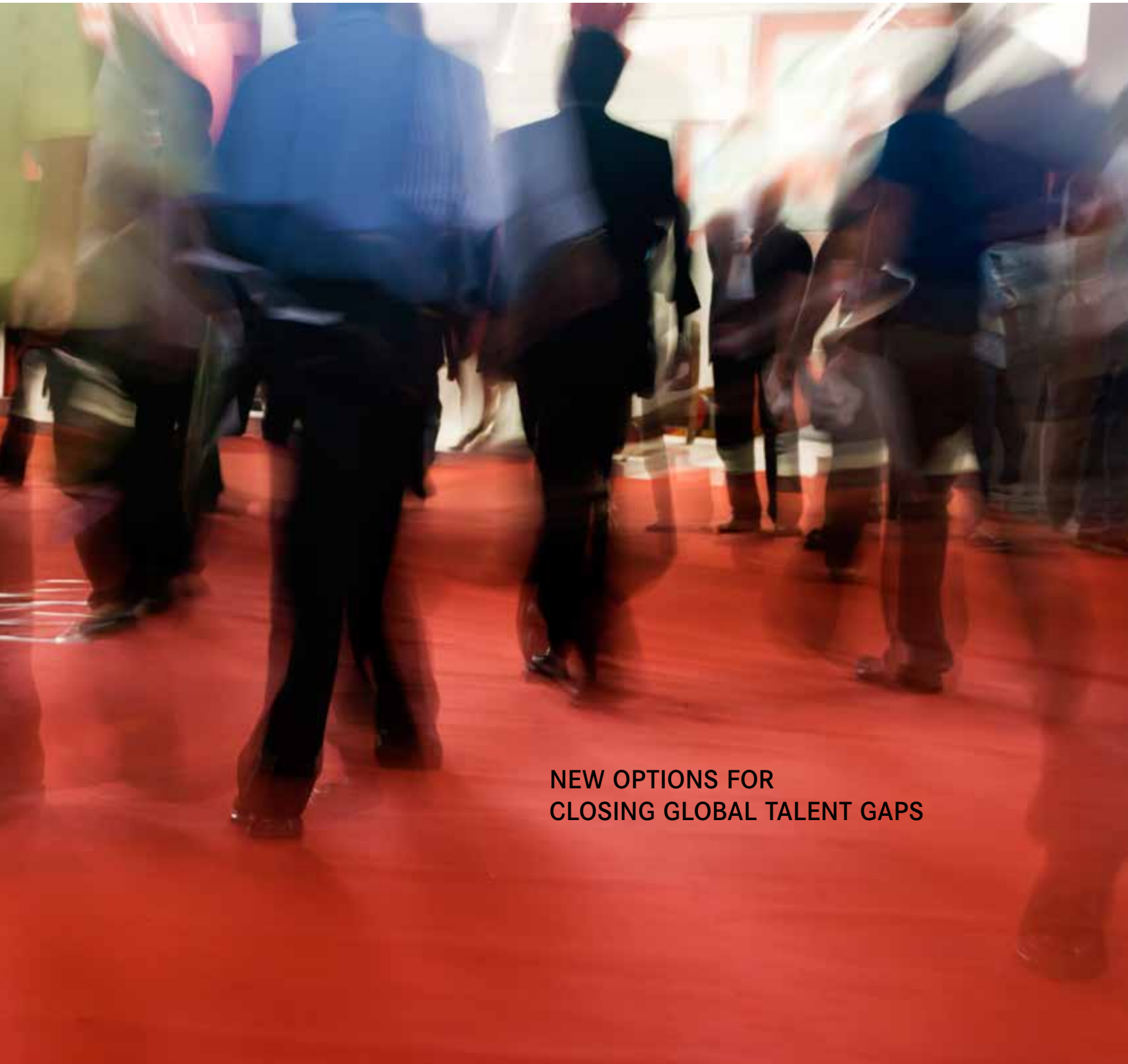
Buy, Build, Borrow, or None of the Above?



NEW OPTIONS FOR CLOSING GLOBAL TALENT GAPS

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This report accompanies the Business Implications Summary of *Buy, Build, Borrow, or None of the Above?* intended for CHROs of organizations seeking to address talent gaps.

Business Implications Summary: CHRO (8 pages)

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Buy, Build, Borrow, or None of the Above?

New Options for Closing Global Talent Gaps

RESEARCH REPORT R-1572-15-RR

by Mary B. Young

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Introduction

For decades, HR has spoken the language of Bs. In 1998, Dave Ulrich promulgated five tools that organizations can use to increase their competence: they can buy (hire), build (train and develop), borrow (use temporary workers or consultants), bounce (terminate), or bind (retain) talent.[1] Wedded to Bs, Ulrich later added bound (moving talent around or upward within the organization).[2]

Human resource professionals have long embraced Ulrich's talent strategy framework, although a few elements have been forgotten. Today, three of the Bs—buy, build, and borrow, often joined by an R for redeploy—have become the standard litany of talent resourcing strategies. Ulrich and other HR thought leaders have elaborated on the benefits and risks of each option and the circumstances under which each is most effective.[3] These frameworks can help HR and business leaders weigh the alternatives for closing talent gaps.

But they may also oversimplify the choices. When The Conference Board interviewed companies to learn how they decide the best strategies for closing the gap between talent supply and demand, it became clear that the options have become more complex. The three Bs and an R now seem quaint in their simplicity, like walking up to a Starbucks counter and ordering "a cup of coffee."

Faced with uncertain environments, changing technologies, global markets, skill gaps, and talent shortages (see box on labor shortages, page 5), leading companies have developed more robust methods for optimizing their talent sourcing options. As this report's three company case studies describe in greater detail, these HR leaders:

1. Engage a broad group of stakeholders to ensure that talent strategy is aligned with changes in the operating environment and business priorities
2. Continuously evaluate capabilities and talent—in that order
3. Tailor resourcing strategies to specific talent segments, jobs, and locations
4. Blend solutions
5. Invent new ones
6. Use data and analytics to model the impacts of various options and drive better decisions about how to close talent gaps
7. Think about the entire talent ecosystem, rather than simply the talent the company owns today or wants to in the future
8. Recognize when the best option isn't to buy, build, borrow, or redeploy talent, but "none of the above"

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1 Dave Ulrich, "Intellectual Capital = Competence x Commitment," *MIT Sloan Management Review*, Winter 1998.

2 "The Six 'Bs' Overview, Tool 5.1," *The RBL Group*, 2009.

3 "The Six 'Bs' Overview, Tool 5.1," *The RBL Group*, 2009.; Peter Cappelli, "HR for Neophytes," *Harvard Business Review*, October 2013, pp. 25-27.

Beyond Buy, Build, Borrow, or Redeploy

Employers face significant challenges in finding an adequate supply of talent to meet current and future demand (see box). They may need to develop creative alternatives. The three companies highlighted in this report—GE, Lockheed Martin, and Southern California Edison—are improvising solutions more varied and cross-functional than the old buy-build-borrow-or-redeploy, including some options that lie outside HR's traditional domain.

While the particular talent gaps that organizations face vary depending on their industry, strategy, geographic footprint, and other factors, this research points to fundamental approaches that help companies make optimal choices to address those gaps.

1 Engage a broad group of stakeholders to ensure that talent strategy is aligned with changes in the operating environment and business priorities.

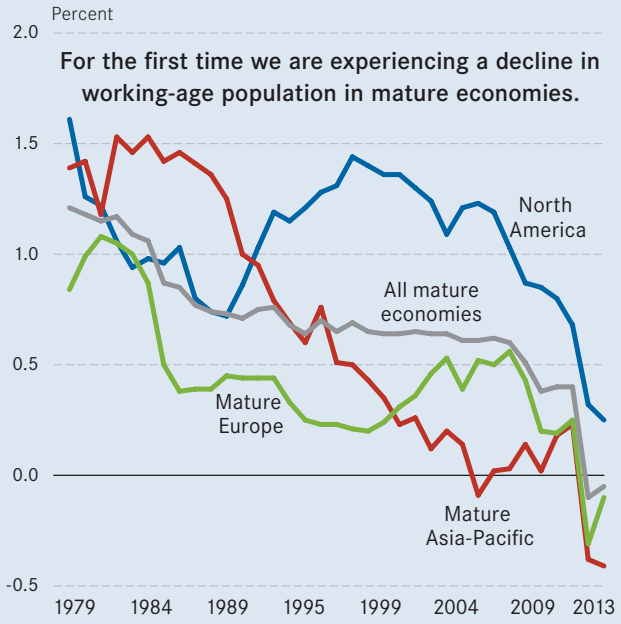
The GE case study (page 11) illustrates the importance of involving business leaders in defining capabilities—that is, what the organization must be able to do or deliver. Doing so builds agreement about the gaps between current and future capabilities. It encourages thoughtful consideration of where these capabilities should be. Can they be centralized, for example, in a global shared services structure, or must they be close to customers? Are they location specific or location agnostic? The answers will determine whether the company can move work to where the talent is, or the reverse. This discussion may also reveal a wider array of resourcing options, not all of which involve talent.

At Southern California Edison (SCE), workforce planning convenes a group that includes the business planner for each operating unit, various HR functions, and end users of workforce planning output, such as real estate, IT, and finance. Bringing together the sources of workforce data—the business planners who provide demand forecasts and the workforce planning team that analyzes internal and external supply—and the consumers of that information has improved its overall quality and credibility.

Everyone now works off the same numbers. In addition, rather than each HR function independently pitching its buy, build, borrow, or redeploy solutions to the operating unit, they develop an integrated approach to closing talent gaps. (A more detailed case study of SCE appears on page 22.)

Chart A

Risk of labor shortages varies significantly across countries



North America = US, Canada; **Mature Asia-Pacific** = Taiwan, Australia, Japan, South Korea, New Zealand; **Mature Europe** = Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, UK.

Sources: OECD and Gad Levanon, Bert Colijn, Ben Cheng, and Michael Paterra, *From Not Enough Jobs to Not Enough Workers: What Retiring Baby Boomers and the Coming Labor Shortage Mean for Your Company*, The Conference Board, Research Report 1558, September 2014, page 6.

Talent gaps occur when the number, quality, or cost of available workers falls short of employers' needs. Recent research from The Conference Board compares 29 mature economies in terms of their labor shortage risk in the coming decade. A chief cause is that the working age population in these countries is declining for the first time since the World War II era, largely due to the retirement of baby boomers and the smaller numbers of younger cohorts.

2 Continuously evaluate capabilities and talent—in that order.

Rather than immediately thinking about how to close the gap between talent supply and demand (the traditional HR approach), engage with business leaders in defining current capabilities and how they will need to change. Focusing on capabilities broadens the range of potential options to include external solutions (e.g., acquiring another company, forming a joint venture, crowdsourcing) or redesigning work processes, jobs, or organizational structure.

3 Tailor resourcing strategies to specific talent segments, jobs, and locations.

To do this well, HR strategists need domain expertise, enterprise-level perspective, and knowledge of local markets.

Take the option of borrowing talent by using contingent workers.[4] Southern California Edison, like other utility companies, uses "supplemental" workers, for example, to install power poles. Yet SCE must also consider other factors. In certain jobs, overreliance on contractors or using them inappropriately could have negative impacts on safety and reliability, two of the company's most important performance measures.

Sometimes companies' only alternative is to borrow talent. In occupations such as software development, where the demand for talent exceeds supply, many workers actually prefer to work on a project basis, pursuing new challenges as they move from company to company. Because these individuals have the bargaining power, they get to dictate employers' talent options.

4 Blend solutions.

Rather than choosing a single talent strategy, GE often creates hybrids tailored to local needs. "It's not buy or build. It's buy and build," says Paul Fama, who leads global talent development for GE's global growth and operations unit (GGO), describing how the company resources its expansion in growth markets around the world. While GE is known for hiring top talent and then developing them for advancement, that sequence doesn't work in every location. In some countries—Indonesia, Angola, and India, for example—GE may have to provide extensive training before local talent can perform the jobs they were hired to fill. In other places, lack of critical mass necessitates redesigning programs or sending employees to other regions for short stints, a combination of redeploy and build.

5 Invent new ones.

Lockheed Martin has developed an online talent community called Military Connect to support US military members' transition to civilian life. Military Connect's primary objective is to give back to service members by providing content that can help them transition more successfully. Visitors can easily navigate from the community's website to the job listings on Lockheed's corporate careers page.

But Military Connect's contribution to the company's talent acquisition strategy is that it serves as the prototype for the next generation of talent communities, which will be more specialized. Rather than casting the net broadly, as Military Connect does, Lockheed will focus on hot skills and scarce talent fields such as cybersecurity or radio frequency engineering, or on specific diversity segments. Each of these talent pools is important to the company's future.

While company representatives may stay in the background after creating a talent community, a lot can be learned there simply by listening. With sophisticated tools (such as social network or sentiment analysis, for example), they could potentially analyze member posts and community interactions to assess the knowledge and influence of individual members. A specialized talent community, therefore, is a candy store for the company's strategic sourcing staff. Whatever information they pick up from the talent community can be supplemented with other public data—LinkedIn profiles, for example—to build a list of passive candidates. They can then reach out to selected community members periodically, building a relationship while strengthening the company's pipeline for hard-to-find talent.

To frame this in the language of Bs, Lockheed Martin is making a build-and-buy play by creating external talent communities that may eventually feed its talent pipeline.

6 Use data and analytics to model the impacts of various options and drive better decisions about how to close talent gaps.

4 Mary B. Young and Emily Huston, *Managing the Total Workforce: Bringing Contingent Workers inside the Strategic Workforce Planning Tent*, The Conference Board, Research Report 1518, 2013.

Lockheed Martin tracks the activity on Military Connect: the number of new and returning members, how much time they spend on the site, what articles are most read or draw the most comments, the types of questions members post to the community, etc. These data help the company and its content partners (Brave New Talent and Curata) to get progressively better at attracting and keeping members—insights the company can later use to build talent communities that support its long-term talent pipeline strategy.

Southern California Edison benefits from industry-level workforce data collected by the Electrical Utilities Human Resource Metrics Group (EUHRMG) and the Center for Energy Workforce Development. Vemo, a strategic workforce planning vendor, aggregates data from EUHRMG member companies to track industry trends, such as the percentage of employees who are retirement eligible versus the percentage that actually retires in a given year. Aggregating data from many companies enables Vemo to see relationships that wouldn't be visible looking at just one company. Working with such a large dataset (which includes 270,000 employees) paves the way for multivariate statistics to predict the impact of a given talent strategy (for example, increasing annual compensation by 1 percent) on outcomes such as retention. It can drill down deeper to compare the impacts of a one-percent raise on the retention rates of different age cohorts. As a result, when SCE's workforce planning team recommends an integrated strategy for closing the company's talent gaps, it can support some of its recommendations with industry trends and metrics, benchmarks that SCE leaders pay attention to.

One of the ways GE uses data and analytics is in meeting localization requirements in some of the countries where it does business. Governments in many growth markets require that foreign companies meet specific targets for hiring local employees and developing their skills. In Saudi Arabia, for example, GE must achieve 25 to 30 percent localization of its workforce. These targets progressively increase over time. To meet them, GE needs to forecast how many local people it will need to hire, how long it will take to train them, and how many will reach proficiency—and, of those, how many the company can retain. If the company underestimates the number of local hires it needs to make, it could face negative consequences such as a government fine. Overestimating is also a problem since it leads to overcapacity, added cost, and potential ill will.

The calculus for determining the appropriate number of hires differs from country to country, and is dependent on quality of education, local culture (for example, how comfortable local employees are in a structured work environment), competition for talent, and other factors. For a company like GE, which operates in 175 countries, the potential variability is mind-boggling.

7 Think about the entire talent ecosystem, rather than simply the talent the company owns today or wants to in the future.

In building talent communities for highly specialized talent—for example, radio frequency engineers with deep space experience—Lockheed Martin hopes to engage the members of that professional ecosystem, inside and outside the company, in ways that will ultimately help it recruit the best talent in that field.

In GE's case, even with a workforce of 300,000 employees, the company doesn't have the bandwidth to do everything it might like. With a strategic imperative to increase its agility and speed, it is using open innovation to tap into the global brain—a virtual community of engineers outside the company who compete for cash prizes for solving a GE engineering challenge.

The company also uses other ecosystem alternatives to getting work done internally: forming joint ventures, creating external partnerships, and investing in independent startups to incubate new ideas. These are strategic decisions, rather than expedient work-arounds to overcome headcount or budgetary restrictions.

8 Recognize when the best option for closing the talent gap isn't to buy, build, borrow, or redeploy talent but "none of the above."

One of the biggest limitations of the familiar buy, build, borrow, or redeploy model is that it assumes that talent is the best answer to every resourcing question. It's a relic of an earlier era when HR played a more limited, reactive role helping to execute business strategy rather than to shape and pressure-test it.

That's no longer the case in many companies. The HR leader is a business executive whose functional expertise is human capital. With growing capabilities in data and analytics—integrated with finance, marketing, sales, and operational data and tied to business KPIs—HR delivers information and insights that lead to better business decisions.

For example, HR may raise fundamental questions about the demand side of the equation, rather than accepting it as a given: Do we really need to do this work? Do we have to do it in the same way? "None-of-the-above" alternatives might include any of the following:

- **Business process redesign** Can we change the way we deliver this service, or produce that product, to match the talent supply? Or should we eliminate our need for that talent? Can technology transform this work?
- **Organizational redesign** Can we redesign the organization to compensate for unavailable skills? For example, since GE can't find individuals with some of the hybrid skills that its "industrial internet" requires, the company is creating collaborative environments where teams can deliver the needed combination of knowledge, skills, and competencies (see Figure 1, page 13).
- **Job redesign** If there isn't enough qualified talent to perform a job, can it be redesigned to match the talent supply? For example, could it be divided into two jobs: one that requires lower level skills, which may be more plentiful, and another that uses higher skills?
- **Knowledge capture** If we can't find talent with the knowledge we require, can we capture it from incumbents and make it available to others on demand? While the end result is to give employees new capabilities—the traditional build approach—this solution relies on knowledge management methods and tools that lie outside most HR professionals' expertise.

Such none-of-the-above options can be coupled with traditional talent strategies (B, B, B, R). When work is automated, outsourced, or even eliminated, that often frees up capability that could be used elsewhere. A skilled employee who's doing something that the organization plans to do less of may be reskilled or redeployed to help build a new organizational capability.

When analysis suggests that talent isn't the best solution for building organizational capabilities, HR isn't "letting down" business leaders by failing to deliver. Rather, HR is bringing data and expertise to help the organization execute its strategy more effectively. Taken together, this array of strategies is more varied and cross-functional than the old buy-build-borrow-or-redeploy. Human resource leaders need to be able to weigh the full range of options, including those that lie outside their traditional domain.

What HR Can Learn from Business Strategy

In *Build, Borrow, or Buy*, two strategy experts, INSEAD's Laurence Capron and the University of Toronto's Will Mitchell, provide business leaders with a framework for choosing the best way to obtain the resources—such as physical assets, expertise, intellectual property, and human capital—that their company needs to grow.[5] Too often, they argue, organizations make bad choices about whether to build, borrow, or buy and automatically choose the default option that's worked in the past, without fully considering the alternatives. Even if organizations execute their tried-and-true approach extremely well, the results will be limited if it's not the best pathway.

Many HR practitioners fall into the same traps. They don't have a methodology to regularly scan the environment or reassess whether the mix of tactics they're using is still optimal. They may over-rely on one tactic—say, talent acquisition—because that's where the company has the strongest capabilities, rather than switching to a different solution (using contractors, for example) when the business needs change. Talent strategists may also think too narrowly about their options. While their toolkit may be large and fully stocked, it is, in the end, an HR toolkit.

Capron and Mitchell's recommendations for business strategists are equally applicable to HR. Companies need three things: a process for continuously monitoring the environment, the discipline to rigorously examine alternatives rather than automatically choosing the default option, and the agility to switch between talent strategies when the situation calls for it. Having all three things gives companies a competitive advantage.

This report's case studies describe how HR leaders are building these capabilities. In addition, the box on pages 9-10 ("A Structured Approach to Addressing Talent Gaps") provides a template that will help executive teams incorporate these recommendations to build strategic capabilities and close talent gaps.

5 Laurence Capron and Will Mitchell, *Build, Borrow, or Buy* (Boston: Harvard Business Review Press), 2012.

A Structured Approach to Addressing Talent Gaps

THE QUESTIONS YOU NEED TO ASK

By defining the company's current capabilities and those it will need in the future, executive teams can make better decisions about the actions to take. The structured approach outlined below can be used to evaluate a variety of options, rather than automatically assuming that talent is the only—or best—way to close a talent gap or build a strategic capability.

1. The executive team identifies the strategic capabilities that the company (or a specific business unit) will need in the future and how those capabilities differ from today's.
2. The CHRO engages business leaders in translating future strategic capabilities into talent demand.
3. HR provides the executive team with data and insights regarding talent gaps (supply versus demand), prioritized according to their potential business impacts.
4. Based on all of this, and incorporating input from various functions (strategy, finance, HR, legal) and local as well as enterprise perspectives, the organization formulates a strategy to build its strategic capabilities by investing in its resources and acquiring new ones, as needed.

For links to research and tools that companies will find helpful in answering some of these questions, especially regarding talent supply, see "Resources from The Conference Board" (page 29).

Table A

Building Organizational Capabilities: Is Talent the Best Strategic Alternative?

Who	Objective	Questions
Executive team	Define current capabilities	Compared to our competitors, what are our strengths today, and what will they need to be 3 to 5 years from now? What are our weaknesses today, and how could they prevent us from developing the capabilities we will need in the future?
Executive team	Identify future capabilities	What current capabilities will we need to maintain, grow, or strengthen? What capabilities will become less important? What capabilities would differentiate us from our competitors? What current capabilities can we leverage to develop the needed capabilities? What are our assumptions about changes in efficiency and productivity over this period? How realistic are these assumptions, based on historical data? Which capabilities must be in a specific location, and which are location-neutral? How long will it take us to develop the new capabilities, i.e., when should we begin? What capabilities could we acquire through a partner (e.g., outsource or joint venture) or merger or acquisition versus developing them internally?
Executive team, facilitated by CHRO	Define and prioritize talent demand	How will our workforce need to change (quantity, quality, skills and competencies, location) to deliver future capabilities? What jobs or skills will have greatest impact on strategic results? Which jobs are location-specific and which ones can be performed in any location?

(continued on page 10)

A Structured Approach to Addressing Talent Gaps

Table A

Building Organizational Capabilities: Is Talent the Best Strategic Alternative? (continued)

Who	Objective	Questions
CHRO	Assess internal and external talent supply	**INTERNAL** What is our internal supply? How confident are we in our data? In what regions/countries/locations where we operate are the required skills and competencies most/least abundant within our current workforce? How difficult is it to retain this talent? Can we develop it internally? How long will that take? Do we have the infrastructure and other resources to develop this talent? Are they available externally? Can we move jobs to where our internal talent supply is? **EXTERNAL** Is there an adequate external supply of specific types of talent? How good is our data? How difficult is it to find, hire, or retain this talent? Where is the talent we need most/least abundant? Can we move jobs to where the external talent supply is? How much competition is there for this talent supply? What are the projected compensation trends? What knowledge or competencies are firm-specific versus widely available in the market?
CHRO	Identify and prioritize talent gaps	Where are the biggest gaps between future demand and projected supply? What gaps are most important to us strategically or pose the greatest risk? Where would investments in talent have the greatest strategic impact?
CHRO CFO Legal Strategy Local experts	Evaluate options to build future capabilities	What are the comparative costs and benefits of various talent options (buy, build, borrow, redeploy) to address these gaps? For which gaps is talent not a feasible solution due to supply, cost, quality, or other factors? What are other alternatives (e.g., redesigning business processes and/or jobs; technology investments to increase productivity and reduce workforce demand; crowdsourcing; outsourcing work; moving to a global shared services model) and their costs and benefits?
Executive team	Determine strategy and actions	What is the optimum combination of actions and investments to equip the organization with the strategic capabilities it needs for the future? Who is responsible for executing them? When and how will we monitor results and make adjustments as necessary?

GENERAL ELECTRIC

Optimizing Global Strengths and Local Capabilities

AT A GLANCE

Headquarters: Fairfield, Connecticut

Primary businesses: Aviation, capital, energy management, health care, lighting, mining, oil and gas, power and water, intelligent platforms, transportation

Number of employees: 307, 000

FY 2013 revenues: $146.045 billion

For more information, visit **www.ge.com**

General Electric (GE) is a diversified technology and financial services company. Its products and services range from aircraft engines, power generation, water processing, and lighting to medical imaging, capital finance, and industrial products. It serves customers in 175 countries. Effective January 28, 2011, it held a 49 percent interest in a media company that includes the NBC Universal businesses.

Sources: GE Works: 2013 Annual Report and "General Electric Company," *New York Times*.

"We are raising the stature of everything global in GE," Chairman and CEO Jeff Immelt said when he named Vice Chairman John Rice to lead GE's global growth organization (GGO), which focuses on non-US markets. "We are entering a period of great opportunity in global markets and, as a result, our teams must be more decentralized, faster, and more local."[6]

Headquartered in Hong Kong, GGO supports GE's expansion in Latin America, Eastern Europe, China, India, ASEAN, Russia, Canada, Australia, the Middle East, Africa, Japan, and Korea—regions and countries whose combined revenues tripled from 2003 to 2013 to more than $40 billion.[7]

The "art and science" of running GGO, according to Rice, "is having these big, broad, global businesses…and making them local. It's about finding that balance."[8] The same holds true for its talent strategy.

To support its explosive growth outside the United States and Western Europe, the company—long regarded as a world-class developer of people—has had to adapt its talent practices, or invent new ones, tailored to local markets. In fact, some of these innovations have proven so effective that they've now been exported to the rest of company.

This case study describes how GE is shifting its center of gravity from the developed world to other regions and, as it does so, making decisions about how to resource its eight businesses. Three things that other companies can learn from GE:

1. **Continuously evaluate capabilities and talent—in that order.** Rather than immediately thinking about how to close the gap between talent supply and demand, HR leaders at GE engage with business leaders in defining current capabilities and how they will need to change. Failing to recognize these pivots can lead to blindly perpetuating today's capabilities, organization, and workforce.
2. **Blend solutions and invent new ones.** As GE's operating environment becomes more complex, businesses may require a combination or sequence of solutions (buy and build) rather than a single one.
3. **Think about the entire talent ecosystem, rather than simply the talent the company owns today or wants to in the future.** The organizational boundary that once clearly separated internal from external resources has become a permeable membrane. Information, ideas, people, business problems, and solutions can flow more freely back and forth. This creates many new options for how work gets done.

6 "GE Names Vice Chairman John Rice to Lead GE Global Growth and Operations," *Business Wire*, November 8, 2010.

7 GE Works: 2013 Annual Report.

8 Kathy Chu, "GE Exec: Global Businesses Support Thousands of US Jobs," *USA Today*, January 29, 2012.

From an Annual Event to an Ongoing Conversation

In the past, talent discussions were concentrated in "Session C," a months-long talent appraisal that's been a set piece of the annual planning process since the 1950s, although its format has evolved over time.[9] "When we had [only] an annual Session C, GE was in fewer countries," says Vice President of Executive Development and Chief Learning Officer Raghu Krishnamoorthy. "Now that we're booking orders in 175 countries and 12 regions, we need to continuously evaluate organizational capabilities and people. Even within developing markets, there are nuances. What's applicable in Nigeria is different from what's applicable in Indonesia."

Scale is not the only factor making ongoing talent discussions a necessity. The larger GE's footprint, the more unpredictability it faces in the marketplace. A tsunami in Thailand, the Ebola epidemic in Africa, the US government's sanctions against Russia—all of these have impacts on GE's businesses and their resourcing needs. "There are always unexpected events, opportunities, or issues that you need to pivot on," says Krishnamoorthy. "Countries don't wait until your annual planning event to change."

FIRST, CAPABILITIES. THEN TALENT.

In weighing the options for how to resource businesses in different regions, GGO's HR team thinks more broadly than their counterparts in many organizations. Workforce planning provides business leaders with a profile of their organization today. It can also engage them in thinking about the capabilities they need to build for the future. As a business, where are we trying get from and to? How will our capabilities need to change?

The industrial internet is a data loop that connects intelligent devices (such as an airplane's jet engine, a power plant's turbines, a locomotive, or a hospital CT scanner) to the systems that integrate, store, analyze, and visually present the data—and then to the human beings who act upon it. The data and analytics also flow back to the intelligent device as inputs to future operations. Figure 1 (page 13) illustrates the data flow.

To bring the industrial internet to scale, GE needs to grow some of its current capabilities and develop new ones: it will need to outfit both new and already installed equipment (jet engines, deep-sea drilling operations, wind turbines, etc.) with data-gathering sensors to collect real-time data. By 2025, GE will need the processing power to analyze 40 times more of this data than it handles today. It will also need to safeguard the security of all these data, devices, and the global networks.[10] Moreover, GE must decide where these capabilities should be located and what resources they will require.

By focusing first on capabilities, GE can make smarter decisions about what talent options—buy, build, borrow, redeploy, or none of the above—will be most effective.

9 See the company's website GE Operation Mechanisms; for more information see articles Fay Hansen, "Training at the Top at GE," *Workforce Magazine*, June 12, 2008; Ron Askhenas, "You Get What You Expect From Performance Assessment," *Harvard Business Revie*w, June 28, 2011; Leslie Brokaw, "GE Talent Management: Aligning Hiring With Strategy," *MIT Sloan Management Review*, February 9, 2012.

10 Peter C. Evans and Marco Annunziata, "Industrial Internet: Pushing the Boundaries of Minds and Machines," GE, November 26, 2012 , p. 31.

The Industrial Internet

The industrial internet is already happening, showcased at GE's annual Minds and Machines event, where customers share how they are deploying these new capabilities in their respective businesses. Whatever benefits the industrial internet delivers today, the potential is much, much bigger. By enabling customers to improve their efficiency and reduce their costs by just 1 percent, GE estimates that the industrial internet could deliver $32.3 trillion in value.

Figure 1

The industrial internet data loop

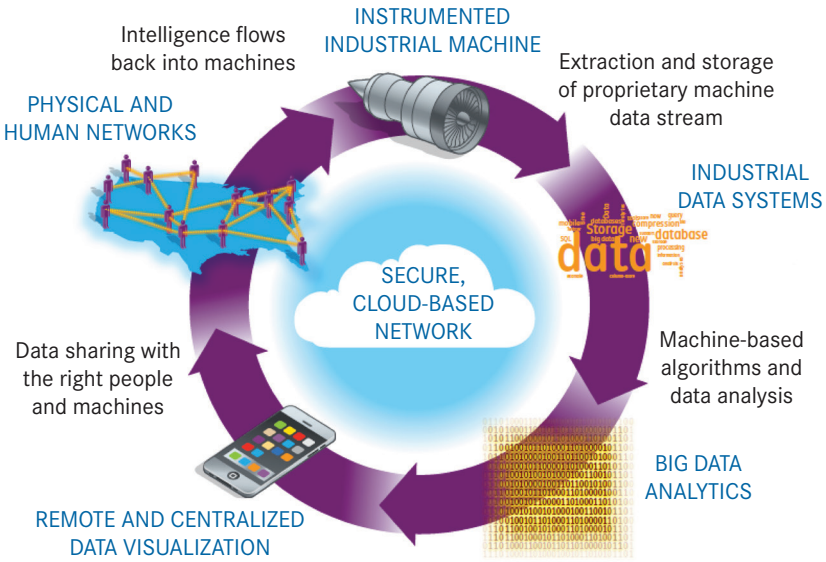


Figure 2

Industrial internet: the power of 1 percent

What if…

Potential performance gains in key sectors

Industry	Segment	Type of savings	Estimated value over 15 years*
Aviation	Commercial	1% fuel savings	$30 billion
Power	Gas-fired generation	1% fuel savings	$66 billion
Health care	System-wide	1% reduction in system inefficiency	$63 billion
Rail	Freight	1% reduction in system inefficiency	$27 billion
Oil and gas	Exploration and development	1% reduction in capital expenditures	$90 billion

* Nominal US dollars

Illustrative examples based on potential one percent savings applied across specific global industry sectors.

Source: Peter C. Evans and Marco Annunziata, "Industrial Internet: Pushing the Boundaries of Minds and Machines," GE, November 26, 2012.

Buy

In mature markets like the US and Europe, the company has a strong brand and longstanding relationships with colleges, universities, and other partners. But in emerging markets, GE is an underdog, competing against better known, local employers, often for a too-small pool of qualified talent.

To overcome these challenges, GGO built a center of excellence (COE) for talent recruitment and staffed it with professional recruiters. Based in growth markets, they understand local industries and talent supply. They also speak the local languages, a necessity when reaching out to passive candidates who may never have encountered a corporate recruiter (employment agencies are the norm in many countries) or found themselves on the receiving end of "strategic sourcing." Local knowledge also helps GE be culturally sensitive in its talent acquisition practices. In Saudi Arabia, for example, male recruiters need to observe accepted social norms when interviewing a female candidate, who may come to the appointment chaperoned by a husband or male relative.

Since its creation in 2007, the recruiting COE has reached into all of GE's growth markets: Canada, China, Japan, Latin America, Korea, Russia, India, the Middle East, Africa, Germany, ASEAN, Australia, and New Zealand. It now serves all of GE and has also expanded to include executive recruiting. The effort has paid off. GE has built a talent pipeline in locations and technical specialties (such as software and digital technologies) where there wasn't one before. By leveraging a common enterprise platform, recruiters in one region can refer candidates to their colleagues in other regions. More experienced recruiters can also coach those who are less so. Perhaps the most visible testament to the COE's impact is that GE and two partners, Saudi Aramco and India's Tata Consulting Services, have launched a new business services and training center in Riyadh, staffed entirely by women. Today they help manage global supply chains for GE and Saudi Aramco; in the future, they may do so for additional customers. The long-term plan is to hire and train 3,000 Saudi women.

Driven by necessity to find new ways of acquiring talent, GGO's global recruitment COE has become the HR version of "trickle-up innovation." Typically, trickle-up innovation is what happens when engineers in a poorer country create an ingenious solution, often cobbled together with the humblest of resources, that proves so clever and effective that users in mature markets eventually adopt it.[11] The talent recruitment COE is an HR version of this.

Another way that GGO has upped its talent acquisition game is by engaging talent before it enters the job market. To build its employer brand in Mexico, where the company has numerous manufacturing sites, GE recruits interns from the country's best engineering programs and trains them in lean manufacturing. Competing teams of interns are given a real-time manufacturing challenge and asked to come up with a lean solution. The best teams get to present in front of a panel of factory managers and the final winners receive a cash grant so they can execute their solution. The "lean challenge" has done more than build employer brand on campuses; it has helped the company shave significant costs.

Unleashing Opportunities for Saudi Women

In support of Saudi initiatives to reduce unemployment and increase the Kingdom's own labor force, GE has joined with Saudi Aramco and Tata Consultancy Services to open Saudi Arabia's first all-female business-process services and training center in Riyadh. The ultimate goal is to recruit and train up to 3,000 women, including 1,000 to support GE business.

Source: GE Works: 2013 Annual Report, General Electric.

11 Michael Fitzgerald, "How Innovations from Developing Nations Trickle-Up to the West," *Fast Company*, March 1, 2009.

In Bangalore, India, the John F. Welch Jr. Technology Center poses similar challenges to select engineering colleges. Top teams present face-to-face to GE research engineers and the winners receive funding so they can bring their idea to fruition.

In countries where GE has a smaller footprint, GGO has found other ways to get to know the country's best and brightest. In Kenya, a dozen or more outstanding students are invited to the GE campus every year. Each spends the entire day one-on-one with a senior leader, experiencing how he or she spends the day. GE has also sent senior executive women to campuses to share their career experiences with younger women who show promise in a technical field. Such efforts offer local students glimpses of a career, and a company, that they might not have imagined otherwise.

Build

In 2014, GE was ranked as the top company for leaders in the world.[12] The company invests $1 billion annually in employee learning and development. It offers its Crotonville leadership courses at nearly 200 locations worldwide—including regional learning centers in Munich, Abu Dhabi, Bangalore, Shanghai, and Rio de Janeiro—in addition to the main Crotonville campus in New York, the jewel in its talent development crown. In 2014, 40,000 GE employees worldwide participated in a Crotonville learning experience.[13]

However, a program that works in one region doesn't necessarily work well in others. "It has to be localized," says Ravindra Kumar, organization and talent development manager for GGO. Case in point: GE's functional leadership programs, each tailored to a single discipline such as HR, design engineering, commercial (sales), or finance, have long served to socialize newly hired graduates to GE culture. The model works well in places like the United States, Western Europe, China, and India, where individual GE businesses hire enough recent graduates into each function to fill a class. Not so in many growth markets, where the intake is smaller. There is also another obstacle in successfully transplanting this course: GE has learned from experience that it takes senior leaders who have already been through the program to come up with an appropriate project and provide effective feedback. In growth markets, senior leaders are less likely to have had this opportunity.

What local markets often lack, says Kumar, is "infrastructure." To build it, he and his GGO colleagues found enough program alumni to form a regional cadre of assignment leaders. To overcome the other problem—not enough new hires in any one business—they created a single, regional program for each function. That opened up other possibilities. Participants in the commercial leadership program, for example, could be rotated from the oil and gas business into power and water, something GE had never tried before. Not only did this give them broader experience, it enabled them to build a cross-functional network. "That's a huge win in new markets," says Kumar. "In eight to 10 years, these are going to be the country or region leaders."

GGO also develops new "build" programs to support its growth-market strategy. Sales of GE Healthcare's diagnostic and imaging equipment and patient monitoring systems are booming in emerging markets. Yet finding local talent to install and service this equipment is difficult. GE's oil and gas business faces similar problems hiring service and application engineers. To address both businesses' needs, GGO created a two-year engineering training program to prepare their respective new hires. While each group studies different technical content, the leadership and professional skills they learn are the same. First tried in ASEAN, Africa, and Australia, the program has been rolled out in four other growth regions, doubling enrollment.

Borrow

"You have to think about the whole talent ecosystem," says Krishnamoorthy, GE's chief learning officer. "Not all capability gaps can be addressed by bringing people into the organization." Focusing on capabilities before jumping into people solutions helps leaders consider a wider array of options: acquiring another company, forming a partnership or joint venture, investing in startups and letting them incubate future innovations, or leveraging an industry alliance—the types of business strategy plays that Capron and Mitchell discuss in *Build, Borrow, or Buy* (see page 8).

12 See the latest GE ranking in "Top Companies for Leaders" from Aon Hewitt (#1 in 2014); "Best Companies for Leadership" from Hay Group (#2 in 2014); and "Best Companies for Leaders" from *Chief Executive Magazine* (#3 in 2014). Visit the websites for past rankings.

13 *GE Crotonville* (Management Development Institute), "The Future of Leadership." Read more about Crotonville at GE Training and Development.

Open innovation is another alternative. Rather than depending solely on its own engineers—GE has 45,000—to generate every new breakthrough, the company taps the global brain, or the collective intelligence of people, machines, and software systems connected to each other via the internet.[14] An example: in June 2013, grabcad.com, an open community of more than one million engineers around the world, posted a 3D printing challenge from GE to redesign a bracket for the company's jet engines, each of which weighs nearly 13,000 pounds. The solution needed to be 30 percent lighter to reduce fuel costs, while continuing to meet other specifications. Just four months later, the contest closed. Engineers in 56 countries had sent in 700 submissions, 10 of which were selected for fabrication and testing. By December, GE announced the winner: M Arie Kurniawan. Working out of a small engineering and design firm he runs with his brother in Central Java, Indonesia, he had reduced the bracket's weight not by the requested 30 percent, but by 84 percent, down from 4.48 pounds to 0.72 pounds.[15] Multiplied out, that translates into $20 million in annual fuel savings for all 737 aircraft globally.[16]

Within GE, this story has quickly achieved the stature of corporate legend, yet it is not an anomaly. In fact, it's the path to innovation that GE plans to travel increasingly in the future. Partnering with Undercurrent, an organizational design and business strategy firm, and reaching out to open source innovators through sites like grabcad.com, Quirky (a crowdsourcer of manufacturing designs), Kaggle (data scientists), and Local Motors (which crowdsources designs and then micro-manufactures prototypes), GE is multiplying its capabilities not by owning them or bringing them inside, but by "borrowing" them from the global brain.

Open innovation raises new possibilities and questions that HR and the business must weigh when making resourcing decisions: Do we have the capacity to perform X or Y? Based on our long-term business strategy, what capabilities are essential to build or keep in-house, and what can we borrow? Are some processes better performed at arm's length, rather than inside the company? What are the trade-offs in time, money, quality, productivity, and intellectual property?

Redeploy

GE may also redeploy jobs to places where it has identified a concentration of niche expertise and skills. Japan is home to the best ceramics materials engineers, says Krishnamoorthy. France has excellent product engineers, Italy has systems engineers, and Poland is a hotbed for application engineering. GE's 175-country footprint gives it the option of finding the highest quality talent and delivering work to their door. "You've got to move work to where the talent is, not talent to the work," he says.

Another redeployment option is to move high-potential expats now living in a mature-market country back to their home country as leaders. Nigerian-born Lazarus Angbazo has spent much of his career in New York working in financial services, most recently as a managing director for GE commercial finance. He is currently president and CEO of GE in East, Central, and West Africa. Although power and water dominate GE's portfolio in the region, Angara's finance background didn't hinder his selection. The new CEO would be surrounded by technical leaders. "We didn't need someone with expertise in power and water," says Krishnamoorthy. "We needed someone who knew the psychology of the local environment—the tribes, the languages, the political and social nuances. We look for leadership," Krishnamoorthy says. "Leadership is portable."

Angbazo's career is not unusual at GE. Leaders are often redeployed to help build out the company's local capabilities or to identify and train a local successor. This kind of mobility is made easier by GE's development infrastructure. Because senior executives spend so much time tracking, reviewing, teaching, and coaching leaders, they have clear line of sight to up-and-comers.

Redeployment can also work the other way, says Heather Wang, GGO's chief human resources officer and GE-wide vice president for global talent recruitment. "In the past, we sent strong leaders from mature markets to emerging markets to close the leadership gap," she says. "Now we're reversing that."

14 Cadell Last, "Is the Internet Evolving Into a Global Brain?" *Huffington Post*, September 20, 2013.

15 "Jet Engine Bracket from Indonesia Wins 3D Printing Challenge," GE Reports, December 11, 2013; Liz Stinson, "How GE Plans to Act Like a Startup and Crowdsource Breakthrough Ideas," *Wired*, April 11, 2014.

16 "Case Study: GE Engine Bracket," *Undercurrent*.

High potentials from growth regions are seconded to GE's global business headquarters, where they work on a two-to-three month project sponsored by a senior executive. Because the assignment is relatively short, the home country's loss is temporary. What they get back in return is a stronger leader who has gained an enterprise perspective and a stronger network within GE, critical assets for operating in a large and increasingly matrixed structure. "We have to help people understand and work their way through it," says Wang. Once a local leader has worked at global business headquarters, "corporate becomes more comfortable letting go of things."

Such changes are small but important steps in shifting the company's center of gravity to growth regions and pushing decision making to the organizational fringe. GE has set clear objectives for achieving these ends: it has simplified its headquarters structure and processes and is increasing field approvals—decisions that are made close to the customer, rather than higher up in the organization—by 50 percent.[17] The center of gravity for learning is also shifting. In the past, two-thirds of leadership program participants were based in developed countries; today, developed and growth markets are equally represented, says Wang.

None of the Above

HR can also address talent gaps by considering solutions beyond the B, B, B, or R framework. Sometimes the required capabilities are so new that the talent doesn't exist yet. The industrial internet, for example, requires a new blend of digital-mechanical engineering capabilities. Before now, these skills resided in different individuals working in different functions. Until the labor market catches up, GE will build this capability by designing organizational structures that foster collaboration: "environments that accelerate the ability of people with different skills to interact and innovate together."[18]

This is not unlike GE's approach to moving what Krishnamoorthy calls "non-obvious candidates" into leadership roles outside their area of expertise. Rather than assuming that the required knowledge, skills, and competencies must reside in a single person, GE finds them distributed across multiple people and then brings them together. "In a large organization like GE, the individual is no longer the unit," says Krishnamoorthy. "It's the team."

By focusing on capabilities before talent, HR can also help the business rethink the work that needs to be done. Typically, workforce planning provides business leaders with quantitative data, such as a profile of their internal and external talent supply. But it can also raise questions about capabilities, says GE's workforce planning leader, James Gallman: This is where we are today. Where do we need to be? What do we need to do more of, less of, stop, or start? With the right people in the room—including the lean (process) leader for the business—the conversation may lead to a reexamination of the work itself. Do we really need to do X? Could we eliminate it, or redesign our processes to use more technology? As GE attempts to simplify, do less with less, and behave more like a startup, these kinds of conversations can help leaders take a step back and question fundamental assumptions.

An HR executive who only thinks about whether the company should buy, build, borrow, or redeploy talent is going to be left out of these conversations.

17 GE Works: 2013 Annual Report, pp. 24, 28.

18 Peter C. Evans and Marco Annunziata, "Industrial Internet: Pushing the Boundaries of Minds and Machines," GE, November 26, 2012 , p. 33.

LOCKHEED MARTIN

Building Communities and Long-term Relationships with Talent

AT A GLANCE

Headquarters: Bethesda, Maryland

Primary businesses: Aeronautics, information systems and global solutions, missile and fire control, mission systems and training, space systems

Number of employees: 113,000

FY 2013 revenues: $45.358 billion

For more information, visit **www.lockheedmartin.com**

Lockheed Martin is a global security and aerospace company principally engaged in the research, design, development, manufacture, integration, and sustainment of advanced technology systems, products, and services. It also provides a broad range of management, engineering, technical, scientific, logistic, and information services. It serves both domestic and international customers with products and services that have defense, civil, and commercial applications, with its principal customers being agencies of the US government. Its main areas of focus are in defense, space, intelligence, homeland security, and information technology, including cybersecurity.

Source: Lockheed Martin Corporation 2013 Annual Report.

The US government plans to trim military personnel by 36,700 in 2015 alone, reducing its armed forces to about 1.31 million.[19] In the coming years, thousands of military service members will be leaving active duty and looking for jobs in the private sector. These facts are especially interesting if you're a talent strategist at Lockheed Martin. The company's biggest customer is the federal government and many of its products—military planes, stealth fighters, missile defense systems, national security space systems—and services are sold to the military.

Talent strategists know that, year after year, companies like Lockheed will need to find talent in science, technology, engineering, and math (STEM) fields that are in famously short supply in the United States. The overall demand for these skills is expected to increase, driving up compensation. But Lockheed Martin's business strategy is to proactively cut its costs to offset shrinking government budgets, a move that potentially puts the company at a competitive disadvantage in attracting talent. And there's one more thing: because Lockheed does so much work for the government, most of its hires have to have security clearances, which cuts out foreign nationals.

Faced with potential threats to its talent pipeline, the company launched Military Connect as a preemptive strike (page 19). Military Connect is the company's first foray into talent communities, a term that Marvin Smith, the driving force behind Military Connect, uses with precise intention. "A talent community is an interactive group of people joined together by a common interest or affinity," he says. "The essence of a community is that people can talk to each other."

This case study describes how Lockheed Martin is developing talent communities as a long-term strategy for building pipelines in specialized fields such as cybersecurity, intelligence, radio frequency engineering, and software development. In effect, Lockheed is forming relationships with talent before it needs them, or they need Lockheed. Takeaways from this case study include:

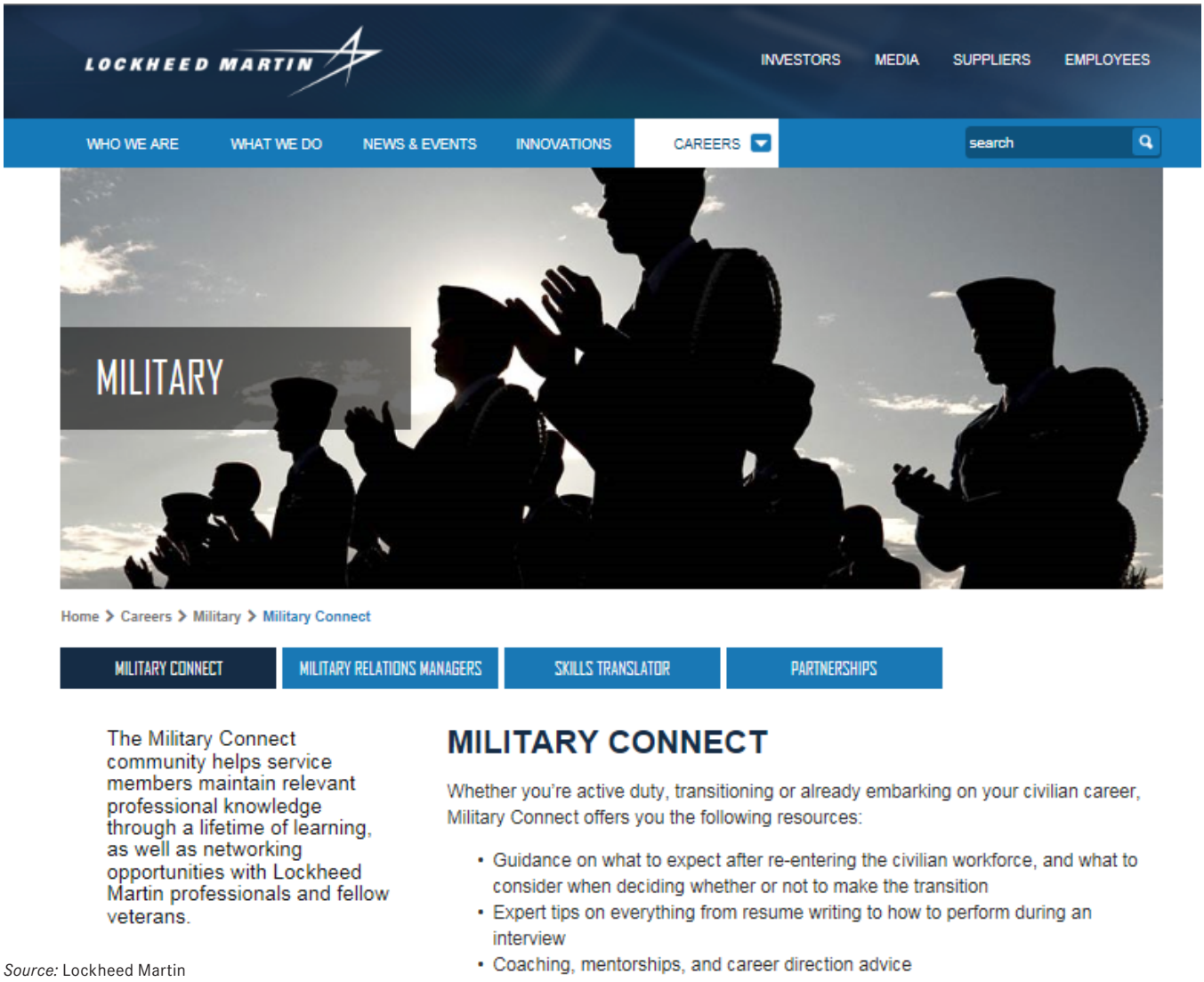
- **How talent communities can contribute to a company's long-term, strategic sourcing strategy**
- **How talent communities differ from other online strategies that companies may use to publicize jobs or promote their employer brand**

Military Connect's primary mission is to provide useful content (e.g., career advice, coaching, professional and personal connections) to help current and former military personnel navigate the transition to civilian life. Much of the site's content comes from articles, blogs, and other resources selected for their relevance and that are frequently refreshed.

19 Andrew Tilghman, "2015 Budget Released," *Military Times*, March 4, 2014.

Exhibit 1

Military Connect



Source: Lockheed Martin

Members may also submit questions and comments, or respond to other members' posts. Some examples: Should I use my military job title when applying for a civilian job, or translate it into civilian language? I have 18 years' experience, but many jobs require a bachelor's degree, which I don't have. Should I apply anyway if the job interests me? Lockheed's military relations team (which, like Smith, is part of talent acquisition), throws out ideas, questions, and other gambits to keep the conversation going. Now that the community is up and running, the next step is to invite Lockheed employees to join in.

Since Military Connect launched in June 2014, Smith and his colleagues have kept a close eye on its performance. The community gets 45 to 55 new members per week and membership now tops 1,600. First-time visitors spend an average of nine minutes, while returning members stay close to 20.

More than half of members have returned to the site five or more times. The company tracks what topics and content get the most traffic and how many members click through to Lockheed's career site or apply for a job.

Because Lockheed is one of the military's largest contractors, and because veterans make up about a quarter of its workforce, the company has always supported this community. "Military Connect is not about Lockheed Martin. It's about this community," says Smith. "It's about giving back."

But Military Connect isn't solely altruistic. "We're building long-term relationships with this talent," says Smith. "We're thinking 10 to 15 years out." While only a small subset of transitioning military has the skills Lockheed Martin needs, these long-term relationships are not totally disconnected from the company's talent sourcing strategy.

More important, Military Connect is a test-run for the talent communities that Lockheed plans to build for its high-priority talent segments: cybersecurity professionals, software developers, radio frequency engineers, intelligence analysts, and supply chain managers. There's also interest in creating talent communities for specific diversity segments, another talent priority. These communities wouldn't be about the company giving back; they'd be part of its sourcing strategy for talent, a topic that Smith thinks a lot about.

"Talent community" is a term that many companies use more loosely than Lockheed Martin does. Often, they're referring to a talent network: an opt-in, automated alert that's sent to subscribers when the company posts a job of potential interest. A talent network's message focuses on the company—its employer brand and value proposition, its jobs—rather than on the recipient. But what really differentiates a talent community, says Smith, is the interpersonal communication. "Without that, it's not really a community."

Table 1 describes four levels of engagement with external talent that are part of Lockheed's talent sourcing strategy. By applying what it learns from Military Connect, the company expects that each specialized talent community—the one for information analysts, for example—will serve as a feeder to the talent pool of future prospects. By engaging with the talent pool over time, Lockheed can learn more about potential (passive) candidates, and vice versa. Qualified members may become part of the company's talent pipeline.

Table 1

Four mechanisms for engaging with external talent

	TARGET AUDIENCE	FOCUS	EXAMPLE
TALENT NETWORK	External talent interested in jobs at company	It's about the company, not about them	Automated job-alert system to which prospects subscribe
TALENT POOL	Individuals, within a key talent segment, who have been roughly pre-qualified as candidates and will be part of an outreach initiative	It's about the company, not about them	E-mail blast sent to software developers notifying them about a job or inviting them to a recuiting event
TALENT PIPELINE	Subset of talent pool whom the company is engaging and cultivating relationships with through iterative outreach	It's about the company, not about them	Strategic sourcing team's outreach to individuals in key talent segments
TALENT COMMUNITY	Interactive group of people inside and outside the company, joined together by a common interest, passion, or affinity • Allows members to communicate with each other	It's about them, not about the company	Military Connect Cyber-security community

Source: Lockheed Martin

In some ways, this is what Lockheed is already doing, according to strategic staffing specialist, Peter Bugnatto. "It isn't about just finding resumes. You have to understand the needs of both the candidates and the business units and then make the stars align when the timing is right. It's about building and maintaining relationships and establishing trust," he says.[20]

A talent community is a multiplier for strategic staffing. It increases the opportunities for identifying external talent, getting to know them, and becoming part of their professional network. It also provides a way for them to engage with Lockheed managers and employees, on topics about which they share a passion.

The challenge, says Ben Martin, vice president for global talent acquisition, is figuring out the needs of a particular talent segment. It's comparatively easy to find topics that are relevant to transitioning military. But what do cybersecurity experts care about? Do they need a place where they can talk shop, or do they already have one?

20 Leela Srinivasan, "Strategic Sourcing at Lockheed Martin: What it Means, What it Takes, What it Delivers," *LinkedIn Talent Blog*, February 24, 2014.

SOUTHERN CALIFORNIA EDISON

Workforce Planning 2.0 Helps Optimize Talent Solutions

AT A GLANCE

Headquarters: Rosemead, California

Primary businesses: Electric utilities, renewable energy

Number of employees: 13,599

FY 2013 revenues: $12.562 billion

For more information, visit **www.sce.com**

Southern California Edison (SCE), the largest subsidiary of Edison International, is one of the largest electric utilities in the United States. SCE is an investor-owned public utility primarily engaged in the business of supplying and delivering electricity to over 14 million people in a 50,000 square-mile area in Central, Coastal, and Southern California. The company maintains more than 103,000 miles of transmission lines and nearly 1.4 million electricity poles.

Sources: Building the Grid of the Future: 2013, Edison International and Southern California Edison 2013 Annual Report, 2014; About Edison International's Companies: Southern California Edison, Edison International.

Radical changes in the electric utility industry are reshaping skill requirements at Southern California Edison (SCE). Workforce planning puts business leaders across the table from HR "solution partners" to develop an integrated plan for closing the gap between supply and demand.

By making recruiting, talent management, and training and development part of the workforce planning process, not just the recipients of its output, SCE can do a better job optimizing buy, build, and borrow solutions. This case study illustrates innovations that companies in any industry can apply:

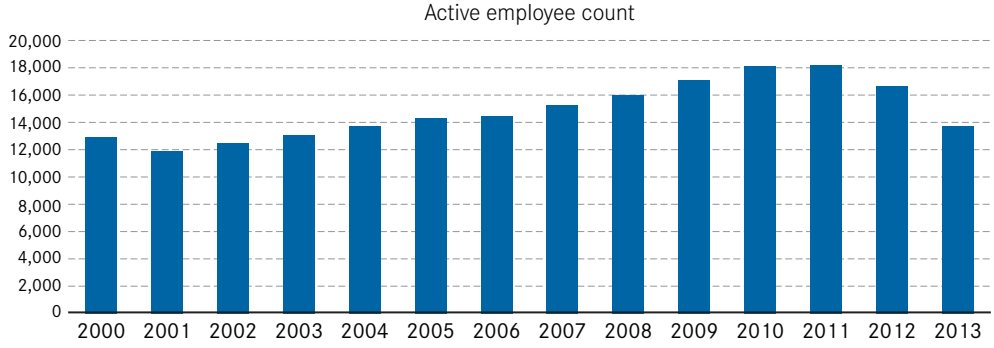
- **Leveraging industry coalitions to gather industry-specific data on labor supply and demand**
- **Using predictive modeling to assess the potential impacts of alterative talent strategies**

Workforce Planning 1.0

When SCE established its workforce planning center of excellence (COE) in 2010, the company faced significant business challenges in its service area. Demand for power from traditional energy sources was leveling off, replaced by power generated by rooftop solar and other alternative sources. The company's aging infrastructure needed a $20.4 billion investment to ensure its safety and reliability. Yet raising rates wasn't the way to pay for it, since SCE already had some of the highest in the country. That left another alternative: reversing the decade-long expansion of its headcount, which had grown 50 percent from 2001 to 2011 (Chart 1).

Chart 1

Southern California Edison's headcount creep



Source: Southern California Edison

SCE also faced other challenges. Like utility companies all over the world, it had an aging, long-tenure workforce, great waves of whom would be retiring over the next decade. To replace them, the company had to find, attract, and retain qualified new talent—overcoming the industry's decidedly unsexy image in the eyes of many students and new graduates. It also had to hire people far enough in advance that they would be qualified to fill these jobs, many of which require years of on-the-job experience and certification.

As part of an enterprise-wide effort to achieve operational and service excellence, SCE reduced its workforce from roughly 18,000 to 14,000 from 2011 to 2014—achieved, in part, by closing two large power plants. To prevent recurring headcount creep, the company set a firm labor budget and staffing caps. Operating units now had to build their labor forecasts from the ground up, staying within these headcount and budgetary parameters. No longer could a manager claim to need 10 more people at a given job level and later hire 15 lower level employees.

"These controls gave us a simple way to monitor and control our headcount commitment so we don't creep back to unhealthy staffing levels," says Michael Manning, who led strategic workforce planning at the time. It also paid other dividends. Operating units (the industry's term for administrative departments and functions as well as business units) once had to provide headcount forecasts over and over again, responding to numerous requests from facilities planning, finance, staffing, and regulatory proceedings—all made at different times of year. Workforce planning removed the onus from operating units and provided downstream users with a consistent set of workforce numbers.

Developing these fundamental capabilities in workforce planning, says Manning (who now leads HR shared services at SCE), was like "building a sturdy ship." Once the ship had been built, significant changes in SCE's business strategy led the company to steer the ship in new directions.

Workforce Planning 2.0

The US utilities industry is undergoing massive changes, the biggest in SCE's 125-year history, says Manning. The company must transform its distribution system from one designed for the one-way flow of electricity (from a power plant to customers) to two-way flows (capturing, storing, and distributing energy from many sources, including power generators, wind turbines, and fuel cells). New competitors are vying for SCE's customers. Rooftop solar, electrical transportation, large-scale storage batteries, and other resources that generate, use, or store energy are increasingly distributed. The next-generation grid must manage all of these new complexities and, at the same time, ensure that electric services remain safe, reliable, and affordable.

These changes translate into new talent requirements. Meter readers are being replaced by smart meters. Fewer people will be needed in power generation and more will be needed to work in developing and maintaining the next-generation grid. SCE also needs people with experience buying energy on the open market. To secure the right talent for the future, SCE must determine the new requirements, the size and quality of its internal talent pipeline, and which employees can be reskilled. It must also assess the external talent supply for key roles.

SCE's sturdy ship must now help the company make the right choices about talent. Manning calls this "workforce planning 2.0," an enhanced version that's being rolled out in the company's largest operating unit, transmission and distribution, with plans to expand it enterprise wide. In workforce planning 1.0, the COE generated plans and reports for the business. This was "workforce planning for the many"—or all positions within the company. Inputs were limited: the operating units provided labor forecasts and workforce planning projected internal talent supply for the enterprise as a whole, based on retirement and attrition.

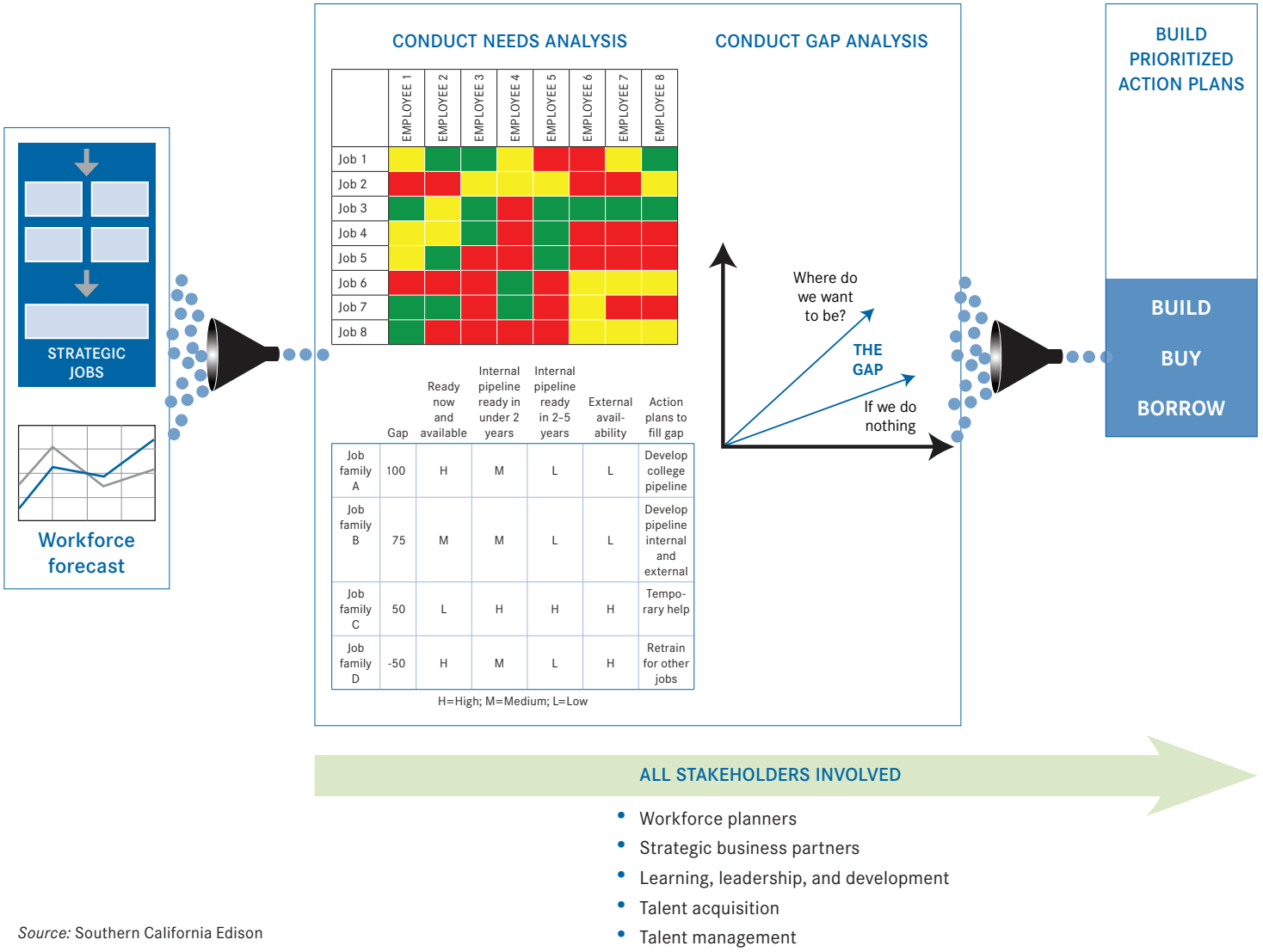
While this kind of operational workforce planning continues, workforce planning 2.0 focuses more selectively on strategic jobs, about 15 percent of the total, and incorporates additional human capital data and analytics. Exhibit 2 shows a storyboard that Jay Helmer, senior manager, workforce planning and analytics, uses to explain the enhanced process to stakeholders.

In workforce planning 2.0, business planners embedded within each operating unit produce a quarter-by-quarter labor forecast based on the business plan, just as they've always done. But now the workforce planning team provides a number of new analyses, described in the sections that follow.

Exhibit 2

Southern California Edison's workforce planning process 2.0

Planning for future talent gaps



	Gap	Ready now and available	Internal pipeline ready in under 2 years	Internal pipeline ready in 2–5 years	External availability	Action plans to fill gap
Job family A	100	H	M	L	L	Develop college pipeline
Job family B	75	M	M	L	L	Develop pipeline internal and external
Job family C	50	L	H	H	H	Temporary help
Job family D	-50	H	M	L	H	Retrain for other jobs

H=High; M=Medium; L=Low

Source: Southern California Edison

HISTORICAL MOVEMENT IN STRATEGIC JOB ROLES

In the past, HR tracked the number of people joining and leaving the company, but hadn't analyzed how people move within the organization. Chart 2 shows the inflow and outflow of people in two job roles and the net gain or loss over a three-year period. SCE knows it will need many new linemen in coming years, in part to replace those who are retiring. For that job category, Helmer says, SCE is "treading water. We're losing as many people as we're taking in." The chart also shows what's been happening with apprentice linemen, the traditional feeder pool. While a significant number of apprentices became full-fledged linemen, some moved into different jobs. Of greater concern is that the inflow of new apprentices is only 25 percent of the outflow. "It was awesome for the planning group in transmission and distribution to see this chart," he says. "They felt they'd been spinning their wheels and this data proves it."

IDENTIFYING FEEDER POOLS

SCE is interested in more than the numbers; it also wants to understand how talent moves into strategic roles. While the progression from apprentice lineman to lineman is standardized across the industry, the pathway for many other jobs is less clear. That's especially true as changing business models and technologies create new roles and skill requirements. To figure out how today's incumbents arrived in the strategic jobs they now occupy, SCE traced their career histories two to four jobs back. This analysis helped SCE identify the roles that serve as feeder pools.

ASSESSING PIPELINE READINESS

Were these feeder pools sufficient to fill strategic roles in the future? To find out, workforce planning developed a profile of today's incumbents based on five variables related to their career history and performance. This profile became the benchmark for measuring the feeder pool's readiness. Chart 3 presents a heat map that shows the readiness of individuals and the talent pipeline for each strategic job.

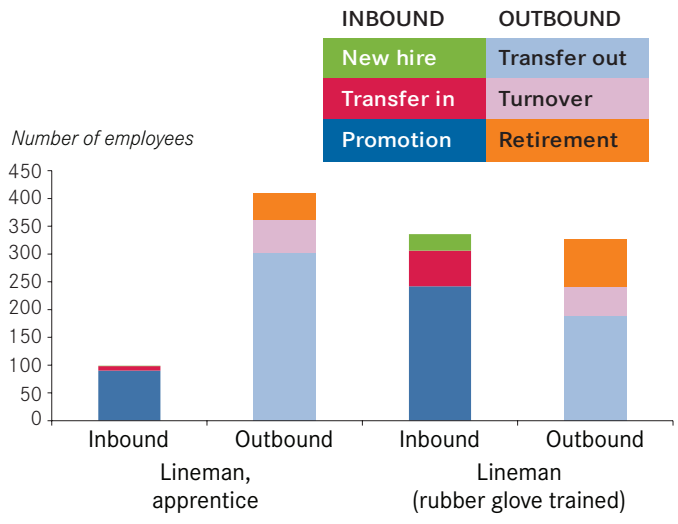
Helmer took the heat map back to the business to make sure the readiness ratings matched managers' views of the individuals. By and large, they did. Giving leaders the opportunity to corroborate the analysis reduces the chance that they will question workforce planning's supply forecast later on, or the recommendations for addressing future gaps.

The new insights about internal talent and its movement within SCE lay the foundation for more robust discussions about talent gaps and how to close them. Going forward, Helmer wants to get even more granular. By breaking strategic jobs into the knowledge, skills, and abilities they require, he says, the company can catalog its talent inventory and compare supply and demand in greater detail.

Chart 2

Historical job movement for linemen and apprentice linemen

2011–2013

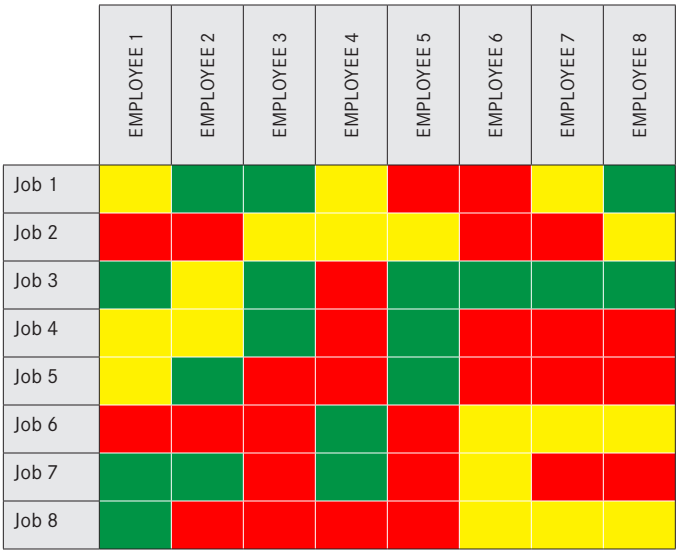


Source: Southern California Edison

Chart 3

Assessing the feeder pool for strategic jobs

This is an example of the heat map used at SCE when assessing the readiness of candidates in the pipeline for strategic jobs.



Source: Southern California Edison

The Workforce Planning Conversation

To ensure SCE makes optimal buy, build, and borrow decisions, workforce planning engages a broad group of stakeholders to shape the operating unit's workforce plan and talent strategy:

- The operating unit's business planner, who reports to the business leader and provides the demand forecast for talent (i.e., headcount projections) based on the business plan

  The larger units each have their own dedicated planner, who is responsible for analysis, planning, forecasting, and budgeting for many types of resources, including headcount. Smaller units may share a planner.

- The operating unit's HR business partner
- "Service partners" for talent acquisition, talent management, and learning and leadership development

Convening these people in the same room is important for several reasons. The first is alignment. "It's the first time they have ever come together," says Helmer. In the past, each service partner acted independently, gathering information from the operating unit to inform its own actions, but "there was no connection to a shared activity."

Both business and workforce plans get better when data providers and data consumers meet up. "The planners tell how they come up with their numbers. Service partners explain how they're going to use the numbers and why it's important that they're credible and accurate," he says. Other end-users may also be invited, since the output of workforce planning has implications for real estate, finance, and IT. "Unless planners understand who's using this information, they're not as invested in making it accurate or in adopting the frameworks and methods we're using," says Helmer.

"Traditionally, recruitment and training weren't involved until the end. They were the recipients of this work. Now they get visibility to the actual needs analysis," says Helmer. Job titles change slowly, but skills can morph from one year to the next. Hiring managers' shifting expectations often remain tacit rather than documented. When HR service providers participate in workforce planning, he says, they gain a deeper understanding of what the business needs. "Without this kind of visibility, recruiters are just filling requisitions."

The labor forecast and the pipeline readiness assessment give the group a clear picture of the gaps for strategic jobs. Table 2 shows a summary for four strategic job families and an additional rating of external talent availability, based on workforce planning's analysis of market data. This overview of the pipeline serves as the foundation for action planning to close the gaps.

Table 2

Pipeline readiness chart

Strategic jobs feeder pools

	Gap	Ready now and available	Internal pipeline ready in under 2 years	Internal pipeline ready in 2–5 years	External availability	Action plans to fill gap
Job family A	100	H	M	L	L	Develop college pipeline
Job family B	75	M	M	L	L	Develop internal and external pipelines
Job family C	50	L	H	H	H	Use temporary help
Job family D	-50	H	M	L	H	Retrain for other jobs

H=High; M=Medium; L=Low

Source: Southern California Edison

Armed with this data, the planner, service providers, and workforce planning evaluate both the internal and external capacity to execute various resourcing options. To ensure that SCE will have enough linemen, for example, the company needs to weigh the costs and benefits of various options and its ability to execute them:

- **Build:** What will it take to overcome past challenges and bring in more apprentices who can grow into lineman?
- **Buy:** How many ready-now linemen can SCE hire from other utilities? The region's high cost of living makes it difficult to attract talent from less expensive areas, since the job pays roughly the same regardless of location. In addition, every other utility also needs to hire more linemen, so external supply is tight.
- **Borrow:** How much of the demand for linemen can be met by contractors or outsourced to a vendor? What are the trade-offs in terms of risks to safety and culture?

More than likely, says Helmer, the company will need to use all of these strategies. To determine the optimal mix, everyone has to be in the room. That's one of the biggest improvements in the 2.0 version, says Helmer. "Instead of each HR service partner pitching a separate solution in a separate meeting with the business, we come away with one, integrated service offering."

THE ROLE OF WORKFORCE PLANNING

Workforce planning does more than facilitate these meetings, it provides the group with a broad perspective on internal talent supply across the enterprise, pointing out areas where demand is decreasing and talent might be redeployed to growth areas. Helmer and his team have also begun to drill down below job titles to capture "what makes that job that job." Instead of counting heads to see where the company has talent gaps, it will be able to assess the supply of specific knowledge, skills, and abilities, which will give SCE more flexibility in how it deploys talent.

"When left to their own devices, the operating units have a limited view of the skills pool across the company," says Manning. "Workforce planning can add value by becoming a matchmaker between emerging demand and existing supply."

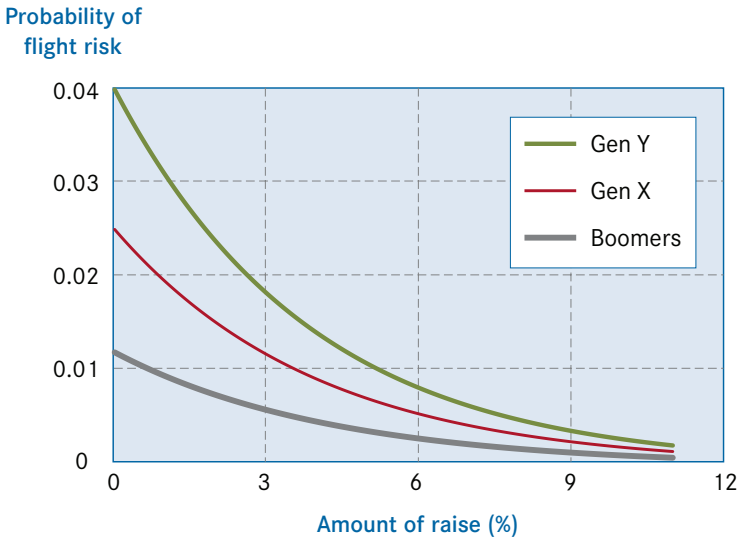
In addition, workforce planning captures external data to further enhance talent decisions. SCE is part of several industry groups that collect data and conduct labor market analyses, and this information provides context for SCE's own workforce data. Labor supply data comes from the Electric Utilities Human Resource Metrics Group (EUHRMG), a coalition of 35 US companies that share data about their current workforce. Vemo, a strategic workforce planning (SWP) and analytics vendor, integrates this data to produce a statistical profile of the US utilities-industry workforce: age distribution, retirement eligibility, tenure, pay, head-count by job roles, etc. The Center for Energy Workforce Development (CEWD), another industry group, conducts a biannual survey of member companies that captures information on their future hiring—the demand forecast for job roles including those that SCE has identified as critical needs.

Aggregating workforce data from many companies also delivers another benefit: it helps validate the predictive analytics that Vemo provides SCE. Through data mining, Vemo can analyze the impacts of alternative talent strategies to give companies insights about the best options for achieving their objectives. By combining data from 35 companies and 270,000 employees—or about half the total number of workers employed in utilities—Vemo provides benchmarks that support those insights and provide the stories behind the findings. For example, Chart 4 and Table 3 compare the impact of pay increases on flight risk for three age cohorts. Based on this analysis, it is clear that flight risk is greater for Gen X and Gen Y than for baby boomers. A 1 percent raise will decrease flight risk for younger workers, especially those in Gen Y; however, increasing pay by 6 percent or more has limited impact on attrition for all age groups.

Having industry-specific data makes workforce planning more credible, says Manning. It allows SCE to understand how its talent practices and talent supply and demand compare to its peers. In the past, employees tended to spend their entire career working for the same company. Today, that is less often the case. As a result, the company is operating in a different talent market than the one most managers grew up in. By modeling various what-if scenarios using this large data set, individual utilities can model the impacts on the workforce. If the California economy becomes more like New York City or the rural Midwest, or if consumer demand should increase or decrease by 5 percent, how will that impact turnover, hiring needs, cost of the workforce, or other outcomes?

Chart 4

Flight risk by generation and amount of raise



Source: Vemo

Table 3

Impact of raise by age generation

	Potential intervention of +1% raise when current raise is…	Impact
Gen Y	0-3%	High
	3-6%	Moderate/diminishing
	6-10%	Low
Gen X	0-3%	Moderate
	3-6%	Low to negligible
Boomers	6-10%	Very low to negligible

Source: Vemo

Appendix

RESOURCES FROM THE CONFERENCE BOARD

The following resources are organized according to the objectives in "A Structured Approach to Addressing Talent Gaps" (see page 9).

DEFINING THE ORGANIZATION'S CURRENT AND FUTURE CAPABILITIES

Buy, Build, Borrow, Redeploy, or None of the Above? New Options for Closing Talent Gaps
Research Report 1572, February 2015

Scenario Planning for Human Resources and Strategic Workforce Planning
Research Report 1549, May 2014

Scenario Planning: Opportunities for Mid-Market Firms
Executive Action 408, September 2013

Local Content Requirements and Strategic Workforce Planning
Executive Action 414, October 2013

On the Level: Strategic Workforce Planning from Micro to Macro
Executive Action 369, December 2011

Engaging Business Leaders in Strategic Workforce Planning: A Guide to Effective Conversations
Executive Action 354, July 2011

DEFINING TALENT DEMAND, ASSESSING SUPPLY, PRIORITIZING GAPS

International Comparisons of Annual Labor Force Statistics
Research Report 1559, September 2014

Nobody's Perfect: Overcoming the Limitations of External Labor Data to Drive Better Business Decisions
Research Report 1552, June 2014

From a Buyer's Market to a Seller's Market: Declining Unemployment and Evolving Labor Shortages in the United States
Executive Action 427, May 2014

Charting International Labor Comparisons
Research Report 1542, March 2014

Addressing National Talent Shortages: What Companies Are Doing, What Companies Can Learn
Research Report 1531, September 2013

Where Did Productivity Go? Can Incentives to Grow the Workforce Be Found?
Executive Action 413, October 2013

Managing the Total Workforce: Bringing Contingent Workers inside the Strategic Workforce Planning Tent
Research Report 1518, April 2013

Trapped on the Worker Treadmill?
Executive Action 393, January 2013

Addressing the Talent Shortage in China and India: Leveraging Women in the Workforce
Executive Action 392, January 2013

Will the Decline in Unit Labor Cost in Europe's Troubled Economies Help Improve Competitiveness?
Executive Action 391, January 2013

Strategic Workforce Planning across National Borders
Research Report 1497, July 2012

Recession Aftermath: What the Delayed Retirement of Mature Workers Means for Business
Executive Action 375, March 2012

EVALUATING OPTIONS FOR BUILDING FUTURE CAPABILITIES

Buy, Build, Borrow, Redeploy, or None of the Above? New Options for Closing Talent Gaps
Research Report 1572, February 2015

Designing Global Businesses for Innovation and Growth
Research Report 1555, August 2014

Is This the End of Work? Information Technologies and Labor Market Disruption: A Cross-Atlantic Conversation
Executive Action 431, July 2014

Sourcing at Home: Is the United States a Viable Component of a Global Services Portfolio?
Council Perspectives 050, October 2013

Addressing National Talent Shortages: What Companies Are Doing, What Companies Can Learn
Research Report 1531, September 2013

Strategic Talent Management: Where We Need to Go
Research Report 1533, September 2013

Managing the Total Workforce: Bringing Contingent Workers inside the Strategic Workforce Planning Tent
Research Report 1518, April 2013

Talent Management Tomorrow: Seeing Around the Corner to Meet Strategic Business Needs
Council Perspectives 043, September 2012

Financial Services Offshoring: Moving toward Fewer Captives and Global Cost Competitiveness
Executive Action 323, March 2010

Increasing US Business Investment in Postsecondary Credentialing for New Workforce Entrants
Executive Action 322, March 2010

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Mary B. Young, principal researcher, human capital, leads The Conference Board program of research on strategic workforce planning (SWP) and has been a major contributor to the company's research on human capital risk and human capital analytics. She has studied strategic workforce planning's emergence and evolution as a business process in more than 70 companies.

Her research on SWP is available in 20 research publications from The Conference Board, including *Nobody's Perfect: Overcoming the Limitations of External Labor Market Data to Make Better Business Decisions* (2014), *Human Rights Risk* (2013), *Managing the Total Workforce: Bringing Contingent Workers inside the Strategic Workforce Planning Tent* (2013), *Strategic Workforce Planning across National Borders* (2012), *Managing Human Capital Risk* (2011), *Strategic Workforce Planning in Global Organizations* (2010), *Implementing Strategic Workforce Planning* (2009), *Gray Skies, Silver Linings* (2007), and *Strategic Workforce Planning* (2006).

Young received her doctorate in organizational behavior from Boston University's Graduate School of Management. She earned a M.Ed. in organizational development at the University of Massachusetts at Amherst and a BA in English from Case Western Reserve University.

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Research Report, October 2014

"Is Your Occupation or Industry at a High Risk for Labor Shortages?" (US)
Special Webcast, October 2014

Human Capital Analytics @ Work, Volume I
Research Report, October 2014

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