THE NIMBLE UTILITY
CREATING THE NEXT GENERATION WORKFORCE
FIND OUT MORE
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In the past, a utility’s success was predicated on its ability to maintain its fair share of the “pie” with hopes that it would continue to grow. Now, however, the pie is not only growing; it is completely changing. Disruptive technologies and other transformative developments mean that growth opportunities are quickly emerging in every area of the market.

Unfortunately, most utilities are stuck playing catch-up. They are clearly focused on the immediate issues of upgrading aging infrastructure, adopting interactive communication technologies, and attending to other asset-based activities intended to enable smart grid opportunities. Focusing solely on system upgrades when the market is clearly exploding with real potential will leave a utility clutching to the crumbs left over by more progressive market participants.

In their resolute pursuit of technological improvements, utilities are missing out on a huge part of capitalizing on market opportunities: their people. Utilities must develop a more adept and agile workforce—one that not only maintains their company’s traditional piece of the pie, but also sets the table for a whole new menu of opportunities available in the transforming market. This is not going to be easy. Recent market trends indicate utilities face real workforce challenges:

- The capabilities that utilities need to house are undergoing drastic change. The introduction of new technologies and systems is growing the demand for technical resources and analysts and creating entirely new job functions. The reliance on digital technology will also impact job roles and the demand for specialty skills, particularly in field operations, customer interfaces, and asset management.
- While the size of the overall utility workforce is expected to decline slightly, we anticipate a demand of 105,000 new workers by 2030 with capabilities ranging in both depth and breadth: from technicians and energy efficiency advisors to data analysts and customer operations specialists. The challenge will be to balance its talent base in relation to its changing business: cost effectively adding new skills as they become relevant and capturing desirable competencies in a competitive market.

- On top of this, new entrants to the job market change jobs more often—not only will utilities need to attract talented people, they will need to find creative ways to retain them.

In this complex labor market, the old workforce models on which utilities have relied will no longer prove successful. Traditional workforce planning has tended to focus on near-term requirements. But with market intensification and growing complexity, organizations will need to understand the effect of shifting business strategies on staff resources, and to anticipate which capabilities to attain and nurture in order to capture emerging market opportunities.

In short, utilities will need to become nimble. This means they will need to align their operating model with their workforce capability model so they can continuously capture the right people with the right skills at the right moment, then unleash their talents in ways that capitalize on developments in the external market. Their internal environment must be as nimble as the external market is volatile. It no longer suffices to have a workforce that is able to maintain the utility’s traditional role and value. Utilities must have a capable, informed, energized workforce—and equally agile operational structures to support them—if they are to seize market developments before other market players do.

Even as they focus on renovating their system assets, it is still possible for utilities to also renovate their human resource practices to be bold and nimble enough to take advantage of the volatile and disruptive external forces that have become the new norm. PA’s approach to doing this is to take an outside-in view on business change, linking the external factors in the energy market to organizational capabilities and financial decisions required to effectively deliver toward the strategic goals. Key components to a nimble operating model and workforce include:

- **An Embedded Capability Model** aligns a utility’s internal capabilities to the external market, ensuring that the operating model is fine-tuned to deliver toward the utility’s strategic objectives and to allow for easy connectivity and collaboration across the enterprise and its functions.

- **Predictive Metrics** analyzes data to create a more fluid, constantly updated view of the workforce’s potential and uses this as a basis for strategic action.

- **Adaptive Development and Succession Planning** continually forecasts capabilities that the organization needs and the skill level individuals will need to meet market demands.

To be successful in the face of technological developments and workforce challenges, utilities must proactively manage both its system assets and its people. By adopting new practices, the new utility workforce can become a motivated, compelling force that recognizes and rides market opportunities to fruition. The only alternative is to plod along the traditional utility path, relegated to protecting its slice of pie, and resigned to leaving new earnings potential to be reaped by other, more nimble market opportunists.
NEXT GENERATION ENERGY WORKFORCE
The aging workforce and infrastructure dilemma

Gearing up for the next decade

$2 trillion
Electric utility investment by 2030

$17-24 billion
US annual spend to facilitate smart grid vision

Growing demand and supply gap

105,000
new workforce demand by 2030

under 25,000
Industry workers looking to transition to new positions as a result of this deployment

Top capabilities required

Current
• O&M
• Skilled craft construction
• Lineworkers

Future
• Technical specialists
• Energy efficiency
• Customer centric
• Business intelligence
• Cloud based analytics

Only 18% Yet 68%
of organizations have a talent and workforce approach that is aligned to their business strategy believe this is a high priority
Opportunity to shape the future workforce

The ‘Next Generation Workforce’ and the Nimble Utility

NIMBLE OPERATING MODEL
readily adaptable to changing market dynamics, the modern grid, and customer expectations.

NEXT GENERATION WORKFORCE
possessing a broader and more diverse set of skills to manage and operate in a DynamicEnergy™ environment.

CAPABILITIES
meet the needs of Next Generation Energy encompassing a broader ecosystem of vendors and business partners.

TECHNOLOGY
adaptable, maximizing the opportunities for automation, utility analytics, and innovation.

SOURCES:
PA Consulting Group Analysis 2016
PA Consulting Group People & Talent Research and Benchmarking 2016
West Monroe and Illinois Institute of Technology: http://www.itilmicrogrid.net/education/The%20Smart%20Grid%20Workforce%20of%20the%20Future.pdf
CURRENT TRENDS AND THEIR IMPACT ON THE UTILITY WORKFORCE

The significant effort required to modernize our nation's aging electric infrastructure has captured the imagination and attention of utility leaders. Right now, utilities are so intent on completing yesterday's commitments and maintaining their current position, they have little time left to think strategically about the projects of tomorrow. This narrow focus can blind a utility to other important and inter-related trends that hold revolutionary opportunities for growth and stakeholder profits.

Savvy utilities are not those that reliably maintain their assets to retain their current market position. Rather, they are those that proactively harness all their assets—physical and human alike—to make the most of the potential that exists out there. Utilities that not only keep an eye on market and customer developments, but also move quickly to expand on them—or even create their own—will ensure that they both preserve and expand their business.

Capitalizing on trends—being a digital Netflix rather than a Blockbuster Video—starts with understanding the trends and their potential. In the following section, we provide some clarity to the complexity by examining five major trends and the implications for the utility workforce.

The Trends

WORKFORCE IMPACT #1: THE DIGITAL UTILITY

<table>
<thead>
<tr>
<th>The Trend</th>
<th>Utilities are seeking ways to realize the benefits of digital technologies to optimize performance, customer service, and safety and reliability.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some Opportunities</td>
<td>There are several opportunities presented by this trend. For instance, GIS-integrated Outage Management Systems (OMS) enables utilities to attain greater operational efficiencies with the ability to deal with enormous call volumes as well as to analyze and group trouble calls. Consequently, the prediction of outage events has become more automated and accurate, and the prioritization of those outages has become more sophisticated. Another example lies on the Distribution Management System (DMS) side, with GIS-integrated graphic displays and greater data volume capacity, which allow utilities to better monitor maintenance and model changes to the distribution network. OMS and DMS are converging into a single platform where utilities will be able to handle most day-to-day operation.</td>
</tr>
<tr>
<td>The Threats</td>
<td>A growing dependency on digital management systems and web-based communication also opens the door for cyber security threats to utilities, which are already amongst the most targeted companies of cyber attacks.</td>
</tr>
<tr>
<td>Staff Implication</td>
<td>Utilities will require adequate technical experts (IT/OT), cyber security experts, data scientists, and design and engineering professionals in order to leverage all the opportunities presented by digital technologies.</td>
</tr>
</tbody>
</table>

1. A Brief History of OMS and DMS, electricenergyonline.com, September, 2005
WORKFORCE IMPACT #2: CONSUMERS TO PROSUMERS

The Trend
As more customers adopt distributed energy technologies, they are starting to demand more transparent and customizable relationships with their energy providers.

Some Opportunities
The cloud enables the utility to interact with its customers using a real-time virtual hub that provides a “one-stop-shop” environment for all their utility needs, including: switching, billing, dynamic pricing and rate choice, supply choice, self-generation, bundling energy and non-energy services, broker involvement, DER connections, and community microgrids.

The Threats
Customers are increasingly expecting a higher level of service and information from utilities, matching the level of service and information they get from service providers in the financial, telecom, and retail sectors.

Competition is arising from companies like Opower, which can provide customized advice to utility consumers about lowering their energy consumption through simple changes in their use of energy.

Staff Implication
The changes in customer interaction demands will require utilities to hire the necessary technical experts and data scientists to set up and run the virtual hub. Utilities will also need customer advisors with a deep understanding of the new products and services as well as strategic partnership managers who can liaise with other players in the market (e.g. Opower).

WORKFORCE IMPACT #3: GRID EDGE TECHNOLOGIES

The Trend
Many innovative new companies such as Google (Nest), Tesla (Powerwall), and SolarCity have emerged in the energy industry, exploiting opportunities in the market.

Some Opportunities
To address the growing skills gap and exploit grid edge opportunities, some utilities have started to form partnerships with technology companies to provide new services.

Some of these partnerships jointly aim to test and commercialize new technologies that allow them to connect microgrids with the rest of the grid easily and cost-effectively.

The Threats
Not only are grid edge companies transforming the energy market landscape; they are also attracting the top technical and entrepreneurial talent that utilities sometimes struggle to recruit. Grid edge companies are generally viewed as more nimble, innovative and entrepreneurial. In addition, their culture and incentive structure are geared toward attracting and retaining this talent.

Staff Implication
Efforts to better capitalize on grid edge opportunities will require utilities to commit to emerging technology experts, innovators, talent managers, and strategic partnership managers.
## WORKFORCE IMPACT #4: FLEXIBLE/RESILIENT GRID

### The Trend
Smart meters, distribution automation, and other interconnected technologies are mature assets, providing significant opportunities for improved network operations.

### Some Opportunities
Pervasive use of intelligent electronic devices and sensors is generating massive volumes of data, which allows utilities to improve reliability and manage intermittent loads.

Utilities are seeing significant reliability increases from machine learning and analytic-based grid automation, including real-time self-healing, load and voltage management, distributed energy resources, and demand response.

### The Threats
The principles behind designing the grid are changing, as grids have to be able to incorporate new distributed energy technologies and other unforeseen changes.

The grid must also become increasingly flexible to handle intermittent loads caused by DERs and microgrids operating independently of the main power grid.

Momentary outages have bigger impacts as populations become increasingly dependent on connected technologies, requiring utilities to put billions into infrastructure-hardening projects to increase resiliency.

### Staff Implication
Flexibility and resiliency improvements to the grid will require utilities to look for experts in dynamic strategy, cross functional management, electrical/power system design and engineering, and predictive asset management.

## WORKFORCE IMPACT #5: POLICY INNOVATIONS

### The Trend
Regulators are enacting policies aimed at promoting greater competition, integration, sustainability, energy efficiency, resiliency, reliability, affordability, and demand elasticity.2

### Some Opportunities
There are many opportunities arising from this trend. For instance, in an effort to promote energy innovation while improving consumer choice and affordability, some states are starting to require utilities to serve as Distributed System Platform Providers (DSPPs).

Another opportunity is presented as regulators push utilities to develop distribution resource plans, showing how they will merge rooftop solar, behind-the-meter energy storage, demand response, plug-in electric vehicles, and other DERs into their daily grid operations.3

### The Threats
With utilities gradually transitioning from providers of energy to providers of energy services, they will need a more flexible utility rate setting mechanism – one that rewards performance and investments in human capital; rewards operational and consumption efficiencies; and allocates both costs and benefits equitably.

### Staff Implication
The implementation of new generation technologies and network upgrades will continue to sustain a high demand for both construction and O&M personnel. Renewable generation and capacity additions used to meet the 2013 RPS compliance obligations meant utilities had to add approximately 200,000 U.S.-based jobs in 2013.4 In addition, utilities will need strong strategic, legal and regulatory expertise to successfully navigate and influence the increasingly complex regulatory landscape.

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The Impacts on Skills and Capabilities

The five trends reviewed here present significant opportunities for gaining market share and winning the loyalty of customers. They also have a direct and significant impact on the skills and capabilities that utilities will need in order to take advantage of those opportunities for growth.

Fulfilling this resource need becomes more complex when considered long-term. For instance, by 2035, the demand for some specific job functions will increase while the overall number of FTE will remain fairly steady or decrease slightly as a result of increased automation. In short, utilities will experience a large shift toward high demand skills, while simultaneously experiencing a slight decrease in the absolute number of staff overall.
In order for utilities to manage the market’s major trends, they will have to proactively develop and manage three types of capabilities within their workforce:

### Hot Skills and Capabilities

Hot skills are either new for utilities or are those that are expected to become crucial. Due to a more dynamic marketplace and the spread of data stemming from technological change, hot skills, such as those shown below, will become increasingly important for capitalizing on a rapidly changing business environment.

<table>
<thead>
<tr>
<th>Hot Skills and Capabilities</th>
<th>Practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerging technology expertise</td>
<td>Technical experts who are able to plan, implement, and manage new smart grid and grid edge technologies, as well as monitor and adopt new technologies as they emerge.</td>
</tr>
<tr>
<td>Dynamic strategy analysis</td>
<td>Strategic thinkers and planners who can help utilities navigate and manage a more rapidly evolving business environment.</td>
</tr>
<tr>
<td>Innovation</td>
<td>R&amp;D practitioners (typically from the sciences and engineering) who can promote and embed innovative thinking throughout the organization.</td>
</tr>
<tr>
<td>Data science</td>
<td>Information technologists capable of sophisticated analysis and of extracting actionable insights from Big Data for viable commercial opportunities.</td>
</tr>
<tr>
<td>Technical expertise (IT/OT)</td>
<td>IT professionals to include specialties in: programming, cyber security, system and network maintenance and support experts.</td>
</tr>
<tr>
<td>Strategic partnership management skills</td>
<td>Adept negotiators and creative marketers with the skills to work in close partnership with grid edge players (business development, communications, etc.).</td>
</tr>
<tr>
<td>Cross-functional management skills</td>
<td>Cross-skilled program managers able to engage and manage cross-functional teams to achieve strategic goals.</td>
</tr>
</tbody>
</table>
Transitional Skills and Capabilities

Transitional skills are those that are either expected to grow moderately or will see a shift in focus. This skill area includes customer advisory, talent management and legal/regulatory skills, important to interacting effectively with customers and navigating through a much more complicated regulatory landscape.

<table>
<thead>
<tr>
<th>Transitional Skills and Capabilities</th>
<th>Practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Advisory</td>
<td>Strategic customer advisors who can actively coordinate with customers regarding complex decisions related to consumption, rates, supplier choice, DERs, etc.</td>
</tr>
<tr>
<td>Legal &amp; Regulatory expertise</td>
<td>Advocates who are familiar with appropriate legal and regulatory frameworks and engaged in the appropriate networks and contacts to effect positive public and business policy.</td>
</tr>
<tr>
<td>Talent management</td>
<td>Experts in workforce planning, recruitment and capability development (e.g. training and knowledge management).</td>
</tr>
<tr>
<td>Design &amp; Engineering (electrical and power systems)</td>
<td>Electrical/power systems designers and engineers who can both implement grid edge opportunities and address aging infrastructure issues.</td>
</tr>
<tr>
<td>Predictive Asset Management</td>
<td>Asset data analysts who can employ data to proactively manage assets on a lifecycle basis to reduce operational risk and increase customer value.</td>
</tr>
</tbody>
</table>

Foundational Skills and Capabilities

Foundational skills are core capabilities that are not expected to see significant changes in focus or numbers. This skill area will either see steady or declining demand as it will be highly impacted by technological and business model changes.

<table>
<thead>
<tr>
<th>Foundational Skills and Capabilities</th>
<th>Practitioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Customer Service</td>
<td>Call center representatives who can respond to customer inquiries using automated, direct, and digital communications.</td>
</tr>
<tr>
<td>Enterprise Service Providers</td>
<td>Administrators in HR, Finance, and Procurement in nature who are adept with automated processes and enterprise systems.</td>
</tr>
<tr>
<td>Administrative</td>
<td>Administrators in billing and reporting who are adept with automated processes and enterprise systems.</td>
</tr>
<tr>
<td>Line Work</td>
<td>Increased automation will lessen the demand for skilled craft construction and O&amp;M staff, but current workforce will continue to play a key role in the replacement of aging infrastructure.</td>
</tr>
<tr>
<td>Design &amp; engineering (mechanical and civil)</td>
<td>With much traditional knowledge available and increased automation emerging, mechanical &amp; civil engineering design will see reduced demand.</td>
</tr>
</tbody>
</table>
The figure below highlights the projected demand trends for **hot**, **transitional** and **foundational** skills over the next 20 years. As illustrated, the demand for the three categories of skills will change over both the short- and long-term.

For example, the increase in demand for hot skills will be close to 40% by 2020, while the same skills will see radical growth of 418% by 2035.

### Change in Skills Demand over the next 20 years

<table>
<thead>
<tr>
<th>Changes in Skills Demand</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Skills</td>
<td>39%</td>
<td>113%</td>
<td>230%</td>
<td>418%</td>
</tr>
<tr>
<td>Transitional Skills</td>
<td>13%</td>
<td>32%</td>
<td>55%</td>
<td>83%</td>
</tr>
<tr>
<td>Foundational Skills</td>
<td>-5%</td>
<td>-11%</td>
<td>-16%</td>
<td>-21%</td>
</tr>
</tbody>
</table>
How the Trends have Impacted Other Industries

Utilities are far from the first sector to face such significant impacts and workforce transformation. There are a number of relevant cases from other industries that utilities can use to prepare themselves for the similar challenges underway.

Telecommunications Industry

The recent introduction of disruptive technologies, like smartphones and phone applications, has fundamentally changed the competitive strategy of traditional telecommunications companies. As the telecommunications companies pondered the effect of these technologies, Apple and Microsoft were able to capture this highly profitable market.

Telecommunications companies are now attempting to reverse their fortunes by focusing on building up core capabilities needed to capture high value-add market opportunities. AT&T, for instance, has created AT&T Labs, an internal research and development organization made up of more than 1,300 scientists and engineers at R&D centers around the U.S.

Verizon similarly opened two innovation centers where LTE projects can be developed and showcased;

What Utilities Can Learn from the Telecommunications Industry Experience

Although late to respond to the opportunities presented by smartphones, phone applications and streaming services, telecommunications companies are making a concerted effort to shift resources from traditional infrastructure-driven skills to those that enable their workforce to identify and capture high value-add market opportunities.

Disruptive changes in the industry like DERs, RPS, and OMS/DMS integration will require comparable responses from energy utilities. Fortunately, utilities have the opportunity to become first movers and exploit the new opportunities. However, if they resist reconfiguring their workforce, they will miss the chance to set themselves apart in an increasingly competitive market and will similarly have to play catch-up.

Figure 1: Similarities between the Telecommunications and Utility industries
Bharti AirTel Limited. Bharti converted itself to a first mover in the early 2000s, outsourcing its daily operations and retaining functions like finance, sales, marketing, and management. It built its workforce around branding and identifying customer pain points. As a result, Bharti has enjoyed 120% compound annual growth in sales revenues and 282% growth in net profits per year between 2003 and 2010.5

Music/Video Streaming Industry

Digitalization and streaming have completely altered the music and video industry. No longer is artistry and production at the heart of the industry; rather, technology, big data, and regulation are the driving business forces.

With the emergence of the video streaming industry, content has moved from CDs/DVDs/VCRs to digital files, like MP3, WAV, MPG, and MOV. This means that producers can circumvent mass distribution channels, instead developing and distributing content to targeted groups identified through consumer data mining and served through direct-serve channels. Entities like Blockbuster Video and Tower Records—restricted by physical locations and products, complex licensing processes driven by large production studios, and serving mass markets—have been quickly replaced by agile online entities that provide easily variable content, like iTunes and Netflix.6

In addition, new technologies have helped the organizations that handle music rights to streamline their processes, allowing for music—as played across various media channels—to be tracked automatically, and efficiently matched against copyright databases, ensuring that the artists are correctly compensated. This has facilitated the ability for online firms to take advantage of digitization.

In the European Union, commission recommendations on the management of online rights in musical works have triggered a number of structural changes in the industry. Online music challenges the traditional separation between handling of performing music rights and mechanical music rights. Moreover, the national boundaries to handling rights were also challenged. This has forced the organizations that handle music rights to re-structure their business models and enter into new partnerships across borders to meet a new and competitive environment.

Exploiting Customer Data

One of Netflix’s most popular original series, House of Cards, was actually the product of sophisticated data-driven analysis.

“When the program, a remake of a BBC miniseries, was up for purchase in 2011 with David Fincher and Kevin Spacey attached, the folks at Netflix simply looked at their massive stash of data. Subscribers who watched the original series, they found, were also likely to watch movies directed by David Fincher and enjoy ones that starred Kevin Spacey. Considering the material and the players involved, the company was sure that an audience was out there.”7

What Utilities can Learn from the Music and Video Streaming Industry Experience

Digitization and streaming has completely revolutionized the entertainment industry—from content development to copyright management to distribution and sales. Agile online entertainment companies have overtaken slow, risk-averse studios, by quickly distributing a huge variety of available content—or developing its own—to appeal to every kind of customer through their chosen channel, based on huge databases of customer preference data.

Utilities are meeting some of the same challenges—and are slowly beginning to face comparable digitization, automation, and regulatory trends. In the future, utilities can take advantage of the opportunity by attracting data scientists that can mine data coming from AMI other integrated technologies to make customer savvy decisions.

5. Govindarajan, V., Telecom’s Competitive Solution: Outsourcing, May 2012
What Does this Mean for Utilities?

Historically, utilities have registered their value, not in terms of people, but in terms of the physical assets they maintain on behalf of customers. This concept is even reflected in how a utility’s financial performance is measured, based on the system size and performance. In the present dynamic market, physical assets do not become less important; however, people are becoming a much more central asset.

Consider the main priority at the forefront of utility leaders’ minds: system modernization in support of smart grid potential. Clearly, making the necessary infrastructure upgrades will drive an immediate spike in demand for designers, engineers and skilled craft construction workers. Unfortunately, as the immediate demand for these resources is increasing, their availability is steadily declining. This is already creating a perilous resource gap that promises to tie the hands of utilities, desperate to modernize their systems and keep up with technological advances.

At the same time that the transforming market is abundant with potential for growth and stakeholder profits, utilities are faced with the complex challenge of addressing immediate capacity issues, keeping an eye on the changing capabilities that will be needed as automation and technology increase, creating a competitive hiring strategy as labor sources diminish, and accomplishing all this while maintaining costs.

As shown in the previous review, this concept has been proven in other industries experiencing radical disruption; those that succeeded were those who had the right people. People could find new ways to make the best value out of existing assets, utilize technologies and data to define new products and services, and discover new ways of interacting with customers.

This review of trends speaks to the changes that are already underway in the utility industry. Given these industry mega-trends, changes in the market and customer demands, utilities must ask themselves if their workforce is prepared to face the implications—or even if they understand which workforce capabilities they have and which they will need in the future.
In the world of utilities, workforce practices have failed to keep up with disruptive market challenges in their environment. Our research indicates that:

- Only 15% of CEOs believe they are successful at integrating people and talent into their operating model.
- 65% of the jobs that people will be doing in ten years have not even been thought of yet.
- 3.6% of organizations have embedded workforce and skills metrics.

There is a significant mismatch between what talented individuals want from their organizations and what they are actually offered.

A nimble utility is able to adjust itself and services rapidly and in a cost effective way.

What Does It Mean to be Nimble?

Being truly nimble is more than being flexible. A nimble organization has the ability to make smart and timely decisions about core organizational strategies, resources, and actions based on changing market forces. Nimble utilities are able to take advantage of alternative energy drivers, digitally-enabled practices and other disruptive market forces.

Creating a nimble organization requires intervention strategies and work processes that transform the entire culture of the organization so it becomes one that enables its staff to recognize and build upon important opportunities. A nimble organization is often structured in a modular way, allowing for easy connectivity and collaboration across the enterprise.
and its functions. In this way, the organization can be changed, re-ordered, and reconstructed as if it were a set of Legos. This is the opposite of what utilities have traditionally been—rigid legacy systems and structures that are almost impossible to change, where people work functionally in silos.

**Designing a Place where ‘Nimble’ Can Thrive**

Ensuring agility in an organization is not entirely about workforce capabilities and operations, nor exclusively about organizational structure. It exists when all of them can live and thrive together.

We can say that building a modern, nimble utility able to be effective within a dynamic market is much like renovating a stately Victorian house into a functional home for a growing family. The current house is sturdy, reliable, good looking. Inside is a different story. Rooms are small and isolated, reducing the knowledge that family members have about each other’s lives and emerging issues. There is absolutely no room for discussing and cooking up new recipes that suit everyone’s changing dietary needs. There is a parlor and mudroom that is never used, and no room for all of the electronic gadgets everyone is using to communicate with the outside world. One kid is going to college, aging parents are thinking of moving in, and on any given day, the family is not sure who is going to be sleeping in what room. And on top of all this constant change, the plumbing rattles, the lights flicker, and nothing is up-to-code.

The opportunity here is not only to renovate the house and make it functional and sound, but to create a vigorous and viable life inside it. How do the people interact with the house? How does it support the lifestyle they want today..and tomorrow? How does the house fit its residents, its neighborhood, the climate, permitting requirements?

Utilities have an opportunity to build an organization with the same care and consideration they would take to build a suitable house for their families. Becoming nimble requires looking at all aspects—from the facade of the house (the business strategy), to the floor plan (the processes and organizational structure), to the plumbing and electricity (the IT systems, data). It must all be designed to meet the overall objectives of a business strategy.

**Where the Opportunity Lies**

As defined, the nimble utility has a more agile, cross-functional and analytical way of working. At the heart of creating this organization is its operating model. The operating model is what defines an organization’s business and support processes, capabilities, technologies and organizational and governance structures—all of the resources and capabilities required to achieve its strategic objectives. It is in its operational heart where utilities need to build agility and market acumen.

We know that capability, workforce and talent management have many different components – from defining what talent means for an organization to keeping track of talented individuals as they progress. We have identified key elements that make up successful, high performing people and talent management programs, and every one of these offers an opportunity to be closely integrated with the utility’s operating model in order to be more agile and aligned to the external world.

This is not a simple endeavour, but it is one that will ensure utilities are able to renovate for a dynamic future rather than remain an elegant relic of the past.
Although there is recognition in the industry of the importance of attracting, developing and retaining employees with key capabilities, it is often done in a reactive way that responds to immediate or functional needs, separate from an overall business or operational plan. This is similar to replacing shingles on a leaky roof just prior to adding a new story to the house when, in a year’s time, the kids will be gone and it will be time to consider downsizing.

It is an unfortunate fact that, especially within the utilities industry, human resource decisions tend to be reactive and not aligned to market, customer and financial considerations. As a result, utilities are finding it especially difficult to attract, develop, and deploy talented people. In previous years, this was somewhat manageable; in today’s variable and challenging market, it spells the end of utilities as viable, growing, entities.

It is beyond the scope of this paper to describe the complete how-to of building a nimble organization from the foundation-up. In general, the idea is for an organization to have a clear external view of market opportunities as well as its internal culture/ capabilities, then to develop the means to ensure they are connected to the point of influencing and driving each other to achieve set objectives, even as they continually change. Understanding that having a direct connection between external developments and internal competencies, successful utilities have begun to transition from engineering-focused organizations to those fuelled by creativity and innovation. This will better allow them to capitalize on quickly-developing market and customer opportunities.

To be successful, utilities need to become nimble. This means creating and embedding an integrated framework of capability planning, HR practices and talent management that is inseparable from its strategic vision and market forces. To become truly nimble means integrating the human, technical, and operational components of a utility with market drivers and strategic intent. In this way, the completed renovation supports both the utility family’s life ambitions, and the changes to come from the world around it.

Our research shows that 48% of organizations feel they do not have the right people and skills to succeed in a digital age. It is of no surprise that 45% of CEOs have concerns about succession planning and 40% believe skills development initiatives need to be revised. Though they recognize the issue, they admit they have not created the people strategy they need to understand where to focus or develop the metrics they need to measure progress. This contrasts dramatically with the attention CEOs pay to other challenges of similar importance and the associated dashboard and metrics they expect and use.

Lack of metrics would be unacceptable for financial management, so why is it acceptable for people management?
Elements of a Nimble Utility: Embedded Capability Model

Utility workforce practices have failed to keep up with the disruptive market challenges we presented in Section 2. Without immediate attention, the current utility workforce will not be able to provide the capabilities required to support the market and customer. To address this gap, PA encourages organizations to rethink their planning around the capabilities they will need in the future and build/internalize a Capability Model.

Often CEOs in our research refer to “formal structure and governance” for workforce management or “a robust process,” rather than a clear guiding strategy. Every organization needs a strategy and capability map to ensure that it is making the right decisions about developing capabilities across the organization in the short and longer term. It is, therefore, critical to create a strategy and capability model that:

• Fully aligns with the business ambition
• Defines the critical capabilities key to the utilities success
• Clarifies the most important activities to deliver your commercial ambition
• Provides a detailed roadmap and integrated people management activities

The first step to building a Capability Model is to define the type of organization utilities want to be—including the make-up of the workforce—and align this to the strategic industry market and customer drivers and trends. A Capability Model will help clarify the capabilities that are absolutely fundamental to success, as well as to the pipeline of specialists and leaders that will be required. As discussed in section 2, it is also useful to pinpoint which hot, transitional and foundational workforce capabilities are imperative to realizing the utility’s strategic goals, especially when they can be prioritized to provide focus on challenging workforce needs.

The Capability Model aligns a utility’s internal capabilities to the external market, ensuring that the operating model is fine-tuned to deliver toward the utility’s strategic objectives. A nimble utility has strong, continuous feedback loops between its corporate strategy and operating model. Due to the uncertainty of tomorrow’s regulatory and competitive landscape, it is critical for the utility to be in position to quickly re-adjust its structure and focus to take advantage of what is occurring in the market. The more modularity the utility can build into its operating model, the more flexibility it will have to adapt to changes. A core principle of being nimble is to allow for easy connectivity and collaboration across the enterprise and its functions, realizing synergies as well as leveraging technologies and data to support this.

Elements of a Nimble Utility: Predictive Metrics

Nimble organizations build robust systems for collecting, storing, and managing workforce data and use metrics to predict what is likely to happen in the future. In contrast, utilities typically use “lagging” metrics to look back at what happened in the past and correct operations to improve future performance. The underlying idea, of course, is that expectations and other considerations will remain the same, allowing them to build capability based on practice in recurring situations. Although a few are starting to look at indicators that project coverage of key leadership positions, most utilities are failing to capitalize on the potential of data and the use of analytics.

For example, many utilities are experiencing a higher rate of turnover for new employees at the same time that they are dealing with their retiring workforce. Utilities are in the grip of a retirement bubble with approximately 25% of the population having retired over the last 5 years and 25% able to retire in the next five years. Of those who are retirement eligible in the next five years, 45% are within one year of retirement. As a result of the retirement bubble, almost 50% of current utility employees have less than ten years of experience in the company.

7. PA Consulting Group Research on Workforce Planning & Talent Management; New York Power Authority
In addition, employees at an early stage in their career do not see clear paths to progress their careers at utilities, resulting in negative retention and engagement implications. As a result, in recent years many utilities are experiencing a higher rate of turnover for new employees. Employees with less than five years of service are leaving utilities at a rate twice that of any other group, except for those with greater than twenty-five years of service (i.e. retirees). Year to date 2014, those with less than five years of service are leaving at a rate that is trending to almost three times that of other groups. Why? Apparently, employees are no longer seeking or expecting to stay with the same company for their entire career. According to the Bureau of Labor Statistics, today’s youngest workers will hold twelve to fifteen jobs in their lifetime. Therefore, utilities cannot rely on how it operated in the past, counting on a relatively low employee turnover.

Volatile market circumstances demand an approach to strategic capability and talent identification that starts with a set of bespoke criteria, leverages data-mining technology to create a more fluid, constantly updated view of an employee’s potential from all the available information, and uses this as a basis for action. Blurring the boundaries between internal and external systems could provide the breakthrough that is needed for utilities to make better use of data to gain access to capability in the areas where it is needed most. However, as roles and capabilities evolve, there are likely to also be different decisions utilities need to make regarding the use of contingency workers, interim and contract resources.

An East Coast Power Utility was experiencing high turnover within its newly-hired employee base. Employees with less than five years of service were leaving at a rate trending to almost three times that of other groups. We discovered that the utility’s lack of focus on career progression and opportunities for development meant the utility was not seen as an employer-of-choice. This perception was filtering through to the external recruitment markets and creating risks to the effective attraction of the highly skilled resources the utility needed. We worked with the utility to establish career paths and associated development programs to provide routes for employees to build further skills and capabilities. The educational, exposure and experience opportunities will contribute to the development of a more highly skilled, agile workforce able to flexibly respond to changing industry conditions.
Elements of a Nimble Organization: Adaptive Development and Succession Planning

Our sense is that succession pools and plans for many organizations are nothing more than works of fiction. The roles that are listed may not exist in five years; people are placed without clear knowledge of their aspirations. Names are placed in boxes to eliminate blank spaces, rather than representing an accurate view of the organization’s pipeline. All in all, succession pools and plans are structured and inflexible in an environment that requires agility.

A nimble approach to resourcing and succession continually forecasts capabilities that the organization needs in the future and the level of mastery individuals will need to have within those capability areas. Such an approach extends beyond the identification of Future Leaders aligned to current business functions or units. It extends beyond a one-size-fits-all approach to development, deployment and reward. It allows an organization to differentiate, develop and reward its talents, related to data derived directly from industry, market, customer and strategic plans.

This more fluid approach provides a clear picture of emerging strategic capabilities across the business, regardless of where individuals sit in the organization. As roles and structures change and future demands become known, the capability approach will help the organization rapidly deploy its strategic people and talent into new, emerging roles, and allow the structure of the organization to adapt accordingly.

In a more fluid world, where internal and external talent pools are flowing into one another to create a new type of talent ecosystem, quality career support and advice will become even more important. Handled well, it could provide a real source of competitive advantage, acting as a magnet for the next generation workforce who will be drawn to

Figure 2: An adaptive development and succession plan provides tailored strategies for attaining and retaining capabilities

- **Buy**: Utilize channels and source required external resource. Leverage networks & alliances and social media.
- **Build**: Provide transparency with career paths to help employees inform development.
- **Bind**: Where are we most at risk to lose key capabilities and why? How do we motivate people proactively and retain our high value people?
- **Borrow**: Create short term opportunities with mentoring / work shadowing related to help mitigate gaps and provide individuals with development.
- **Boost**: Can progression be accelerated for gaps in key positions?
- **Bounce**: How can staff be kept motivated and see career progression? What opportunities could people be moved to or developed into?

NEXT GENERATION WORKFORCE
an environment that offers the type of expertise only available in the external market for a high fee. To develop this ecosystem, the organization must have a deep understanding of the ambition of any of the individuals identified as strategic talent. To attract and retain critical and strategic capabilities, organizations need to understand and provide what their talented people want. This is especially true during times of rapid change and competition for hot skills in a dwindling labor pool.

**Is Your Utility Ready to Take on the Market?**

If your utility is like most of the organizations we have researched, it promotes a people-oriented approach within its operating model (68% believe it is imperative), but has been less than successful implementing it (only 18% of organizations believe they are). How does your utility measure up? Are you ready for the challenges the dynamic market presents? Are you nimble? Here are some questions that will help you understand where your utility may be lacking—and what to do about it.

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**Do You Know Which Specific Capabilities Will Assure Your Organization’s Future Success?**

If you have not thought about the direct impacts that market and workforce trends will have on your business and you have not aligned your workforce plans to those emerging needs, this is a good place to start.

Utilities will benefit from creating an identity attractive to Generation Y resources. This generation of workers now number 53 million, comprising the largest proportion of the United States workforce. Career plans must therefore consider carefully what attracts such employees, as well as what will be needed to develop their critical capabilities.

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8. PA Consulting Group, The Future is Fluid, 2015
Does Your Operational Model Drive Your Workforce Strategy?

Even if you know what your organization will need to do to take advantage of emerging opportunities in the market, you have to have an integrated, progressive plan for getting there. You may wish to develop and prioritize a road map of transformation initiatives that drive the enterprise and key functions towards optimal target operating models.

Do You Know How You Will Attract the Capabilities You’ve Identified?

If you do not have a people and resourcing strategy to either develop or attain essential capabilities, it is time to start. Critical skills are becoming harder to acquire and competition for hot skills is especially stiff.

Are You Sure You Know What Your Key Employees Actually Want and Need?

It used to be that utilities were considered a stable—and therefore desirable—place to work. This is no longer the case. The hot talent you attract needs to be nurtured, challenged, and supported if they are to lead your organization to a successful future.

Are You Able to Quickly Adjust Policies, Structures and Practices to Meet Demands?

For many years, utilities could depend on needing to support a set number of key functions. Now, new service lines and initiatives will need to be supported with resources as they emerge. If you are constantly fighting policies, having to officially “restructure” or revise job descriptions, you may need to adopt new flexible ways of doing business.
The Case for Change

For many utilities and managers, workforce planning and development remains a box-ticking exercise. But massive changes are in the works—utilities can no longer rely on HR practices developed in a structured industry, captured customers, static roles, and dependable labor pool. Only with effective strategy and capability planning, will utilities be able to effectively manage the risks associated with gaps in organizational capabilities and resource needs to take command of market forces and grow its role.

The next 10 years will be transformational for the utility industry. Only the organizations that have a clear idea of the capabilities they will need—and a workforce model to attract and nurture those capabilities—will be able to harness the potential that exists in the market.

Utilities need to take the opportunity now to build and nurture their workforce so they can begin to transform into a nimble organization. By embracing the changes that are sweeping away old certainties about how to compete successfully and how to manage strategic talent, organizations can develop a response that will mean they are much better positioned to both survive and prosper.
About PA.

An innovation and transformation consultancy, we believe in the power of ingenuity to build a positive human future in a technology-driven world.

As strategies, technologies and innovation collide, we turn complexity into opportunity.

Our diverse teams of experts combine innovative thinking and breakthrough technologies to progress further, faster. Our clients adapt and transform, and together we achieve enduring results.

We are over 2,600 specialists in consumer, defense and security, energy and utilities, financial services, government, healthcare, life sciences, manufacturing, and transport, travel and logistics. And we operate globally from offices across the Americas, Europe, the Nordics, and the Gulf.

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