



Creating Solutions. Inspiring Action.

Summer Member Meeting

June 22-23, 2016

Key Themes

BHEF Summer 2016 Member Meeting

Overview

BHEF's 2016 Summer Meeting, held in McLean, Virginia on June 22 and 23, brought together senior business leaders, including guests from the Northern Virginia Technology Council, and presidents of higher educational institutions to assess workforce challenges and share best practices to address these issues. Sessions consisted of a members' business meeting centered on BHEF's strategy and key initiatives, a CEO Roundtable on how Virginia regional talent ecosystems interplay with the global economy, and a discussion on opportunities for veterans transitioning into the civilian workforce.



Participants in BHEF-NVTC CEO Roundtable

Organizations need more technology talent, particularly in the areas of cybersecurity and data science and analytics. However, an acute shortage exists, and demand outstrips supply. Since this trend is expected to continue, it is critical that business and higher education deepen their efforts to increase supply.

With its focus on high-skill, high-demand talent development, BHEF leads the creation of effective partnerships and innovative programs in data science and analytics and cybersecurity. Additionally, BHEF's emerging market intelligence function provides actionable insights members and partners use to tailor their efforts.

Key Themes

Demand for technology talent is high and growing.

Two key trends in the business world are: 1) an enormous increase in the amount of data produced and available to analyze (e.g., *Big Data*); and 2) an exponential rise in the amount and sophistication of the cybersecurity threats that organizations face each day.

These major developments drive the demand for talent in cybersecurity and data science and analytics. While this need is significant among technology companies, these trends affect nearly every industry, as organizations accumulate vast amounts of data and are vulnerable to daily cyber intrusions. Business leaders expect the need for talent with expertise in these fields to grow for years to come.

With technology talent in high demand, there is an acute talent shortage.

Multiple business leaders stated they “can’t hire people fast enough.” Significant talent shortages exist in data science and analytics, cybersecurity, and software development. These shortages are likely to become more pronounced, and the competition will spike. This challenge is global, as Virginia firms vie for talent against Silicon Valley firms, like Google, Facebook, and Amazon. As industry competes against itself, universities compete with the private sector to attract qualified faculty.

Employers with technology talent needs note that graduates they hire with deep technology knowledge often lack what are known as *T-shaped skills*—critical thinking, collaboration, and effective communication. CEOs also stress they need well-rounded individuals who not only possess these qualities but also are adept at product management.

All employees need to be tech savvy, but we also want critical thinking and soft skills.

Michael Corkery, President and CEO, Deltek

Employers utilize numerous approaches to create talent pipelines and ecosystems.

Discussions centered on how businesses and government agencies find and develop desired talent, including partnerships with higher education. Examples included:

- **Creating curricula in focused areas.** Academic institutions articulate how they work with businesses to co-create curricula that equip graduates with industry-demanded skills. One example is a capstone seminar in the University of Virginia's new data science program, which is sponsored by industry partners.

- **Teaming on research.** Rolls-Royce North America established The Commonwealth Center for Advanced Manufacturing, which engages in collaborative research involving students and professors.
- **Introducing private sector instructors to the classroom.** Businesses can partner with higher education through programs such as *Professors of Practice*, where employees with technology expertise serve as instructors. This has several benefits: universities receive an influx of capable instructors, who take their experience back to employers; students learn from real-world practitioners; companies see stronger retention rates among participating employees; and lastly, personnel who contribute as instructors and mentors gain a sense of high-satisfaction from their time with students.
- **Offering internship and externship programs.** Telos partnered with 10 national labs to provide 24 top technology students with internships in Washington D.C. and Northern Virginia. Along with internships, companies, like Booz Allen Hamilton, work with universities on externship programs. These are meaningful, longer-term projects that students work on for companies while still in college.

Internships are particularly important. They are the best handshake we have between academia and industry.

Teresa Sullivan, President, University of Virginia



Hands-on demonstration with cybersecurity interns at Northrop Grumman, Center for Innovative Solutions

- **Engaging in outreach to diverse student organizations.** The panel of technology executives emphasized the importance of creating a diverse talent pool. They spoke of partnerships not only with large universities but also community colleges and organizations such as the Society of Women Engineers.

- **Actively recruit veterans.** Veterans embody characteristics that technology companies seek, including personal integrity, strong leadership capabilities, and the ability to inspire others, as well as creativity, persistence, and resilience. Companies like KPMG and Northrop Grumman recruit large numbers of veterans. They build networks and ambassador programs to connect with former service members and emphasize programs to improve the effectiveness of transitions from the military to the private sector.

The veterans we have attracted embody all of the characteristics we look for in any employee.

John Veihmeyer, Chairman, KPMG International



John Pazik, Office of Naval Research, and John Veihmeyer, KPMG

- **Providing mentors.** Companies whose employees mentor students in data science and cybersecurity have a competitive edge in its technology recruiting efforts.

Corporations also hire liberal arts graduates, then fill gaps with technology education. In other instances, employers build programs for specific groups, such as veterans. However, these efforts are most effective when multiple organizations work together to create a comprehensive ecosystem. Greater participation increases the scale, opportunities, and benefits.

BHEF is squarely focused on the leadership in high-skill, high-demand talent development.

BHEF serves as a national leader in workforce trends assessment across sectors and supports member efforts to design effective talent pathways. BHEF aggregates best practices, designs talent development models, and facilitates partnerships between business and higher education to create new undergraduate programs in emerging fields.

Spanning beyond data science and cybersecurity, BHEF, through its market intelligence function, will identify workforce trends, develop actionable insights, and produce publications to help inform BHEF members' talent development strategies and influence thought leaders.

It is important [for business leaders] to have intimate relationships with education institutions in the region.

Michael Maiorana, Senior Vice President, Public Sector, Verizon Enterprise Solutions

BHEF's Market Intelligence publications demonstrate BHEF's strategy in action.

Through the collaboration of its business and higher education members, BHEF launched the National Higher Education and Workforce Initiative to create new undergraduate pathways in high-skill, high-demand fields.

Equipping Liberal Arts Students with Skills in Data Analytics:

This case study examines how BHEF member Drake University, a private university with a strong liberal arts tradition, is equipping its students to become data-enabled professionals.

Creating a Minor in Applied Data Science: This case study examines how BHEF member Case Western Reserve University integrates T-shaped skills into an applied data science minor.

Fostering Career Opportunities in the Changing Media Industry: This trend report details the demand for media engineers, the changing skill sets within the field, and the benefits of higher education-industry partnerships, as demonstrated between BHEF member Stevens Institute of Technology and NBCUniversal.