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# Preparing Skilled Veterans to Meet the Market and Growing Demand for Cybersecurity Talent

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*Abstract - Separating service members are a valuable pool of potential cybersecurity professionals.*

**Index Terms:** Career Development, Education, Employment, Information Security

## INTRODUCTION

By connecting the large pool of separating veterans to academic, government, industry and career transition partnerships, we can make great strides toward meeting the demand for cybersecurity talent. If we train even a modest percentage of separating service members in cybersecurity, it will go a long way towards filling the qualified cybersecurity talent gap.

### *The Need*

A cursory search of the Internet reveals multiple studies, reports, and opinion pieces bemoaning the lack of qualified cybersecurity personnel.<sup>1</sup>

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<sup>1</sup> See, e.g., [www.rand.org/news/press/2014/06/18.html](http://www.rand.org/news/press/2014/06/18.html),  
[www.networkworld.com/article/2857305/cisco-subnet/cyber-security-skills-shortage-panic-in-2015.html](http://www.networkworld.com/article/2857305/cisco-subnet/cyber-security-skills-shortage-panic-in-2015.html)

### *The Reinforcements*

In response to the growing need for cybersecurity talent, we have a serendipitous surge in separating service members, as the military faces cutbacks. The White House issued a 2013 report that noted the military expects to separate a million service members over the next several years.<sup>2</sup>

### *The Catalysts*

To cover the need with reinforcements, there must be a catalyst to enable their successful merger. In this case, we have several.

Veterans have several advantages from their stint in the military that greatly increase their chances of successfully transitioning into the cybersecurity field.

A Veteran's background necessarily includes years of experience in general security, and often, robust opportunities for education and training, both while in the Service and after separation.

Over a third of our nation's military veterans have training in a variety of STEM disciplines. Another third or more receive technical training in weapon delivery systems and support systems that augment mission readiness. The military also trains a number of commissioned officers and enlisted personnel working in specific technical disciplines requiring advanced degrees, including PhDs.

### *Military Force Reductions*

The 2015 Defense Department called for a reduction in active-duty military to 1.31 million troops, a decrease of nearly 37,000 service members from the previous year.

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<sup>2</sup> [http://www.whitehouse.gov/sites/default/files/docs/military\\_credentiaing\\_and\\_licensing\\_report\\_2-24-2013\\_final.pdf](http://www.whitehouse.gov/sites/default/files/docs/military_credentiaing_and_licensing_report_2-24-2013_final.pdf)

Defense Secretary Chuck Hagel called the reductions that eliminate an entire fleet of Air Force fighter planes and shrink the Army to its smallest size since before World War II “difficult choices.” Hagel stated,

*“These reductions will change defense institutions for years to come, but [are] designed to leave the military capable of fulfilling U.S. defense strategy and defending the homeland against strategic threats.”<sup>3</sup>*

The military drawdown is moving highly trained and experienced men and women from the military to the private sector during one of the most challenging job markets since the great depression of 1929. The drawdown translates into an on-going challenge for our veterans in garnering paychecks after serving our nation valiantly.<sup>4</sup>

### *Veteran Unemployment*

The jobless rate for retiring and separating military officers and enlisted personnel is almost 3% higher than civilians experience most likely due to the systematic challenges, veterans face systemic challenges in their transition to the private sector.

According to a 2014 RAND report, *“Between 2000 and 2011, younger veterans were, on average, 3.4 percentage points more likely to be unemployed than similarly situated younger non-veterans.”<sup>5</sup>*

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<sup>3</sup> “Hagel Outlines Budget Reducing Troop Strength, Force Structure,” DOD News Feb 24, 2014 by Nick Simeone, American Forces Press Service

<sup>4</sup> “CEO of Gallup calls jobless rate 'big lie' created by White House, Wall Street, media,” February 05, 2015, FoxNews.com

<sup>5</sup> “Why Is Veteran Unemployment So High?” by David S. Loughran, Rand Corporation



Source: Statista, Department of Defense

According to a 2013 article in Time Magazine, the primary issue is that today's business leaders do not understand the value that veterans bring to the table.

*"This is one of the first generations of business leaders that largely didn't serve in the military, which poses real cultural barriers to understanding military skills and experience."<sup>6</sup>*

*"One of the main barriers to hiring veterans, from the perspective of businesses, is that they struggle to understand how military skills translate to increasing the bottom line."<sup>7</sup>*

In a 2012 survey of new veterans with Prudential, Inc., 60% of veterans reported that translating their military service to the civilian job market was a significant challenge.<sup>8</sup>

<sup>6</sup> "The Ground Truth on Veterans' Unemployment", Time, by Tom Tarantino, March 22, 2013

<sup>7</sup> Center for a New American Security, June 2012

<sup>8</sup> "The Ground Truth on Veterans' Unemployment," Time, by Tom Tarantino, March 22, 2013

From our work, we have seen only modest improvement in this problem across the board. Although this situation is slowly improving, veterans still face frustration transitioning into the private sector.

While the military recently introduced a mandatory weeklong employment workshop, the Transition Assistance Program (TAP), which is helping to close the employment gap, it struggles to help executive-level veterans.<sup>9</sup>

### MILITARY TRAINING AS A CATALYST FOR CYBERSECURITY CAREERS

While few military members have extensive training in computer science, all have a security mindset.

After highly publicized breaches of military networks, such as the Buckshot Yankee, WikiLeaks, and Snowden breaches, it was seen as an imperative that military members be vigilant with security of sensitive information.<sup>10</sup>

Required annual training has made all veterans aware of general cyber threats and threat actors. Almost all military members have held at least a Secret if not a Top Secret security clearance. Holding such a clearance means the veteran passed a thorough background check and was entrusted with information that would cause “serious damage” to national security if released.

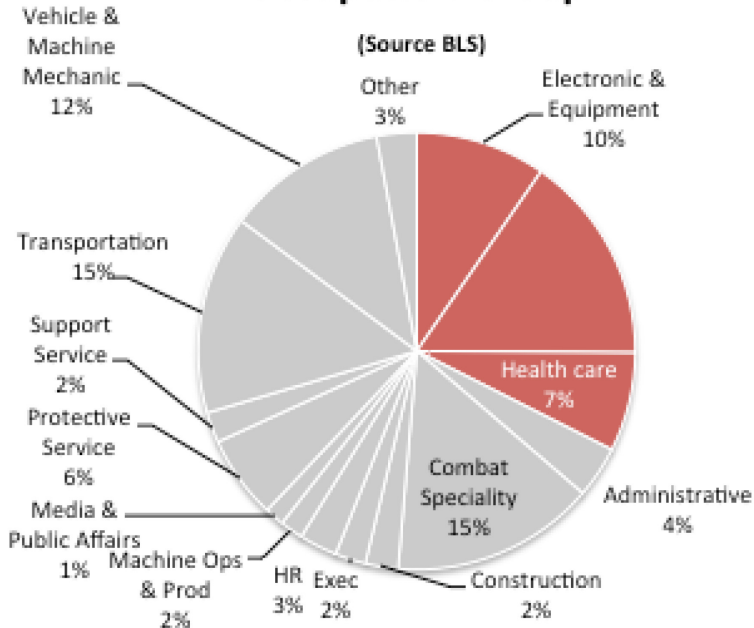
To support the military, over one-third of our nation’s military veterans have training in a variety of STEM disciplines.

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<sup>9</sup> <http://www.dol.gov/vets/programs/tap/>

<sup>10</sup> See e.g., [www.wired.com/tag/operation-buckshot-yankee/](http://www.wired.com/tag/operation-buckshot-yankee/);  
[www.reuters.com/article/2013/08/21/us-usa-wikileaks-manning-idUSBRE97J0JI20130821](http://www.reuters.com/article/2013/08/21/us-usa-wikileaks-manning-idUSBRE97J0JI20130821);  
<http://www.thedailybeast.com/articles/2014/02/06/snowden-still-outwitting-u-s-spies.html>

## Active Duty Military By Broad Occupation Group



Source: Bureau of Labor Statistics

Another third or more receive technical training in weapon delivery systems and support systems that augment mission readiness. The military also trains a number of commissioned officers and enlisted personnel working in specific technical disciplines requiring advanced degrees, including Ph.D.s., through the military and a variety of post-graduate universities.

In addition, a number of our veterans work side by side with industry and government technical and scientific personnel on projects that allow them to gain deep cybersecurity subject matter expertise.

## EDUCATIONAL OPPORTUNITIES AND THE GI BILL

Many of our veterans have the Montgomery GI Bill available for them to be retrained or enhance the skills that they currently have. Post-separation education can assist them in any skill mismatch engendered by military service. For example, according to Simon et al. (2009), almost one-third of enlisted veterans who separated between 1993 and 2000 made use of the Montgomery GI Bill benefits within the first two years of separation.

This is an opportunity to assist our exiting veterans to improve their skills and abilities by availing themselves of the benefits of the Montgomery GI Bill.

A critical area that many of these veterans can seek employment is in Science, Technology, Engineering, and Math (STEM) programs. Many of our post-secondary education systems are trying to attract our veterans into the STEM fields. There is a great need for many of our veterans to enter these fields to provide continued service and support to our nation. These needs were highlighted in a report to President Obama in 2012.

*“Economic projections point to a need for approximately 1 million more STEM professionals than the U.S. will produce at the current rate over the next decade if the country is to retain its historical preeminence in science and technology. To meet this goal, the United States will need to increase the number of students who receive undergraduate STEM degrees by about 34% annually over current rates. Currently the United States graduates about 300,000 bachelor and associate degrees in STEM fields annually.”<sup>11</sup>*

While separating service members may lack deep computer science backgrounds, almost all enlisted members and many officers have GI Bill benefits available to them. The GI Bill benefits will pay for certificate programs or even full four-year degrees in cybersecurity or other fields.<sup>12</sup>

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<sup>11</sup> Report to the President from The President’s Council of Advisors on Science and Technology: Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering and Mathematics; Feb 2012

<sup>12</sup> <http://www.military.com/education/gi-bill/new-post-911-gi-bill-overview.html>

Today, the Post-9/11 GI Bill benefits typically pay veterans a base salary and full tuition for 36 months of schooling. For veterans who have already completed some schooling before entering, or while serving in the military, the GI Bill can serve as a means to obtain a Master's degree or post-graduate certificates at no cost.

## INDUSTRY OUTREACH

Other ways that we can encourage our exiting veterans to enter the STEM field is to have policies enacted that will focus on stimulating employer demand for veterans. For example, a variety of federal agencies facilitate the job search process through job fairs, online job search services (e.g., Department of Labor's CareerOneStop program), and facilitating connections between service members and employers before separation (e.g., Army Partnership for Youth Success [PaYS]<sup>13</sup>). Explicit federal hiring preferences for disabled veterans and veterans of certain military operations as well as federal law barring discrimination against veterans (i.e., Uniformed Services Employment and Reemployment Rights Act) also operate on the demand side. The 2011 VOW to Hire Heroes Act includes a number of demand-side provisions, including tax credits for employers who hire veterans who have been unemployed for six months or more.

In addition to the robust education benefits available to many veterans, industry outreach is ubiquitous, enthusiastic, and well publicized.

Veteran jobs initiatives include the US Chamber of Commerce Foundation and Capital One's "Hiring 500,000 Heroes" program and JPMorgan Chase's "100,000 Jobs Mission." As their names imply, these are initiatives to hire 500,000 and 100,000 veterans respectively. Both programs met their goals ahead of schedule.<sup>14</sup> They have done this by encouraging hundreds of companies to commit to hiring

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<sup>13</sup> <https://www.armypays.com/INDEX.html>

<sup>14</sup> <http://www.uschamberfoundation.org/blog/post/hiring-our-heroes-capital-one-hit-major-milestone/42243>; [http://www.csrwire.com/press\\_releases/37673-100-000-Jobs-Mission-Hires-Over-200-000-Veterans](http://www.csrwire.com/press_releases/37673-100-000-Jobs-Mission-Hires-Over-200-000-Veterans)

veterans. Walmart, on its own, has committed to hiring 100,000 veterans over the next five years and made a pledge to hire any honorably discharged veteran.

The military has invested substantial time and energy into training Airmen, Soldiers, Sailors, and Marines to work hard in high-stress environments.

In essence, the military has pre-screened all applicants. In addition, by virtue of their honorable discharge, these veterans have demonstrated they are capable of performing at a satisfactory level in a rigorous job, and they have avoided misconduct and drug use.

Young separating veterans are in a position to go back to school and can take an entry-level job with a long productive future.

However, for executive-level members of the service, accustomed to compensation commensurate with their experience, starting back from square one is not a feasible option. To do so would be to leave their strongest attributes and work experience unutilized.

## THE OUTLOOK FOR EXECUTIVE LEVEL VETERANS

When we look at the job market for senior-level officers and enlisted personnel who have served over 20 years and held jobs at high levels of leadership, the situation is more complex. Career military members have carried heavy responsibilities and may have made life-and-death decisions; often they have led dozens or hundreds of people and overseen multimillion-dollar programs. Some find jobs as civilians in the Department of Defense or hire on with a defense contractor.

However, once outside the defense arena, opportunities that can leverage their vast body of experience and provide comparable compensation are much more difficult to find. Even a position that requires leadership or managerial experience, which retiring officers have in spades, will additionally require intimate familiarity with the employer's field.

When looking more specifically at the growing field of cybersecurity, senior service members will need to capitalize on all that they have learned through the military.

While senior officers may lack deep technology skills<sup>15</sup>, the military invests in training its workforce on cybersecurity.

Senior leaders, wherever they have served, are educated on the dangers of phishing and malware, cyber threat vectors, and the basics of information assurance and cybersecurity. They likely know more about cybersecurity than they think they do. They have also done risk management on a daily basis and have engaged in frequent exercises.

The military also invests in the latest technology, so members have worked with technological security devices, such as encrypted fiber optic connections, virtual private networks, two-factor authentication, and PKI certificates.

What brings this all together is formal, accredited coursework through education available locally and online. With some foresight, service members can easily complete their education before leaving the military. In addition, veterans can gain deeper, more specific and current knowledge of the latest cybersecurity trends by networking with professors and fellow students.

## HELPING EXECUTIVE LEVEL VETERANS TRANSITION INTO CYBERSECURITY CAREERS

Virtually all veterans have received extensive training, many of them achieving graduate and advanced degrees, having taken advantage of the outstanding educational programs offered during their tenure of service. Almost 95% of senior officers have earned advanced degrees and over a third of senior enlisted have at least a bachelor's degree.<sup>16</sup>

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<sup>15</sup> Senior officers from the class of 1990 were pre-World Wide Web and likely never took more than a typing course before entering the military.

<sup>16</sup> <http://www.afpc.af.mil/library/airforcepersonnel demographics.asp>

In addition, such training has not been offered solely to commissioned officers. Forbes contributor Shaun So asked the rhetorical question, “*Should a prior service enlisted veteran with both bachelors and masters degrees be passed over a leadership career path because they’re enlisted?*” He continued:

*Today’s soldiers, regardless of their ranks, are trained in some of the world’s most elite leadership courses. Furthermore, they are battle tested and capable of accomplishing seemingly impossible tasks, again, regardless of their rank. Yes, there are distinct differences between enlisted and officer leadership roles, however, I do not think that those differences should prevent an enlisted veteran candidate from future corporate leadership training opportunities.*<sup>17</sup>

## GLOBAL BUSINESS RESOURCES MILITARY TRANSITION PROCESS

Following the service drawdown from the Vietnam War, and despite extensive leadership experience and solid educational credentials one of the authors struggled in the job market. Because of this personal experience, he started a company in 1983 to focus on career counseling and placement for mid- to upper-level executives. With multiple offices, the company quickly grew into a significant player in the employment industry and surpassed industry averages for placement of executives into the marketplace.

Over the years of operation, the company pioneered innovative and exciting processes for successfully helping men and women of all ages and backgrounds, including veterans, enter the job market. We also provided consulting services for businesses and seminars and classes for career-centered applicants seeking advancement.

For the past 30 years, volatile changes in the job market, advances in supporting technologies, and our unique underlying knowledge base have driven us to re-energize our employment services under our not-for-profit company, Global Business Resources (GBR).

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<sup>17</sup> <http://www.forbes.com/sites/oracle/2015/02/09/how-your-organization-can-avoid-an-integration-debacle/>

GBR provides multiple resources for the veteran job seeker along with people who provide philosophical support in terms of research and concepts that are essential ingredients of our success equation.

We have found that using a multi-step process is a best practice in assisting veterans with accurately translating their military experiences into understandable skills that are recognized and valued by private sector hiring managers. These steps include:

- 1) Career Assessment with an expanded personal assessment process emphasizing skills analysis and transference. A part of this process is for the veteran to assess accurately and understand their skill sets developed from both experience and training during their service tenure. The challenge for the veteran is articulating these skills and abilities into meaningful and understandable civilian-equivalent skills. For those with fewer technical skills and training, a steeper challenge is how to leverage this training as a catalyst for transitioning into the private sector.
- 2) Mentoring and coaching are key ingredients for success in this continuously evaluated process. The mentor's role is to help the veteran as a skills translator. A mentor must understand the private sector and the wide range of the skills fostered by military training to successfully aid the veteran's transition. The mentor also needs to have an intimate knowledge of the various technical educational opportunities available to the veteran.
- 3) Market research to ensure we are staying in tune with market signals and making any adjustments to benefit the veteran client.
- 4) Self-employment workshops for veterans who prefer to establish and control their career paths. For certain technologies, product incubators are conducted to assist the veteran in the most difficult challenge of all, producing a successful business entity.
- 5) Soft skills development, including Emotional Intelligence training.

## USING EMOTIONAL INTELLIGENCE IN THE MILITARY TRANSITION PROCESS

Transitioning is a challenge that besets all human beings. Growing up in a military household, one is forced to transition into new schools, communities, churches, and ball teams. Some learn the necessary adaptation skills. For those who do not, they dread the process and are filled with anxiety.

For military personnel who already have gainful employment, going through the final months of service is a formality filled with trepidation of having to color-coordinate what they wear to work post military life. To those without secure employment, life outside of military service can be filled with anxiety, wondering how finances will work and how to handle the day-to-day routine no longer regulated by the government.

Another concern is the civilian spouse who is accustomed to running the household in the absence of his/her military significant other. The family dynamics will be disrupted upon the veteran's return. Determining how the roles will be filled is as challenging as finding new employment.

Research in the field of Emotional Intelligence (EI) has found that up to 20% of a person's overall success in life is IQ or technical skills related compared to 47% of their overall success that is directly related to social skills.<sup>18</sup>

EI is defined as “*a set of emotional and social skills that influence the way we perceive and express ourselves, develop and maintain social relationships, cope with challenges, and use emotional information in an effective and meaningful way.*”<sup>19</sup>

People with high EI are skilled at specific emotional competencies and have learned social capabilities that result in outstanding work performance.<sup>20</sup>

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<sup>18</sup> Stein & Book, 2011

<sup>19</sup> Multi Health Systems, 2013, p. 2

<sup>20</sup> Goleman, 1998

In a study called the GLOBE Project, a study conducted by 160 social scientists that examined the interrelationships of societal and organizational cultures and organizational leadership.<sup>21</sup> They studied 60 cultures, which represented all of the major regions of the world and they found that EI transcended cultures, nations, and politics. The GLOBE Project highlighted that EI is not just a U.S. fad or a culturally indigenous belief structure (House, 1998). Dysfunctional personality characteristics often are hidden from view when considering employees through the lens of technical or cognitive skills.<sup>22</sup>

The US Air Force used the EI-i assessment to select recruiters found the ability to predict successful recruiters increased by three fold.<sup>23</sup> Their immediate gain was \$3 million annually. When the data was submitted to the Government Accounting Office (GAO), the Secretary of Defense ordered all branches of the armed forces to adopt the EI process for recruiters.

Research by the Center for Creative Leadership found that the primary cause executives become derailed are deficits in emotional competency. The three top EI skills that suffer are change management, team dynamics, and interpersonal relationships.<sup>24</sup>

Supervisors in a large manufacturing plant were given training in EI competencies such as listening and problem solving. After the training,

- Lost-time accidents were reduced by 50%
- Formal grievances were reduced from 15% per year to 3% per year
- Plant exceeded productivity goals by \$250,000<sup>25</sup>

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<sup>21</sup> As reported by House, 1998

<sup>22</sup> Nelson & Hogan, 2009

<sup>23</sup> Cherniss, 1999

<sup>24</sup> Cherniss, 1999

<sup>25</sup> Pesuric & Byham, 1996

Porras and Anderson conducted a similar study with supervisory training.<sup>26</sup> Production increased 17% when supervisors were given EI training compared to no increase for supervisors not given EI training.

Introducing EI training to transitioning soldiers will not only aid in their search for gainful employment but also increase the probability of keeping their family relations intact.<sup>27</sup> EI has shown to enhance the probability of a happier marriage and introducing EI into parenting increases the probability of children having the social skills necessary to cope with their daily challenges.<sup>28</sup>

## SUMMARY

Our country depends on the future of our promising military veteran leaders.

*Academia, Government, and Industry must do everything they can to court and nurture veterans regardless of their rank, because, to quote Shaun So again, leadership is, “a process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task.*

*What is the only prerequisite? Being a person. Everything else is gravy.<sup>29</sup>”*

Do these biases continue to persist? Yes, and in an ever-wider swath within the private hiring sector as more and more veterans are released into the job market. We agree with Mr. So’s contribution and firmly disagree with these career segregation policies. However, this problem has been persistent for several decades and will not be solved anytime soon.

For this reason, rather than attack the system, we advocate a leveling of the perception of veterans’ qualifications by setting the stage for a new and exciting career path. We can transition veterans’ military careers into cybersecurity careers

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<sup>26</sup> Porras and Anderson, 1981

<sup>27</sup> Gottman, 2002; Gottman & Silver, 1999

<sup>28</sup> Gottman & DeClaire, 1998

<sup>29</sup> <http://www.forbes.com/sites/oracle/2015/02/09/how-your-organization-can-avoid-an-integration-debacle/>

by connecting academic opportunities, the government, and industry. Such efforts will level the playing field for skilled talent while opening up new and exciting cybersecurity careers paths for veterans.

Our veterans already have significant STEM skills, training, experience, and expertise, and have earned the right to update and certify their knowledge to meet private sector employment opportunities. Though this concept makes sense at a macro level, each case is unique and competent execution will require one-on-one counseling and mentorship that takes into account the multiple variables of each veteran's situation.

### ABOUT GBR

GBR is associated with the University of Washington Tacoma Center for Information Assurance and Cybersecurity. Several programs are offered by the Center of Excellence that provides undergraduate and graduate programs along with certifications in risk assurance and cybersecurity.

Our program is but one tool for the veteran to amplify skills and use military training as a catalyst for accomplishing a successful transition into valuable and rewarding cybersecurity careers in the private sector.

## REFERENCES

- [1] Cherniss, C. (1999). The business case for emotional intelligence. *Consortium for Research on Emotional Intelligence in Organizations*, 4, 5.
- [2] Goleman, D. (1998). *Working with emotional intelligence*. Retrieved from <http://books.google.com/>
- [3] Goleman, D. (2005). *Emotional intelligence*. New York, NY: Bantam Books.
- [4] Gottman, J. (2002). *The Relationship Cure: A 5 Step Guide to Strengthening Your Marriage, Family, and Friendships*. Three Rivers Press.
- [5] Gottman, J., & DeClaire, J. (1998). *Raising an emotionally intelligent child*. New York, N.Y.: Simon & Schuster.
- [6] Gottman, J., & Silver, N. (1999). *The Seven Principles for Making Marriage Work: A Practical Guide from the Country's Foremost Relationship Expert* (1ST ed.). Crown.
- [7] House, R. J. (1998). A brief history of GLOBE. *Journal of Managerial Psychology*, 13(3-4), 230–240. doi:10.1108/02683949810215048
- [8] Multi Health Systems. (2013). *EQ user's handbook*. MHS. Retrieved from [ei.mhs.com/](http://ei.mhs.com/)
- [9] Nelson, E., & Hogan, R. (2009). Coaching on the Dark Side. *International Coaching Psychology Review*, 4(1), 9–21.
- [10] Pesuric, A., & Byham, W. (1996). The new look in behavior modeling. *Training and Development*, 25–33.
- [11] Porras, J. I., & Anderson, B. (1981). Improving managerial effectiveness through modeling-based training. *Organizational Dynamics*, 9(4), 60–77.
- [12] Stein, S. J., & Book, H. E. (2011). *The EQ edge: Emotional intelligence and your success*. Mississauga, ON: Jossey-Bass.