

Spring 2021

Dec 06, 2024

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Industry Study

Final Report

*Strategic Human Capital*



**The Dwight D. Eisenhower School for National Security and Resource Strategy  
National Defense University  
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# STRATEGIC HUMAN CAPITAL INDUSTRY STUDY 2021

## Abstract

During the period January-May 2021, the Eisenhower School's Strategic Human Capital Industry Study conducted a comprehensive assessment of the importance and impact of human capital on U.S. and international industrial, economic, and strategic competitiveness. Spanning multiple industries, firms, and countries, both defense-related and non-defense-related, the investigation addressed both routine and emergency conditions for purposes of understanding the implications of converting human capital from one to the other. The participants in the inquiry engaged numerous defense, governmental, non-governmental, industry, academic, and advocacy organizations to determine current trends in advancing and elevating human capital, talent management, and workforce development. To complement these engagements, the members of the group conducted analyses of the human capital ecosystem, its governing environment, its relationship to national security, its impact on U.S.-China-Russia Great Power Competition, and the practices of selected firms and countries.

Four overarching themes of widespread, enduring importance emerged: credentialing; diversity, equity, and inclusion; technology and data analytics; and the future of work. Treatment of these particular issues produced a set of policy recommendations for advancing U.S. competitiveness, while at the same time elevating understanding of Strategic Human Capital.

## Participants

Ms. Megan Bartholomew, U.S. Department of State  
Lieutenant Colonel (P) Alfred Boone, U.S. Army  
Captain Willie Brisbane, U.S. Navy  
Lieutenant Colonel (P) Douglas Curtis, U.S. Army  
Colonel Myroade De Leon, Philippines  
Colonel Robert Dinan, U.S. Army  
Colonel Gabriel Garcia Garza, Mexico  
Ms. Niki Glassmire, International Business Machines Corporation  
Lieutenant Colonel Michael Halligan, U.S. Marine Corps  
Mr. Khalid Hamidi, Defense Logistics Agency  
Lieutenant Colonel Joshua Hawkins, U.S. Air Force  
Ms. Crystal Moore, Department of the Air Force  
Lieutenant Colonel Jennifer Parker, U.S. Marine Corps  
Lieutenant Colonel (P) Michelle Schaumburg, U.S. Army  
Ms. Terri Shaffer, General Services Administration  
Colonel Sabrina Thweatt, U.S. Army

Dr. Gregory Foster, Faculty, Industry Study Lead  
Mr. Mark Foulon, Faculty, Industry Analysis  
Mr. James McGrory, Faculty, Defense Intelligence Agency Chair  
Ms. Sarah Mironcow, Faculty, Department of Homeland Security Chair

## **Organizations Engaged**

### **Federal Government**

American Workforce Policy Advisory Board  
Centers for Disease Control and Prevention, Chief  
Human Capital Officer  
Defense Business Board  
Department of Defense, Chief Civilian Human  
Capital Officer  
Department of Defense, Military Personnel Policy  
Department of Homeland Security, Deputy Chief  
Human Capital Officer  
Department of State, Deputy Chief Human  
Capital Officer  
Federal Emergency Management Agency, Chief  
Human Capital Officer  
Office of the Director of National Intelligence,  
Chief Human Capital Officer  
U.S. Agency for International Development,  
Chief Human Capital Officer  
U.S. Bureau of Labor Statistics  
U.S. Customs and Border Protection  
U.S. Government Accountability Office  
U.S. Office of Management & Budget

### **U.S./Allied Military**

Allied Command Transformation (NATO)  
U.S. Africa Command J-1  
U.S. Central Command J-1  
U.S. Cyber Command J-1  
U.S. European Command J-1  
U.S. Indo-Pacific Command J-1  
U.S. Northern Command J-1  
U.S. Space Command J-1  
U.S. Special Operations Command Europe J-1

### **International Organizations**

Embassy of Switzerland in the United States  
German-American Chamber of Commerce Midwest  
International Labor Organization  
International Organization for Migration  
International Organization for Standardization  
Organization for Economic Cooperation & Development  
United Nations, Department of Sustainable  
Development Goals  
United Nations, Department of Operational Support  
United Nations, Department of Peacekeeping Operations  
United Nations Development Program (Crisis Bureau)  
United Nations Educational, Scientific, and Cultural  
Organization  
United Nations Global Compact  
United Nations High Commissioner for Refugees  
World Bank  
World Bank Moscow Office (Russia Human Capital)  
World Business Council for Sustainable Development

### **Business/Human Resources Community**

AFL-CIO  
Business Roundtable  
Capital CoLab/Greater Washington Partnership  
Center for Human Capital Innovation  
Jobs for the Future  
National Association of Colleges and Employers  
National Association of Manufacturers  
National Federation of Independent Business  
Society for Human Resource Management

### **Private Firms**

ABB Group  
BAE Systems  
Booz Allen Hamilton  
CACI International  
Chemonics  
Daimler AG  
Deloitte Touche Tohmatsu Ltd.  
Fluor  
IBM Corporation  
KBR, Inc.  
Korn Ferry, Inc.  
ManTech  
McKinsey & Company  
MITRE Corporation  
PepsiCo  
SAIC  
Veolia

### **Academic Institutions/Think Tanks/Other**

Committee for Economic Development  
Columbia University (Sustainable Development)  
Duke University (China Human Capital)  
Georgetown University (U.S. Labor Market)  
Montgomery College  
Northern Virginia Community College  
Thomas Jefferson High School for Science/Technology  
University of Colorado–Denver (Talent Development)  
Washington Bach Consort (Talent)  
World Central Kitchen (Mobilization)

# Strategic Human Capital Word Cloud



*This Word Cloud represents a compilation of the issues, concerns, and insights identified in the Strategic Human Capital Industry Study’s engagements with the 75 individuals and organizations listed on the preceding page. As with all such representations, the larger and bolder the word appears, the more often it was mentioned by authorities in the field.*



## Starting With the Basics: Defining Human Capital

- “A labour force, or the skills it possesses, regarded as a resource or asset.”  
*Oxford English Dictionary*
- “The skills, knowledge and experience of a person or group of people, seen as something valuable that an organization or country can make use of.”  
*Oxford’s Learners Dictionaries*
- “Employees, and all of the knowledge, skills, experience, etc. that they have, which makes them valuable to a company or economy.”  
*Cambridge Business English Dictionary*
- “The knowledge, skills, and health that people accumulate over their lives, enabling them to realize their potential as productive members of society.”  
*World Bank*
- “The knowledge and skills people possess that enable them to create value in the global economic system.”  
*World Economic Forum*
- “The knowledge, skills, competencies and other attributes embodied in individuals or groups of individuals acquired during their life and used to produce goods, services or ideas in market circumstances.”  
*Organization for Economic Cooperation & Development*
- “The production factors, coming from human beings, we use to create goods and services. It comprises all our knowledge, abilities, talents, skills, intelligence, training, judgment, and experience.”  
*Market Business News*

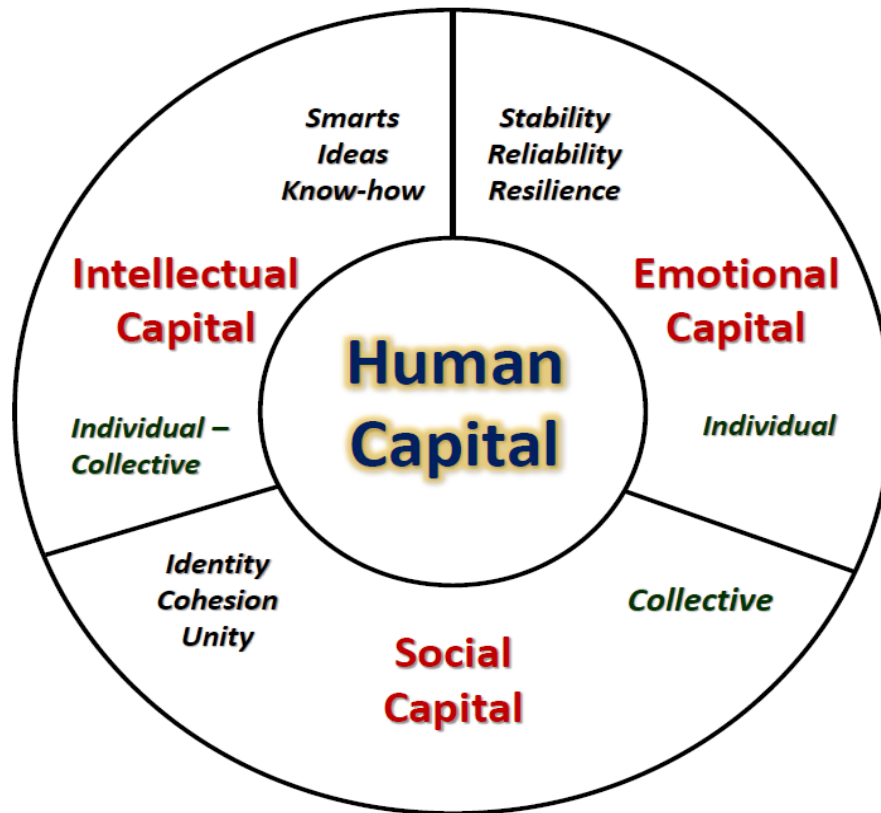
### **THE STRATEGIC HUMAN CAPITAL INDUSTRY STUDY: AN INTRODUCTION**

Strategic Human Capital (SHC) is fundamentally a “domain,” not an industry per se. It cuts across all institutions, organizations, and industries, public and private, national and international. Human capital is (a) an element and an instrument of national power, (b) a key contributor to public- and private-sector organizational performance, (c) a vital component of industrial and economic performance, (d) an important indicator of strategic competitiveness, and (e) a central element in America’s mobilization posture. Strategic human capital is the aggregation and application of workforce knowledge, skills, abilities, talents, experience, and expertise to strategic aims and concerns.

The Strategic Human Capital Industry Study (IS) could be thought of as an industry of industries that cuts across all the industries and domains constituting the Eisenhower School IS program. It focuses on (a) the various public- and private-sector stakeholders, national and international, who supply, demand, and utilize human resources in the conduct of routine and emergency national security affairs; (b) the national and international conditions and trends that affect and are affected by human resource availability and capabilities in the realm of national security, writ large; and (c) the actual supply of and demand for human resources and capabilities across sectors under routine and emergency national security conditions.

The aim of the Strategic Human Capital Industry Study has been to assess the impact of human capital in contributing to and determining U.S. and international industrial, economic, and strategic

competitiveness. Figure 1 depicts the constituent elements of human capital, as distinct from physical and financial capital.



**Figure 1. The Constituent Elements of Human Capital**

**BOTTOM LINE UP FRONT**

Four key themes have emerged from this inquiry: individual credentialing; diversity, equity, and inclusion (DE&I); technology and data analytics; and the future of work. These themes have prompted the following policy recommendations:

- **Individual Credentialing:** The United States should reform Title IV federal student aid; emphasize skills-based credentials (competencies) rather than traditional academic degrees; and accelerate the time it takes to get an individual to competency through on-the-job upskilling, thereby leading to increased profitability and competitiveness.
- **DE&I:** The United States must close its educational achievement gap by reallocating resources to produce equal educational opportunities for all children. Education and equality must be considered matters of strategic national security importance. This will call for comprehensive, concentrated federal oversight to ensure that educational reform is elevated above individual state preferences.
- **Technology and Data Analytics:** Chief human capital officers (CHCO) are – or should be – central to strategic decision making in all organizations, public and private. CHCOs should use data analytics to replace repetitive managerial functions of managers, focus on outcome rather than input measures, facilitate workforce modeling and predictions, and enable truly strategic decisions leading to increased productivity, profitability, and competitiveness.
- **Future of Work:** Immigration reform is essential to increase the number of skilled employees in the U.S. workforce, who in turn can enhance productivity, profitability, and competitiveness.

Companies must recognize the value of upskilling their employees in general and providing digital skills training in particular, especially since many, if not most, future jobs will demand digital literacy. By the same token, hybrid work environments are likely to continue in the aftermath of the Covid-19 pandemic; accordingly, for telework-compatible jobs, remote work and training will be necessary for leaders and employees. Additionally, as on-demand or “gig” work continues to expand, typical employer-provided benefits such as retirement, healthcare, and unemployment insurance must receive high-priority attention as objects of change in national policy.

## METHODOLOGY

In conducting this inquiry, the Strategic Human Capital IS conducted in-depth research, using authoritative source material from recognized experts, on a full range of topics related to human capital, human resources, manpower, personnel, talent management, workforce development, labor practices and standards, and the future of work and the workplace. This research provided an intellectual foundation for online engagements with the 75 individuals and organizations listed above (Organizations Engaged).

A separate Industry Analysis course complemented the core work of the IS by providing the members of the group with concepts, tools, and frameworks for assessing industry structure, firm conduct, firm and industry performance, and U.S. government policies. This provided the basis for investigating the operational and financial performance of four of the top five defense contractor firms: Lockheed Martin, General Dynamics, Northrop Grumman, and Raytheon/United Technologies.

Each member of the IS undertook, as a major role, an individual research effort on an assigned topic designed to (a) highlight a particularly important dimension of comparative strategic human capital assessment and (b) feed directly into this group report. Topics included the nature and importance of human capital, the link between human capital and security, and the challenges posed by the governing domestic and international environment, among others. Eight members of the group investigated the human capital practices and performance of a private firm that is a major defense and government contractor and a foreign country generally recognized by authoritative sources (e.g., the World Bank, the World Economic Forum) for its human capital performance. The methodology is depicted in Figure 2 below.

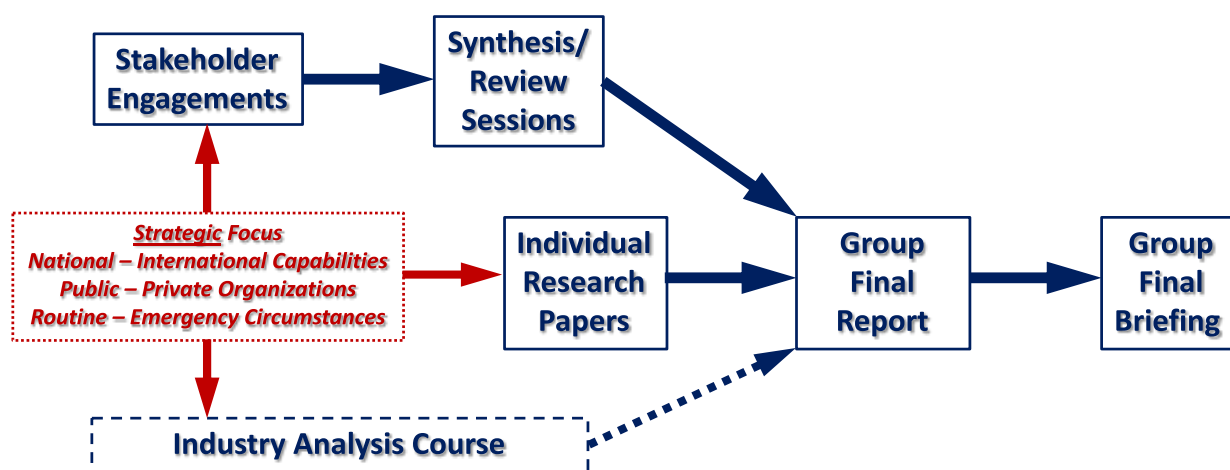


Figure 2. Methodology



## DEFINING HUMAN CAPITAL UP: STRATEGIC HUMAN CAPITAL

The SHC domain cuts across every institution or organization, public or private, and potentially serves as the most valuable kind of capital at the disposal of organizations and countries. **Capital** is something measured in tangible terms of monetary worth or assets such as machinery, equipment, or buildings reported on financial statements.<sup>1</sup> All create value for an organization, and economists measure capital as the assets that can enhance one's ability to perform economically useful work and increase value generation.<sup>2</sup> The most common types of capital in economics include financial capital and physical capital. Human capital must be considered a cross-cutting domain, potentially the most valuable asset but also one that is more challenging to measure.

**Human capital** is used by organizations to perform services or create products that ultimately generate revenue and other valuable outputs. One authoritative valuation expert, addressing the business context, states: "The value of a business is the function of how well the financial capital and the intellectual capital are managed by the human capital. You'd better get the human capital part right."<sup>3</sup>

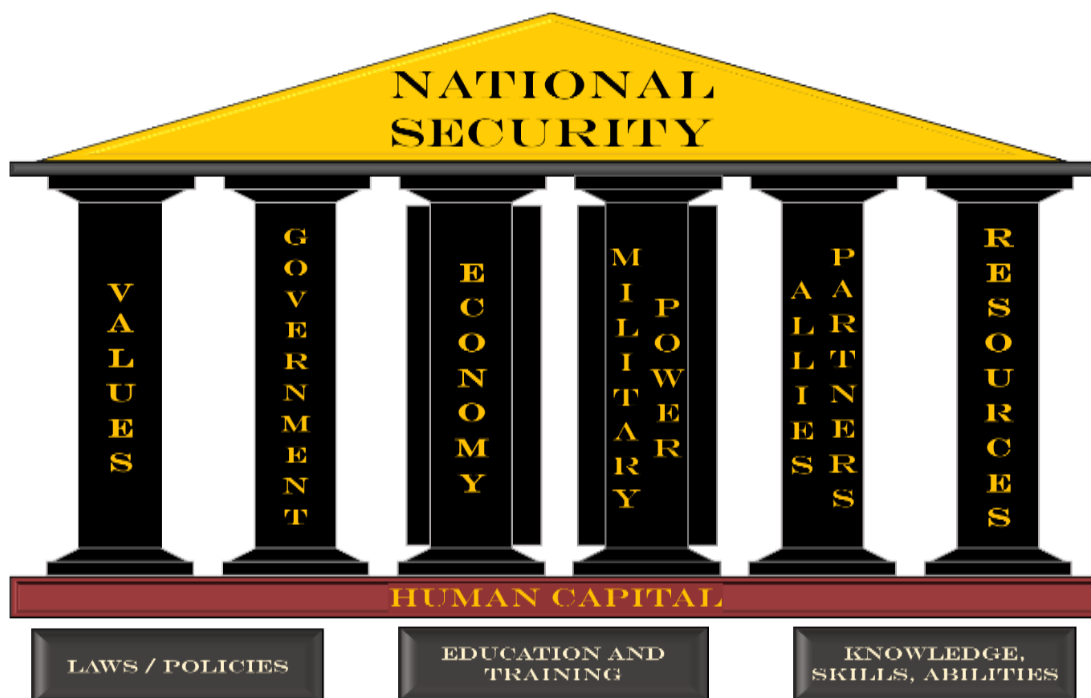
Education and experience remain two of the most important forces shaping human capital, especially when considering something as important and complex as national security. Unlike the more "concrete" nature of financial capital, human capital creates intangible measures of value and productivity for organizations and businesses. Moreover, companies don't own people the way they own other assets, thus making the intellectual skills and talents of humans in the workforce especially valuable.<sup>4</sup>

The strategy of investing in and/or advancing human capital in the workplace ties directly to private-sector profitability or public-sector customer satisfaction, as well as an organization's ability to recognize talent during the hiring process. Organizations must also develop a strategy that fosters, grows, nurtures, and explicitly recognizes individual and collective workforce talents to retain, retrain, or grow that workforce. A **human capital strategy**, especially one uniquely developed for an organization, provides the ability to measure and increase human productivity while meeting current requirements and future goals.

By way of definitional distinction not commonly recognized or acknowledged by practitioners in the field, the concept of **Strategic Human Capital** intended here concerns the management of human capital for strategic purposes, in distinct contrast to the strategic management of human capital (the more common semantic construction).

## LINKING HUMAN CAPITAL AND SECURITY: THE ULTIMATE RESOURCE

National security, in the view of one authoritative source, is built upon seven pillars: values, government, physical resources, the economy, allies and partners, military power, and human capital (see Figure 3 below).<sup>5</sup> Since the U.S. emerged as a post-World War II superpower, government policymakers have invariably emphasized leveraging physical capital to achieve national security objectives. Unfortunately, less attention has been devoted to understanding the value human capital plays in enabling the United States to achieve its strategic aims.<sup>6</sup> As both an element (building block) and an instrument (tool) of national power, human capital is the ultimate cornerstone of national security: the aggregation and application of workforce knowledge, skills, abilities, talents, experience, and expertise for strategic purposes.<sup>7</sup>



**Figure 3. Human Capital as Bedrock of National Security**

Generally, national security is considered principally a defense function, focused on the pursuit and protection of national interests. On the other hand, there are those like Dr. Sheila Ronis, who argue persuasively that national security includes “anything that adds to the strength of the Nation”: e.g., schools and educational programs that create a knowledgeable citizenry and encourage lifelong learning. Investments in science, engineering, research and development, technological innovation and, most importantly, a strong economy are essential to a global superpower.<sup>8</sup> Such characterizations make a strong case that national security in the 21<sup>st</sup> century will require significant grassroots investment in human capital as a defining element.

The continuing ability to attract and retain foreign-born talent remains, as it traditionally has been, a unique source of competitive advantage for the United States. This should remain a national strategic priority.<sup>9</sup> International students and skilled migrants are attracted to America’s values, freedoms, and opportunities to better themselves by contributing to American society; through integration, they have a role in transforming and advancing both the economy and the culture. As of 2017, first-generation immigrants and their children founded almost half of Fortune 500 companies, and immigrants accounted for twenty-five percent of all new high-tech companies between 2006 and 2012.<sup>10</sup> International students and skilled immigrants have created opportunities for the U.S. to enhance specialized areas like science, technology, engineering, and mathematics (STEM), accounting for forty five percent of STEM undergraduates.<sup>11</sup> Additional research indicates that most foreign-born employees with advanced degrees have earned their higher education in this country and have chosen to remain after they graduate.<sup>12</sup> Yet, recent experience has shown that the U.S. struggles to retain foreign talent due to current immigration laws and policies.

### **THE STRATEGIC ENVIRONMENT: FOUR DOMINANT FORCES**

To craft a robust strategy that enhances national human capital management, there must be an examination of key structural forces and trends impacting human capital to develop policies that enable

the U.S. to adapt to and benefit from the strategic environment. Four dominant forces, in particular, dominate the SHC environment today: changing demographics, climate change, rapid technology development and innovation, and economic shifts.<sup>13</sup>

**Demographic Changes.** Domestic and international businesses and governments are experiencing demographic changes resulting in economic opportunities and challenges.<sup>14</sup> Slowing population growth and an aging population will result in fewer workers and a greater percentage of older employees in the workforce. In many developed countries, individuals over the age of 65 will reach 25 percent of the total population by the year 2040, compared to 15 percent in 2010.<sup>15</sup> This will contribute to higher social security and healthcare costs. Conversely, developing countries in South Asia, South America, the Middle East, and North Africa expect larger working-age populations in the future.<sup>16</sup> These demographic shifts signal potential productivity challenges for countries like China that have rapidly aging populations.

Demographics will also be influenced by potentially large-scale migration during the next 20 years, driven by economic incentives for some and, for others, the avoidance of religious persecution, social injustice, and crime. As a result, countries faced with aging workforces may be more open to welcoming migrants. According to the UN, European countries had the largest total number of migrants, roughly 70 million immigrants crossing the border during one recent period.<sup>17</sup> Whatever might be said about the burdens of such developments, this influx of migrants permits nations to acquire human capital talent that can contribute to increased productivity and economic growth.

**Climate Change.** The second structural force molding the future strategic environment is climate change. Rising temperatures and extreme weather patterns are likely to aggravate food and water resources, and recent studies have shown sometimes alarming increases in the frequency of climate-induced disease.<sup>18</sup> Climate change has precipitated increased migration due to rising sea levels, heat waves, and extreme weather.<sup>19</sup> Though such climate-induced movement usually tends to be temporary, recurring cases can lead to more permanent migration.

**Technology.** Rapid technological innovation is a third structural force transforming the SHC environment. Artificial intelligence, increased automation, and the collection and storage of data present both opportunities and challenges for public- and private-sector organizations.<sup>20</sup> As a result, countries will compete to develop emerging technologies, acquire the best human talent, and create an environment that sparks innovation.

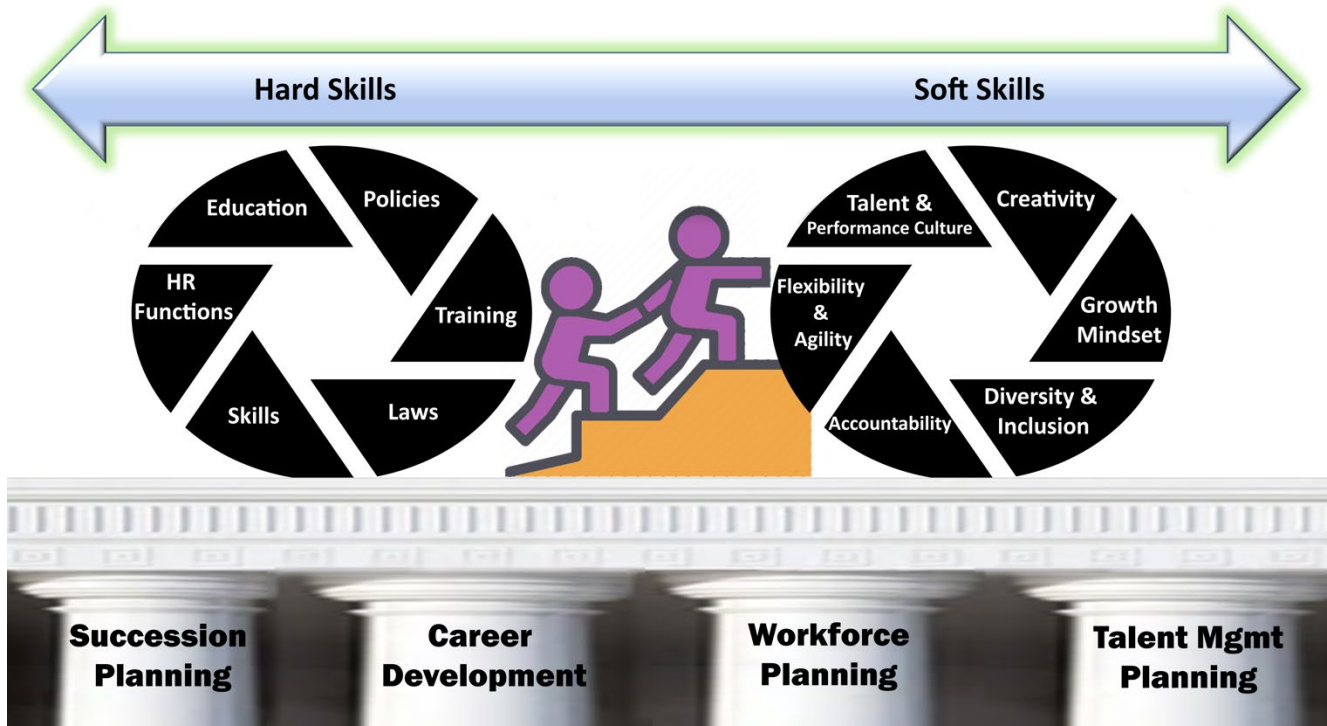
**Economic Shifts.** Economic shifts represent a fourth structural force influencing SHC. As borrowing continues, political debates over the national debt remain heated and even a source of prolonged inaction. The global trade environment will likely become more fragmented due to limited progress in global trade agreements.<sup>21</sup> Additionally, new regional and bilateral agreements can capture rules and protocols not covered under the World Trade Organization. Lastly, the projected decrease in manufacturing jobs in the next two decades is likely to place pressure on governments of manufacturing-dependent emerging economies.<sup>22</sup>

## THE SHC ECOSYSTEM: STAKEHOLDERS AND CONNECTIONS

The SHC ecosystem is a complex, overlapping network of stakeholders and relationships (see Figure 4). Organizational and business strategies focus on results-driven objectives and goals. To succeed, a SHC framework must align with the grand strategy of an organization while remaining nested and providing supplemental strategies. With leadership enabling the workforce, setting the performance and workplace culture, and exploiting talent across an industry, the common themes of providing a solid foundation for SHC include succession planning, career development, workforce planning, and talent management planning. The foundation shown at the base of Figure 4, coordinated both internally and

externally, generates a workforce that continually meets requirements and displays the application of both hard and soft skills.

An engaged, motivated workforce aligned to organizational strategy not only increases productivity and accountability but also improves recruitment, retention, communications, and marketing within and between organizations. The four recurring attributes of a strong foundation for the SHC ecosystem also enable a culture of learning, growth, creativity, and diversity, equity, and inclusion. While laws and policies frequently drive organizational requirements and decisions, effective SHC built on a strong foundation provides the flexibility and agility to adapt to national and global issues.



**Figure 4. Portraying the SHC Ecosystem**

The external forces that drive human capital development range from experiences in childhood education, technical training opportunities, community colleges, universities, exposure to culture or languages, and the inherent set of moral values and personality traits acquired over time. Whether at the national or global level, education gained through formal training and experiences impact the pathways and availability of talent to industries. The time required to produce and develop talent, when considering external forces, takes decades and sometimes an entire generation to innovate.

U.S. educational goals over the last decade have focused consistently on moving American children from the middle to the top of international rankings in science, math, and engineering, preparing STEM teachers, producing one million more STEM college graduates by 2023, and broadening participation and success in STEM fields for women and underrepresented minorities.<sup>23</sup>

The synchronization of key players across the U.S. government and industry does not always generate the synergy required to advance SHC. While public-private partnerships exist across the nation, they are limited but potentially can expand with improved government policy and incentives. However, two key players changing the SHC landscape on the international stage include the United Nations and World Bank. In 2015, the member states of the UN agreed to 17 Sustainable Development Goals (SDGs) that, executed over time (to the Year 2030 and even beyond) and in synchronization, have provided a shared blueprint for peace and prosperity the world over.<sup>24</sup>

In relation specifically to human capital, the SDGs contribute to improving quality of life for people resulting in increased contribution and production over time whether in villages, communities, regions, nations, or states. The common global language of the SDGs unites countries that otherwise see each other as strategic competitors, and it also enables allies and existing partners to work together. The World Bank seeks, in turn, through its Human Capital Project, to accelerate more and better investments globally in people for greater equity and economic growth. With data available for 174 countries, the measurement of human capital using the Human Capital Index and developmental indicators enables investors and global leaders to understand vulnerable spots in the world and opportunities to invest, especially with regard to health security, education, hunger, and infrastructure development.<sup>25</sup>

Using demographics as an accurate measure for predicting future requirements, projections show that over the next 40 years the growth in the U.S. labor force will come from immigrants and their children. The health of the economy will increasingly rely on this critical population to fill skilled jobs. This, in turn, will require community involvement starting with the recognition of how vital immigrants are to our workforce.<sup>26</sup>

In some communities, barriers as simple as language, understanding the needs within the labor market, searching for jobs, or transferring professional licenses or credentials across national borders have proven challenging for immigrants. Even U.S. citizens working as teachers, physicians, or lawyers face barriers to free movement when they cannot easily transfer their licenses or credentials between states. Policy innovations, even beyond immigration policy, can open doors to increased human capacity and opportunity using such vehicles as targeted government grants.

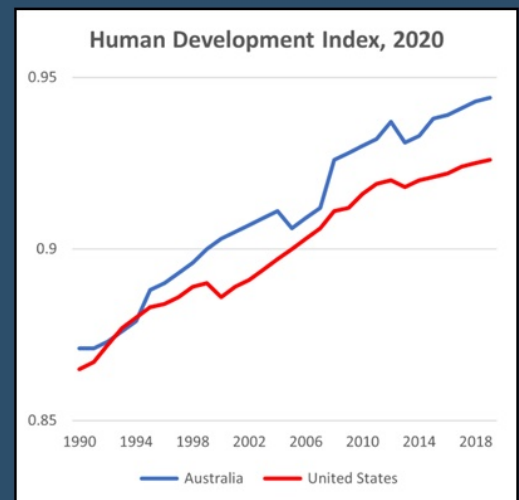
## Taking a look “down under”

Australia is the 6th largest country in the world with 25.7M people and is ranked #8 out of 187 countries in the UN Development Programme’s 2020 Human Development Index (HDI). More than 17M people live in large cities such as Canberra, Melbourne, and Sydney.



This significantly facilitates the Australian government’s ability to provide Education, Healthcare, and Public Security. The graphic below highlights both the Human Development Index of Australia and the United States.

The below graph depicts Australia’s HDI progression since 1990, now outranking the U.S. With its successful human capital development and strategic geographic position, Australia continues to offer to its already strong US partnership, countering any regional threats posed by China.



Australia ranked 16/174 countries by World Bank Human Capital Index

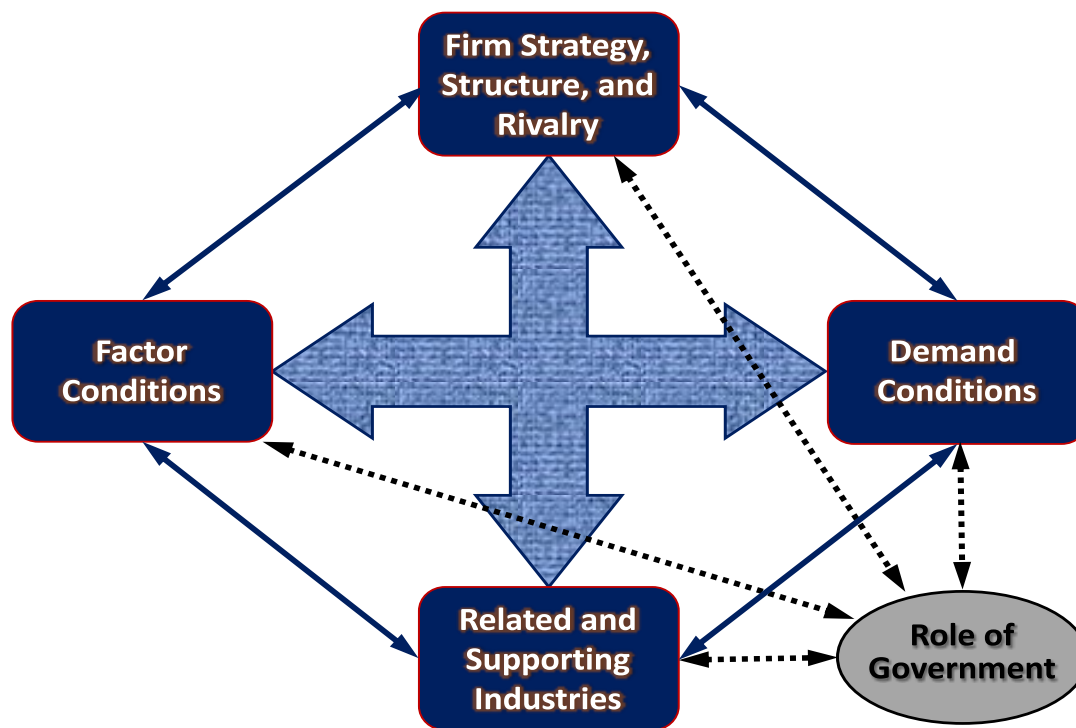


## COMPETITIVE SHC ASSESSMENT: THE U.S. AND ITS GREAT-POWER COMPETITORS

Human capital is, arguably or not, the most critical factor in achieving sustained economic growth. Countries capable of creating favorable conditions for continuous human capital growth and innovation have almost unlimited potential for achieving global competitive advantage and economic prosperity.

Harvard University's Michael Porter formulated his Diamond Model (also known as the Theory of National Competitive Advantage of Industries) to explain why certain industries within a particular nation are competitive internationally. Because Strategic Human Capital is a domain, not an industry per se, the Porter Diamond offers only partial explanatory value for assessing human capital as a source of strategic advantage for the United States vis-à-vis others. This assessment thus applies the Porter Diamond through a human capital lens, rather than an economic lens, by considering factors that influence any country's ability to create sustained human capital competitive advantage.

Porter asserts that when domestic conditions favorably support four interrelated and mutually reinforcing factors (factor conditions; demand conditions; related and supporting industries; and firm strategy, structure and rivalry), nations create systemic competition and pressure to innovate, providing opportunities for industries to achieve and sustain global competitive advantage.<sup>3</sup> Ultimately, to enable sustained industry competitive advantage, governments can apply the framework to craft national policies that don't directly intervene, but act as a "catalyst or challenger," allowing the four mutually reinforcing factors to work together to raise firm competitive capabilities (see Figure 5 below).<sup>5</sup>



**Figure 5. The Porter Diamond Model**

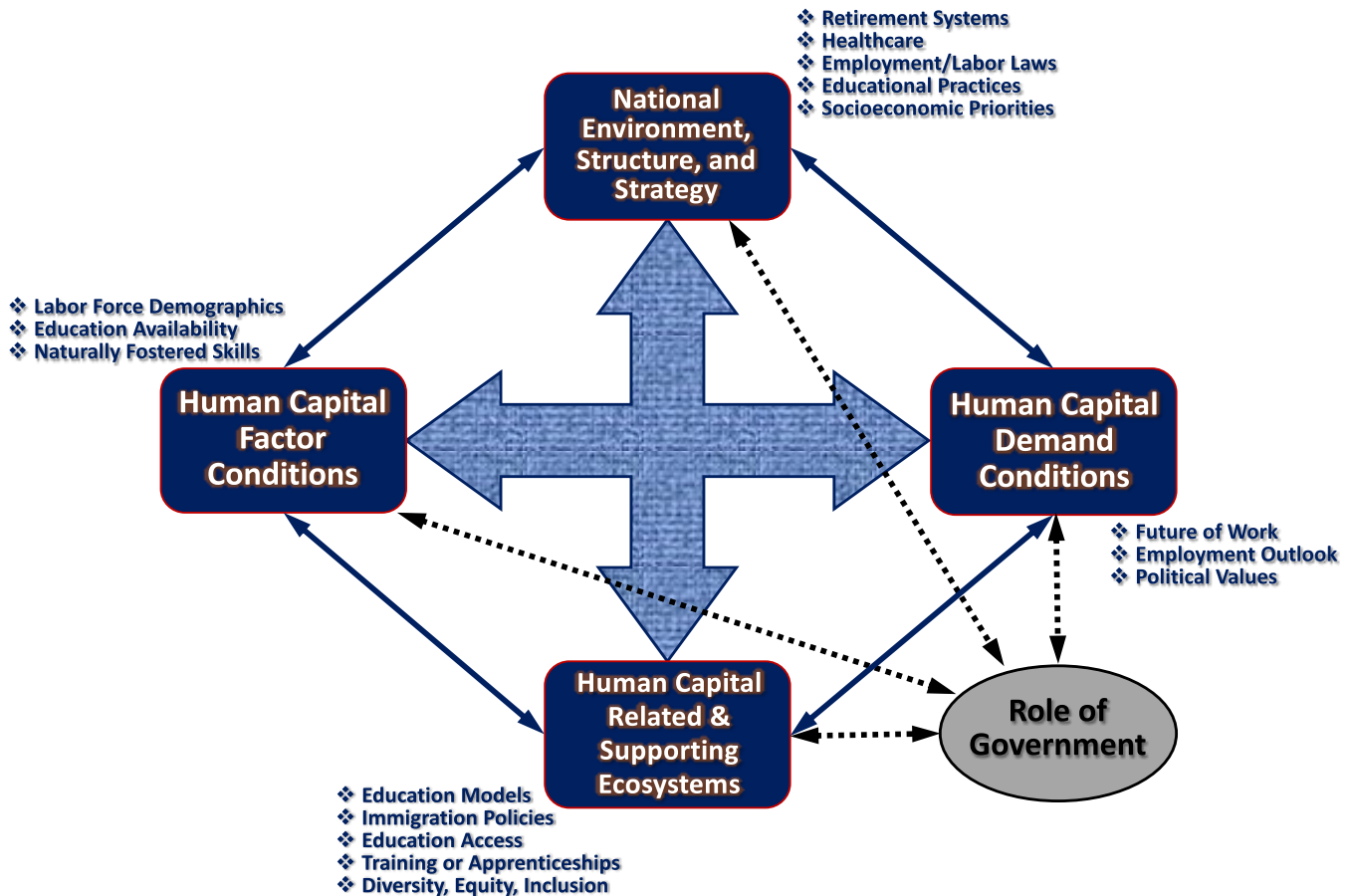
Porter's factor conditions provide suggestive insights into ways nations can leverage human capital for competitive advantage. Key factor conditions might include labor force demographics, educational institution availability and capacity, and naturally fostered competencies that emerge out of necessity or culture.

Porter’s demand conditions suggest human capital demand trends in areas such as the future of work, the employment outlook, and political values that shape education, training, reskilling, and curriculum development.

Porter’s related and supporting industry concepts suggest human capital-related national ecosystems that influence or shape educational models; immigration policies; quality, access, and affordability of higher education; training and apprenticeship programs; and diversity, equity, and inclusion priorities.

Finally, Porter’s firm strategy, structure, and rivalry concepts are suggestive of ways national context and politics shape, prioritize, and incentivize institutions, programs, policies, and laws that influence the human capital lifecycle.

Better for our purposes than Porter’s framework in its original economic context is to consider a human capital-specific lens that permits a modified and sustainable human capital framework to emerge. Figure 6 represents a modified Porter Diamond that emerges with four mutually reinforcing factors (human capital factor conditions; human capital demand conditions; human capital-related and supporting ecosystems; and national environment, structure, and strategy). The four mutually reinforcing factors act as an interlinked system where factor strengths and weaknesses can help or hurt other factors, influencing a nation’s ability to innovate and upgrade its human capital.



**Figure 6. Modified Porter Diamond in a Human Capital Context**

## China

China's unprecedented economic gains over the last 30 years have catapulted the country onto the global stage. However, the Chinese Communist Party now finds itself in a paradoxical position – to remain in power, it must relinquish control and increase equality to exploit the potential of its large but declining population. China's most significant challenge is to dismantle its *hukou* system, which institutionalizes rural-urban inequalities and creates barriers for human and social capital development. China's economic rise and resultant global relevance stemmed from its large and undereducated workforce that moved from rural to urban areas and accepted low-wage manufacturing jobs and low living standards. China's more recent attempts to increase its human capital may prove too late because returns on human capital investments often take a generation to appear.

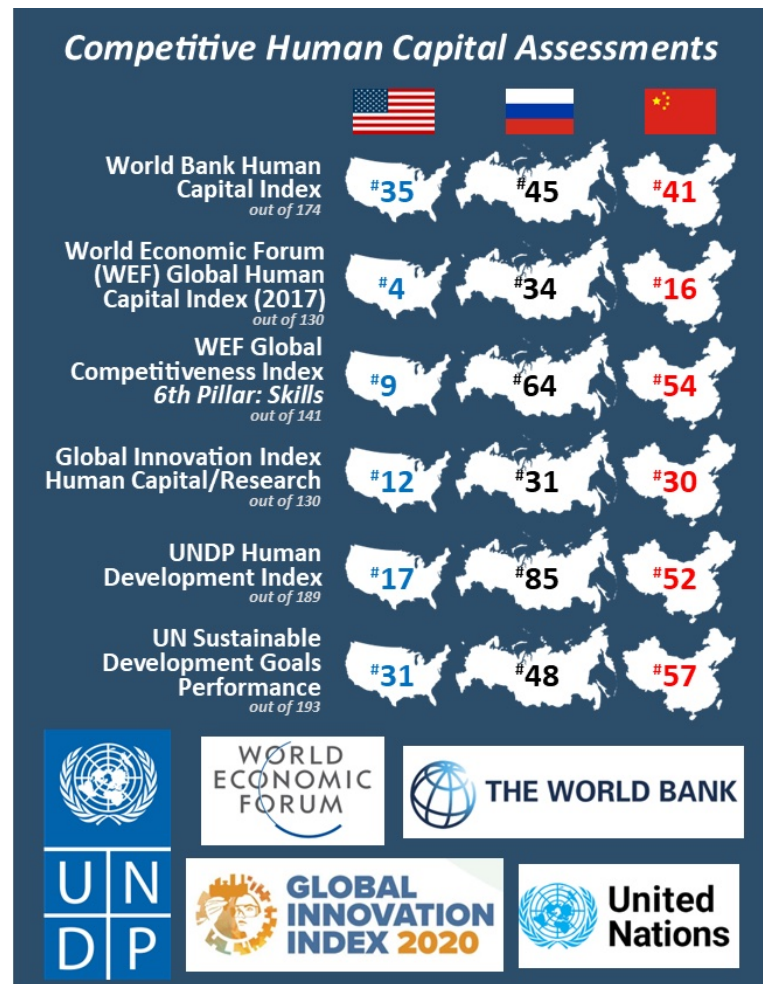
## Russia

The development of human capital in Russia should be the country's top national priority. For years Russia neglected its human capital, allowing an erosion so extreme it will take years to recover. Today, Russia prioritizes education, health, and pension investments; however, the damage is done. Russian life expectancy has fallen sharply since the 1990s. Many factors are converging such as economic instability, high rates of tobacco and alcohol consumption, poor nutrition, depression, and a deterioration of the healthcare system. Although Russia does have highly skilled mathematicians and physicists, the general workforce lacks education and training. Essential to the sustainable social and economic development of Russia is the education of highly qualified personnel who can work efficiently and effectively in their economy.

## The U.S.

The U.S. has no national human capital strategy or federal framework. Several U.S. states have implemented educational and workforce talent development strategies around economic development, and numerous federal departments and agencies maintain human capital strategies for their departments. The federal Office of Personnel Management has long published a human capital framework for the federal government. However, state or internal federal government human capital strategies do not equate to a national human capital strategy, which would shape the public and private sectors to develop the nation's human capital for sustainable economic attainment and national security.

The modern U.S. education system – including primary and secondary systems and all institutions the U.S. categorizes as private or public delivers broadly impressive access and attainment for educational development. The current World Economic Forum (WEF) Global Human Capital Report ranks the U.S. fourth out of 130 countries for educational development, assessing a score of 83.5 out of



100.<sup>27</sup> This places the U.S. education system well above the WEF national development average of 65.87 and the North American average of 73.95.<sup>28</sup>

A chief strength of America’s modern educational development is the high-quality depth and breadth of the nation’s entire education system. The system ranges from pre-primary to multiple secondary education levels with very high quality.<sup>29</sup> As measured by WEF, the U.S. development system is surpassed only by Switzerland, Norway, and Finland. By this measure, no country surpasses quality equitable educational development on the scale of the U.S.<sup>30</sup>

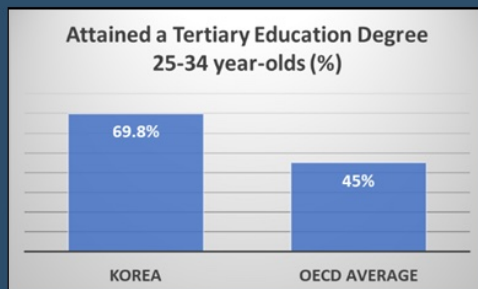
## Taking a closer look: Investing in Education

With more than 51M people, South Korea is the world’s 12th largest economy by nominal gross domestic product. Korea’s education investment catapulted the country from illiteracy to a significant international technological hub.

The South Korean economy benefits from a highly skilled workforce with the highest percentage of tertiary education degrees.

South Korea earns top-ranking education status because of its investment in teachers. The profession is highly respected and very competitive. The OECD reports: “Teachers are held to high standards and benefit from job stability, high pay, and good working conditions...teachers also benefit from a high degree of school autonomy in curricular decision-making and assessment practices in Korea.”

South Korean teachers play an essential role in student educational development and prepare students for joining the highly skilled South Korean workforce.



South Korea is ranked 4/174 countries  
by World Bank Human Capital Index

Despite the U.S. education system’s human capital development results, systemic disparities remain from the centuries-old stains of slavery.<sup>31</sup> Beyond racial disparities, women’s suffrage is only 100 years old and has followed the same slow march towards equal outcomes. Further, the rates at which women and racial minorities fall out of the workforce demonstrates the weakness and threat that disparate access and outcomes play to U.S. long-term human capital outcomes.

In the March 2021 Interim National Security Strategic Guidance, President Joseph Biden highlights the importance of ensuring that our workforce represents the diversity of our country.<sup>32</sup> President Biden’s April 2021 infrastructure investment proposal proposes a \$600M increase to historically Black colleges, tribal, and community colleges, and Title I formula reforms to give federal funds to more high-poverty high schools.<sup>33</sup> It would be America’s broadest integrated human capital investment. While it remains a threat to continue without a national human capital strategy, deliberate high-dollar investments in education significantly mitigate this.

Beyond historic investment levels, policymakers should reinstate the gainful employment guidelines rescinded in July 2020. The Department of Education designed these guidelines to ensure that taxpayers only award Title IV (federal financial aid funds) to for-profit institutions that demonstrate gainful employment post-graduation.<sup>34</sup> Such reversal action is critical to ensure that financial aid results in meaningful employment since Pell grants are the largest Title IV expenditure and significantly assist older adults (upskilling or reskilling) and racial or ethnic minority students.<sup>35</sup>

The World Bank’s Human Capital Project (HCP) is a global effort to accelerate more and better investments in people for greater equity and economic growth.<sup>36</sup> Although the HCP is a relatively new initiative, it is worth noting that neither the U.S., China, nor Russia participates in the project.<sup>37</sup> A key feature of the HCP, the Human Capital Index (HCI), measures the amount of human capital a child born in the current year could expect to attain by the age of 18.<sup>38</sup> The highest HCI score a country can obtain is a numerical value of 1.0; values below 1.0 represent lost economic potential relative to Gross



Domestic Product (GDP). According to the most recent HCI scores (See Figure 7), the U.S. outperforms both China and Russia. However, none of the three countries performs exceedingly well when compared to the 174 countries included in the assessment.

Economy	Components of Human Capital Index 2020						Human Capital Index		
	Probability of Survival to Age 5	Expected Years of School	Harmonized Test Scores	Learning-Adjusted Years of School	Adult Survival Rate	Fraction of Children Under 5 Not Stunted	HCI 2020	HCI 2018 Back-Calculated	HCI 2010
United States	0.99	12.9	512	10.6	0.89	-	0.70	0.71	0.69
Russian Federation	0.99	13.7	498	10.9	0.80	-	0.68	0.73	0.60
China	0.99	13.1	441	9.3	0.92	0.92	0.65	0.65	-

**Figure 7. World Bank Human Capital Comparisons: U.S. – China – Russia**

**SHC INNOVATION AND MOBILIZATION: SOME INTERIM JUDGMENTS**

Innovation – in technology, doctrine, practices, and procedures – is of central importance to all institutions and organizations. It prefigures and determines competitive advantage, whatever the context. And its existence and prevalence are, without question, an outgrowth of human endeavor. Nowhere are these propositions more at play than in matters of U.S. strategic competitiveness, not least in the Defense Department’s ability to attract, develop, and retain highly skilled personnel. Thus we must be concerned about manpower shortages that exist across DoD and thereby compromise national security and America’s competitive position.

The United States inarguably requires a highly capable military to defend its interests. Such capability depends on a steady stream of qualified uniformed, civilian, and contractor personnel. If the financial incentives DoD offers to attract volunteers fail to work, one must ask why Americans decline to serve. As a nonexcludable, non-rivalrous public good, national defense provides a free-rider benefit to all citizens, where people benefit even when they don’t contribute. Continued manpower shortages, where they exist, will unquestionably challenge America’s ability to surge or mobilize in response to domestic or international emergencies. Today, this stands as an enduring problem.

In 1982, The White House issued National Security Decision Directive 47, *Emergency Mobilization Preparedness*, which states:

- It is the policy of the United States to have an emergency mobilization preparedness capability that will ensure that government at all levels, in partnership with the private sector and the American people, can respond decisively and effectively to any national emergency, with defense of the United States as the first priority.
- It is the policy of the United States to develop systems and plans to ensure that the Nation's human resources are available in the requisite numbers and skill to support and sustain the Armed Forces, and to provide for essential civilian needs.<sup>39</sup>

Almost 40 years later, the United States continues to lack a comprehensive strategy to mobilize, sustain, and protect its citizens and defense industrial base in response to military or civilian crises.<sup>40</sup> The government even lacks a reliable mechanism for integrating and mobilizing interagency and private-sector organizations, both of which play essential roles in delivering highly qualified human capital in sizable numbers for emergency situations. Although Defense Production Act authorities can facilitate interagency and private-sector integration, the absence of deliberate planning and coordination with industry limits the nation’s capacity to mobilize appropriately at the speed and scale required.



The failure to identify and effectively communicate demand requirements can create significant gaps when employing human capital during surge and mobilization. Current government leaders can take a page from history to create a blueprint for SHC management, as from President Truman’s 1951 *Memorandum Establishing a National Manpower Mobilization Policy* where the primary goal of manpower mobilization is to safeguard our national security through the maximum development and use of our human resources, see Appendix 2.<sup>41</sup> At its core, this memorandum is still relevant today and provides a baseline for government and private sector leaders to develop the comprehensive strategy needed to address the role of human capital in surge, mobilization and most importantly national security.

## FOUR KEY ISSUES IN SEARCH OF REMEDIES

### Credentialism

Credentialism is the belief in or reliance on academic or other formal qualifications as the best measure of a person's intelligence or ability to do a particular job. Credentialism, also known as degree inflation, has been a growing problem globally over the last ten years. According to estimates from Harvard University, six million jobs will be affected by degree inflation as employers increasingly demand that applicants have better qualifications than current employees performing the same role.<sup>42</sup>

For decades, the U.S. employment sector has been criticized for its obsession with college degrees. By the early 20<sup>th</sup> century, Americans had developed a system for adjudicating difference and hierarchy on the basis of educational attainment and completion as the four-year college degree became the *sine qua non* of middle-class respectability and white-collar employability in the United States.<sup>43</sup> This system creates inequality across gender, racial/ethnic groups, and other underprivileged populations.

Credential inflation reduces the available pool of experienced, qualified job candidates who may possess the skills required for certain positions just because they lack a post-secondary degree. It presents a fallacy that a tertiary education (specifically, bachelor’s/master’s degrees) is essential to individual success in the labor market as students accumulate mounds of debt in pursuit of unnecessary credentials with no guarantee of employment post-graduation.

President Trump’s Executive Order 13932 on “Assessing and Hiring Job Candidates in Federal Agencies” (June 26, 2020) seeks to alter the federal hiring process by removing potentially unnecessary education qualifications to ensure that the federal hiring process is merit-based. The EO suggests that the federal government should favor skills- and competency-based hiring techniques over degree-based educational requirements to assess some job candidates.

Advancing human capital is a key contributor to developing competitive advantage. There is no one formula of specific credentials and/or skills that will inevitably lead to success. What is certain is that in the 21<sup>st</sup> century, the search for highly qualified and innovative candidates should not be filtered by a

### *A closer look at Employee Development*

With more than 35,000 employees, BAE Systems enables their employees to manage their development and career plans



by providing opportunities to learn, grow, and move within the company. BAE’s top and middle-level managers use talent profiles, performance discussions, assessment tools, and development plans to foster employee development. The company runs a robust coaching and mentoring program and builds talent for the future through intern, co-op, and apprenticeship programs across its business segments.

BAE offers career paths in critical skill areas to reskill and upskill its workforce, showing employees how to develop specific skills to advance. BAE also provides “universities” within its business segments to provide courses where employees build new skills and obtain technical certifications to become competitive for new positions.



## A look at DE&I in practice

At Booz Allen Hamilton (BAH), diversity is central to its culture, and the firm consistently ranks among the U.S. firms on all measures of DE&I, including ten consecutive years on the Human Rights Corporate Equality Index, Forbes' "The World's Most Admired Companies," Twenty-one years on the Working Mother Magazine best 100 companies, and Forbes' Top 100 "Americas Best Employers for Diversity."



BAH's leadership team is comprised of 89% women or people of color. Their current chief executive officer (CEO), Horacio Rozanski, is an Argentinean immigrant who started with BAH some 30 years ago. Since earning the chief personnel officer role in the early 2000s and through his time as CEO, Rozanski led the fastest rise to board membership/executive roles for women and people of color of any of the U.S. East coast publicly traded companies. BAH committed a half-million dollars in investments to fund community organizations, support recruiting pathways for underrepresented groups, and advance awareness and belonging through its five corporately supported affinity groups.

“You can have a solid career here with a lot of support in whatever you want to accomplish with your life. Want to become a data scientist or a software developer? They got you. You want to be respected because you are a minority? I know it sounds stupid now, but trust me, they will do that. They have a huge focus in Diversity & Inclusion. I am an immigrant myself from Latin America and I am as skeptic as they come. Not here. They for real got you, let you be you and, even better, encourage you to be you.”

*former BAH Hamilton Senior Data Analyst, via Indeed*

specific set of requirements. Instead, U.S. firms and federal organizations should consider candidates with both formal and informal credentials, educational backgrounds, and candidates who obtained their skills through unorthodox or unconventional methods. Therefore, to enhance the country's strategic human capital, recurring efforts should be made to reassess organizational skills “gaps,” to determine more accurately the characteristics organizations need, and to expand existing conceptions of skill requirements.

## DE&I

The rise in social discord has illuminated issues related to diversity, equity, and inclusion (DE&I). Although a universally agreed upon definition of DE&I doesn't exist, the Society for Human Resource Management's (SHRM's) definition best reflects numerous widely held perspectives: “Diversity refers to the similarities and differences among individuals accounting for all aspects of their personality and individual identity.”<sup>44</sup> SHRM describes diversity as providing “the *potential* for innovation and creativity,” inclusion as enabling potential by ensuring that people feel “welcomed, respected, supported and valued,” and equity as the “fair treatment in access, opportunity and advancement for all individuals” where barriers to disadvantaged groups are eliminated.<sup>45</sup>

For macro-level analyses, inequality is the foundational characteristic shared among DE&I's three elements. Inequality negatively impacts survival and competitiveness in two significant ways. First, the presence of inequality implies that a governing apparatus is not nurturing or exploiting the individual cognitive abilities or collective potential of all members in its society. This diminishes available resources. Second, inequality erodes trust and hope – key ingredients that bond people with governments and generate social cohesion. In the U.S., inequality in the education system and workplace create acute vulnerabilities that inhibit the country's ability to remain competitive in the evolving strategic environment.

Persistent educational inequality limits economic growth and stability. For example, the academic achievement gap between white students and their black or Hispanic peers deprives the U.S.

economy of \$310B-\$525B a year in productivity, equivalent to 2-4 percent GDP; while the gap between high- and low-income students results in a loss of 3-5 percent of GDP.<sup>46</sup> The primary driver of academic achievement gaps is inequality in the distribution of comprehensive (or integrated) education resources. For example, K-12 students in the Northeast receive nearly double the amount of investment than that which is made in students in the South.<sup>47</sup> At the local level it only gets worse. In the Fairfax County Public School District (Virginia), students receive \$14,932 while they only receive \$6,652 in Utah's Jordan District.<sup>48</sup>

In U.S. business, the prospect of inequality in outcomes is often viewed as a useful spur to effort. Companies with greater diversity out-innovate and out-perform others. Employees at these companies



are 45 percent likelier to report that their firm’s market share grew over the previous year and 70 percent likelier to report that the firm captured a new market. Diversity unlocks innovation by creating an environment where new and distinctive ideas are heard.

One of the barriers to creating a diverse environment is that of conscious or unconscious bias. Preconceived notions of what an individual can or can’t do based upon race, gender, ethnicity, or other general categorization may mask true potential. A person’s education and skill development require both time and money. Limitations in either will negatively impact their potential.

**Technology**

Rapid technological innovation compels organizations to rethink the way they operate. Today’s environment requires leaders to build a workplace where flexibility and agility matter, and a workforce that possesses the skills suited for the dynamics of the modern environment.

Organizations recognize the power of people and machines working together to boost productivity and competitiveness. In the human capital framework, the automation of production processes is accelerating. There are substantive gains to be made in the human resources domain along with the governance of data to drive strategy and decisions. Across government, academia, and industry, organizations are developing systems to automate routine and mundane processes, especially in the human resources sector of organizations. This frees up human resource personnel for more collaborative organizational work, and especially permits human resource managers to become strategic enablers as they advise organizational leadership. The management of SHC must also occur in how we cultivate skills in our workplace, on virtual platforms, or a combination of both. While technology replaces certain tasks and human labor, there are skills that cannot be automated. The result is a shift away from task-oriented and result-driven outcomes toward automation. These organizations also recognize that to achieve their strategic objectives in the human capital domain with regards to acquisition, development,

**Data & AI: the future of People Analytics**

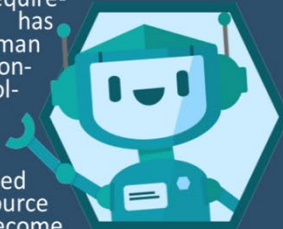
Organizations are recognizing the power of people and machines working together in maintaining and increasing competitive-



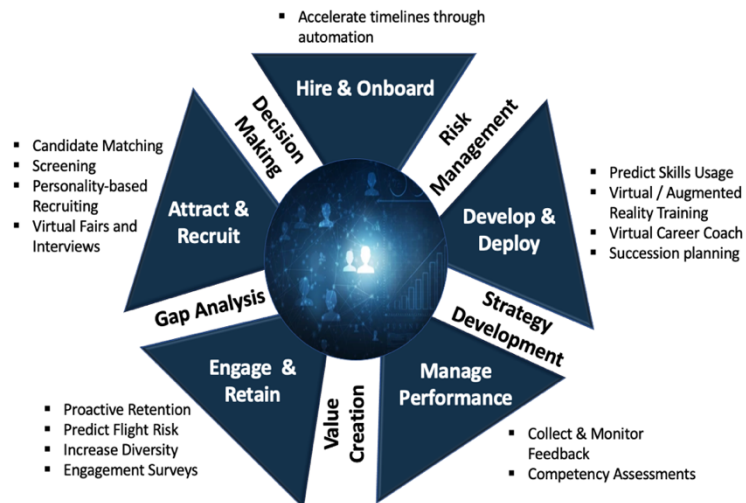
nally the automation of production processes comes to mind. However, there are substantive gains to be made in the human resources domain along with the governance of data to drive strategy and decisions.

Across government, academia, and industry, organizations are developing systems to automate human resource processes that are routine and mundane with great success.

Bots empowered through AI that produce human resource outputs and outcomes have proven effective at reducing manpower requirements. This has freed up human resource personnel for more collaborative organizational work, and especially permitted human resource managers to become strategic enablers as they advise organizational leadership. These organizations also recognize that in order to achieve their strategic objectives in the human capital domain with regards to acquisition, development, and retention of a talented workforce, they must better leverage data.



They collect data currently but are working to develop appropriate data set assessment tools that measure performance and effectiveness against human capital objectives. In doing so, the organizations intend to enable valuable programs focused on driving culture change, identification and differentiation of talent, and improving diversity, equity, and inclusion, among many others. These new tools intend to democratize data, making it readily available across the organization which improves decisions and increases agility.



**Figure 9. Technology & the Human Ecosystem**

and retention of a talented workforce, they must better leverage data. Technological advancement provides governments, industries, and organizations with abundant data. The ability to capture, store, and utilize data will provide companies with enormous insight effectively and efficiently. This requires the development of assessment tools that measure performance and effectiveness against human capital objectives. In doing so, the organizations intend to enable valuable programs focused on driving culture change, identification and differentiation of talent, and improving diversity, equity, and inclusion, among many others. These new tools intend to democratize data, making it readily available across the organization while increasing the flexibility and agility of decision making by managers and leadership. More progressive organizations are putting their data to work by combining it with the power of AI.

### **Future of Work**

Changing workforce demographics, adoption of disruptive technology and virtual collaboration tools, and the rise of on-demand work are shifting how work is accomplished. These future work trends are forcing employers to rethink traditional business models and accelerating shifts to remote and hybrid work environments.

According to the U.S. Bureau of Labor Statistics, we are currently witnessing notably slower labor force growth. This is attributed to an aging society, with those 55 and older making up a more significant share of the labor force, and a slowing birth rate. From 1970 to 2019, the U.S. median age grew from 28.1 to 38.4.<sup>49</sup> In U.S. federal agencies, a particular concern is the large number of workers who are at or rapidly nearing retirement age. Non-governmental entities are exploring mechanisms to increase labor force participation or to increase the labor force itself by substantially reducing barriers to entry for underrepresented groups (e.g., women, minorities, and the disabled) and by reforming immigration programs.

Demographics will also be influenced by a potentially large-scale migration during the next 20 years driven by economic incentives or the avoidance of religious persecution, social injustice, and crime. The U.S. and its allies can benefit from highly skilled migrants by offering economic opportunities and a path toward citizenship. For example, Germany enacted the Skilled Workers Immigration Act in March 2020, which allows for skilled workers from outside the European Union, who have the required German language skills to reside in Germany for six months while pursuing employment.<sup>50</sup> After receiving a firm job offer, their visa is valid for four years, after which they may become permanent residents. This relatively new program has the potential to expand Germany's labor force, while also providing a potential model for other countries to adopt.

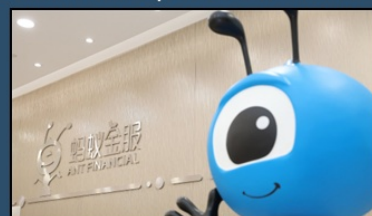
Disruptive technologies and virtual collaboration tool adoption are changing the future of work and influencing human capital change. AI and automation are making the recruitment process

## **Looking forward: Various Futures of Work**

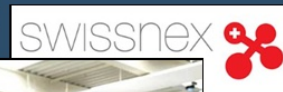
To resolve aging workforce challenges, Germany enacted the Skilled Workers Immigration Act, allowing certain skilled workers from outside the European Union to obtain a 4-year visa and earn permanent residency.



In an effort to prioritize on-demand work, China launched Ant Financial, a health insurance program for an estimated 58 million independent workers.



In Switzerland, about two thirds of students opt for vocational education and training after completing secondary school. These programs are two to four years long and combine classes with on-the-job training to prepare young people for over 300 different occupations. Federal and regional governments serve as intermediaries between companies and students, encouraging the creation of apprenticeship positions and providing guidance to students on career choices. Swissnex, a Swiss government-sponsored network to support education and innovation, works closely with companies around the world to implement Swiss-style apprenticeships. In the United States, this means supporting the creation of job opportunities for young people to begin professional careers without college debt.



more efficient, less costly, and easier to locate highly skilled individuals. This includes automation to screen hundreds or thousands of resumes and filter candidates that align with an organization's expectations, driving process acceleration and reducing manual human resume screening.

Use of virtual collaboration tools enables employers to integrate work globally and permit both synchronous and asynchronous work by offering real-time cloud-based file sharing. These features allow employees living in different time zones to collaborate on tasks asynchronously, where offline users can access files or read chat messages when returning to work. The COVID-19 pandemic has only accelerated industry adoption of virtual collaboration tools. For example, from December 2019 to October 2020, Microsoft Teams users grew from 20M to 115M, possibly signaling extreme work changes post-COVID.<sup>51</sup> Working from home is a critical weapon in the fight against COVID-19 and future pandemics. Over the past year or so, companies have spent millions of dollars on technologies so that employees can work from home.

On-demand work popularity is expanding rapidly with many workers considering it their primary source of income and a long-term career choice. Gallup estimates that prior to the COVID-19 pandemic, 36 percent of U.S. workers participate in the gig economy, with 44% of gig workers saying it is their primary source of income.<sup>52</sup>

While gig work can be a reliable source of primary or supplemental income, it also opens challenges – such as earnings not being covered by taxation. The World Development Report 2019 emphasized that gig workers must have social security protection, and U.S. business sources have proposed another category of workers covering the gig workers that will provide benefits like those regular employees receive (e.g., insurance and rights to organize).<sup>53</sup> China has launched a welfare program through Ant Financial that gives gig workers free health insurance (coverage of 20,000 RMB or \$3,000) and has provided workers the use of Alipay, an app for transaction payments.<sup>54</sup> This program has been a remarkable success in providing coverage for an estimated 58M independent workers.

## POLICY RECOMMENDATIONS

At the conclusion of the SHC IS, multiple recommendations emerged for both U.S. policymakers and organizational human capital leaders to act on as they seek to advance human capital. These recommendations reflect an analysis of countries, organizations, and firms. Overarching Strategic recommendations (**S**) are provided first, followed by additional recommendations aligned by the four themes: Credentialing (**C**); DE&I (**D**); Technology and Data Analytics (**T**); and Future of Work (**F**).

**(S)** *Establish a national CHCO presidential advisor:* Recognizing human capital as one of the most important contributors to national competitiveness, the United States should establish a national Chief Human Capital Officer presidential advisor to choreograph whole-of-nation human capital efforts.

**(S)** *Develop a national human capital strategy:* A national human capital strategy is absolutely essential to establish whole-of-nation priorities that seek to achieve and sustain national strategic human capital advantage. A national strategy can address human capital gaps and shortages that hinder U.S. ability to surge and mobilize during emergencies.

**(S)** *Create opportunities for public-private collaboration and partnerships:* Industry recognizes how critical human capital is to firm competitiveness and is likely to support opportunities to collaborate and influence national human capital priorities.



(C) Collaborate on universally accepted skills and competency credentialing: Collaboration between federal and state governments, business, and academia is necessary to establish skill- and competency-credentialing guidelines so that credentials can be universally accepted across the U.S.

(C) Integrate private-sector skills demand into higher education curricula: As private-sector skills change, the private sector should coordinate with academia on curriculum changes.

(C) Adopt a less rigid lifelong learning model: Federal and state governments, business, and academia should collaborate to establish agile lifelong learning models that value skill and competency over formal degree attainment. Many organizations overvalue degree attainment rather than competency and skill while inflating degrees and increasing student loan debt unnecessarily.

(C) Update job descriptions with accurate and realistic credentialing and competency requirements: Organizations should ensure that all job descriptions accurately capture appropriate competency and credentialing requirements, rather than overvalue degree attainment models.

(D) Allocate equal education funding for all children: The United States must view education and equality as matters of priority strategic importance – matters too great to be left to unconstrained individual state preferences. The federal government should close the educational achievement gap by reallocating resources that result in equal education funding for all children. One way to begin addressing this issue would be to fully fund previously approved legislation – e.g., dispersing the remaining \$9.7B of the \$26B approved under the 2002 reauthorization of the Elementary and Secondary Education Act.

(D) Double the Pell Grant: Pell Grants are beneficial to low-income families, and federal education financial aid investment has a high return for taxpayers. So, double the amounts now available.

(D) Reinstate gainful employment guidelines: In 2019, the Department of Education rescinded these guidelines to only award Title IV (federal financial aid funds) to for-profit institutions that demonstrate gainful employment for post-graduation. The original guidelines should be reinstated.

(T) Update national measurement tools (BLS, SEC, etc.) to include the emerging impacts of technology on human capital: Government metrics that capture workforce data and trends are vital to human capital policy development and organizational change. A comprehensive understanding of technology trends can inform a national human capital strategy.

(T) Leverage technology and data to create human capital management strategies, influence people decisions, and measure progress against goals: Organizations are harnessing the power of data to manage traditional human resource functions, highlight organizational priorities, and inform talent strategies.

(T) Allow CHCO to make data-informed decisions: Chief Human Capital Officers should use data analytics to understand workforce planning and make more effective people decisions.

(T) Digitize the workplace: Organizations must be encouraged to digitize the workplace, even after COVID-19, to enhance workforce productivity and allow for remote or digital work wherever feasible.

(F) Increase highly skilled worker, non-immigrant (H1B) visas: To address workforce demographic shortages, the United States should permit additional highly skilled non-immigrant workers to enter the country, while also providing additional resources to the U.S. Citizenship and Immigration Services (USCIS) to speed up the process and handle an increased number of visas.

(F) Initiate laws and guidelines for on-demand workers: The United States should consider new laws and regulations that provide self-employed/on-demand workers more convenient and cost-efficient access to typical employer-based healthcare, unemployment insurance, and retirement plans/savings.

(F) Develop a national effort to advance U.S. citizens' digital skills: There is a decided need to integrate and institutionalize digital skills training into education and to employ lifelong learning models.

(F) Institutionalize hybrid work environment training: Organizations should develop telework and remote work training programs for supervisors and employees. Training should include mindfulness; technology; collaboration tools; strategic onboarding; coaching, performance evaluation; developing skills; and staying engaged.

## FINAL TAKEAWAYS

Both national security leaders and human capital leaders must recognize that now is the time for a paradigm shift to obtain the full potential of human capital and maximize American talent. SHC professionals must prioritize human capital planning and processes to ensure that the United States is positioned to outpace its global competitors. The SHC IS has highlighted the current SHC ecosystem, defined the environment, drawn linkages from SHC to national security, and made recommendations to maximize U.S. SHC. These policy recommendations provide U.S. leaders in government, academia, business, and other organizations a plan of action for creating national and organizational strategic advantage. Failure to implement these crucial recommendations could have a significant impact on U.S. national security and the competitiveness of our nation.

## APPENDIX

### Truman Administration Memorandum Establishing a National Manpower Mobilization Policy

January 17, 1951

To the Heads of Executive Departments and Agencies:

There is hereby promulgated, effective immediately, the attached National Manpower Mobilization Policy which I have approved on the recommendation of the National Security Council, the Secretary of the Treasury, the Secretary of Labor and the Director of the Office of Defense Mobilization.

This policy shall be adhered to by all departments and agencies with respect to programs under their control, subject to such amendments and supplements as may from time to time be issued by the Director of the Office of Defense Mobilization pursuant to authorities vested in him.

HARRY S. TRUMAN

#### NATIONAL MANPOWER MOBILIZATION POLICY

##### Aims of manpower mobilization

1. The primary aim of manpower mobilization is to safeguard our national security through the maximum development and use of our human resources. In particular, this involves:

a. Providing manpower for the Armed Forces in sufficient numbers and with the mental, physical, and occupational qualifications necessary for national defense.

b. Providing manpower for producing the materials and services necessary to the Armed Forces, to meet commitments of aid to other nations and to support the civilian economy.

c. Constantly increasing our mobilization potential through training and educational programs to expand our supply of persons with highly developed skills essential to civilian and military activities. Providing manpower for protection of the civilian health and welfare.

2. The most efficient use of the Nation's manpower will be of vital importance in any prolonged effort to keep the strength of the United States at a high level and will be of the utmost importance in the event of full mobilization. Consequently, it is important that manpower measures taken now be consistent with and contribute to the most advantageous use of our manpower should full mobilization become necessary.

3. We must rely heavily on science and technology. The most effective use must be made of our supply of individuals having the special skills required to develop and produce the necessary equipment and to use and maintain it in the Armed Forces. Malutilization of such individuals represents a direct and unnecessary reduction of our defense potential.

4. While recognizing the very high priority of the Armed Forces' requirements for certain numbers and classes of manpower, the needs of mobilization also require a vigorous civilian economy. The manpower necessary to defense production, to civil defense, to agriculture, and to the production of essential civilian goods and services and to sustain our commitments of aid to other nations, must be considered as integral parts of a balanced mobilization program.

5. To assure the most effective use of our manpower to meet these needs, it is essential that we establish principles and adopt a series of policies which will lead to the most effective use of our manpower resources. Wherever statutory authorization is necessary to put these into effect, it will be sought from the Congress.

### **Principles of manpower mobilization**

6. In achieving these objectives, the national manpower mobilization program will be based upon the following principles:

- a. Each individual will be expected to serve in the capacity in which he can contribute most to the total mobilization program.
- b. Employers, both private and governmental, will assure full utilization of those abilities and skills of each individual which will contribute most to the total mobilization program through such measures as minimum manning, training, and assignment of duties in accordance with needs, skills, and potentialities.
- c. The Government will develop and administer manpower programs designed to enlist to the fullest possible extent the support and resourcefulness of individuals in the achievement of the mobilization program.

### **Basic manpower mobilization policies**

7. The following basic manpower mobilization policies are necessary to give effect to the principles stated above, but do not prejudice or limit extension of manpower policies as further needs of mobilization evolve.

- a. The size of the Armed Forces will be determined by the President. He will be provided with the Department of Defense requirements to meet strategic plans; with full information on the prospective supplies of manpower, and on the manpower requirements for defense production, agriculture, civil defense, and other essential purposes.
- b. The greatest care must be exercised to assure that the supply of persons possessing critical skills will be distributed among military and civilian activities in a manner which will contribute most to the mobilization program. When the total need for workers with critical skills for civilian and military assignments is expected to exceed the supply that can be made available, the requirements for persons with such skills will be reviewed and distribution of the supply will be measured by the relative urgency of the need for critical skills as between the Armed Forces and the civilian economy.
- c. Policies in respect to recruitment of individuals from civilian life and call-up of members of the unorganized reserves will have as their objective the use of persons possessing irreplaceable skills where they can make their maximum contribution to the total mobilization program.
- d. Policies governing occupational deferment of persons subject to induction under the Selective Service Act will provide for: (1) the occupational deferment of persons possessing critical skills if they are currently using such skills in essential activities, except to the extent the military services require persons with those skills; (2) deferment of a sufficient number of individuals in educational and training institutions to provide an adequate continuing supply of professional and highly skilled manpower.
- e. Recruitment, placement, distribution, training, and utilization of the civilian labor force (including Government employees) will be based primarily upon voluntary measures for manpower mobilization. This policy will be carried out through such measures as: (1) providing appropriate employment information to guide workers to jobs in which they can make their maximum contribution; (2) developing recruitment and rehabilitation activities needed to expand the labor force; (3) training persons to meet civilian manpower requirements and providing appropriate placement services; (4) providing assistance to employers in promoting maximum utilization of the labor force including women, physically handicapped, older workers, and minority groups; (5) providing adequate housing and community services; and (6) assisting workers to arrange for their transfer to essential jobs in other areas.
- f. Governmental manpower controls will be used when and to the extent needed to assure successful execution of the mobilization program. Such controls will apply to employers, to workers, or to both. They will include  
(1) restricting indiscriminate labor turnover through control of separations (2) giving effect to manpower allocations by placing employment ceilings on employers with respect to the total number of workers, the number of men or the number in particular skills; (3) controlling of employer hiring, and (4) enforcing adherence to utilization standards, including full use of women, handicapped workers, and minority groups.
- g. All manpower programs will be geared to the needs and problems of specific geographical areas.
- h. As mutually desirable to the United States and friendly nations, workers will be brought into the U.S. for, or their services utilized within the borders of their own country on, work of value to the mobilization program. Full use of domestic manpower resources will be made before bringing in foreign workers.
- i. Production will be scheduled, materials allocated, and procurement distributed with careful consideration of available manpower. Whenever feasible from an economic and security standpoint, production facilities, contracts, and significant subcontracts will be located at the sources of labor supply in preference to moving the labor supply.
- j. The full understanding and assistance of labor organizations, employer associations, professional societies, civic and community groups, and State and local governments will be sought in carrying out these functions.
- k. Each department will, itself, implement the policy and be responsible for its supervision.



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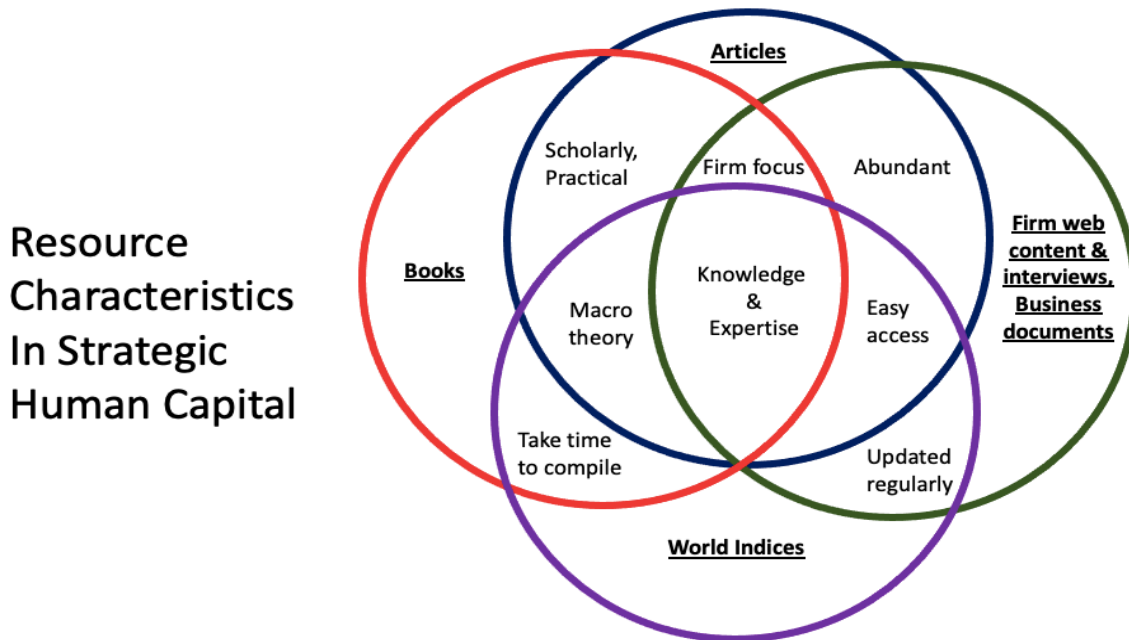
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Whether one is investigating countries, government organizations, or individual firms, where does one find answers to such questions as: What is strategic human capital? Why, if at all, is human capital important to national security? How does one assess the current state of human capital in the United States and abroad? Many resources from a variety of perspectives are available for answering these questions and others. Some of the more common resources and their characteristics are depicted below in Figure 10.



**Figure 10. Resource Characteristics in Strategic Human Capital**

Researchers have an abundance of resources from which they can find information regarding strategic human capital. Authoritative resources include: literature and research found in books and articles published in scholarly journals; publications issued by international and domestic organizations dedicated to human capital; various global indexes created by international organizations; business documents, including annual shareholder reports and annual 10-K filings to the Securities and Exchange Commission; and virtually unlimited web content from private firm, government agency, and advocacy group websites. Briefs and interviews from human resources leaders within those firms, agencies, and groups are also critical when those leaders are available and willing to discuss their human capital practices.

While the characteristics of these resources may differ, they each provide unique knowledge and insight into the definition of human capital, how to measure it, and how it might affect national security. For the 21<sup>st</sup> century, researchers can't afford to be too narrowly focused in their understanding of strategic human capital. Those who study human capital should consider not only how it affects a country's economy, but also how it affects social, civic, and political institutions. Researchers should also consider how the development of human capital in firms encompasses more than just a contribution to return on invested capital, but also enhances organizational performance, produces innovation, and spurs knowledge creation. Only by taking a broad view of human capital can one truly understand its strategic implications.

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