



MAKING *the* MODERN WORLD

Public-Private Partnerships and Advancements in Science and Technology from 1955 to 1975

PART 4 OF 4



Wernher Von Braun began his career in rocketry during World War Two where he developed rockets for the German Army to attack U.S. and allied forces. Following his surrender to the United States, the U.S. Army barnessed his knowledge to radically expand its rocket and missile programs. Von Braun later became a director at NASA, thus ensuring his career began under the auspices of destruction and ended under the aegis of exploration. (Courtesy of Getty Images)

Science, all by itself, has no moral dimension. The same applies to technology. The knife may save a life when yielded by a skillful surgeon, but will kill if thrust only a few inches deeper.

—Wernher von Braun, Director of NASA’s Marshall Space Flight Center

INTRODUCTION

Public-private partnerships were reciprocal in nature and afforded pipelines to bring private-sector expertise to government work. These individuals believed they had a role to play in national security, and they came from universities, nonprofits, and businesses to improve the function of U.S. government. By the 1960s, droves of social scientists came to work in the federal bureaucracy.

Backed by rapid growth in computing power, which afforded the opportunity to collect, store, and analyze greater amounts of data, experts applied statistical analysis to human behavior and bureaucratic systems. Practitioners were often referred to as management scientists or system analysts, and they aimed to make human affairs more efficient.

Of the many federal agencies where analysts worked, the Department of Defense presented a particularly appealing challenge. To strengthen national defense, they believed the young leviathan needed reform. When Secretary of Defense Robert McNamara arrived at the Department of Defense, he brought experts (referred to as “Whiz Kids”) and a zealous belief that data-driven solutions could improve global readiness.

SECRETARY OF DEFENSE ROBERT MCNAMARA

When he accepted the position of Secretary of Defense under President John Kennedy, Robert McNamara brought to the Pentagon a team of young professionals from businesses he revitalized such as the Ford Motor Company, from universities, and from nonprofits familiar with government work like the RAND Corporation.

Following McNamara’s arrival, he and his team soon installed a long-term planning system referred to as the Planning, Programming and Budgeting System (PPBS).

To manage it, McNamara relied on Charles Hitch—who had come to the DoD from RAND—and who became the Assistant Secretary of Defense Comptroller. PPBS was designed to rationalize long-term planning in the Department of Defense by organizing the budget around the military’s capabilities, rather than requests from the services as had been done in the past. PPBS eliminated redundant programs, lowered agency costs and granted greater budgetary flexibility. Today, the DoD refers to the process as Planning, Programming, Budgeting and Execution (PPBE).

McNamara soon encountered the limitations of data-driven solutions that, by their very definition, could not account for unknown quantities. Although decisive victory in South Vietnam eluded the U.S., McNamara remained slavishly devoted to his metrics. His ruthless adherence to this methodology reduced human beings to statistics he used to express the war’s progress. Under his leadership, the U.S. adopted the grisly and morbid “body count” metric that soured civilians and military leadership on the war’s handling.

Simply expressed, body counts were the number of North Vietnamese Army and Viet Cong killed by U.S. and allied forces in any given engagement. These numbers (often inflated and incorrect) were then reported up the chain of command. They were then tallied against estimated North Vietnamese and Viet Cong total strength, and by attrition, the enemy presumably weakened. McNamara believed that once enemy deaths were too great, they would have to relent. In his 1995 memoir, he admitted the U.S. “undertook [the body count] because one of [General Westmoreland’s] objectives was to reach a so-called crossover point. To reach such a point, we needed to have some idea of what [the enemy] could sustain and what their losses were.”

Sociologist Daniel Yankelovitch later coined this “The McNamara Fallacy.” He argued it consisted of an over-reliance on measurable data and summarized it as “if it cannot be measured, it is not important.” War is both an art and a science. Poetically, humans contain more variables than numbers can account for alone.

SOCIAL HISTORY

Advances in technology and data collection also fundamentally altered the way historians interpreted humanity’s role in shaping history. Owing to changes to mores and norms in the 1960s as well, young historians used digital computing to build large and complex data



An example of social history in action. The United States of America’s Vietnam War Commemoration’s History and Legacy program conducts a holistic oral history with a veteran; the interview examines veterans’ lives before, during, and after the war. In addition to thanking and honoring veterans for their service, the interview generates a historical record that will be housed in perpetuity at the Library of Congress that scholars and the public may use to better understand the Vietnam War and veterans’ histories. (Courtesy of the United States of America Vietnam War Commemoration)



Social scientists have worked for the U.S. federal government in shaping policy since the 19th century. Beginning in the late 1950s, they came to the federal government armed with digital computing power, which equipped them with large data sets. Secretary of Defense Robert McNamara was one of the earliest reformers to use digital computing and big data. Shown here pointing to a map of Laos and South Vietnam, McNamara’s overreliance on data produced a complicated legacy. (Courtesy of Getty Images)

sets of ordinary persons; from this data, they developed new questions about the past and new methodologies to explain change over time. Historians began to examine previously unexplored themes such as culture, race, gender, and more. Their answers illuminated the important roles previously non-documented persons, communities, and cultures represented in shaping the United States and the world, while also creating new avenues for historical inquiry. New inquiry then spurred further innovation, which included cross-disciplinary dialogues, and led to intersections with sociology, anthropology, ethnography, gender studies, and political science, among others.

Social historian Peter Stearns wrote, “I once argued that no aspect of human behavior should be denied to social history.” This strident belief drove social historians to find new and innovative ways to document and express the past. One of the most prominent includes oral history, and it is a staple in thanking and honoring veterans at the United States of America’s Vietnam War Commemoration; oral history is also used at other federal agencies, universities, and businesses. In capturing the experiences of men and women from diverse ethnic, social, and cultural backgrounds, the Commemoration and other participating programs generate a holistic view of the veteran experience so that the nation may not only thank and honor them, but better understand their role in shaping the nation and its past.

LEGACIES

Public-private partnerships lent public personnel, funds, and equipment to scientific expertise at nonprofits, universities, and private companies across the United States to place the nation at the forefront of global readiness. From 1955 to 1975, the U.S. created and deployed sensors to detect adversaries, global positioning systems to accurately navigate its own and allied forces, unmanned aircraft to safely monitor areas of national interest, networked communications systems to quickly transmit strategic information, and smart munitions to limit collateral damage. These inventions grew beyond their original purpose to become staples of modern civilian life.

Knowledge is permeable, developmental, cumulative, and advanced by asking new questions. Inquiry drives its growth from fledgling understanding to more advanced and complex states. The nature of inquiry is often fickle, and it can lead to unforeseen, unimagined, and unpredictable results. At the dawn of the Cold War, the U.S. government engaged in public-private partnerships to accomplish the extraordinary task of strengthening the nation’s defense and global position. Yet, the nation’s Cold War goals pale in comparison to its accomplishments. Inadvertently, scientific inquiry and technological advancement in the service of national defense combined to make the modern world. Technology, science, and knowledge now pervade every facet of human existence even as they continue to transform it and be transformed by it.

A GRATEFUL NATION THANKS AND HONORS OUR VIETNAM WAR VETERANS

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