

NATIONAL DEFENSE UNIVERSITY

NATIONAL WAR COLLEGE

**THE REAL TRANSFORMATION: BUILDING AND MAINTAINING LONG-TERM
COMPETITIVE ADVANTAGE**

LTC EDWARD C. CARDON, USA

A TRANSFORMATION PAPER FOR THE CHAIRMAN OF THE JOINT CHIEFS OF STAFF

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Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 2003		2. REPORT TYPE		3. DATES COVERED 00-00-2003 to 00-00-2003	
4. TITLE AND SUBTITLE The Real Transformation: Building and Maintaining Long-Term Competitive Advantage				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National War College, 300 5th Avenue, Fort Lesley J. McNair, Washington, DC, 20319-6000				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT see report					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 12	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

The defense strategy calls for the transformation of the United States military and the defense establishment over time.¹ Secretary of Defense Rumsfeld has acknowledged the difficulty with transformation -- it means different things to different people and different organizations. The Quadrennial Defense Review defined transformation in terms of capabilities, but it has been difficult to define or describe transformational capabilities for a capabilities-based force. The Chairman of the Joint Chiefs of Staff recently suggested that transformation is a process and a mindset – not a product – with intellectual, cultural, and technological elements.² Recently, Secretary Rumsfeld recently defined transformation as “a process that shapes the changing nature of military competition and cooperation through new combinations of concepts, capabilities, people and organizations that exploit our nation’s advantages and protect against our asymmetric vulnerabilities to sustain our strategic position, which helps underpin peace and stability in the world.”³ This begs the question “Transform for what, or, transform to what?” A complicating factor is the difficulty in transforming defense capabilities that are already globally recognized as dominant. There is no broadly accepted consensus on how to transform the United States military and defense establishment.

This paper offers a strategic approach for developing and sustaining transformational capabilities. The real goal for defense transformation is to ensure that the United States retains a long-term military competitive advantage in comparison to the rest of the world.⁴ This approach suggests a model that places competition as the critical cornerstone for sustaining and creating

¹ Donald H. Rumsfeld, Quadrennial Defense Review, September 30, 2001, p. 16.

² General Richard E. Myers, Chairman Of The Joint Chiefs Of Staff, Posture Statement Before the 108th Congress Senate Armed Services Committee, February 6, 2003

³ Donald H. Rumsfeld, Transformation Planning Guidance, April 2003, p. 3.

⁴ The National Security Strategy states “The United States must and will maintain the capability to defeat any attempt by an enemy—whether a state or non-state actor—to impose its will on the United States, our allies, or our friends. We will maintain the forces sufficient to support our obligations, and to defend freedom. Our forces will be strong enough to dissuade potential adversaries from pursuing a military build-up in hopes of surpassing, or equaling, the power of the United States.” George W. Bush, National Security Strategy of the United States, September 17, 2002, p. 30.

United States competitive advantage over its potential adversaries. This model provides senior leaders a framework for analyzing strategies, allocating resources, and making decisions to ensure long-term global military dominance. This paper is based on a wide body of published work on competitive strategies for industry, and on the competitive advantage of nations.⁵

The underlying premise to this approach is that the principle of competitiveness is at the core of both creating and sustaining a competitive advantage. Competitive advantage is not static: it is a dynamic and constantly evolving system -- just like the strategic environment. Relentless competition is the best way to ensure the best decisions are made in a constantly changing environment because competition demands constant improvement and innovation to perpetuate advantage. In a very broad sense there are four specific threats to existing capability advantages.⁶ There is always the possibility of a new entrant that will challenge the status quo. At the same time, there is the possibility that a substitute that could replace an existing capability and negate a competitive advantage. Finally, supply and demand creates a natural tension: suppliers want to maximize profits and consumers want to maximize capabilities. This competitive tension aims for an equilibrium between effectiveness and efficiency. While each of these categories is important in its own right, they also compete with each other to create never-ending competition and a constant demand for continuous improvement and innovation.

There is another aspect to competition that generates competitive advantage -- cost and differentiation.⁷ Cost-focused strategies normally create and sustain capabilities for the lowest costs. This strategy forces competition toward lowering costs. In the commercial sector, a cost-based competitive advantage normally provides advantage in the short term. There is a constant

⁵ The foundational basis for the approach and the model used in this paper is based on a book written by Michael E. Porter, The Competitive Advantage of Nations, The Free Press, New York, 1990.

⁶ Ibid, pp. 34-36.

⁷ Ibid, pp. 37-40.

and consistent danger that other competitors will find a better way to lower costs that negates an existing cost advantage, especially in a globalized strategic environment.⁸ Long-term competitive advantage is normally based on a strategy of differentiation. Differentiation is focused on providing a high quality or unique capability at a premium price. For example, in fighter aircraft, many countries have produced or bought MIGs because they focused on a cost strategy. These fighters provide no quality or unique advantage.⁹ The United States pursued a differentiation strategy best represented by the production of the stealth fighter. Stealth fighters have provided the United States a long-term competitive advantage. This advantage includes not only an exceptional capability, but also includes the supporting infrastructure. The uniqueness of both capability and infrastructure is not normally subjected to the same rate of erosion to competitive advantage when compared to a cost-based strategy.

In addition to issues with premium costs, there is another caution to a differentiation approach. Differentiation is not founded on the “silver bullet” theory where decisive capabilities rely on a single approach. Complexity theory argues that it is the diversity of differential capabilities that creates the potential for rapid adaptation to unforeseen circumstances and elements of chance.¹⁰ Competition creates a culture of adaptation. In addition, a diverse array of premium capabilities introduces a level of complexity that helps dissuade potential adversaries from challenging the military power of the United States. This is an important element to long-term competitive advantage. Reliance on a single approach stifles competition, slows adaptation

⁸ The impact of cost-focused strategies is described in detail in Thomas L. Friedman, The Lexus and Olive Tree, Farrar Straus and Giroux, April 1999.

⁹ This example is for illustrative purposes only, and it is understood that the effectiveness of fighter aircraft is not solely related to the platform, but includes other elements such as recruiting, training, munitions, and sensors.

¹⁰ This is the thesis from Mitchell Waldrop, Complexity: The Emerging Science at the Edge of Order and Chaos, Touchstone Books, 1992

qualities, and reduces the demand for constant improvement and innovation. Over time, reliance on a single approach leads to the loss of competitive advantage.

The challenge is to describe a strategic model that creates and sustains long-term competitive advantage. In some ways, this concept of competition has parallels with the checks and balances described in the United States Constitution. While the United States system of government is often viewed as “messy,” it is also recognized by many as the best form of government when compared to other government models. Competition is the primary driver for efficiency within capitalistic economic systems. However, in national defense matters, effectiveness is perceived to be more important than costs, although it is also understood that national defense has to be affordable. The best way to drive both an effective and efficient solution is ensure a competitive environment.

Creating competitive advantage involves an entire system. Business models often describe this system as a value chain in terms of inputs, production, outputs, marketing, and follow-on services.¹¹ This model describes both products and services. Each of these elements can be individually improved through innovation with new or different processes and procedures, technologies, or concepts. Given that all these elements are interconnected, any improvement to an individual element of the chain also raises the overall value of the entire chain, increasing overall capability. Robust value chains in a constant dynamic state are hard for potential adversaries to copy or replicate without incurring prohibitive costs. The challenge for the United States is to exert enough competitive pressures on the value chain to consistently generate improvement and innovation without crushing the value chain. This pressure is especially difficult to exert when the United States already holds a decisive competitive

¹¹ Porter, pp. 40-44

advantage. The concept of value chains and their link to competitive advantage can be demonstrated with an example.

The United States has dominant space capabilities. This dominance is based on an entire system -- all United States space assets; the entire United States space industry; and the entire space infrastructure. There are inputs such as technology and industry, concepts, and human resources; there is production such as satellites, the operationalization of space, and creation of a “space cadre;” there are outputs such as intelligence, communications, and geo-location capabilities; there is the marketing of space capabilities; and there is the maintenance and sustainment of the entire system. This advantage has led to a tremendous reliance on space capabilities for conducting military operations across the spectrum of conflict. However, United States space assets are aging, the United States’ space industry is under intense competitive pressure, and the United States’ space infrastructure no longer retains its overwhelming dominant position.¹² While the United States still enjoys dominance on every point on the space value chain, challenges are emerging at several points along the value chain. Other countries are building space programs, and foreign-owned, multi-national companies are building more competitive satellites and launch facilities. Though the United States continues to enjoy its competitive advantage in space by constantly improving and innovating its existing capabilities, this is not enough to retain long-term competitive advantage. The United States must take action to lift every element of the space value chain if it expects to retain its long-term competitive advantage for this century. The Space Commission Report has suggested policies and investments that allow United States companies to operate one generation ahead of foreign

¹² These are conclusions drawn from the Executive Summary, Report of the Commission to Assess United States National Security Space Management and Organization, and January 11, 2001.

competitors, and that the United States military operate one generation ahead of United States industry.¹³ This is a strategy of competitive advantage based on competition.

Value chains are not linear -- they are actually filled with tremendous complexity due to external linkages. External linkages create another level of competitive advantage due to the strength and robustness of linkages between different value chains. For example, in space, the United States' competitive advantage is further enhanced with linkages to other value lines such as the exclusive supercomputer architecture that can more rapidly process data and a very robust telecommunications infrastructure that can distribute large amounts of processed data anywhere in the world. This synergy between external linkages can advance competitive advantage to a much higher level than the advantage gained from a single value chain. Similar linkages exist at every element for a variety of different value chains. Understanding both the competitive advantage from the capability and the competitive advantage from the linkages to other capabilities is essential for examining and analyzing competitive advantage.

While value chains have tremendous merit as a construct, there are challenges in quantifying the competitive advantage. How much advantage is enough? For example, in 1990, the United States' Global Positioning System (GPS) was a unique capability that gave the United States a tremendous competitive advantage in comparison to the rest of the world. However, by 2006, the European Union is planning to build its own global navigation satellite system called Galileo, which will reduce the degree of competitive advantage in global navigation capabilities currently enjoyed by the United States.¹⁴ The United States has three options: undermine the efforts of the European Union to maintain its current advantage; accept a smaller degree of advantage; or invest resources to improve existing capabilities. Making a decision solely based

¹³ Ibid, p. 8.

¹⁴ Office of the Spokesman, Department of State, Media Note, "U.S. Global Positioning System and European Galileo System," March 7, 2002.

on a GPS value chain without regard to linkages between other value chains might be a mistake because it may be possible for the United States to accept a smaller degree of advantage by relying on offset capabilities with other inter-related and inter-connected value chains. New high-priced technologies are not always needed to maintain advantage, especially if these technologies affect coalition partners as well as potential adversaries. Senior leaders need to understand the analytics behind value chains, and their linkages to other value chains, in order to make strategic decisions that create and sustain long-term competitive advantage.

There is another caution to using value chains as the primary means for determining competitive advantage, especially for the defense establishment. There is a tendency to eliminate improvements and innovations for existing capabilities to pay for new capabilities before new capabilities are in place. This tendency creates a capability gap and introduces an element of risk. However, new defense capabilities generally add to current defense capabilities vice replace existing capabilities. Therefore, even when pursuing new capabilities, existing capabilities must continue to be subjected to the competition that encourages innovation and improvement. At the same time, new capabilities, as new entrants or substitutes, are subject to competitive pressures from existing capabilities. The continued existence of multiple competing value chains for the short-term can be critical to creating long-term competitive advantage.

A competitive environment also implies some level of competition between different factors or elements.¹⁵ While value chains are very valuable for analyzing competition, they do not create a strategic competitive environment. There are three primary factors that interact to create and sustain competitive advantage in defense matters: military power, industry, and government.

¹⁵ Michael Porter introduced the idea of an interactive diamond comprised of factors and linkages for industry and national competitiveness. Though the factors and linkages that will be introduced are quite different, the construct of this model is along similar lines. Porter, pp. 69-175.

Military power is the balance between air, sea, land, space, special operations, and information capabilities. While each of these capabilities may have unique advantages, there are also linkages between these value chains that give the United States a higher degree of competitive advantage. There is no other nation in the world that can conduct sustained military operations across the spectrum of conflict on a global scale. Military power also includes power projection. This is not just the ability to project power, but is further refined as the ability to project power at a time, place and method of our choosing, build momentum, and to finish rapidly and decisively. Therefore, this includes power projection forces and the entire related infrastructure such as forward basing, in-flight refueling, robust intelligence capabilities, and global logistics capabilities. Another way to think of these capabilities is in terms of core capabilities linked together in a joint construct. This factor has been under some pressure since the 1990 generating some competition for improvement and innovation.

The second factor is the industrial base. The United States needs to maintain a competitive industrial capability to generate and sustain premiere capabilities. This includes strong science and technology programs, robust research and development infrastructures, competitive manufacturing capacities, and robust capital investment instruments and markets. This factor also includes processes such as the acquisition and sustainment of different capabilities. The nature of the capitalistic economic system already drives improvement and innovation through competition. However, the military was unable to leverage many of the economic innovations created in the civilian sector since the 1990s, and in many ways, current defense research, development, and acquisition processes and practices stifle competition within the industrial base.

The third factor is the competitive process between the different branches of government established by the Constitution. National security strategy is about matching ends and means while balancing costs and risks. There are a variety of tools available – military, economic, diplomatic, and informational – that the United States can use to accomplish its national objectives. The challenge for the government is to balance these tools. Normally, the interagency process, a competitive process, establishes this balance, but there are also exceptions. For example, both the building of the atomic bomb and the quest to put a man on the moon did not follow a competitive model, but were the result of political will to gain and maintain a competitive advantage. However, these examples are the exception, and over time, the process regained a new equilibrium once the national goal was achieved. Today, the governmental competition that has created unparalleled military power has not had an equivalent effect on the other instruments of national power.

These factors are not independent. They have linkages that are complex and robust between all the different factors at a number of different levels. Some would describe these linkages as webs or networks, and they are essential in creating and maintaining competitive advantage. The tensions between factors are already well documented. The constant tension between military power and the different federal agencies is described in several studies on civil-military relations. The tension between the industrial base and the different branches and departments of the federal government is also apparent, especially when the Defense Department is receiving an overwhelming portion of the federal budget in comparison to other federal agencies. The linkage between military power and the industrial base is at the heart of the continuing debate between effectiveness, efficiency, and affordability of national defense.

There is also an outside element that influences this model: chance. Clausewitz describes chance in detail as an element of war -- it is no different for competition.¹⁶ Some examples of chance that affect this model are new inventions, economic shifts, war, new political demands, discontinuities in inputs such as funding, and politics. The element of chance keeps the model in a dynamic state -- a necessary environment for innovation and improvement.

The real challenge is for strategic leaders to ensure competition within a very complex environment described by factors, value chains, and linkages. The primary role for strategic leaders is to push the different factors to compete without upsetting the balance of the triangle. Leaders have to keep the triangle in balance to encourage competition. If the triangle becomes skewed because one factor overwhelms the others, disaster is inevitable because it reduces the pressure for competition; thereby, affecting competitive advantage. Strategic leaders can use leadership and policy to create necessary pressures to control the balance within the triangle. These pressures can be controlled, but there is an art in determining an acceptable level of competitive advantage. At one end of the spectrum, leaders can use policy to create a monopoly to reduce competitive pressures. At the other end of the spectrum, leaders can use policy to fully integrate capabilities into an inter-dependency status. The challenge for leaders is adjust policy along this spectrum to generate the right amount of pressure to cause healthy competition. This pressure does not normally come from abundant resources, rather, the pressure to innovate comes from a scarcity of resources, powerful advocates, and a fear of irrelevance.

Competition is not an end in itself but it has a purpose – to create competitive advantage. Competition is a fundamental concept that describes the economic system of the United States. Americans fundamentally understand the power of competition. Competition drives

¹⁶ Carl Von Clausewitz, On War, Edited by Michael Howard and Peter Paret, Princeton University Press, 1976, p. 85.

improvement and innovation, and creates an entrepreneurial culture. It is this culture that allows for rapid adaptation to an ever-changing strategic environment. It is this spirit of competition that will ensure the competitive advantage of the United States for the long term. This spirit also accounts for the fickleness of chance. Chance creates opportunity, and a competitive culture is best suited to rapidly exploit opportunity. A competitive culture adapts faster to change, and provides the impetus for continuous action to maintain and gain competitive advantage.

The United States can position itself for long-term competitive advantage by adopting a culture of competition that demands constant innovation and improvement. The United States should continue to pursue a strategy of differentiation to ensure long-term military dominance. This dominance is not based on just equipment or platforms – it is based on quality people, demanding training, rigorous leader development, and adequate infrastructure. Therefore, it is in the interest of the United States to maintain a structure that encourages competition in a variety of different and diverse ways. A model that provides a baseline analysis of competitive advantage across factors and subsequent value chains can assist senior leaders in allocating funds, especially in a resource constrained environment. Long-term United States’ military dominance will not be based on transformation – it will be based on maintaining a competitive advantage. Therefore, national leaders should formulate governmental policies, processes, and organizations to maintain a balance between military power, the government, and industry that stimulates the competition necessary to maintain long-term competitive advantage in comparison to the rest of the world.