

War Isn't A Rational Business

Col T. X. Hammes, USMC

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In the January 1998 issue of the *Proceedings*, Vice Admiral Cebrowski and Mr. Garstka provided a detailed look at the US Navy's concept for Network-Centric Warfare. They predict emerging networked information systems will give the owner of those systems total dominance on the battlefield. Their enemies will be so overmatched by this "system of systems" that they will have no choice but to submit. The authors feel the Revolution in Military Affairs (RMA) has changed the fundamental nature of war.

To support their contention that information systems will dominate war, they cite several business studies showing how information systems allowed a business to dominate its field. The authors noted the advantage conveyed by information networks is so overwhelming the new industries rewrote economics and actually achieved increasing returns on investment. As a result, these firms came to totally dominate their fields – "locking out" their competitors.

With this as a background, the authors developed the idea that modern war is similar to modern business. They contend that since a modern Clausewitz does not exist for this new form of war, we can and should replace Clausewitz's concept of war by studying how nations create wealth. When we understand how wealth is created in an information based economy, we will understand how to fight in an information based world. We can then apply the advantages networks give business directly to war – and attain even better results.

I agree that warfare is undergoing significant changes, but I certainly do not draw the same conclusions as the authors. While information technology has already had, and will continue to have, a major impact on how we wage war, the argument that Network-Centric warfare will allow us to dominate warfare is flawed for number of reasons.

First, it will not change the fundamental nature of war. Second, it will not necessarily give us a marked advantage over a potential enemy. Third, it is based on Joint Vision 2010—itself a fatally flawed concept of warfare. Finally, the authors contend that technology will insure US forces maintain a much higher speed of decision than our enemies. This is both untrue and, in many situations, irrelevant.

The Nature of War

While there have been dramatic changes in HOW we fight, the fundamental nature of war has not changed. It is not a business. In fact, history, current events and even science (in the form of chaos theory) support Clausewitz's concept of war as a battle between the

wills of opposing commanders that is vastly complicated both by “fog” and “friction.” Clausewitz knew war was not business-like when he wrote “...war is an act of force, the emotions cannot fail to be involved.” He knew that war is emotional and often is NOT guided by rational business-like decisions. How could a “business” possibly be rational when it is based on the concept of trading lives for ideas? How many lives is independence worth? Religious beliefs? Ethnic identity?

This is the central problem to applying a business model to war. A business model assumes rational decision-making. Yet war is rarely rational and always highly emotional. What rational model can explain the continuation of WWI after the stalemate of 1916. No possible political gain could compensate the nations involved for the millions of casualties and financial exhaustion that clearly faced them. Yet they fought on for two more years

Not only does history provide numerous examples like World War I, current events provide even more. How can you explain the Palestinian Intifada using a rational business model? How does one “lock out” a suicide bomber who is willing to die to kill ONE Israeli?

Even more emphatic proof that business models do not apply to war lies in the current (Feb 1998) crisis in Iraq. We have spent months telling Saddam that he has only two options—accept inspection or face attack. Under the Network-Centric lock out concept, our overwhelming superiority in the “business” of our choice should have forced him to accept our will. Instead, Saddam ignored our obvious overwhelming superiority in the “business” of conventional war and chose a different approach. He dispersed his forces and prepared to simply absorb our attack. Simultaneously, he negotiated and agreed to inspections at the last moment.

While we cannot see the long-term outcome of the crisis now, the very fact that he responded in an asymmetrical and “illogical” way points out the central weakness of a “lock out strategy” based on a business model. The enemy can refuse to compete in the same business we choose. In this case, Saddam refused to meet us in a conventional war. He moved the conflict to a different arena entirely. He chose to avoid the battlefield in favor of the United Nations and the court of world public opinion. Clearly in the complex arena of international security affairs, an astute opponent can avoid being “locked out”.

Yet even this evidence will not convince some. Some will insist that the great strides in networked information systems have negated the lessons of the past. They contend history is no longer a valid guide. To them the future belongs to science and technology.

To those proponents of modern science’s triumph, I point out that the relatively new mathematical concepts of chaos theory support Clausewitz not Network-Centric.

Chaos theory is rapidly evolving but, essentially, it is the belief that complex systems are very sensitive to inputs, particularly initial conditions. Even minor changes to the inputs of complex systems result in massive changes to the output of those systems. Popularly

summarized as the “Butterfly Theory”, it postulates that a butterfly flapping its wings in China (very minor input) may result in a thunderstorm over Washington DC rather than the anticipated clear dry weather (a huge change in output).

Although proponents of this theory say that eventually we will develop the mathematical models to predict the outcomes of chaotic systems, they admit such models will not work until we can identify and quantify all inputs. Since such systems are subject to major deviations in outcome (a thunderstorm) based on virtually undetectable input (the flap of a butterfly’s wings), it is highly unlikely we can identify, track and correctly interpret all initial inputs (every butterfly, bird, bee, etc. in China). We may not even be able to determine when to measure “initial” inputs. Chaos theory recognizes Clausewitz’s view that the fundamental nature of war is chaos.

Science points out yet another, potentially fatal, flaw in the concept of Network-Centric Warfare that the authors ignored – complexity. Network-Centric requires a complex system of systems to prosecute a war. The authors praise the breadth and complexity of the system of systems stating that, according to Metcalfe’s Law, “the ‘power’ of a network is proportional to the square of the number of nodes in the network.”

While this may or may not be true, I suspect that virtually all systems managers would add a corollary to that law – “the complexity of a system is proportional to the cube of the number of nodes.” And of course, reliability is inversely proportional to complexity. History has not been kind to extremely complex organizations or systems in battle.

Today, science would classify such a system as a “complex system” and as such subject to chaos theory itself. For us to make Network-Centric Warfare work, we will have to understand the impact of chaos theory on our “system of systems.” Unfortunately, this “system of systems” is what we are counting on to overcome the effects of chaos theory. We will be chasing our tails forever.

In direct contradiction to the Network-Centric’s failure as a model for war, history, current events and even modern science continue to show us war fits the Clausewitzian model. From the emergence of nation state wars to the current crisis in Iraq, warfare closely matches Clausewitz’s description. The conflicts throughout this period can be described and explained by his model. The information revolution has changed the way we fight but it has not changed the fundamental nature of war.

A Decisive Advantage?

The second major flaw in Network-Centric is the idea that our “system of systems” will provide us a decisive advantage. The authors believe that by building a warfighting system that parallels successful business systems we will dominate modern war. They propose a networked system of three grids. The first, a sensor grid, will see everything on the battlefield. The second, a command and control grid, will collate, analyze and make the correct decisions based on the perfect picture of the battlefield. The third will be an

engagement grid that will execute the decisions of the command and control grid and use precision munitions to destroy the designated targets.

While there is no doubt that the collection systems, modern C2 and precision weapons available to US forces provide enormous advantages in conventional war, they do not provide superiority across the spectrum of war. In fact, reliance on a three-tiered grid system for battlefield dominance will result in defeat. All the enemy has to do is defeat one grid and the entire system collapses.

Two simple examples, Somalia and Iraq, will suffice to show that an enemy can defeat at least one grid – in these cases our sensor grids -- and force us to fight from a position of information INFERIORITY.

The Somalis defeated our sensor grid by blending in with the civil population in Mogadishu. Our systems could not see inside the buildings nor tell the “good” guys from the “bad” guys when they were outside. All our sophisticated collection systems were unable to inform US commanders that the Somalis had developed an aggressive, well-developed defensive system to counter our raid tactics. We did not even know they had brought massive numbers of rocket-propelled grenades back into the city. As a result of the failure of our sensor grid, our commanders were completely surprised by the vigorous and rapid reaction to our early October raid. The result was 19 American dead and our withdrawal from Somalia.

Clearly the Somalis had Information Superiority. They knew what tactics we would employ; exactly where our forces were stationed; what routes we would use to reinforce the Rangers; how we would react to a helicopter shot down. They even knew the importance of immediate international media coverage of the event. They had a plan to get members of the media to the scene, get them to record it and get those pictures on the air.

Contrast the decisive Somalia action to the hesitant UN/US action and ask yourself which side had a superior understanding of the tactical and operational picture.

A second example where sophisticated sensors have not given us an advantage is the current crisis in Iraq. For all our tremendous capabilities, we do not know where Saddam’s weapons of mass destruction (WMD) are. We do not know how he will respond to air attacks. We do not know how the Arab masses will react to a sustained campaign. We don’t have his command and control system precisely located. The list of what we don’t know is longer than the list of what we do know. This is against an enemy we have focused on for over 7 years! Clearly, the fundamental uncertainty in war has not changed.

In the Iraq case, all three sensor grids failed. Our sensor grid failed to provide a perfect view of the battlefield. Our command and control grid has failed to provide a clear, coherent course of action and remains tied up in both internal and international debates about what that course of action should be. Finally, even if we had a course of action, our

engagement grid might not be able to execute it. Our precision weapons are useless against targets we cannot locate. Even if the target is located, the precision weapons may not be useable due to political or humanitarian restraints. Saddam is an expert at placing military targets inside installations such as hospitals, mosques, etc. All three grids essential to Network-Centric warfare have been defeated by a not particularly well run Third World nation. The real world has shown that Network-Centric Warfare cannot guarantee and advantage.

Joint Vision 2010: Flawed View of the Future

The third major problem with the Network-Centric Concept is the fact it is based on JV2010 – itself a fatally flawed concept. Several excellent critiques of JV2010 have already been published (see *Marine Corps Gazette*, Dec 1997 (Hoffman, Owens) and March 1998 (van Riper)) so I will deal with it very briefly here.

JV2010 is built on the four pillars of Precision Engagement, Dominant Maneuver, Focused Logistics and Full Spectrum Protection. Supporting each of these pillars is the bedrock belief that we will have Information Superiority.

Despite what we say in JV 2010, recent conflicts prove that we will often fight from a position of information inferiority. This should not surprise us. Virtually all current collection technology was developed to find conventional forces. This same technology gave birth to widely available commercial systems including satellite photos, the Internet and informational databases that are accessible to the market.

In other words, it is easy for a terrorist/insurgent/gang member to track the movement of our forces via the Internet, CNN and commercial satellite photos -- precisely because these systems were developed to look for conventional forces. At the same time, we cannot use these systems to track many of their forces, particularly their unconventional forces and those operating in urban areas. These elements remain virtually invisible to our Cold War collection assets. We are forced to rely on our severely degraded HUMINT [ed. note: intelligence from human sources] capabilities to find such an opponent.

Saddam knew how many carriers we had in the Gulf, how many total aircraft, what weapons systems we were likely to employ and even how we would employ them. In contrast, we still do not know where his WMDs are, how his C2 works, or even where he will spend the night, much less where he will fight the war from.

JV2010's four pillars all assume Information Superiority. Without that superiority, the viability of the entire concept must be questioned. Somalia and Iraq show we have not achieved Information Superiority. Nor are there any systems under development that will allow us to pinpoint urban insurgents, small WMDs or to see into the mind of an enemy commander.

Speed of Decision

Yet, despite JV2010's obvious flaws, Network-Centric Warfare starts with that concept ... and rapidly goes downhill. Network-Centric focuses on technology and how it applies to business, and therefore theoretically, to war. In trying to point out the business strengths they would apply to war, the authors focus on the advantages conveyed by information technologies ability to speed up the decision cycle

In the Network-Centric Theory, much of the ability of a business to lock out another business is attributed to speed of decision making. While this works in the business models, it just as clearly does NOT work in many modern conflicts. For instance, the Israelis clearly had the tactical ability to react more rapidly than either the Lebanese in 1982 or the Palestinians during the *Intifada*. Yet in both cases, tactical agility did them no good. At the operational and strategic level, their enemies had established a long-term approach which operated outside the realm that rapid tactical decisions could effect. In both cases, their enemies relied on stretching out the tactical fight until the Israelis lost the political will to continue. The same thing is happening in Iraq today. Our vaunted speed of decision making has been neutralized by Iraq's superior use of operational and strategic tools .

CONCLUSION

Clausewitz wrote that for a theory to apply to war, it must apply to all previous historical examples of war. If the theory cannot account for something that has already happened, then it is a flawed theory. Clearly Network-Centric Warfare fails Clausewitz's test for whether a theory can apply to warfare or not

We have seen that Network-Centric Warfare does not change the fundamental nature of war; that it cannot guarantee Information Superiority; that it is based on the badly flawed Joint Vision 2010; that its speed of decision can be neutralized and its sensor grids defeated.

The basic problem with Network-Centric warfare is simple. It sees war as something that can be observed, quantified, controlled. However, as history, current events and modern science point out, war will remain a chaotic environment where no one can see, much less understand, all the factors.

The Information Revolution will not cause a fundamental change in the nature of war. War will continue to be nasty, brutish and not subject to business rationale. As professionals, we must recognize the fundamental nature of war, then develop concepts for fighting in that environment and finally develop the systems to support our concepts for fighting. The sequence is important. If we develop a concept of war that allows us to deal with uncertainty, fog and friction, we will do well if we do enjoy near perfect knowledge. But if we develop a concept of war (Network-Centric) that is based on perfect knowledge, and then find ourselves in a fight where we don't enjoy perfect knowledge, we will lose.

We must not forget Clausewitz's caution to strategic thinkers:

“The first, the supreme, the most far-reaching act of judgment that the statesman and commander have to make is to establish by that test the kind of war on which they are embarking; neither mistaking it for, nor trying to turn it into, something that is alien to its nature.”ⁱⁱ

ⁱ von Clausewitz, Carl ; *On War*; edited and translated by Michael Howard and Peter Paret; Princeton University Press; Princeton, New Jersey, 1976, page 76.

ⁱⁱ *ibid*, page 88.

Col TX Hammes is a senior military fellow at the National Defense University in Washington, DC.