

Matrix Warfare:
The New Face of Competition and Conflict in the 21st Century

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Osama bin Laden has many of the attributes of a ruthless venture capitalist.¹ He is able to attract dedicated individuals, he provides just adequate funding to achieve defined milestones, and he demands innovation from an empowered group of subordinates organized into a relatively flat, non-hierarchical corporate structure. Continuing the business metaphor, one can also argue that bin Laden has also incorporated many of today's best business practices into his organizational plan. Al Qaida is a global enterprise with dispersed "operating companies" working in a highly decentralized fashion. Corporate headquarters provides strategic guidance and corporate resources, but does not micromanage daily operations. The operating companies, through training and indoctrination, understand implicitly what corporate leadership wants.

As demonstrated during the last decade, the small agile competitor can frequently fell the large cumbersome corporate monolith, and al Qaida demonstrates many of the attributes of the most successful Silicon Valley entrepreneurs.² As with all global businesses, al Qaida has a complex series of arrangements both internal and external to accomplish ever changing and diverse corporate goals. Non-hierarchical corporate structures which dynamically coalesce members into task organized, multi-disciplinary groupings to achieve specific goals are called matrix organizations. Al Qaida is just such a matrix organization, and as any good corporate competitive intelligence department understands, it is essential to understand the competition if one's own corporation is to gain market share, or ultimately, force the competition out of business.

The Matrix

Al Qaida's approach to terrorism represents a new manifestation of conflict as transformational and momentous as the advent of nuclear warfare. A combination of technology and wealth now empowers individuals as only nation-states have been empowered in the past. This confluence of economic and technologic power enables individuals, such as bin Laden, and sub-national groups, such as al Qaida, to seriously threaten the interests and, potentially, the very survival of a modern nation-state.

The principal attribute of matrix warfare is the dynamic nature of its internal membership structure and its external alliance structure. Membership is actualized to fulfill varying combinations of geopolitical, economic, and/or psychological/ideological/religious needs or desires. For example, members can share common economic interests on one level and join together to accomplish a specific goal and then disengage and reshuffle to accomplish a different set of objectives. However, these combinations need not be sequential, but rather can be concurrent and multi-various, such that at any given moment, numerous combinations and associations are possible between the same members, but for different objectives. This presents those who might oppose these organizations with a constantly changing matrix of interconnections, making simple nodal analysis difficult and requiring a multi-dimensional mindset analogous to that required for three-dimensional chess.

Taliban controlled Afghanistan was the prototypical matrix state. An un-elected consortium of Muslim clerics and political, military, and economic agencies from within and without Afghanistan worked in varying combinations to control the country and pursue individual and collective goals ranging from access to natural resources (oil

pipelines), the drug trade, or the transportation mafia, and furtherance of religious or ideological agendas.

A matrix organization is not neatly hierarchical. Horizontal and vertical authority and responsibility are task organized to meet the occasion. While a central authority or group provides strategic direction and certain resources, close coordination is not essential. All key members are indoctrinated so that should central authorities be destroyed, a new power center can be created from residual, globally dispersed resources. This diffused organizational structure has additional benefits for a group perpetrating criminal activities. Because leaders and key members are not publicly elected and are not public figures in the Western sense, they maintain a certain level of plausible deniability with relation to the actions of the larger organization. Even the most prominent personalities of the organization may only be fronts for the real behind-the-scenes power brokers. To complicate matters further, the true identity of even publicly recognized individuals may be questionable.

Additionally, it is a mistake to personify the threat. Focusing on one or even several key individuals risks over-simplifying the problem and could mislead the public into thinking that eliminating the leading figures would constitute ultimate success. This decentralization is a key characteristic of matrix organizations. Historically, it has been useful and reassuring to paint the opponent leader as evil incarnate, but in matrix warfare, there are no Hitlers - just many Goebbels and Himmlers.

Proliferation of technology is the key enabler for matrix warfare and the principal factor making matrix warfare so much more virulent than previous manifestations of conflict. Never in history has the individual or a sub-national group of actors possessed

the lethal resources now available or the communications means necessary to connect a globally dispersed organization. In today's interconnected world, catastrophic effects can be produced rapidly at the time and place of the opponent's choosing. For the United States, information and transportation technologies have bridged the geographic separation afforded by the Atlantic and Pacific Oceans. The firewall of our shores has been breached and we must work to establish technical and organizational means to recreate, virtually, the physical protection once offered by the oceans. Technology has brought an end to our splendid isolation and has placed us in a geopolitical situation more familiar to Western Europe than to our continent.

The demographic shift to urban centers, coupled with ever increasing reliance upon power and commodity distribution technologies, has created new vulnerabilities for our homeland. In earlier times, large segments of the population could be relatively self-sufficient or at least reliant only upon the collective resources of their locality. Today, the very capabilities which have improved the productivity and profitability of our industries and consistently improved the quality of life for our citizens have created a more brittle structure far less resilient than before. Transportation, power generation, and urban planning must be re-thought in light of potential matrix threats. Efficiency must now be balanced with safety and survivability.

Technology is the engine that empowers sub-state actors with the ability to threaten the nation-state. While the world has always had criminally violent individuals, the destruction these individuals can produce is now greatly multiplied by advanced science and technology. Proliferation of technology is an inexorable force, thus making matrix warfare irrevocable – it will always be with us. Analogous to the nuclear genie

being unleashed, the events of 11 September have awakened us to a new sort of endemic threat. Matrix warfare further darkens the threatening cloud cast by the Damoclesian threat of thermonuclear warfare.

The current example of matrix warfare as witnessed by the attacks on New York and Washington, DC represents a criminalization of warfare. It is the latest derivation and most distant point from the chivalric code of the Middle Ages. Al Qaida has supplanted the modern code of the warrior, as codified in the law of land warfare, and its progenitor, the chivalric code, with a nihilistic ideology of self-conceit. The hostile actions of this matrix organization are criminal activities where individuals or groupings of individuals act in a supranational role for non-state aims. Clearly, law of war and standard legal conventions are not adhered to by these groupings, adding another element of criminality. Matrix organizations, like Al Qaida, eschew the central tenets of Just War Doctrine: competent authority to order the war for a public purpose; a just cause (it may be self-defense or the protection of rights by offensive warfare) and means proportionate to the just cause after all peaceful alternatives have been exhausted; and right intention on the part of the just belligerent.

Complicating law of war considerations further, the old dialectic of war and peace no longer applies to matrix warfare. War and peace have been replaced by constantly varying rheostatic competition and conflict. This clash of wills is pervasive and persistent. A clearly defined endstate that defines success and concludes hostilities does not apply – success and failure are defined in shades of gray, and matrix warfare cannot be decisively defeated on a traditional battlefield.

The world recognizes that nuclear warfare will forever remain a latent threat: The world must now recognize that matrix warfare is just such a threat.

Response Strategies.

Combating matrix warfare requires a new approach. Strategic empowerment of the individual, global economic interdependence, and technology proliferation alter the calculus of power such that a much broader and more nuanced approach than can be provided by the military alone is essential to effectively countering a matrix threat. A broad interagency response is required, and the newly created Office of Homeland Security is a good start in this direction. However, the synergy necessary amongst all government agencies will require new organizations, responsibilities, and modalities.

In shattering a second dialectical norm - the clear distinction between domestic and foreign policy, matrix warfare demands that domestic policies must be considered in light of their potential national security and foreign policy implications as never before. For instance, we must recognize that drug traffickers are also likely financiers of terrorism, thus making drug enforcement operations an integral part of the war on terrorism. The tremendous money involved in the drug trade and other illicit financial activities contribute significantly to the empowerment of sub-national actors to conduct their depredations.

The broad spectrum and pervasiveness of potentially catastrophic threats precludes a strictly defensive posture. The threat posed by biological, chemical, and nuclear weapons of mass destruction is so potent, that a 99% effective defensive posture

still represents an intolerable level of risk. We must develop offensive means and employ them in such a way that we establish a posture analogous to nuclear massive retaliation that precludes the employment of the most catastrophic capabilities.

Preemptive measures will become more prevalent in order to ensure the nation's self-defense and establish this preclusive capability.

This offensive imperative argues for a Department of Defense focus on international commitments. This need not and should not be to the exclusion of a supporting/reinforcing role for homeland defense, but the priority of effort for Defense must be on taking the fight to the enemy.

“Transformation” has been the clarion call heard in military and defense establishment circles for the last several years, building to a crescendo with the 2001 Quadrennial Defense Review (QDR). In its most basic form, the received wisdom regarding transformation has been that we are in a strategic pause, where no “peer” competitors exists and where we could afford to take the risk of reducing conventional forces in order to pay for enhanced technological capabilities to improve long-range precision strike from cruise missiles and air delivered smart bombs, intelligence, and sensors. It is important to remember that if not for the events of 11 September, we were prepared to assume significant risk by reducing ground forces and related capabilities to fund new and unproven technologies as evidenced by the fact that the QDR Report was substantially re-written in the week following the September attacks.

Militaries must continually transform if they are to remain relevant, so the concern here is not about transformation per se, but rather, it is an argument against the high risk, high technology approach championed by many technologists within the

Defense Department and academia. Setting aside the dynamics of the Congressional-Military-Industrial Complex, one can only explain this mindset by concluding that we were guilty of mirror imaging – believing that future adversaries would be like us – fight like us, equip like us, think like us. By understanding the characteristics of matrix warfare, it should be possible to avoid these pitfalls in the future and develop a new threat based approach to transformation.

Warfare in the 21st century, as in all preceding centuries, is about people – about human will. Our future military forces must be more engaged on a human level worldwide. We must maintain close liaisons and training with foreign militaries and we must establish personnel policies which ensure our servicemen and servicewomen are educated in regional studies. All officers should be required to pursue a “minor” in a designated region of the world throughout their career and follow a career path that provides significant numbers an opportunity to live and work in their region of expertise at least twice throughout a career. Familiarity with the cultural and physical terrain of the world will become increasingly necessary attributes for our military personnel.

In future campaigns against a matrix threat, strategic bombing campaigns will have diminished relevance. While the signature air campaigns of the U.S. Air Force will make a valuable contribution, this Service’s current focus must be balanced with the need for a robust close air support capability (aviation assets working in support of and in close proximity to ground forces). Because matrix opponents will rarely field conventional forces, it will be essential to obtain the necessary resolution and detail of the target that can only be provided by ground forces closely observing or maintaining contact with these unconventional adversaries.

To identify widely divergent and multi-various threats we will require a multidisciplinary intelligence capability. All defense, law enforcement, and intelligence agencies must be able to share a single database or federation of databases while working in concert for congruent goals and objectives. Human intelligence is critical and must be improved, but of equal importance is the need for the intelligence community to shift its culture away from covert intelligence and better use and analyze the rich repositories of open-source information. Much of what we need to know is available in the public domain: What is most needed, is the engagement of individuals throughout the world focused on harvesting and interpreting open-source data. Analysts should be in situ and not closeted in cubicles in northern Virginia.

Our intelligence analysts and our military in general must implicitly understand the matrix opponent's will to power – what motivates him to act. Technical means cannot accomplish this task. The data necessary to derive such meaningful analysis is open source, readily available to those dedicated to taking the time to study, ask the right questions, and get involved on the ground. We simply cannot effectively target what we do not understand.

Finally, while not an end itself, technology is important, and the U.S. must be able to rapidly harness new technologies to counter new and diverse threats. Better sensors, sophisticated munitions, and secure, reliable, interoperable communications are important improvements to most effectively prevail against the matrix threat. Tying these technical improvements into a coordinated and coherent strategy incorporating all elements of national power is the surest way of sustaining U.S. vital interests. The flexibility and adaptability of matrix organizations demands that we adopt an equally responsive

acquisition system, something which our current Planning, Programming, and Budgeting System (PPBS) manifestly is not. Significant restructuring will be necessary to get new technologies and capabilities fielded more quickly, and fortunately no nation is better equipped materially or intellectually to make this a reality than the United States.

In conclusion, the exigencies of matrix warfare demand new approaches to security. The broad nature of the threat requires an equally broad response. Cooperation and coordination amongst all government agencies must be expanded and improved. Matrix warfare is here to stay and we must develop a coherent and *sustainable* response that ensures global security. Matrix warfare is not unassailable, it is a war that can be won, but in order to win, we must clearly recognize the nature of the threat confronting us. It is not a static, rigid, hierarchical nation-state as we have confronted in the past; but rather, it is a dynamic, distributed, de-centralized, global, and amorphous adversary – it is a matrix threat. Returning to the business metaphor with which we began, we must seriously re-think our “business model” in light of the matrix threat and be prepared to change not just our methods and modalities, but our institutional cultures as well.

¹ Rich Karlgaard, Digital Rules, *Forbes*, Oct 2001, p.43.

² Rich Karlgaard, Digital Rules, *Forbes*, Oct 2001, p.43.