

# [Achilles’ heel – over-reliance on technology](https://assignbuster.com/achilles-heel-over-reliance-on-technology/)

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Among them, conflicts and wars have always occupying important place. Through last decades the U. S. Military were not only a beneficent but even a founder of the technological progress. L] Demand for the technological superiority, the decisive factor In prospective war, were forcing successive American governments to spent large sums on research and development (R&D) centers during the Cold War, but didn't expend with the decay of the Soviet union.

Nowadays the USA are spending approximately 12% of their defense budget (75 of $623 billion in 2008) on " research, development, testing and evaluations" (to compare, in 2004 combined spending of China, Russia, France, Israel and the united Kingdom for R didn't exceed $17 In 1991, the first Gulf War showed the prosperity of the American military technology over their Cold War's adversaries equipment.

This war were also an impulse for so called Revolution in Military Affairs (ARM) which is so far shaping the strategy of the American army. The point of this essay is the explanation where the American military supremacy is coming from and then, by referring to historical case studies, an analyze of possible weaknesses in the U. S. Strategy. At the end maybe it will be possible to answer the question: could the faith In technology became the American " Managing of even " Achilles heel" of the 21st century?

Before the ARM became main goal of the U. S. Military during Donald Rumbled term of office as a Secretary of Defense, as early as in the middle ass military thinkers, like retired admirals William Owens and Arthur Casebooks, remarked that the changing rules of the information age implicate changes in the military area as well. They argued that the patterns from modern economy should be implied also in military. 4] In 1996 the Joint Chiefs of Staff created the " Joint Vision 2010" OVA 2010) which stated that the main goal for the U. S. Military will be achieving " the information prosperity' defined as a " the capability to collect, process, and disseminate an uninterrupted flow of Information while exploiting or denying an adversary ability to do the same. "[5] Year 1999 brought an another crucial work for the current military transformation program. The " Network Centric Warfare" written by David S.

Alberta, John J. Garrets system. Therefore, when in the past success in business depended on ability to rapid production and shipment of products, so also victory in war depended of ability to rise and then transport concentrated army groups into decisive points of enemy; s offense. The perfect example of the realization of this strategy (created by the industrial revolution in 19th century) were Prussian victories over Austria (1866) and France (1871).

Bismarck armies were able to defeat their enemies because thanks to the developed command structure and railroad system were able to mobile and move masses of soldiers faster than their adversaries. In turn, as a result of the information revolution, success in nowadays business depend from the rapid acquirement and dissemination of information. Therefore, authors of the " Network Centric Warfare" argued that victory in post-industrial war will depend from the ability to gather the most exact possible knowledge of the enemy.

Then, thanks to the existing technology, it will be possible to strike into vital points of the enemy's forces from big distances - it is no any longer necessary to concentrate big armies (in true it could be dangerous because of the mass destruction power of modern weapons), it will be enough if a fire platform will appear in 600 miles range from the enemy and then precision guide monition (PEG)will be lunched from this safe distance against odes of the enemy's army.

Realization of the " Network Centric Warfare" ideas became the main goal of the Donald Remorseful era as the Secretary of Defense and for the fist time was shown in practice during the 2nd Gulf War in 2003. [6] The biggest change between the First and the Second Gulf War came in the real- time communications systems between units and their commanders. The main task of the specially designated units, like the 1 lath Signal Brigade was " connecting foxhole with the White House".

Soldiers of the Brigade, during assault on Baghdad occupying Satellite Park" (camp with dozens of satellite dishes settled somewhere in Kuwait, approximately 75 miles from Iraqi border) were controlling if every unit has maintaining connection with the central command. In 2003 the 1 lath Signal Brigade were responsible for the flow of whole Army's battlefield communication (five networks). The routine of checking health of the communication nodes spread among fighting units, were broken when any one of the representing them icons changed color from green to red.

In these cases main task of the unit were becoming delivery of reserve transmitters on the front line. In the Revolution in Military Affairs it is necessary that every soldier can get connection to the Global Command and Control System (CSS). Known as " Geeks" for common soldiers, system tracks every friendly soldier, vehicle, plane or ship on the world and place its position on the digital map. Also known enemy's positions were showed there.

During the operation " Iraqi Freedom" CSS ran over Spinner - the Secret Internet Protocol Router Network: 65 servers placed in the Connect (Central Command) which was settled Just outside the capital city of Qatar - Doth. Spinner is the American army's local area network and ores in a exactly same way like public Internet, however for the security reasons it doesn't connect with the World Wide Web properly. Through their CSS soldiers were able to get connection to the portal called " Writhing Web" - big source of battle plans, maps, records and online chats.

Thanks to the platform unit which engaged in a fight with the enemy may send an information about this struggle (or it with the intelligence, Pentagon or even the White House and then send orders back to unit (online or via radio through the nearest Tactical Operations Center - the most forward placed command post on the network). 7] This new information network changed totally the way in which military units were moving through Iraq. During the operation " Desert Storm" in 1991 coalition forces were forming a wedge which was literally sweeping the area in front of it.

In this formation (designed for the armored divisions as early as in the eve of the Second World War) units were working close to each other and any time could received help from the neighboring divisions. Modern technology allowed units to track each other without maintaining an eye contact. Thanks of that, units could moved in a spread " swarm" formation through the battlefield. Formation like this is giving many advantages. First of all, the enemy is not able to predict plans and positions of the American forces so also concentration of their forces in the crucial points of defense is impossible.

Formed in the " swarm" formation units were covering much more ground and thanks to that were able to localize more enemy's forces. After encounter with them they were informing via Tactical Operations Center (TCO) (or even by Microsoft Chat of their CSS[8]) the Central Command and then experts from Connect or Pentagon were trying to work out the best way to destroy this founded target. Units in the " swarm" formation generally moves faster - it's not necessary to keep a wedge formation for the price of sweeping empty ground. And last but not least, fighting in this style makes war cheaper. 9] Donald Rumbled came to the Pentagon from the business community and his commercial approach were easy to spot during his term of office. One of the most important aims of any enterprise is lowering costs. So the savings became one of the Remorseful goals as well. The " swarm" tactics is allowing achieving aims with fewer troops and less equipment (it's not necessary to move vast wall of soldiers and tanks cross the desert - only to throw kept in reserve units against revealed strong points of the enemy's defense and strike precisely against them). Also developing of precision guided weapons (Pigs) seemed like a proper investment.

Of course one may found its surprising - a " smart" bomb costs much more than an ordinary one - but one " surgical" hit is enough to eliminate a target and in the past dozens of bombs had to be dropped to achieve similar probability of destruction. In fact this might be debatable, however Pigs posses much more advantages. First of all there is no other so " American" weapon. Designed as a killing machine " smart bomb" is also considered as a life saving arm - or maybe more correctly as a non unnecessary victims weapon (and non necessary sacrifice are thing that American public opinion like to avoid).

There is no need to drop a bomb directly over a target so American pilots are safer. And thanks to the surgical precision is less likely that with the destroyed for example factory half of a city disappear as well (like during the " carpet" bombings of the Second world War). What is more the USA have in this field great lead over the rest of the World. This ability to identify and strike against many targets it is the " market" (saying in business words) in which Americans have the best competitive advantage.

According to the Remorseful economical approach, army as well as any other enterprise should focus on things in which are superb and efficiency is all and redundancy should be avoided. Because Americans specialize in the capability to identify and attack targets with their Pigs from great distances, Rumbled begun homogeneities of his services - units that do not posses this ability are not fitting to the new strategy. The first victim of the Remorseful policy was the " Crusader" artillery system.

This project was canceled because the Pentagon argued that tasks of the ground artillery can be done by the air force as well. What is interesting, exactly the same conclusion were shared by the decision makers of the Israel Defense Forces (DID). Before 1973. [10] In the eve of the so called MFC Kipper war" Israeli command was sure that perspective war against countries of the Arab world will be looking like the previous one. The spectacular victory in the " Six Days War" of 1967 gave Israelis confidence in own superiority and recipe for success in the future war.

Because victory in 1967 ere achieved mainly thanks to the superior air power, DIF developed this service more at the cost of for example field artillery. To surprise of Israeli decision makers during the war in 1973 opponents were able to employ deadly effective air defense system which prevent Israeli Air Forces to provide close air support role in lieu of artillery. This and some other factors, like total underestimation of the enemy brought Israel on the edge of destruction. [11] History knew also other examples where homogeneities of army's services lead to disaster.

Because of the country of my origin one of first examples that are coming to y mind is the battle of Churchill in 1605. This struggle is of course not very well known for military historians however is showing many aspects in which theoretically superior force became the victim of its own advantages. The battle of Churchill (today Assails, Latvia) was the turning point of the first war (1600-1611) between Sweden and Polish-Lithuanian Commonwealth for the dominance over Duchy of Living (nowadays area of Latvia, Living and Estonia).

New model Swedish army - typical example of the 17th century West European military - led by the king Charles IX himself, were eager to destroy much smaller Polish forces before their ranks could rise. 10. 800 strong Swedish army were formed according to the Renaissance era's structure with approximately 80% infantry (among them two thirds were armed in muskets and the rest in pikes) and a small cavalry contingent. To the contrary Polish-Lithuanian army were mainly mounted and the charge of their armored cavalry (" winged hussars") were still considered as the decisive tactical maneuver.

Opposite forces encounter on 25th September 1605. After 20 to 30 minutes of the battle Swedish forces became literally wiped out from the field and lost 50 to 75% of their base strength. Outnumbered 3 to 1 in the eve of the struggle Poles and Lithuanian lost no more than 100 dead and 200 wounded. The victorious Polish commander can Karol Chickweed) exploited all weaknesses of the Swedish army - homogeneities of forces, over reliance on technology and over confidence. 12] Western European armies ceased to relay on the charge of heavy armored knights in 16th century when armed in pikes and muskets infantry units literally ended the " age of chivalry'. After the " milestone" battles of Mortgager (1313), Lapped 1339, Secrecy (1346), Cincture (141 5), Raven (1512) and Via (1525) core of typical he decreasing year by year support of cavalry (at the beginning of the 17th century mounted soldiers were used only for reconnaissance and to secure infantry blocks from being outflanked by enemy's horse.

To fulfill this tasks typical western cavalryman were mounted on heavy, powerful but slow steed and relay on his pistols as a main weapon against adversary counterpart. To the soldiers and commanders of organized in this style Swedish army (which included a few thousand German, Dutch and a few hundred Scottish mercenaries) the army of the Polish-Lithuanian Commonwealth had to looked very old fashioned. Two thirds of this army were created from the cavalry with the armored hussars as a backbone unit.

But despite coming from the nobility stratum this soldiers had not so much in common with out lived common leave of medieval knights. First of all, they were professional soldiers who had spent majority of their lives " in a saddle" practicing own military skills. Secondly, Polish " winged" hussars were not a remainder of the medieval times but quite modern formation. Originated from Hungarian or Serbian mercenary " hussars" - medium cavalry unit specializing in the " hit and run" tactic (used commonly on the

European frontier with the Turkish Ottoman Empire), they went through process of adaptation and uniformity to be able to deal with all of the Pollard's opponents (since beginning of the 16th century - Russians, Western European mercenaries, Mongols and other Asiatic nomad tribes, Cossacks, ... ). All this struggles created an universal soldier - armed in lance, sword, saber, pistols, matchlock and sometimes even a bow and arrows, protected by the body armor and riding on the especially breed warhorse[13], hussar were combing the light cavalry ability to maneuver with the breaking charge power of the medieval knights.

Winged" hussars were distinguishing themselves from other units by wearing attached to the saddles of their horses wings created of eagle or ostrich feathers and by covering their armor with furs of wild animals. This look, in addition to the unusual sound created by the long flags attached to their lances were scaring enemy's horses and this is maybe the clue why at Churchill they beat Swedish riders with ease.

Swedish horsemen - too few in number and unable to fight with the enemy who excel in close combat instead of firefight, were not able to prevent Poles of outflanking and then striking in the back f Swedish infantry formations spreading panic which embraced whole Charles IX army. So called in Sweden " Churchill disaster" forced changes in Swedish military. Forces of Gustavo Adolph, which doing especially well during the " Thirty Years War", passed through transformation which raised the parity of cavalry in the army and changed the way in which they were used.

The second Swedish mistake at Churchill were confidence about superiority of their tactics of musket fire. The twilight of the heavy armored knight on the West came when weakened by gun fire valor units were not able to brake on through the wall of infantry pikes. Since this moment the winning side of a typical battle in Western Europe were this one which were able to shoot faster, more accurate and continuously to their enemy before encounter at the sword point. Because of that ranks of the musketeers start growing and numbers of the hand-to-hand fighters melting.

Used to the speed of the marching infantry Swedish musketeers in 1605 were able to shoot Just one volley against fast charging Polish and Lithuanian riders before hiding among ranks of the advancing cavalry mostly because as well trained and experienced horsemen as hussars were able to charge in spread formation and dense their ranks Just before encounter with the enemy. What is more, the firearms technology of the 17th century were not very reliable, additionally in hours preceding the battle they were exposed to rain (and wet gun powder surely were not so effective as a dry one).

If we add to this factors some typical human reactions, like extreme stress experienced by the shooters in front of the charging cavalry, low losses among the Chickweed's soldiers of 100 killed only 13 were hussars) are not so surprising. Western European military men knew how to deal with the enemy's cavalry but were not prepared to fight with such huge numbers of horsemen. This problem - not sufficient number of existing countermeasures could became also a weakness of the American forces nowadays.

During the " Millennium Challenge 2002" - war game which was simulation of (then) perspective war with Iraq, American's adversary (team " Red") once succeeded. " Red" player's land-to-sea rockets sank 16 American ships in the Persian Gulf with 20. 000 men on board. U. S. Navy were in possession of countermeasure - anti-rocket system " Aegis", but defenses were overwhelmed by the number of rockets shot at them (" Reds" fired whole their arsenal in one volley). Despite defeat Americans were still believing in theirs system. The over confidence can be extremely dangerous in battle . 14] The victory at Churchill could not be possible (or at least not so effective) without Swedish conviction in own superiority - not only in numbers but also in quality. Before the battle Swedes occupied strong defense position on the hill, however they left it when Polish-Lithuanian forces started retreating. This retreat, in fact a feint which forced Charles IX to chase after Chickweed's army, stopped when Swedes moved out of the hill. Then hussars turned over and strike against the exposed enemy. Similar belief in own invincibility seems to be one of the main sins of modern American commanders.

There are however some fields where it is possible to show weaknesses in the American war winning strategy. First of all, advantages given by the Revolution in Military Affairs had narrow applicability. American strategy were deadly effective in Iraq but conditions typical to he desert landscape - vast flat land and generally clear weather, were perfect to show American supremacy in equipment. Repetition of this may not be possible in other environment - like the Afghan mountains or hated since Vietnam war Jungle.

What is more American opponent were conventional army - possessing specified structure and tactics - things that can be exploited thanks to the dominance in the information realm. Realities of modern world shows however that possible American enemy do not have to be other country but for example insurgence group or international crime organization. Enemy like this is very difficult to track and its not predictable in acts. Secondly American army is relying on information technology that is very vulnerable and fails very often even in peace time.

Army servers might be liable on hackers attacks (in 1999 Department of Defense reported 22, 144 attacks on its unclassified systems) and what is more they can fail even without any help from enemies (for example because of the network failure Nationals Security Agency headquarter were shut down for whole 3 days in January 2000). So crucial for accessible for less than $4000 commercial tools. The same problems might cause using by military public telecommunication networks and commercial software. For example significant number of systems are provided by Microsoft (like mentioned chats).

In case of problems the Joint Operational Command help desk's main role is consultation with the Microsoft online help 5] It is easy to imagine that so generally accessible knowledge can be used by hackers to interrupt this software work. Additionally, even the most technologically secure network cannot be protected from human errors. Also actions of enemy agents (who in the society so multicultural eke the American could be enlisted with ease) can create many potential dangers. The problem of today's U. S. Litany is over dependence on technology and specialization in digital based strategy. As well as Swedes in 17th century American decision makers are believing that perspective enemies will follow the same paths and will try to compete with the USA on American rules. The problem might appear when adversary will use different, so called asymmetric methods (I. E. Instead of competing in musket fight will lunch a cavalry charge). One of the definitions of symmetry is avoiding strong points of the enemy and striking into his weak points.

So, potential enemy's countermeasures might not include only a try to deprive Americans support of information technology but also an exploitation of the USA institutional impediments. American political system (like most other democratic regimes) is underlining power of the civilian government over military. And civilians can be an easier target than the military men. [16] Two of the most significant American defeats (in Vietnam and Somalia) resulted not from military problems but because of losing the public opinion support for war.

Nowadays so called " CNN effect" can be used against democratic countries to weaken public support for the war (for example during intervention in Somalia in 1993, clan leader, Mohammed Aided won the information war against the UN when television showed corpses of killed marines dragged through the streets of Mogadishu - because of the public opinion, USA have to withdraw from Somalia despite the fact that for each killed marine Aided lost at least 15 men, at total one third of his force). 17] In the past, countries that introduced new methods of combat were defeated by enemy that match their revolution and then excel in it. As a example it is possible to show France in Revolution and Napoleonic period. One of the most significant advantages of France was ability to mobile vast masses of society into the Army. This pattern - soon followed by for example Russia, was an important factors that allowed defeat Napoleon (of course it was not the only one reason but probably without it victories would not be possible).

The Prussian decisive factor in their 19th century victories was development of the railroad system and management of the mass manipulation methods. This features, soon followed by France and Russia prevent German Empire to achieve fast victory in 1914 and as a result to exploit German problems with shortage of resources and manpower.

Also victory of the Soviet Union on the eastern front of the Second World War was not possible only thanks to the unequaled ranks of the Red Army and resources base (in fact this factors USSR possessed also when were suffering bitter defeats of 1941) but mainly the great investments in Research and Development the USA seems to stand far out of the reach of another countries (which cannot even dream of so big spending on odder technologies) however because of the accessibility to the very often commercially used American military technologies they do not have to pass the same way of development and modernization that Americans.

What is more most of the used by Americans military equipment are not so fresh invention. Commonly used over Iraq and Afghanistan planes - like fighters F-14, 15, 16, HA-18, stealth bombers F-117 and 8-2, tank destroyer A-10, Black Hawk and Apache helicopters were designed in the sass and sass. Also tank M-1 Abram - literally indestructible from the ground level vehicle - was designed in sass. [18] The important factor behind the development of this combat machines was existence of the one, dreadful opponent - the Soviet Union.

Because American military were preparing to the possible war with the Soviets their weapons were constructed to match the Russian products and because the perspective of war was very real they did not have problems with convincing the public opinion to spent their tax dollars on the military purposes. Today, lack of the clear opponent is a real problem of the American commanders. Field army can not be shaped to fight with so invisible adversary like AAA-Qaeda or insurgence groups. On the other hand opponents like China are in possession of the nuclear weapons and can not be matched with the conventional forces.

Because of that only possible foe for the American military might be rouge countries with a limited access to resources and technology, so easy to underestimate. What is more technology can win a battle but will not win a war. Armed conflict is the complex affair of political and military dimensions. Strategy leading to victory can but no necessary have to be based on technology. From this point of view, IT really could be the " Managing line" of the 21st century. Prospective American enemies could simply bypass technological American handicap and take advantage of the existing weaknesses such like the lack of the public support for war.

Original Managing line gave France confidence in own invincibility and because of that addicted the country's strategy on this one feature. As a result French army were waiting in their strong points and lost perfect occasion to defeat Third Reich through offensive action in 1939. American problem might be exactly reverse. Military doctrine of the USA is underlining preemptive attack as an important part of providing national security. Conviction in the success of such attack coming from the blind faith in own technological superiority and it can fail bitterly.

For the same reason society cannot treat wars as safe games. Power solutions still should be considered as a (sometimes inevitable) failures rather than methods of diplomacy. To wrap up, technological superiority of the American military seems not to have any equals on the world. Even with the transparency of American methods, prospective enemies are far behind in digital arms race (we have to remember that large number of the Pentagon's new projects are classified as top secret). American army is like Spartan phalanx at Thermopile - rolling over anything which decide to face her head to head.