At the same time, "transformation in one area of military affairs does not...mean the irrelevance of all others." The revolution brought about by the introduction of nuclear weapons did not "render conventional forces obsolete." While the rise of the aircraft carrier, made the battleship less central to naval power in the Second World War, the battleship was widely used in that war and in many conflicts since, including the Gulf War.[13]

The RAND study also offers some cautions based on historical experience. RMAs can provide "immediate military advantage" to the first nation that exploits them in war but are not always brought about by dominant players. They are often adopted and more fully exploited by someone other than the nation inventing the new technology. This was the case with the tank, which originated with the British in World War I, but was first fully exploited by the Germans at the beginning of the Second World War. Not all RMAs involve weapons. Railways had profound impact creating a competency to move large numbers of troops further and faster. Not all RMAs are successful, at least not initially, some take time. All successful RMAs appear to have three components, technology, doctrine, and organization.[14]

Many of the new technologies associated with the RMA have yet to be fully proven in war. For example, it is argued by some that long-range, highly accurate weapons, cruise missiles or those launched from aircraft, will be able to deal with massed armored attacks, thus doing away with the need to counter such attacks with equally massed armor and traditional artillery. But there is as of yet no example to date of massed armor being halted by Precision Guided Munitions (PGMs).

The contemporary RMA is said to involve a number of "technology/ device/ system/ operational employment concept combinations" which have or could change ways of waging war. One of these is the capacity for "long-range precision fires." Here highly accurate long-range weapons employ ground, air, and space-based sensors and command and control system which can dominate warfare obviating the need to close in order to destroy the enemy. The RMA is also associated with "information warfare." The outcome of battles may depend on the ability to protect one's own information systems while at the same time disrupting those of the enemy. Then there is the concept of the RMA being a "system of systems." The idea here is that by combining a "vast assemblage of intelligence collection, surveillance and reconnaissance (ISR)" with "advanced command, control, communications, computers and intelligence processing (C4I)" and "precision-weapon systems," the result is a whole with capabilities "much greater than the sum of the parts." Beyond this would be the "network-centric warfare" concept which envisions the meshing of the information grid, the sensor grid and the engagement grid. Finally, the United States Navy (USN) has developed the concept of a "cooperative engagement capability." Here combat systems on geographically separated platforms would share "measurement date associated with rapid timing and

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[13] Cohen, "A Revolution in Warfare," p. 51.

[14] Hundley, *Past Revolutions*, pp. 14-5.