One implication of future information superiority is a new set of concepts for all the military services. The concepts in *Joint Vision 2010*—dominant maneuver, precision engagement, full-dimensional protection, and focused logistics—are viewed as “transformations” of more traditional functions (maneuver, strike, protection, and logistics) “so powerful that they become, in effect, new concepts.”

- **From maneuver to dominant maneuver.** The amount of battlespace, as well as territory, that a unit of given size will be able to control, plus the ability to deploy Army forces both strategically and operationally.

- **From strike to precision engagement.** The ability of a unit to employ its weapons precisely.

- **From protection to full-dimensional protection.** A key requirement for all military operations due to global trends toward more accurate and lethal weapons. A premium is placed on the ability to protect forces from mobilization to employment in the AO.

- **From logistics to focused logistics.** The ability to maintain a force conducting operations. Modern information systems have the potential to dramatically improve the efficiency of military logistics.

These concepts depend upon information, i.e., on the U.S. military acquiring mastery of the new technologies available in the 21st century for improved command, control, and intelligence. These technologies are presumed to yield information superiority and a “rev-
olution in military affairs” is supposed to be the ultimate product of such transformations.

For each of the four operational concepts, we will be asking two basic questions. First, how can we best measure its effectiveness in the future; what specific MOEs are required? Second, what is the relevance of each concept to information, and vice versa? How much does the concept owe to information (e.g., “knowledge” in the parlance of the AAN) as opposed to some other variable (e.g., “speed” in AAN terms)?

THE CHANGING BATTLEFIELD

From 1914 to roughly the present day, a fundamental MOE for ground units has been their ability to control the movement of the front line of troops (FLOT) by maneuver and attrition. On the defensive, for example, an army’s objective is to limit the enemy’s advance. The MOE in this case is the extent to which the army can achieve the objective; it is typically measured in terms of the number of miles or kilometers by which the FLOT shifts. On the offensive, the army’s goal is generally to move rapidly toward key objectives, with the MOE being the extent of FLOT forward movement (again measured in miles or kilometers) during the army’s advance.

By the early 20th century, armies were of such size that continuous, “solid” fronts were feasible. These fronts could be anchored on major terrain features such as the sea and impassable mountain ranges that precluded attacks on their flanks. In addition to being feasible, these large fronts were essential because an increasingly mobile enemy could quickly exploit an open flank with reserve forces, and information about the location and intent of those reserves was generally imprecise or not available. Often, strategic or political considerations also argued for continuous fronts, as in West Germany during the Cold War. Success was measured by the ability to manage FLOT movement, which was generally represented for analytical purposes in linear fashion, as depicted by the three units lined up on the left in Figure 5.1.

In the future—as information technologies become embedded in military forces, as these forces become even more mobile, as the range and precision of their weapons increase, and as the size of
Figure 5.1—Changing MOEs

many force structures declines—success promises to be measured more in terms of the amount of battlespace a unit can control than by FLOT movement. Battlespace control will be a function of the speed of the unit, its sensors, and its weapons. In many cases the range of a unit’s sensors will greatly exceed the range of its weapons. This will be especially true as units farther down the chain of command gain the ability to access theater and national-level intelligence data (external sources in the language of Chapter Four). Thus, a unit’s ability to control a battlespace will normally be measured by its weapons’ ranges and unit mobility, with the sensors providing targeting, tracking, and directional information for both.

¹By control, we mean in the sense of Definition 1 in Chapter Two.
BATTLESPACE CONTROL

In the future, therefore, if battlefield conditions change as a result of information technologies and move in directions indicated above, a key MOE for ground forces could become the amount of battlespace they are capable of controlling within a given theater of operations. Increasingly, this battlespace might be measured in multiple dimensions, as units seek both to employ UAVs, helicopters, and long-range rockets and missiles within their battlespaces—while denying an enemy the ability to employ similar systems—and to maneuver those battlespaces rapidly throughout the theater in pursuit of broader area control. If such changes in battlefield conditions actually come to pass in the Information Age, then analytical representations of battlespace control seem more likely to be curvilinear than linear, as in the depiction on the right side of Figure 5.1. Moreover, success might come to be measured by volumes encompassed rather than mileposts reached.

In the future, according to Joint Vision 2020, U.S. forces will strive to mass weapon effects rapidly rather than mass sheer numbers of forces to accomplish their missions. The large-scale introduction of 21st-century information systems is supposed to help achieve this objective. For centuries military commanders have fought in a “fog of war,” which left them with imperfect knowledge of the location and status of their own forces, much less precise information about their enemy. By providing a higher-quality picture of the battlefield than ever before, Joint Vision 2020 predicts, information will enable commanders to make decisions under conditions of considerably reduced uncertainty.

In the past, for example, the “fog of war” forced commanders to be more conservative and keep forces in reserve—in part, to hedge against lack of information. Reserves helped counter the consequences of decisions based on potentially inaccurate information. Commanders also hedged against uncertainty by waiting. They delayed action to acquire more or higher-quality information and thereby reduce the uncertainty facing them.

Although higher-quality information will not eliminate the “fog of war” or a continuing need for at least some reserves, the great reduction in overall uncertainty that information superiority is supposed
to provide could force a fundamental shift in the methods used for fighting battles. Quality information should promote earlier decisive action by commanders. Increased situational or “battlespace” awareness could facilitate higher operational tempos and greater precision during operations. Better knowledge of the status of friendly forces, combined with unprecedented knowledge of the enemy, should enable logistical support, as well as both defensive and offensive military force, to be applied more efficiently.