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DOTMLPF-P

(Doctrine, Organization, Training, Materiel, Leadership and education, Personnel, Facilities and Policy)

1. Introduction

DOTMLPF-P is the acronym for the DoD model Doctrine, Organization, Training, Materiel, Leadership and education, Personnel, Facilities and Policy. This model represents categories of “solutions” (e.g., products and services) required to create an operational capability from information technology (IT) and other technology products.

DOTMLPF-P is important because it is a key authoritative intellectual tool in DoD’s efforts to improve efficiency and effectiveness. It may seem obvious that development of a new IT product should include attention to the adequacy of doctrine, training, and “leadership and education,” yet many IT products have been provided to warfighters and others without adequate references or training. While developers of hardware and software focus on their materiel products, recipients of the products focus on mission accomplishment. If the recipient of the product cannot understand how to use it to improve his efficiency and/or effectiveness, he will ignore it.

This paper was developed because (a) although DOTMLPF-P is a valuable intellectual tool that is used widely in DoD, including DoD policy documents, (b) little authoritative guidance is provided on what DOTMLPF-P means or how it can be used when planning and developing a materiel product for commanders, other warfighters, and others in DoD.

DoD uses the DOTMLPF-P model because experience has shown that materiel-only solutions by themselves do not provide capabilities.

2. Basic Reference

The basic reference for DOTMLPF is Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01H, “Joint Capabilities Integration and Development System” (JCIDS) - the basic instruction on the system through which DoD provides governance for developing products and services required to create major joint capabilities. The instruction defines the categories “materiel solutions” and “non-materiel solutions.”

3. Materiel and Non-Materiel Solutions

A materiel solution is a “new item.” A non-materiel solution is everything else (e.g., doctrine, tactics, TTPs, training, leadership, and leadership education).

“Materiel Solution – A new item (including ships, tanks, self-propelled weapons, aircraft, etc., and related spares, repair parts, and support equipment, but excluding real property, installations, and utilities) developed or purchased to satisfy one or more capability requirements (or needs) and reduce or eliminate one or more capability gaps.” (Glossary, page GL-6)

“Non-materiel Solution – Changes to doctrine, organization, training, (existing) materiel, leadership and education, personnel, and/or facilities, implemented to satisfy one or more capability requirements (or needs) and reduce or eliminate one or more capability gaps, without the need to develop or purchase a new materiel solution.” (Glossary, page GL-6)

4. Defense Acquisition University’s (DAU) online acquisition encyclopedia, “ACQuipedia,” (<https://dap.dau.mil/acquipedia/Pages/Default.aspx>)

This site, indirectly under the purview of the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD[AT&L]), provides the following guidance on DOTMLPF-P:

DOTMLPF-P stands for:

- **Doctrine:** the way we fight, e.g., emphasizing maneuver warfare combined air-ground campaigns

- **Organization:** how we organize to fight; divisions, air wings, Marine-Air Ground Task Forces (MAGTFs), etc.

- **Training:** how we prepare to fight tactically; basic training to advanced individual training, various types of unit training, joint exercises, etc.

- **Materiel:** all the “stuff” necessary to equip our forces, that is, weapons, spares, etc. so they can do operate effectively

- **Leadership and education:** how we prepare our leaders to lead the fight from squad leader to 4-star general/admiral; professional development

- **Personnel:** availability of qualified people for peacetime, wartime, and various contingency operations

- **Facilities:** real property; installations and industrial facilities (e.g. government owned ammunition production facilities) that support our forces

- **Policy:** common approaches and procedures

The idea is to fix the capability gap and it makes sense to have one governing instruction (JCIDS Manual) that encompasses both materiel (requiring new defense acquisition programs) and non-materiel (not requiring new defense acquisition program) solutions.

The definitions and descriptions listed above are simplistic but suitable as an introduction to DOTMLPF-P. However, a more sophisticated understanding is required to maximize the value of the DOTMLPF-P concept. For example, organizations include not just (a) the organizations that fight but also (b) schools that provide training and leadership education, (c) sections that write doctrinal publications, and (d) the Defense Advanced Research Projects Agency (DARPA). “Leadership and education” includes leaders exercising leadership to create the cultural change required for warfighters to use new IT products and new methods (e.g., counterinsurgency methods in Iraq and Afghanistan). Facilities include web sites such as the Joint Staff-sponsored Joint Electronic Library (JEL) (www.dtic.mil/doctrine) and ACQuipedia.

5. Example Exploitation of DOTMLPF-P

The Army’s “Initial Capabilities Document for Network-enabled Mission Command” (NeMC ICD) is a good example of the exploitation of the DOTMLPF-P acronym to frame a significant IT challenge and explain one Service’s approach to meeting the challenge.

The ICD explains that: “The current BC (battle command) network components were developed to address functional capabilities and have resulted in a loosely coordinated set of disparate sensors, applications, services, and transport.”

The ICD uses the DOTMLPF model to explain the strategy to create the needed interoperability from today’s disparate systems: “Transitioning today’s disparate systems to the capability envisioned in this ICD is dependent on incrementally integrating existing and emerging materiel and non-materiel solutions.”

6. Exploitation of the DOTMLPF-P Model

The simplest application of the DOTMLPF model to an IT effort is to see if the doctrinal publications, user manuals, training, and leadership education are in place for an IT product to be useful to its intended users.

A more sophisticated approach is to conduct an analysis of not only the necessary non-materiel solution but also the relationships between the different non-materiel solutions. A school is hindered in training users on a new IT product without a user manual and access to information on the science behind the product (e.g., for a heat sensor, how dust affects the sensor’s capability to detect heat). A commander cannot be expected to direct his subordinates to use a product for which he cannot get training support and user manuals.

Gaps identified using the DOTMLPF-P model may be as simple as realizing that a doctrinal publication, users manual, or training course needs a simple and easy addition that explains a basic concept such as the effect of dust on a heat sensor. In fact, the fastest, least expensive way, and most agile way to improve the operational return on an IT product is usually to improve (a) related doctrine; (b) tactics, techniques, and procedures (TTP), (c) training, and (d) leader support of an IT product through leadership education.

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