

Chapter XV

Promoting Netcentricity through the Use of Enterprise Architecture

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ABSTRACT

This chapter describes the DoD (Department of Defense) policy goal toward Net centric transformation as an example of enterprise architecture in practice. An integrated architecture across the enterprise provided by the DoD Global Information Grid (GIG) is a key ingredient toward meeting Net centricity. The chapter provides background information on key concepts and details the steps necessary to meeting the Net-ready key performance parameter (NR-KPP). The DoD architecture framework provides the Supporting System View, Operational View, and Technical Standards View architecture products that each DoD program must create to meet the Net-centric model. The Net-centric transformation is detailed based on the Net-centric data strategy, Net-centric IA strategy, use of service-oriented architecture, and use of a communications transport strategy. The path toward Net centricity is a significant and long-term effort and the chapter focuses on specific areas that affect DoD programs on their path toward Net-centric compliance. The implementation of enterprise services and the use of key technical standards are also discussed as emerging efforts.

INTRODUCTION

This chapter provides a specific example of enterprise architecture (EA) in practice by describing how EA acts as the principal enabler in promoting Net-centric warfare. The United States Depart-

ment of Defense (DoD) has been successful in its efforts in promoting Net centricity as a concept to address modern warfare. Modern warfare is enabled by a Net-centric environment, which promotes a seamless sharing of data among users, applications, and platforms. Today's military is a

global operation that includes land, air, sea, and space-based communications that all need to work together effectively to achieve greater levels of interoperability. Interoperability has been a big buzzword that needs to level set expectations for information systems in use by the military user community, government officials, and public citizens at large.

To address interoperability across the entire government, U.S. federal agencies are adopting EA guidelines as has been prescribed by the office of management and budget (OMB). The U.S. federal government has recognized that EA is critical in tying information technology investments to current and future business goals. The OMB has mandated each federal agency to develop an enterprise-wide architecture that provides a rational basis for each agency's information systems. The OMB has developed a set of Federal EA reference models that provides an organized structure to provide services to citizens—this includes a business reference model (BRM), performance reference model (PRM), services reference model (SRM), technical reference model (TRM), and data reference model (DRM). These reference models provide a basis for all federal agencies to comply with OMB policy and architecture mandates.

Within the DoD, EA is a key construct in transforming the military to the Net-centric vision. DoD EA is designed to manage complexity, allow interoperability, and provide the blueprint for the realization of mission-critical goals within the organization. DoD EA is implemented based on the DoD architecture framework (DoDAF), which has been in wide use and provides the central enterprise architecture framework that is abided by all DoD component organizations. This includes the Armed Forces, Air Force, Army, Navy, Marines, and DoD financial, business, and health organizations.

The path toward Net centricity requires DoD component organizations and information systems to achieve greater levels of interoperability.

Defining a stable enterprise architecture helps to resolve complexities that arise in connecting information systems together. Current challenges stem from the fact that many of the systems are isolated and “stove-piped” and do not effectively communicate with other systems within DoD or other Federal agencies. There are differing levels of heterogeneity of hardware and software, differing levels of information assurance and security controls, use of a variety of common and proprietary standards, and differing abilities for sharing and collaboration of data. Users also have a hard time being knowledgeable of current information. The Net-centric initiative intends to address these issues head-on and provides a path for greater interoperability within DoD component systems.

This chapter provides background as to the definition of Net centricity as has been intended based on DoD policies and guidelines, delineates the requirements necessary to meet the Net-ready key performance parameter, and provides an overview of the DoDAF architecture views. The chapter then discusses the goals set forth for the DoD Net-centric data strategy and DoD Net-centric IA strategy and describes how the creation of integrated architecture views accomplishes Net-centric goals. The chapter then discusses how DoD programs must abide by the Net-centric checklist and describes the use of service-oriented architecture and a communications transport strategy. Within the upcoming and future trends, it identifies the implementation of enterprise services and a set of emerging technical standards.

BACKGROUND

This section provides a description of the concept of Net centricity and defines key terms that help the audience understand the subject matter. The section covers the following topics and provides a background for each concept.

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