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## CONCLUSIONS

*In the world of acquisition reform, it is evident that changes can move at a rapid pace. When we chose our topic, Modifications and Upgrades, in August 1994, very little had been written about it in recent years. On 28 April 1995, Dr. Kaminski, USD(A&T), signed a memorandum changing the acquisition review and oversight process which precipitated changes in the Modification and Upgrade Policy. The summary and conclusions presented here are based on the information gathered and written prior to his memorandum. Although some of our conclusions foreshadow changes in the memorandum, the text was not re-written to reflect any of the ordered changes.*

### **Introduction**

The preceding chapters provided a concise, top level review of DoD regulations, policies and guidance pertaining to the modification and upgrade of weapon systems. Since modification and upgrades are normally handled at the Service level, we reviewed each of the Service's policies and procedures. This report looks at the modification and upgrade procedures for industry, other countries and one other U.S. governmental agency. Written documents, interviews and personal experiences are the basis of this report.

Here, the authors wish to express a few opinions based on our overall experience in preparing this report. Many of our beliefs were developed during numerous interviews and

by taking bits and pieces of information identified during our research.

### **Upgrade Requirement to Return to Milestone 0**

Currently, the process forces the return of all upgrades to Milestone 0 for approval. Not every upgrade needs to go the Milestone 0. In fact, upgrades really should go to the most appropriate milestone as determined by the milestone decision authority. Most of the upgrades that change the military characteristics of a system are evolutionary and not revolutionary. Milestone 0 objectives are "to identify the minimum set of alternative concepts to be studied to satisfy the need"<sup>1</sup> and "to determine if a documented mission need warrants the initiation of study efforts of alternative concepts."<sup>2</sup>

Most upgrades focus on changes to the operational requirement of weapon systems and not changes to the mission needs. If there is a technology that is being introduced that is revolutionary, then perhaps milestone 0 would be appropriate. When a new capability is introduced, it probably has already gone through an Advance Technology Demonstrator process and there is some level of maturity in the technology. No one wants to introduce a major upgrade (this is really a new program) unless it's going to be successful. Because of this and in the spirit of trying to remove those areas that do not add value to the decision process, the MDA should determine the starting point within the LCSMM for all upgrades.

### **Failure to Distinguish Between Major and Minor Upgrades**

Throughout the process of gathering information, opinions and recommendations on the subject of modifications and upgrades, one thing seems to be clear—the process, used to implement modifications, is fairly straight forward. Many modifications are implemented through ECPs and are handled within the program office. One of the advantages here is that the DoDI 5000.2 actually discriminates between major and minor modifications. However, the problem seems to be that it fails to distinguish between major and minor upgrades. This and the requirement to return to milestone 0 takes the decision authority for the execution of minor changes to fielded weapon systems away from the project manager. This added oversight increases cost and schedule for even the most minor changes to a weapon system. The use of the same criteria to determine major and minor upgrades as modifications would return the decision authority to appropriate level.

### **Lack of Program Tailoring**

One of the points made by the OSD staff on the requirements in the DoDI 5000 series is that the instruction was written so that the PMs could tailor it to fit their programs. However, there is tendency in the acquisition system, that seems to lack trust, to do everything possible to make sure one has covered all the bases. Another problem with tailoring, or the lack of it, is that the auditors may expect a PM to comply with “the letter of the law” rather than the spirit. This creates a situation where PMs are reticent to tailor their programs to a lesser requirement than outlined in the 5000 series. The two groups that directly affect program implementation, auditors and comptrollers, have no requirements to be acquisition literate. Requirements of both auditors and comptrollers should include the same education and training as those individuals in the acquisition community and some program office experience.

### **Indirect Oversight**

If one wants to streamline the process, one needs to look at the number of people that have the ability to delay, stall or ask questions. It is not a question of whether these inquiries are good or bad, but whether there is value added to the decision making process. If changes to a system are for logistics reasons, it is a form, fit and function change, and it can be done within the current funding envelope, whether it is a modification or an upgrade, the PM should just do it. When one brings something like this to a higher level of scrutiny, one drives up the cost. The programs that are in the best position to do this are those that have life cycle responsibility for their systems (e.g., DIRSSP). One of the reasons for this is that the PM knows where the dollars are; good

decisions on a LCC trade can be made. So many other systems have costs hidden in other funding lines. It is essential that approval be kept at the lowest possible level, as long as the PM is living within the historical support cost of the system.

### **Execution of Horizontal Technology Integration (HTI) Programs**

The rapid exploitation, of leading edge technologies, is a major objective of all the Services. The Army's choice of HTI as its method to leverage technologies across multiple systems breaks away from the traditional "stovepipe" approach of the acquisition process. HTI does offer an opportunity for increased inter-operability across the force structure. HTI expects to lower overall development costs by distributing them over multiple platforms. The commonality of HTI components should reduce procurement unit cost by affording economies of scale on the common components. However, if HTI becomes the predominant method of modernization for all the services, they must resist the urge to reduce the platform (Host System) PM's responsibility and control. As the current three HTI systems (Combat Identification, 2nd Generation Forward Looking Infrared and Digitized Battlefield) gain in priority, it is conceivable that the funding and total control of the integration of HTI system (Mounted System) will fall to a mounted system PM. The platform PM must always maintain configuration and funding control of their system.

### **Lack of an Adequate Integrated Information Technology Infrastructure**

The workforce involved with modifications and upgrades do not have an adequate information infrastructure. This issue transcends any single service. Many of the tools they

use today are stovepipe systems unconnected to their customers or headquarters. Currently, the services face an increasing workload, declining budget, and fewer personnel. Also, because the Services are using integrated product teams, which in many instances are geographically separated, communication is inherently more challenging. At the same time, a stated goal of DoD is to meet user requirements more rapidly, i.e., shorten the acquisition cycle. This leaves the services with the dilemma of producing faster results with fewer resources. One way of meeting this challenge is by giving the workforce the appropriate information technology tools to do their jobs smarter. Greater emphasis must be placed on establishing seamless information connectivity. Within this context, the improvements to the information systems must go hand-in-hand with reengineering the interfaces between the requirements, PPBS and acquisition system processes. An example from industry that illustrates this point, is the case of Ford Motor Company. Paraphrasing a Harvard Business Review article, Ford was quite pleased to have reduced the staff and expense of its accounts payable system through the use of new information technology automation. They reduced staff by twenty percent cutting down to 400 personnel and simultaneously achieved productivity gains. Then someone pointed out that a competitor Mazda had only five people running their entire accounts payable system. Mazda had reengineered their processes then automated. Ford had automated but not reengineered.<sup>3</sup> The lesson is clear: rethink all processes being used and vigorously reengineer them before imposing new information technology on top of them.

## Summary

Throughout this process of gathering information, we have discovered that there are very good people working within the acquisition community, and their main goal is to do a good job. The challenge for our leadership is to let them continue to do a good job without excessive oversight. Oversight is useful and good, if not overused. Where the DoD has the opportunity and authority to eliminate confining regulations, it should be done without hesitation. The acquisition process, in its entirety is a good one, but like

any process, it needs continuous improvement.

One other final comment (perhaps out of context) is that it became obvious to us that each service is unique in their requirements for fielded systems. "One size fits all" is not an optimal solution to acquisition reform.

The DoD has a responsibility to continue to make improvements to the acquisition process. This is a never ending responsibility and one that will benefit the war fighter as well as the country.

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## ENDNOTES

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1. Department of Defense. (1993, February 26). DoDI 5000.2 Part 3, page 3-8.
2. Ibid.
3. Hammer, M. (1990, July-August). Reengineering Work: Don't Automate Obliterate. *Harvard Business Review*, 104-112