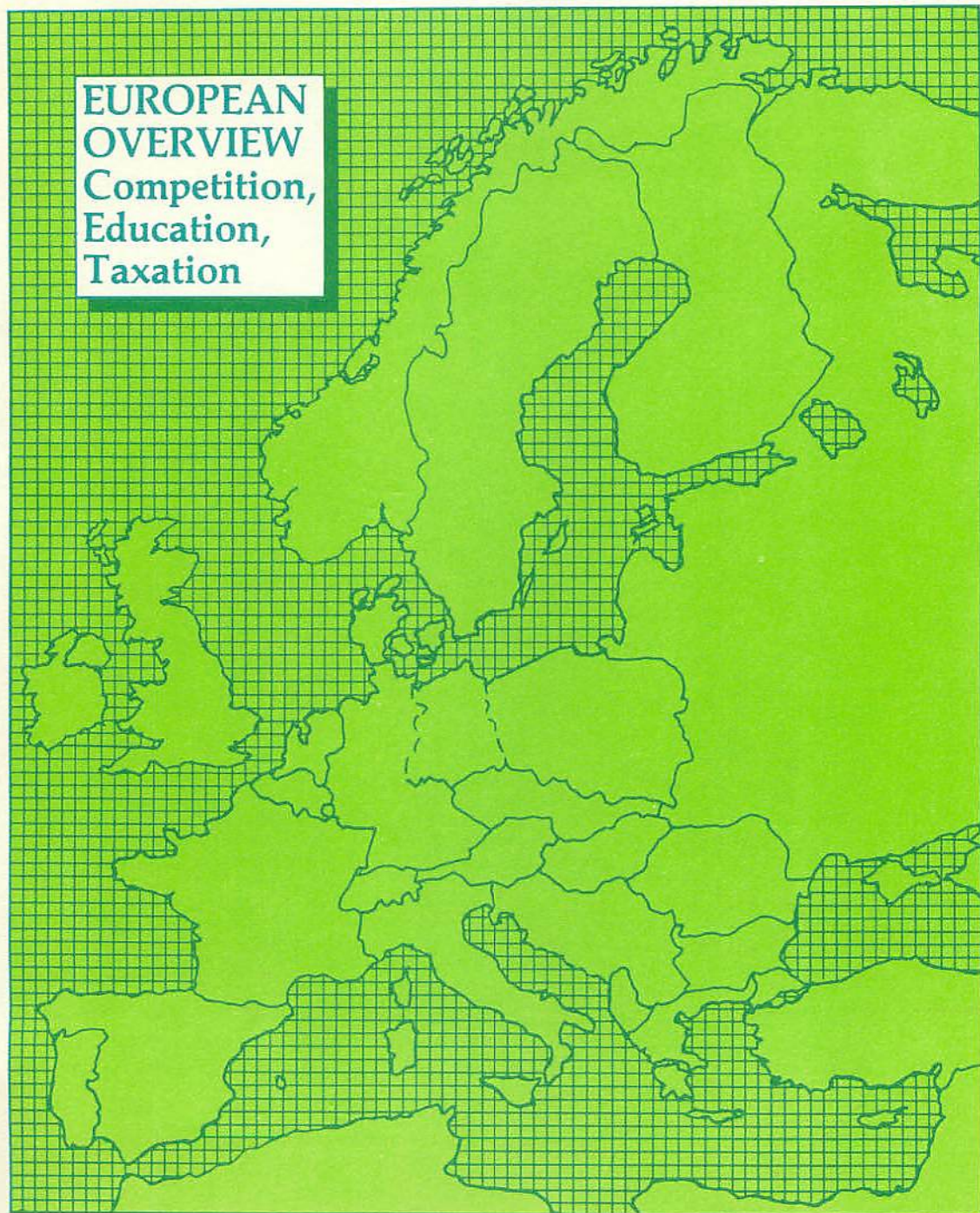


Concepts

The Journal of
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Volume 5
Number 1

**EUROPEAN
OVERVIEW**
Competition,
Education,
Taxation



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7 European Overview Part I: Competition, Education, Taxation

Dr. Franz A. P. Frisch

This is the first of a two-part examination of the European economic and social system as contrasted with that of the United States. The purpose is to provide managers of international programs with a better understanding of the environment in which they must work. In Part I the author discusses the European perception of competition, the European system of education, and the true social and economic priorities of European governments as shown by their use of taxation.

45 Can We Afford the DOD Acquisition Improvement Actions?

Colonel G. Dana Brabson, USAF

Close examination of the 32 DOD acquisition improvement actions prompted by Deputy Secretary of Defense Carlucci last year shows that 13 of the actions require funding "up-front." The author discusses these 13 actions in terms of whether their expected long-term benefits justify their up-front costs.

56 Defense Acquisition: A Game of Liar's Dice?

Dr. Walter B. LaBerge

Based on extensive experience in both government and defense industry, the author has concluded that the current method of developing and procuring defense systems actually guarantees that some of the most visible and discussed problems in defense acquisition will persist. For example, he suggests that current procedures actually work to discourage realism and conservatism in proposals and proposal evaluation while rewarding just the behavior the government claims to want to avoid.

64 Augustine's Laws and Major System Development Programs (Continued)

Norman R. Augustine

In the spring of 1979 the Defense Systems Management Review published 15 "laws" developed by Mr. Augustine to explain some of the more obstinate problems in defense systems acquisition. With this installment, Mr. Augustine adds eight more slightly irreverent but all-too-recognizable "laws" to the collection.

Defense Acquisition: A Game of Liar's Dice?

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Dr. Walter B. LaBerge

The purpose of this paper is to suggest important actions that can and should be taken to improve the defense acquisition process. Although the actions I suggest differ from those already promulgated as part of DOD's acquisition improvement program, they are not inconsistent with that program. [See "Department of Defense Acquisition Improvement Program," *Concepts*, Autumn 1981.] In fact, these proposed actions complement those already under way.

Prior attempts at improving defense acquisition have centered on improving the process without attacking the strong environmental motivations that make people behave the way they do. The DOD procurement system performs in a non-optimal way with large overruns and delays because the environment *forces* that behavior. Therefore, the only way to get more reliable budgeting and execution is to adjust the environment to reward only that performance. Simply put, in order to improve acquisition, DOD must better reward the behavior it wants and penalize that which it doesn't want. This is exactly the opposite of the way it operates now, which is to reward unrealistic promises and never penalize poor performance.

Liar's Dice

To get a feeling for the underlying problem, the following analogy may be useful. The DOD acquisition system is very much like the barroom game of "liar's dice." In that game, winning comes from concealing the true facts (e.g., the roll of one's dice) and by asserting not what *is* but rather what *might be*. To win, the player must put forward the most optimistic assertion that has a chance of being believed by someone not knowing the facts in detail. One who straightforwardly and honestly describes his situation rarely wins against the veteran liar's dice player. The same rules seem to prevail in DOD.

The players in the acquisition process have the same environment as does the player of liar's dice. It is generally conceded to be exceedingly risky for a military officer or a civilian contractor to be open, honest, and conservative. It is far less risky to make grand promises and conceal what is really going on. As a result, we are forever being surprised by programs that suddenly emerge into the limelight grossly overcommitted and underfunded.

To see how this happens, let me give my perception of the defense contractor environment. At the outset of a program, our DOD bid process encourages

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TABLE I
DOD Acquisition Improvement Actions Requiring Money Up-Front

ACTION	FUNDS	FY 82 ISSUE?	COST-BEN RATIO	PAYOFF YEARS	OTHER BENEFITS	COST AVOIDANCE
2. PRE-PLANNED PRODUCT IMPROVEMENT	R&D PRODUCTION	YES NO	10:1	10	REDUCES TECHNICAL RISK; FACILITATES UPGRADING IN RESPONSE TO GROWTH OF THREAT	COST OF FOLLOW-ON SYSTEM
3. MULTIYEAR PROCUREMENT	PRODUCTION	YES	2:1*	2-5	INCREASES PROGRAM STABILITY	10-20% OF ACQUISITION COST
5A. CAPITAL INVESTMENT	PRODUCTION	PARTLY	1:1 TO 2:1	3-10	IMPROVES SURGE CAPACITY	0-10% OF ACQUISITION COST
5B. MANUFACTURING TECHNOLOGY	PRODUCTION	YES	10:1 TO 100:1	3-10	IMPROVES SURGE CAPACITY; INTRODUCES NEW MATERIALS AND PROCESSES.	10-50% OF ACQUISITION COST
7. ECONOMIC PRODUCTION RATES	PRODUCTION	YES	2:1	2-5	MORE RAPID INTRODUCTION OF SYSTEMS INTO INVENTORY; CONTRIBUTES TO PROGRAM STABILITY	10-50% OF ACQUISITION COST
9. SYSTEM SUPPORT AND READINESS	R&D PRODUCTION	YES YES	1:1 TO 4:1	3-20	IMPROVED READINESS; CONTROLLED RISK FOR CONCURRENT PROGRAMS	10% OF LIFE-CYCLE COST
31. IMPROVE RELIABILITY AND SUPPORT	R&D PRODUCTION	YES YES	1:1 TO 4:1	3-20	IMPROVED READINESS; CONTROLLED RISK FOR CONCURRENT PROGRAMS	10% OF LIFE-CYCLE COST
12. FRONT-END FUNDING FOR TEST HARDWARE	R&D	YES	N/A	2-3	SHORTENED ACQUISITION CYCLE WITH CONTROLLED RISK	N/A
21. DEVELOPMENT AND USE OF STANDARD OPERATIONAL AND SUPPORT SYSTEMS	R&D	YES	2:1 TO 5:1	5-20	SIMPLIFIES LOGISTICS SUPPORT	COST OF DEVELOPMENT OF NEW OPERATIONAL AND SUPPORT SYSTEMS
32. COMPETITION	R&D PRODUCTION	YES YES	0.5:1 TO 1.5 TO 1 0.5:1 TO 1.5 TO 1	5-10 3-5	STIMULATES INNOVATION; ENSURES A QUALITY PRODUCT; INCREASES SURGE CAPACITY; MAINTAINS WARM TECHNOLOGY BASE; MAINTAINS WARM PRODUCTION BASE.	-50% TO +30% OF ACQUISITION COST
4. PROGRAM STABILITY	R&D PRODUCTION	YES YES	1.3:1 TO 1.5:1	2-5	DEVELOPS CONFIDENCE IN VIEW OF CONGRESS AND INDUSTRY; DEMONSTRATES EFFECTIVE PROGRAM MANAGEMENT	10-50% OF ACQUISITION COST
6. BUDGET TO MOST LIKELY COST	R&D PRODUCTION	YES YES	1.3:1 TO 1.5:1	2-5	DEVELOPS CONFIDENCE IN VIEW OF CONGRESS AND INDUSTRY; DEMONSTRATES EFFECTIVE PROGRAM MANAGEMENT	10-50% OF ACQUISITION COST
18. BUDGETING WEAPON SYSTEMS FOR INFLATION	R&D PRODUCTION	YES YES	1.3:1 TO 1.5:1	2-5	DEVELOPS CONFIDENCE IN VIEW OF CONGRESS AND INDUSTRY; DEMONSTRATES EFFECTIVE PROGRAM MANAGEMENT	10-50% OF ACQUISITION COST
20. IMPROVE SOURCE SELECTION PROCESS	R&D PRODUCTION	YES YES	1.3:1 TO 1.5:1	2-5	DEVELOPS CONFIDENCE IN VIEW OF CONGRESS AND INDUSTRY; DEMONSTRATES EFFECTIVE PROGRAM MANAGEMENT	10-50% OF ACQUISITION COST

*THIS COST-BENEFIT RATIO (2:1) ASSUMES THAT THE SERVICE IS REQUIRED TO BUDGET FOR THE CANCELLATION CEILING. IF THIS REQUIREMENT IS REMOVED, THERE WILL BE NO NEED TO SPEND FUNDS UP-FRONT AND THE CONCEPT OF COST-BENEFIT RATIO LOSES MEANING.

substantial contractor overoptimism in technical accomplishment, in schedule, and in cost. The contractor environment is one of competition to win the support of the evaluators of the proposal; thus the contractor very much caters to the evaluators' interests. Most major requests for proposals (RFPs) are evaluated by service technologists who will not themselves have a role in implementing the program, which means they are not dominated by implementation interests. In fact, these technologists have little experience in cost control or production implementation and so frequently are not competent to judge implementation issues. They do, however, have a high interest in trying to exploit in operation the most taxing technology. The technologists can see only the merit of new techniques, not their difficulty—and they are the judges.

In the main, the program office that is to execute the work is given the program only after the major characteristics of schedule, technical risk, and costs have been decided and cast in concrete. In practice, they cannot reject an unrealistic program. In fact, seldom does a program manager have a chance to really understand the quality of his going-in position before he is bound, contractually, to its execution.

The contractor proposal is most usually the basis for all execution planning, even though "promising the moon" is known to be the key to successful contract award. Proposal writing in the last few years has become liar's dice in its ultimate embodiment. There is no disincentive to writing a barely credible proposal that can match the disincentive to writing a conservative proposal; namely, the loss of the award.

Not only does DOD provide no disincentive to the low-balling of bids, it further hurts itself by not including in its long-term estimates the cost reserves necessary to compensate for the unrealistic bids.

The Fallacy of Fixed Price

To further complicate matters, there is the erroneous belief on the part of the acquisition community that R&D procurement with fixed-price initial production options helps improve cost credibility. Nothing could be further from the truth. If anything, it hurts cost realism. These fixed-price procurements do nothing to obtain better bids, but do much to deny the government the cost information that is much more available to it in a cost-reimbursement environment.

A contractor today is asked to bid fixed-price in competition with another vendor on development and up to 10 percent of the expected long-term production. Each contractor knows that if he can win the first competitive bid, he will be facilitated by the government or assured of a contract that will allow him write-off facilitization, that he will have a labor base to absorb his fixed overhead, that

he will be able to absorb company-sponsored future development work, and that he can eventually make a profit. He knows that if he loses he will be unable to do any of these things. In fact, without a new labor base he may spoil the profitability of his present contracts. The contractor also knows that he is reasonably safe from punitive action. He knows that the defense acquisition regulations (DARs) assure him that he will be paid real costs and a fair fee for the remaining 90 percent of the production which by then will no longer be in competition. He also knows that in today's application of the DARs his fee on the non-competitive 90 percent is not determined by the dimensions of the exaggerations he may have told to get the job in the first place.

In light of all these considerations, today's contractor inevitably explores how low he can bid on the competitive 10 percent and still make out on the fees, overhead, G&A, and benefits of the non-competitive 90 percent.

The only real disincentive to a low-balling bid is the possibility of problems with cash flow on a gross underbid. But good, strong companies (and many others not so strong) are willing in this kind of competition to risk quite a cash flow hit if the benefits can be expected to be great enough. This situation is quite unrealized by DOD today. Because of it, DOD actually limits its major contract bid structure to only the very rich. And of these, many well-capitalized, competent, economically well-managed companies no longer want to use their venture assets to subsidize the government for many years before making a profit. In a sense, we eliminate just the kind of contractor we ought to want; namely, the one who is good enough to have options with what to do with his surplus cash. Instead, we keep the ones who have no other options.

If you don't believe this, look at the percentage of DOD business compared to commercial business done by our top 25 DOD contractors. It has steadily dropped over the last 10 years from about 30 percent to less than 10 percent. We are not a business to put money into if a company has an option.

For those few companies who can afford and wish to play the DOD game, having figured how low they can go, they now need to fabricate a liar's-dice-like proposal. As in liar's dice, in DOD acquisition you really need to know your opposition. By trial and error, industry by now has that well figured out. They know that their liar's-dice proposal is to be made to a set of people who have every incentive to believe an overoptimistic, barely credible technical, schedule, and cost commitment, and who have a reputation for rejecting conservative offerings. So, small wonder the offerings are expansive.

The management level above the program manager is itself swept up in its own liar's-dice game. The figure of merit by which senior officials are scored is how well they can convince their military and civilian superiors that their own pro-

gram should be funded instead of someone else's. To do this they also need programs which can be promised quickly and at low cost. They too will be long gone before the results of their promises are evident. In sum, no one benefits from being conservative. Everyone benefits by being unrealistic. All the incentives are on selling. None of the incentives are on performance, at least at the time the initial program decisions are made.

Disincentives for Facility Investment

Another important, infrequently considered, aspect is that from the contractors' standpoint there is still little, if any, incentive to use their own money to improve their facilities so as to bring down production costs. There is, however, every incentive for them to use their facility money to move into new areas of R&D, and to facilitate to win new contracts by demonstrating, on their own money, new technology.

Why should contractors spend their money to reduce their fees (since fee scales with cost) unless the resulting improved production capacity puts them in line for new business? Even if a contractor is greatly overrun on the initial 10 percent, there is still little incentive to use company investment to reduce downstream production costs. The threat of a second source is the only threat that works to force company investment, but the size of our production runs rarely allows second sourcing.

In fact, because production runs are not long enough to permit amortization within an individual contract, special tooling is a dangerous, not an enticing investment. The company involved has to bet its cost recovery on what seem to be unstable and capricious DOD and congressional procurement quantity decisions. A buy-back program on specific tooling might alleviate this disincentive, but has yet to be made an accepted practice in DOD. I am not at all sure that DOD really realizes (even though it talks about it all the time) how serious this disincentive to facilitization really is.

The net result of the environment I've described is to encourage unrealistic bidding, to use this bidding as the basis for unrealistic total program budgeting, and to provide little, if any, incentive for a company to spend its venture capital for cost-reducing tooling.

A Deteriorating Competitive Environment

Why is all this still the case, when every administration since WWII has been trying to improve the acquisition process? It is in my view, curiously enough, that the DOD systems acquisition process had, in fact, been steadily improving. I admit that its results seem awful by almost any measure, and that this makes it

look as if we are doing much worse, not better. What is missed by casual observers is that a modest but steady DOD improvement has been swamped by a very great deterioration of the competitive environment in which the process works.

Costs of individual programs have gone up much faster than has the overall budget. So there are necessarily fewer new programs, even though each is more expensive. For example, where the United States once had 12 or so aircraft programs ongoing at any one time, we can now only foresee three or four new aircraft in concurrent production. As a result, contract opportunities have become few and far between and the compulsion to win the only games in town very high. Competition for the available jobs has become so much more vigorous that the resultant temptation for unrealism has far outreached DOD ability to control it.

Turning to suggestions as to what to do—they split into those actions that favorably change the contractor environment and those that can favorably change the service environment. In order to fix on a manageable number of implementable suggestions, I have down-selected to just four each for industry and government. I will list them first and then expand on them individually.

Industry Environment

—Make as a condition of all bids that down-select to a single production contractor, that fee and G&A recovery for the entire contract will be scaled to how well downstream production costs correspond to the estimates made at the time of down-selection.

—Make as a condition of contracts leading to production that full amortization of production tooling investment be guaranteed or that the tooling will, if desired, be bought back by the government. In either case, the contractor must be compensated fully in this facilitization for out-of-pocket costs *including costs of money*.

—Provide the professional manpower to institute an obligatory government “should cost” process that does not allow (except by service system command approval) award of production contracts whose costs vary more than 10 percent from government estimate.

—Ensure that the team that evaluates proposals for a program has the responsibility for executing that program. Do not let the off-line technologists determine the contractual commitments.

These four suggestions, in sum, attempt to make it much more profitable for the vendor and his competition to bid realistically than to play liar’s dice in his proposal.

Government Environment

—Make as a rigid matter of practice that tours of duty of program managers be 4 years and ensure that they be assigned PM status at the beginning of their career in grade (O5, O6, or O7). This will ensure, at the time of next selection opportunity, that the true measure of PM performance can be ascertained.

—For PMs who are with a program less than 4 years, institute a formal follow-up officer evaluation reporting system that requires that 2 years after any PM's departure he be re-evaluated by the service systems commander in terms of the accuracy of his representations at the time he departed the program.

—Institute an audit-by-exception program that reports to the chief of service rather than to the systems command. This spot-check audit would be conducted by the service in a manner parallel to that which the Inspector General performs for other parts of the service.

—Provide 6-8 weeks' overlap of senior personnel to allow adequate time for the new man to understand what he is taking over.

These four suggestions again strive to make possible for the government official an environment in which he may to do his job in an open manner and which discourages covering up difficulties.

Keying downstream profit and G&A on a large, single contractor program to the commitments made during competition is crucial. It is one of only two ways to incentivize accurate forecasts of production costs. The other is to maintain competition through the life of the programs. In most cases, the alternative of continued production competition is not practical. Since we have not so far keyed downstream profits to initial commitments, there are now no disincentives to playing liar's dice in a proposal.

The second suggestion tries to make production facilitization more profitable and less risky than is the case today.

The third suggestion is that compliance of bidding to "should cost" expectation be required. These "should cost" estimates ought to require the blessing of the senior systems command cost specialist. The idea here is to reduce the chance that the development community, in its enthusiasm, will fail to obtain good advice on probable program costs. Under this formulation, the only way for a program whose estimates fall outside the should-cost bounds to gain approval is for that program to get the explicit agreement of the head of the systems command. Knowing that this comparison with should cost will take place and that differences will be adjudicated at the system command level should reduce the willingness at lower levels to condone overoptimism. This, in turn, should produce an industry environment that encourages more realistic bids.

To make this should-cost process effective will require substantial augmentation of the cost and financial assets now available within the system.

The fourth industry environment suggestion is intended to let industry deal at program conception with the group that will implement the program, and therefore the one that has the greatest motivation to encourage realistic offerings.

The fifth and sixth suggestions attempt to remove the tremendous incentive that now exists for a program manager to conceal problems until after his officer evaluation report (OER) is written and he has departed for another assignment. Far and away the best way to do this is for the manager to be with the program long enough to have its results evident. A 4-year PM tour is an efficient use of this skilled manpower. For officers who cannot be retained for 4 years, the concept of a 2-year-later supplementary OER, done by the service system commander, seems equitable. This proposal, although novel, ought to be viewed positively by those honest, open managers who are in competition with those who may conceal information.

The seventh suggestion is bound to be unpopular, but hardly anyone in service or industry runs a major activity without having an audit chain directly from its chief executive officer to the place where implementation actions of major consequence take place. All good industries have this spot-check audit capability in one form or another. The military services themselves audit their principal business. They have inspector general (IG) teams who audit the administrative and readiness performance of an activity. This occasional audit from the top has always had a therapeutic effect by routinely causing everyone to report as if he were the one to be inspected soon.

I cannot emphasize enough the importance of the occasional top-level performance audit. It is even more important in DOD than industry because of the ever-lengthening duration of our programs. One simply cannot wait for a program to be completed to gain understanding of its technical, schedule, and cost situation. Reliable ongoing status reports are required. It is my view that the only way to ensure that these reports are accurate and forthcoming is to install the high-level, off-line audit. Otherwise, incentives for accuracy and openness in in-process reporting do not exist.

The last suggestion, that of substantial program manager overlap, can give the prospective manager time to learn the nuances of his program before being required to assume all of its commitments. As it is now, in his first month a new program manager seldom has a chance to do more than flail at daily problems without understanding their context. The less experienced a manager, the more should be the overlap. This is seldom the case. The normal environment encourages very bad mistakes by a too-abrupt transition.

Let me conclude by insisting, as I did at the beginning, that exhortation alone will not substantively improve performance. Contemporary market conditions, combined with DOD policies, have created an environment that does not favor conservative planning and openness in execution. Unless this environment is changed, not a great deal can be expected from the initiatives of the current administration.

Lest you think I am exaggerating about the difficulty of being honest in today's acquisition environment, just ask a few senior program managers both in industry and the military whether it is true or not. I've talked to enough military and industry senior executives to feel positive that they would agree (privately and off the record) that today's environment is really that of liar's dice and that it is almost impossible for anyone to be as honest and straightforward as he would wish to be.||