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Experimental Technology Incentives Program
National Bureau of Standards
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EXPERIMENTAL TECHNOLOGY INCENTIVES PROGRAM (ETIP)

The experimental technology development and application incentives program was initiated in fiscal year 1973 as part of the President's program to fund ways that the Government could stimulate technological innovation. The objective of the program is to learn how the Federal Government can provide policies and incentives which will encourage greater technological innovation in the private sector. Broader application of innovative technology could lead to the amelioration of national problems.

The interrelation of the Government and private sector is complex and not enough is known to predict the effect on technological innovation of a change in government policy. Consequently, various hypotheses regarding possible federal policy are being tested with analyses and experiments. Considerations leading to the initial selection of policy questions were: (1) areas in which there exists considerable experience; (2) activities traditional to the Department of Commerce; (3) possible new partnership arrangements between Government and the private sector; and (4) experience of foreign governments with technology incentives.

Four policy-related program areas have been identified for investigation and experimentation. The program areas refer to federal procurement practices, federal regulatory practices, federal funding of civilian R&D, and federal assistance to technologically based firms. In each of these, new or modified federal policy will be suggested in cooperation with responsible federal agencies.

In addition to these policy questions, the program will conduct analyses and exploratory studies to provide an improved basis for choice of policy questions for future investigation as well as to permit more effective direction and evaluation of the already selected policy questions.

The accompanying report was prepared as part of the ETIP program of the National Bureau of Standards. Statements contained in this document represent the views of speakers and do not necessarily reflect those of the National Bureau of Standards.

Director
Experimental Technology
Incentives Program
National Bureau of Standards
U. S. Department of Commerce

Proceedings of

GSA/ETIP SYMPOSIUM ON PROCUREMENT PRACTICES

May 29-31, 1974

Sponsored by

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SPEECHES

SYMPOSIUM ON PROCUREMENT PRACTICES

Sponsored by

General Services Administration
and
Experimental Technology Incentives Program
of the
National Bureau of Standards

The purpose of the conference was to initiate a continuing joint-government-industry effort to seek ways to encourage technological innovation in the development of products purchased by the Federal Government.

WELCOMING REMARKS
of
Jordan D. Lewis
Director
Experimental Technology Incentives Program

Good morning. Briefly, our agenda is as follows. We start out with key remarks by Arthur Sampson, Administrator of GSA, and Dick Roberts, Director of NBS, to set the tone for the conference. We then have a talk by Mike Timbers, Commissioner of Federal Supply Service, on procurement from the government's point of view followed by a talk by Les Krogh, Vice President of the 3M Company, on procurement from industry's point of view. Following these talks, we will have a description by Ralph Barra of ETIP of some very exciting procurement experiments now underway in the Federal Government. Then capping off the morning, a general discussion of the morning's subjects by a panel of government and industry representatives.

Starting this afternoon we move into the real core of the program: the "workshops." The workshops are co-chaired by government and industry representatives. In order to enhance the productivity of these workshops, the co-chairmen have been working together since noon yesterday; they worked all yesterday afternoon and much of last evening on preparing for this afternoon and tomorrow.

Government purchases amount on the average to approximately one percent of all civilian goods produced in the United States. This ranges from ball point pens to lasers. The

government purchases of these goods have characteristically followed the market, where heavy emphasis has been placed on lowest cost. The consequence of this practice is that the government does not always (perhaps not even generally) receive the greatest value for its dollar. Recognizing this, there is probably no better way to launch a serious effort to change/to improve/to modify federal procurement practices than to bring together as we have for today and tomorrow the cream of the crop of those who sell to the government and those who buy for the government to discuss the opportunities ahead of us.

The purpose of this symposium then is to recommend federal procurement policies and practices that could provide increased incentives for government and industry jointly to pursue new and improved procurement practices. This is not a modest effort. However, if these recommendations are effectively adopted not only will the government get more value for its dollar but industry might well be able to look at government as a sort of guaranteed mini-market for product innovation.

This symposium is part of a larger context. The Federal Supply Service and the Public Building Service of GSA, the Veterans Administration, and other major federal agencies in cooperation with ETIP have begun over the past few months using procurement incentives such as performance specifications and life cycle costing on an experimental basis to determine how well such tools, such incentives, might actually provide impetus for product innovations. The message here is that we mean business and that your contributions to this symposium have a good chance of being followed.

It is my pleasure and privilege at this time to introduce the Honorable Arthur Sampson, Administrator of the General Services Administration.

OPENING REMARKS
of
Arthur F. Sampson
Administrator
General Services Administration

Good morning. I have another important meeting later this morning when I appear before the Senate Appropriations Committee for my budget for next year. But I wanted to come out here if only briefly because I wanted you to know that I believe in this meeting. I believe in the philosophy behind it and its real chances for success.

The last decade or so has brought fundamental changes in the operation of governments and businesses in this country. The war in Vietnam shook some of our faith in our institutions. The environmental movement made us conscious of our fragile surroundings. Increasing population and rising expectations around the world are making it harder to maintain our life style. Inflation is no longer merely an inconvenience but is now a real threat. Patient problem solving seems to have given way to violent social action. And most recently, we have had to face up to the material and energy shortages that for the first time have put theoretical limits on our growth and physical well-being as a country.

What all this adds up to is the need for a new way of doing business. It is no longer adequate to do business as usual, to produce goods or government services in a routine way. Today we, all of us, are being asked to produce more, and what we produce must directly help in solving our social, environmental and other problems. Moreover, we've got to do all this with less--less energy, less raw material, and fewer real dollars.

Now that's a very lopsided equation. Something's got to give. Well, fortunately there is an unknown in the equation, one factor that could allow us to meet the demands of colleges, consumers, social activists and others who require ever more products and services. And we could do it in the face of strained physical and material resources. How? The secret ingredient is productivity and creativity. Finding new ways of using those products and services. And that, of course, is what this meeting is about. You're not here to solve all of our problems, but you are here to develop the kind of government-business partnership that can solve problems in the long run.

Let me give you an example of this kind of cooperative venture. In the past few years, we have completely revitalized the building program at GSA in partnership with the construction industry. We listened to the industry to find out its concerns. We sorted out the best innovative ideas in firms and put them to work for us. We held important and productive conferences on energy conservation, fire safety, environmental and social aspects of building, and finally we sent men out across the nation to sell to the industry the changes we were making.

Out of this interactive process came a great many advances. New construction management techniques, private financing for public building, performance specifications for office buildings, new concepts like an energy budget for building, and a fresh approach to fire safety. And finally, exciting experiments such as our energy conservation test building

which may use 50 percent less energy than a conventional building. Our environmental building, which will put recycling into process, will have a solar collector and a public park on its roof.

The most important aspect of all these changes is this: They were developed in partnership with industry. The process of developing new ideas and putting them to use was far more rapid than if the government or business had tried it alone. Even more important, the new ideas developed are useful not just to the government, but to the entire industry.

You are here to establish the same kind of effort for GSA's billion dollar procurement program. I can promise you for GSA's part in this venture the same kind of open-minded cooperation that characterized our efforts with the construction industry.

It won't be easy. Developing new ideas is never easy. Improving on old ideas is still more difficult. And bear in mind that when we set out to streamline government construction we were working primarily with one industry. When we turn to the acquisition of commercial type items and services, we are talking about thousands of diverse industries from paper clips to locomotives, each with problems as unique as the products are different. Neither the ETIP program nor this symposium offers a panacea for the myriad problems faced by buyers and suppliers. But both offer us the opportunity to begin a joint effort to overcome them. I hope you share with me the sense of importance surrounding your efforts.

The philosophy of this effort is appropriate to our times. The potential rewards are very real. And there are two dangers we face if we do not develop a creative, problem-solving relationship between government and business.

For us in government there is the danger of doing business as usual, without innovation or increased productivity. This could bring about a loss of credibility--a widening gap between what our leaders promise and their ability to deliver. For you in industry the danger of business as usual is no less real. For you the danger lies in public regulation of business. Unless you improve products and productivity voluntarily you may have to do it on a crisis or crash basis under government rules.

This three-way venture--NBS, GSA and industry working together and other efforts like it can avert those dangers. This program by its nature accelerates research. It has a built-in federal market to help put new ideas into use.

And it establishes the methods of voluntary government-business partnership to meet the new demands of the 70's and beyond.

So your symposium today is significant indeed. And I give you my best wishes for success. Thank you.

REMARKS
by
Richard W. Roberts
Director
National Bureau of Standards

Thank you Jordan. I would like to add my welcome to all of you as you spend your time this week here at the National Bureau of Standards.

In his 1973 budget message, President Nixon called for better ways to encourage private investment in technological change in this country. I think the continuing search for those better ways is really why we are here today and tomorrow. Congress in responding to the President's challenge funded a new program called "ETIP" and as you all know that stands for Experimental Technology Incentives Program which is a long name for a program this size in terms of dollars but we expect this program will indeed have a major impact--an impact much greater than the dollar resources that are going into it. I think it is going to have a great deal of leverage both in the federal system and in the private sector. I think being based here at NBS is not a bad idea. The Bureau of Standards has been involved with technology and technological change since it was founded in 1901. We are concerned with science; the development of new knowledge, and we are concerned with the application of that new knowledge in various sectors in this country to enhance productivity, to fill the basis for our industrialized society in fact to even promote and encourage change. We are involved with government agencies that we have been involved with successfully for a number of years. We are also involved with much of the private sector and I think the Bureau of Standards has a fair amount of credibility in both camps. So for this reason, I think the Bureau is a good home for the ETIP program.

As you know, ETIP is presently concentrating its efforts in three areas. One area of course is federal regulatory policy and our prime purpose in this area is to determine if it is possible to develop regulations that both protect the public and at the same time encourage technological innovation. We

are also looking at ways to improve coupling federally-funded R&D to the industrial sector and of course we are here today to discuss our activities in the Procurement Area.

Now the main purpose of ETIP at least as we see it at the moment is to develop effective methods by which the government can stimulate the process of technological change. In order to develop and validate such methods, ETIP must try out an actual practice some carefully chosen proposition in short what we are saying is that we are having an experimental program and we are going to carry out these experiments in the real life world and we are going to try to use the results of these experiments to develop new policy for operating in the federal sector.

One proposition that we are exploring is: Can the federal government through its vast purchasing power stimulate industry to invest in technological change? You know $60 billion is a lot of leverage and if the government learns to use that creatively we might see a great deal happening. We feel that purchasing power indeed can be employed to encourage technological change and that this change will spill over into the civilian economy and have a major impact there.

Now echoing Mr. Sampson's words, I think it would be futile for ETIP to develop policy for another agency without that agency having a very large piece of the action. Similarly, it would be futile for the Bureau of Standards and federal agencies to work in isolation from industry because it is really industry that we hope will respond by using new technology in answering the various purchase requests that go out from this great bureaucracy. We are delighted to have you here today. I'm looking forward to participating in your deliberations and I wish you a great deal of success.

PROCUREMENT FROM GOVERNMENT VIEW

by

Michael J. Timbers
Commissioner
Federal Supply Service, GSA

Jordan, thank you very much. I would also like to add my welcome to the ones you have already received and say that we are extremely pleased at the response which we have had to this symposium and also extremely pleased at the talent that we have assembled here for the next couple of days. Traditionally, the government has trailed product development in industry. I think this has come about primarily because of our system for establishing and maintaining specifications. Our approach has been to develop our specs, based upon existing products rather than upon the technological potential of the industries with which we do business. We have not encouraged industry to bring the latest innovations to us. Consequently, we have lagged behind industry and have done little to stimulate technology.

Because products must conform to our design specifications, it is frequently not profitable for a manufacturer to introduce a new item which does not meet the established specs. We would like to begin eliminating this situation. We would like to lead industry for a change instead of following, and we are convinced that the Federal Supply Service must take a leadership role in revamping government procurement of commercial type items, just as GSA's Public Buildings Service leads the way in revitalizing government procurement of design and construction services.

We have begun taking steps to bring our system up-to-date. Within the last year we have established a number of programs and practices to design and modernize our program. For example, we developed an intensified marketing program to determine the needs of our customer agencies and to determine how we can best satisfy those needs. We have established an active value management program to assure that proposals and problems are given a thorough and systematic examination no matter what the source of the proposal may be, whether it emanates from a supervisor or a subordinate. And we have begun applying the life cycle costing (LCC) technique to procurement. Now the LCC concept shakes the very foundation upon which government procurement practices have rested for years; that is, the low responsive bidder gets the contract. LCC looks at the total cost of ownership over the entire life of the item, the acquisition, maintenance, repair, and disposal costs. Obviously we can't apply LCC to every item in our system but I can assure you that where it is practical we are going to try to do it.

We will also be including value incentive clauses in our contracts. These will enable contractors to share in savings we realize as a result of innovations they make after the contract is awarded. This should provide a stimulus for the contractor to continuously improve his product or manufacturing process.

These are some of the major steps we have taken so far but this is only the beginning. The largest step is the revamping of our system which is scheduled for implementation in July of next year provided that the necessary legislation is passed. And this is industrial funding or full cost recovery funding which will enable us to operate in much the same manner as a commercial enterprise and recover our operating and overhead expenses through the markeup on the items we sell to our customer agencies. Industrial funding should give us the flexibility to put our manpower and dollars where they are most needed to ensure that our customers are getting the latest products in the most timely manner. Industrial funding gives us added incentive to modernize our system because we now will be paying our own way. We will have to do a better job in order to survive.

As Mr. Sampson emphasized, we are here today to establish a productive working relationship, a partnership of sorts. The ideas and proposals generated by the industry and government representatives assembled for this symposium are needed in our efforts to modernize acquisition practices. And I would like to briefly touch upon some of my own thoughts on the subject. For example, I am sure that most of you will agree on the desirability of performance specs over the traditional design specs. I am equally sure that most of us are familiar with the problems which accompany performance specs. The expense and time involved in developing tests and test methods, the necessity of reproducible tests and the fact that the performance specs can't be used for all items. There are other possible solutions that come to mind for evaluating new and improved products: the possibility of prototypes; the idea of design competition in certain fields, for example in furniture; and the use of panels to study products offered for sale to the government. These panels would augment broad performance specifications.

When I think on the overall subject of stimulating technology, I can't help but focus on a couple of problems that face us. First, as much as we desire to provide incentives for product innovation, we must always remember that fair competition is and always will be a basic tenet of government procurement. Stimulating technology

without giving one contractor an edge or unfair advantage over another is one of the challenges that faces us. In this vein, perhaps we should take another look at our definition of competitiveness. Life cycle costing has broken us away from the strict dollar criterion but maybe we can go further. Another problem we have is how to ensure that small business participates in government procurements. How do we ensure that small business, without the necessary R&D dollars, is not left out in our efforts to stimulate new technology? I hope we give the acquisition process a thorough examination in the next two days. We have over a hundred representatives here from over 60 organizations and if this group can't come up with some meaningful conclusions and suggestions for stimulating the procurement process, I'm afraid there is no help possible. But I am sure we can achieve these objectives and I'm sure you wouldn't be here today if you didn't think we could do many things to improve our acquisition process. I wish you a very successful conference.

KEYNOTE ADDRESS
by
Lester C. Krogh
Vice President
Commercial Chemicals Division, 3M Company

Just a little while ago Mike Timbers said "flexibility in procurement specifications is an absolute MUST if we are to keep abreast of the latest technological innovations."

To that I must add, "and if we hope to achieve real success."

That principle was brought home to me very recently, when a neighborhood Girl Scout approached my door. She wore full uniform, and a face full of hope. She carried a well-stocked sample case of famous Girl Scout cookies and an order blank.

Well, at this particular time in my life, I'm not quite as svelte as I once was; and all I could see was hopeful little girl carrying a sample case full of calories that I in no way need. I was resigned to placing a charitable order, even before she rang my doorbell.

Ladies and gentlemen, that Girl Scout turned out to be--please forgive me--a real sharp cookie!

"Good evening, sir," she said, sizing me up immediately. "For weight-watchers this year, we are also offering Girl Scout celery!"

Now, <u>that's</u> flexibility!

And that's the kind of creativity that built this country.

And that little girl, who will leave college about 1985 or so--and who undoubtedly will <u>not</u> leave her college the way she found it--already has a job offer from me to sell whatever products or services I may be connected with at that time!

I may have some doubts about what <u>I</u> might be doing in 1985, but I have absolutely no doubts about her!

You see, just a few years ago, I was Director of 3M's Central Research Laboratories. Today, I'm Division Vice President for the Commercial Chemicals Division of 3M Company. There was a time when I never thought I would have responsibility for sales, manufacturing, or any of the other orchestrated grief with which I am currently saddled!

But I must admit it's fun. Mostly.

Permit me a few moments to tell you a little bit about 3M Company, because an understanding of what makes 3M tick is essential to some recommendations I will share with you later on.

Back in 1902, 3M was five investors, and a site on Lake Superior that they hoped was rich in corundum, which they hoped to mine and sell for abrasive applications. Hence, the "Mining" in "Minnesota Mining and Manufacturing Company." There has been, incidentally, precious little mining connected with 3M since.

Today, 3M is 79,000 employees in 38 countries of the world, with sales of 2-1/2 billion dollars resulting from successful marketing of some 50,000 or more major products.

Those products are sold through 30-some divisions, just to keep things manageable.

Our continued growth stems from our fascination with offering what people will want and need in the future, instead of what they have wanted in the past, or even what they want today.

Look into any area of human need, and you'll find 3M--in health care, transportation, safety, housing, education and a host of other human concerns that we know as markets.

We have succeeded up to now by regarding serious problems as business opportunities. That's also why most of us have so much fun in our jobs. We enjoy real relevance.

More than 4,500 of those 79,000 3Mers are scientists and engineers. We bet heavily on the outcome. In effect, we live in the future, because we must. Some 20 percent of sales are derived from products introduced within the past five years.

While we encourage innovation, we don't guarantee easy acceptance. The inventor of "Scotch" tape was told he had a wild scheme, and was advised to put away that sticky mess and forget it. He was stubborn, and continued to work with his brain child. Once he was recognized and successful, people stopped calling him "stubborn" and described him as "persistent!"

I guess I'm still on some sort of probation, because last week my boss called me stubborn. "Persistent?" I offered.

"No, stubborn. You're stubborn, Les," he said.

So I've plenty to shoot for. I'm still working for "persistent."

Well, one last commercial for my company: Business Week magazine has said 3M could be considered the nation's most innovative enterprise.

That's high praise, and we love it. But we didn't pause to bask in it. Our worldwide competitors are tough and smart and aggressive. We always can feel their hot breath on our necks as we keep sprinting to stay ahead.

Everything I have just outlined has a direct bearing upon the future of Federal Supply Service under "industrial funding." Because under "industrial funding," your customer's satisfaction will be a key element, just as it is for 3M.

The difference between 3M and "me too" industrial suppliers is the 3M research organization. Those 4,500 men and women work a powerful magic.

Innovation, the process by which an idea is translated into the economy, is what benefits both customer and producer.

There are at least three steps in the innovative process: identification, generation and application.

Identification of a need can be thoroughly accurate, but if research and development people don't understand what is needed, or if the cooperation of engineering, manufacturing and marketing people is less than ideal, innovation suffers.

Sometimes those closest to a problem are least equipped to see effective alternatives. A study conducted by the U.S. Department of Commerce indicates most major innovations are generated outside the industry that is most affected by those innovations. For example, nylon was developed by a chemical company, not a textile company. For another, transistors were first marketed by an instrument company, not a vacuum tube producer.

Sometimes it takes 7 to 15 years to travel from a good idea to a successful product. We have found that lead time is shrinking rapidly, compressed now to 3 to 8 years.

We have expertise in many technologies, so opportunity for serendipitous discovery probably is higher in companies like ours; but most successful research and development is

objective-oriented. By that I mean we encourage our people to dream, but to a purpose!

My friend, Al Reynolds, who now heads up a special department offering alarm services to burglary-prone businesses, is a veteran of several commercial development ventures within 3M. He, in his wisdom, developed what we call Reynolds' Formula.

It is: The Probability of Success increases rapidly as the distance between the two points of view decreases. A technical man and a marketing man close together--organizationally and geographically--can "live with" and develop their idea.

If they do their homework, and employ their own backgrounds and logic, and have a strong sense of urgency about their field work, they'll make that first sale. And learn from it.

So, we get our marketing and laboratory people as close together as we can, with each new development project. We assign them the responsibility of calling together on customers, to find out firsthand what the customer really needs.

Often, the customer doesn't know what he needs--he knows only that he has problems. It's like the delinquent kid being interviewed by a social worker who begins by asking, "Now, young man, just what seems to be your problem?"

If the kid knew, he wouldn't HAVE a problem.

Well, as we study customers' problems it the light of our knowledge, we deduce how we can produce or improve a product in such a way to give customers the value they are seeking.

Remember, they're not buying design. They are buying performance. There's a world of difference. It's the difference between sale or no sale, winning or losing.

This, too, has everything to do with what I will recommend later.

I've had 20 years of experience in dealing with the automotive industry, including my first ten years with our Abrasives Division. Way back, the auto manufacturers were interested only in reducing cost. By force of their considerable purchasing power, they were able to roll back prices.

In the process, they drove out innovation. Creating those conditions, you cannot hope to receive improved products from the surviving suppliers, who cannot support research and development on low profit margins.

Any large-quantity purchaser can be tempted to follow this route. It makes no difference who the purchaser is--General Motors, Western Electric or the United States Government.

Well, the automotive companies did wake up. They realized they needed to change their purchasing policies to provide incentive for improvements. Often the innovative supplier is guaranteed a reasonable percent of the business--in some instances, 75 percent the first year, dropping to 30 percent in later years, to give him incentive to come up with something still better.

Of course, the "me too" companies can always duplicate any innovation in a period of time and sell it at a lower price. But, by definition, "me too" companies never get there fustest with the mostest.

Sears is representative of the kind of buyer that is closest to what the Federal Supply Service is considering. Sears accepts products from suppliers ONLY after Sears tests have confirmed the supplier's claims in meeting the performance desired by Sears.

Further, the existence of Sears research laboratories helps them identify their own needs with far greater clarity. They improve their purchasing through their own testing facilities.

I am very pleased that Mike Timbers is promoting such testing facilities for the government, simply because companies like 3M are delighted to deal with people who know what they want!

If you've ever sold shoes to women, you know what I mean!

Almost all industrial firms have procedures whereby they can purchase small quantities of materials or new products at a higher price, and evaluation procedures to determine whether it is a better value than previous purchases. With a new item review schedule, GSA now can buy some prototypes also. That's the essence of benefiting from innovation.

In the end, that procedure benefits everyone, including end users in commercial markets. One good example that comes to mind is 3M's Light Water firefighting agent. It was developed by 3M and the Navy to deal with fires on aircraft carriers.

The Naval Research Laboratory has excellent testing facilities, and helped us develop that product rapidly. The cost dropped dramatically, 66 percent in 8 years. Today the commercial market for this product is even larger than the

federal military market. And all those lucky customers owe a debt to the Navy, the people with urgent need and the organizational ability to define the need and speed development of a new product.

This is a beautiful example of how the Federal Government, with an urgent need to save lives and very expensive equipment, was able to stimulate commercial development.

Another example, though not an altogether happy one for 3M, is the copying machine market. Large federal purchases marked the beginning of our great success with "Thermo-Fax" infrared copiers. Without government need for fast copying, we might still be waiting for the first dry copier.

Well, 3M was once first, but now we're second, to Xerox. Or, as we say, Brand X.

That's OK, they're out in front in one helluva competitive market, and we admire tough competition. This race, of course, has spurred innovation and price benefits for everyone, much to the benefit of government and business alike.

Well, after a windup this long, there's bound to be a pitch, and here it is:

I would like to make some recommendations.

First, I would like to suggest that GSA develop a procedure for inviting both marketing people and R&D people from supplier firms. Believe me, this alliance results in more effective communications. It's the application of Reynolds' Formula. It really increases the probability of success.

Second, I endorse the proposed GSA laboratory facilities, which will enable technical people to talk to technical people. Equally important, the lab could help eliminate some of the existing specification procedures, particularly unreasonable specifications.

Again, purchase performance, not design. If an existing commercial product works, why not use it? If commercial packaging will suffice, why demand special packaging? Form should follow function, just as in folk art!

If you do indeed establish such a laboratory, make it the best in the world. Stock it with the finest people and equipment available. Trade expertise with one of the world's finest labs--the National Bureau of Standards. Don't follow anyone's example or you will, by definition, be a follower. Lead. If the testing gadget doesn't exist, build your own.

Dr. Jordan D. Lewis, Director of ETIP for the National Bureau of Standards, has pointed out how GSA could stimulate innovation in the area of noise pollution control, simply by specifying the decibel levels for lawnmowers.

There is precedent for this. Look at how the laboratories of the U.S. Department of Agriculture have stimulated food production, and helped increase farm productivity four-fold in 30 years.

My third recommendation is that GSA consider limiting the amount of competitive items it purchases from any one supplier. In industry, we have found that suppliers who sell only to one customer are much less likely to provide product innovations than those who sell a small percentage of their output to a given customer, commercial or government.

You may wish to insist--as most large industrial concerns do--that there be at least two sources of supply, preferably more.

If the item is patented, GSA should purchase only from valid licensees. As you would expect, the patent system is vital to firms like 3M. Without its protection, we would soon lose our incentive to innovate.

My final recommendation is this:

In purchasing new items, GSA personnel should have authority to buy prototypes for testing and evaluation purposes, even though the price will be higher to include initial R&D costs.

Most commercial firms, like 3M prefer to have R&D costs covered in the purchase price, rather than through government-funded contracts. This leaves product manufacturers free to market the product commercially, because it avoids disclosure of proprietary information to possible competitors.

It leaves the innovator with a clean proprietary position and avoids complicated specifications.

Certainly, any highly successful item will <u>invite</u> competition. Look at the dry copying market. To fend off this competition, an original supplier will find ways to reduce the price to <u>all</u> markets or develop further innovations to justify the product.

This means GSA may be paying the most favored price of the largest commerical purchaser, but will be receiving additional improvements while stimulating more from industry.

I appreciate deeply this opportunity to share my thoughts on this subject with you, and look forward to discussing it further with you during the symposium.

I want to compliment GSA and the National Bureau of Standards for arranging this meeting. Your deliberations at this meeting should result in more value to government users of products, and utlimately, increased value to people everywhere.

I will finish my presentation with a quote that fits your present situation exactly. I don't know the author, but he must have walked before you on the same paths:

"There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things; because the innovator has for enemies all those who have done well under the old conditions and lukewarm defenders in those who may do well under the new."

Thanks very much.

PROCUREMENT EXPERIMENTS CONDUCTED BY ETIP

by
Ralph J. Barra
Chief, Procurement Programs
Experimental Technology Incentives Program

Good morning. These may be the last 20 minutes you have to just sit and listen since the rest of the two days we are going to try to get you to do most of the talking. This morning I will give you a few of the objectives we have set for the ETIP Procurement Program. Up to now most of the ideas and directions of ETIP have come from the staff and from our contacts with federal agencies such as GSA and the Veterans Administration. What we hope to get out of this conference are some new ideas...some new suggestions and... some new directions for ETIP. We are really depending on you. It's your opportunity--if you have some new ideas for ETIP--to tell us them before you leave town.

ETIP is not interested in just the goods that the Federal Government buys but we are interested in improvements in goods that the private sector buys. The government only buys about one percent of those goods. ETIP's interest lies mainly in the other 99 percent of the market. The technological changes that we are looking for are changes that

are also compatible with national objectives such as energy conservation, conservation of resources, health and safety, and productivity. Those are the kinds of changes that ETIP is interested in--improving the quality of life (a pretty tough term to define) and the economic strength of the nation. It's a large umbrella to be operating under.

Government procurement, in general, has encouraged the status quo. It has used specifications that have a very low risk factor. It has actually encouraged industry to design and build last year's products and not something new. It has not demanded change. That, basically, is the problem that we are facing. However, while the government only buys one percent of the goods, in many cases, it actually is one of the largest single buyers. It has the potential to influence a company or an industry to change or introduce new products. It can provide a mini-market and in some cases that one percent industry figure may be a 20 or 30 percent figure for a single company. So it may encourage a few of those companies to change and in doing that it may break the ice--may put a hole in the dam and start the flood that we are looking for. We have another indicator of the government's potential and that is where the government has caused some companies to set up separate production runs (just for those unique characteristics specified by the government). ETIP is not advocating this at all. But it's certainly an indicator that there are situations where the government's buy is significant enough to cause something to happen. What ETIP wants to do is to use that influence in a better way.

We are looking at purchasing tools that the government hasn't been using. We are looking at these tools in an experimental way. Some of these tools have been used before in defense or aerospace with some failures and some successes but what we would like to do now is to experiment with these tools in a whole new ball game. What's going to happen if we use value change proposals; or value incentives; or if we use life cycle costing; or if we oriented the specifications toward performance rather than design; if we allowed manufacturers to figure out <u>how</u> to achieve the performance that the government has spelled out rather than telling them how to do it? We don't know. We hope, in the next two days, that you might give us some feeling of the potential for success of these tools and that you might identify some new ones.

Being a policy research type group, ETIP is going to be conducting dozens of experiments with dozens of different products. We are going to be trying to gain varied experiences in the application of a particular procurement tool.

For example, if we use "life cycle costing" for buying air conditioners and it fails to incentivize product change, is that enough of a data base to tell us that life cycle costing cannot be used when we want energy saving changes in the design of any product? Or should we try life cycle costing in buying refrigerators, ranges and other energy consuming types of products? By trying it out in a variety of instances ETIP can see how many failures and how many successes we get and then draw our conclusions. That is what we are really all about. In the next year or so, several experimental buys by the government will be testing the same tool on a variety of products and in a variety of situations. Is one percent of the market enough to influence a product improvement by the government or do we need 5, 6, or 10 percent? Will a supplier sell a new or redesigned product to the government becuase of the publicity and the exposure that that product will get? These are the kinds of questions that we are going to try to answer. Some of you may have some ideas about them and we would certainly like to hear them.

What do we have to know about the availability of the technology? If we want energy conservation, for example, or safety, do we have to know that the technology is there to be used? Maybe not. We are going to pick some products where we do know there is technology. For example, in the noise pollution area, we know that several companies have been very involved in the application of noise abatement technology. The question is...can we, in some way, influence and accelerate the diffusion of that technology into other product areas where it has not been introduced? Can we influence the creation of new technology? Can we, by identifying a need, get a company to invest in additional research or pull out from their research laboratory...a new concept... a new approach, that they have been holding, just waiting for the chance to use it? We don't know but we will try to find that out. We will use some of these incentives on products where there have not been technological improvements for years and see whether or not, all of a sudden, we have changed the curve and have actually helped to accelerate the introduction of some improvements.

Is the nature and the structure of the private market an important factor? Can we provide incentives in certain marketplaces and not provide them in others? Is it necessary for the private sector to have the same need as the government or is it possible for the government to identify a need that the private sector will recognize later as a need that it has too and possibly have the government actually leading the way and the private sector buying later in essentially the same manner. For example, the use of life cycle costing in purchasing. Up to now, the public

has primarily been interested in just the initial price of the goods that they buy. But with the changes we have ahead of us...with the rising energy costs--when electric bills double--will that be a factor? Will they start demanding more efficient products for their kitchens and the home? Maybe. If that's true, then the government, starting now, may give industry the incentive to start changing products now so that they can get a headstart on that emerging market. Is it important whether it is a consumer market, an industrial market or commercial market? Will the incentives that we test be more successful in one market than another? We don't know and we are going to try to find out.

Does it matter what the structure of the supply sector is? Will our incentives be successful when the supply sector is a bunch of small companies with no large ones or will they be successful in any supply sector structure? Will a company that has a large investment in a particular design modify that assembly line slightly to satisfy the government need and then push that improved product into the larger marketplace? We don't know.

Here are a few examples of some of the projects that are underway. In the consumer hard goods area we have focused on energy conservation. For years the government has been using design specs with unique requirements and has actually caused most of the industry to be non-responsive. The government has ended up with products that they are really not happy with--they may have had the lowest price but not the best value. In cooperation with GSA, ETIP is re-writing some of their specs in a "performance" language so that the energy conserving characteristics of a product are spelled out and targets are set for energy innovative approaches by industry. This is just a starting point. If this proves to be a good relationship with that particular industry then it may lead to other characteristics being defined in terms of performance. Safety is one...since the Consumer Product Safety Commission has listed some of these products as being hazardous.

In the medical area, ETIP is working with the Veterans Administration and looking at purchasing tools that are very similar to the types identified in GSA...performance-oriented specs and life cycle costing. As taxpayers we are interested in improved productivity in hospitals and as potential patients we are interested in improved safety. The use of these tools may provide the environment for the purchase of equipment and services in hospitals that lead to improvements both in safety and productivity.

In addition to the independent procurement experiments that we will be conducting, we will also have to take an overview of what's happening in the total ETIP experience. What are we learning from these experiments? What do we have to do now so that five years from now, when ETIP disappears, the "better ways" of purchasing continue? What do we have to do to "institutionalize" the new practices? ETIP's products are federal purchasing policy recommendations. Institutionalization of some of these recommended changes in policy may require legislation; some may require White House directives. How can we do it?

One approach that might work is being set up in GSA now; that is, the establishment of an Office of Experimental Procurement Policy. This office, in parallel with the separate experiments that are going on, will be looking very closely at what is happening...looking at what the industry response is...looking at how the marketplace responds. Has there been any influence? Has anything happened? Has ETIP accelerated improvements in products? Has ETIP done things in such a way that industry says... "don't stop - continue." ETIP is working with agencies that are receptive to this concept so that when ETIP disappears, the ball is carried and the concept doesn't drop by the wayside. In a few years ETIP will be recommending policies and we want those policies to be followed. The only way is to have the people that will be affected by these changes already on the team and trying them out. If they have tried the new procurement tools already, then if a presidential directive is signed or if legislation is passed, the agency will be responsive and will carry it out.

This is a brief overview of the ETIP Procurement Program and in the next few days it will be up to you to help set new directions which may help all of us get the most out of this program.

CLOSING REMARKS

Michael J. Timbers
Commissioner
Federal Supply Service

The last couple of days I thought the toughest job I was going to have was testifying before the Senate Appropriations Committee, but I find that I was wrong. The toughest job I have had is trying to summarize the fantastic recommendations that have come out of this conference. Let me try to focus on what I see as some of the themes evident from the recommendations that I have just heard.

First, I think that the multiple awards system obviously is here to stay. Some modifications were suggested, but it is certainly a system that can help us to encourage product innovation. Surely, it doesn't discourage new ideas to the extent that some of our other methods might, at least in the view of some of the participants. Second, it is obvious that we want greater communication, not only between the procuring agencies and the contractors, but I think it came through loud and clear that we need greater communication between the ultimate user of the product and the manufacturer of that product.

I think it is also clear that we need additional promotional information to let more people know what we are trying to do. We probably could have used more publicity before we got this meeting underway. Certainly, we need to increase our follow-up and publicity about the things we are doing.

Fourth, where specifications are necessary, where they are appropriate, performance specifications are more desirable than design specifications.

Fifth, market research. Market research is necessary within the federal supply system. I share that opinion, and we are working in that direction. We are not moving as fast as I would like to see us go, but we are moving to develop more of a capability to canvass our customer agencies and determine what it is they really need and what current products they are finding unacceptable. Along with this is the concept of commodity groupings in our acquisition process--getting our procurement specification and our development people closer together. We are working in this direction, too.

Now let me comment on a couple of other items that were of particular interest. One idea that came out of the packaging discussion was to put a performance specification for packaging in one of our appliance experiments sort of piggy-back on the appliance experiment itself. I think it sounds like a good idea.

Another interesting recommendation was that the procurement officer should be encouraged to look for innovations. I believe that came from a couple of groups. I happen to agree and think that it is one of the things we should start working on right away to see how we can encourage our contracting officers to be more innovative.

Another suggestion was for a better flow of information between state and local governments. I might mention that we have already started this interplay, with ETIP's help and

with the help of Al Hall of the National Institute of Governmental Purchasing and Bob Cornett of the National Association of State Purchasing Officials. We also have a Joint Federal, State, and Local Advisory Panel on Procurement and Supply, which I chair. In our quarterly meeting conducted just last week, there was a great amount of discussion about how we can get an interchange of information concerning what we are doing and what the state and local governments are doing. I support this concept wholeheartedly.

The matter of longer term agreements was brought up. This also was one of the recommendations that came out of the Commission on Government Procurement, and it is something we are working on within the executive brand. I agree that we should have the authority to do longer term contracting.

Another point that interested me was the idea of restructuring the Federal Supply Service in the course of implementing ETIP projects to come up with more of a central point of contact for receiving new and improved product ideas. That I think has a lot of merit and I will be spending more time on determining how we can make the Federal Supply Service easier to deal with on such product ideas.

Jordan mentioned earlier that we are going to put out a final report and indicated what he thought the time frame will be. At lunch today we talked about which of the co-chairmen will be the principal coordinators from here on so that both co-chairmen don't have to get in the act. Let me quickly identify them:

LaFave in office machines, Bateman in furniture, Goff in containers, Gold in ADP peripheral equipment, Whitworth in instrumentation, Forbes in electrical equipment, Church in automotive equipment, Kyhos in photographic equipment and audiovisual, and Montgomery in chemicals. When we send you the copy of recommendations that came out of your study groups, we will also give you the addresses of the members in case you want to consult with them before you submit your final reports.

Also at lunch today we talked about the idea of a follow-on meeting. I think the feeling was that a follow-on meeting would be a good idea, and that a good time would be after the first of the year. This would give everybody a chance to digest the proposed recommendations and also give us the opportunity to do some work on some of these excellent ideas

suggested. The comment sheets that you got will help us to decide on the scheduling of the next meeting. Let me ask this now for my own use: Is there a general feeling that a followup on this in the future would be a good idea? O.K. Very good.

Lastly, I want to thank all of you for attending. I appreciate the time and effort you put into the symposium and I feel sure that this will be the start of a continuing dialogue between government and the industry and educational representatives attending the conference.

CONCLUSIONS

SUMMARY

Representatives of nine industry product areas and government specialists in the same fields participated in the symposium. In addition to the plenary sessions, separate workshops considered problems in each of the product areas and reported to the full conference. Each workshop had as co-chairmen a government and an industry representative. The product areas were:

Office Machines (Typewriters, calculators, copiers, microfiche)

Furniture (Wood and metal office furniture)

Containerization/Packaging

ADP--Peripheral/Supplies

Instrumentation (Optical and electrical measuring devices)

Electrical Equipment (Appliances and power hand tools)

Automotive Products (After market replacement parts and tires)

Photographic and Audio-Visual

Chemical (Coatings, cleaning agents and detergents)

General guidelines provided the workshops prescribed that consideration be given to the barriers inherent in the Federal procurement process that tend to inhibit introduction of improved technology in products sold to the government and to incentives that tend to encourage innovation. Workshop participants were asked to consider the pros and cons of different types of government specifications that are disseminated to solicit bids, and to evaluate various aspects of procurement practices.

Reports of the nine workshops, including recommendations, are in the appendix.

ASSUMPTIONS

A basic assumption of the symposium was the tremendous influence of the Federal Government upon technological innovation on the part of industry because of huge governmental expenditures for goods and services. In Fiscal Year 1972, the Federal Government spent $57.5 billion on 16 million individual purchases. Federally-assisted purchases and procurements by state and local governments or private

organizations influenced by federal programs probably accounted for similar totals.

In addition to the sheer volume of purchases, the Federal Government has a considerable impact on technological improvements through direct support of research and development, regulatory procedures, patent and anti-trust policies and procurement practices.

It was further assumed that there are technological innovations that have not yet reached the marketplace whose introduction can be facilitated if a government market of sufficient size can be assured.

Government transactions, it was assumed, should be equitable to both sides. The government is entitled to a useful, efficient product and the contractor is entitled to a fair price.

A further assumption was that research is essential to development of new and improved products and that the success of this country in world markets is directly related to its effort in research and development.

DISCUSSION

The government's aim in trying to find means to increase the rate of technological innovation is to hasten changes that are compatible with national objectives. These include energy conservation, pollution control, safety of workers, and improvement of the country's competitive position in international trade. Another objective is to attempt to lead the way toward acceptance of new and useful products in the public marketplace.

All discussion in the symposium related in some manner to the way the government buys goods and services, how it defines the products it wants to buy, how it makes known its needs to producers, barriers to smooth and efficient contract arrangements and suggested means for overcoming barriers. Recommendations were made for facilitating the procurement process.

1. Specifications
   Government speakers explained that in the normal purchasing cycle the Federal Supply Service is requested by customer agencies to purchase certain items, and it develops purchase descriptions, or specifications, to be used as a basis for competitive procurement of the items. Industries selling to the government must

respond in a manner quite different from the way in which they sell to the private sector. Commonly a company develops a product line in response to market demands or attempts to create a market for its products. In selling to the government it often must tailor its products to specific requirements.

a. Function of Specifications
The function of specifications is to make known the government's needs to potential suppliers. Despite some limitations, they serve a useful purpose. They are widely distributed among prospective suppliers, are used by local governments and others who have access to the federal supply system, and thus significantly broaden the base of industry suppliers.

b. Types
Specifications are expressed in terms either of design characteristics or performance characteristics or a combination of the two. Simply stated; design specifications describe what the government wants to buy and how it should be made; performance specifications tell what the government wants and how the product should perform, leaving the design largely to the ingenuity of the producer. Performance specifications are generally favored by industry because they allow more flexibility.

Procurement personnel must constantly strive to strike a reasonable balance between opposing pressures from users who tend to favor definitive specifications and suppliers who prefer flexibility. If specifications are issued that are too restrictive, prospective suppliers find it difficult to meet them; if they are too permissive the resulting product may not satisfy the user agency.

c. Shortcomings of Specifications
Some sentiment was voiced that development of specifications takes too much time, and that in the interim between receipt of a requirement and dissemination of a procurement specification technology could advance sufficiently to produce significant improvement in products. In such cases the specification is outdated by the time it is issued. A number of participants felt that specifications should not be used at all in the case of items that are readily available commercially. Usually, it was felt, such items could be procured on the open

market and negotiations for quantity and price undertaken as required.

It was generally agreed that specifications that are too definitive tend to inhibit innovations because they preclude the flexibility needed by suppliers in order to be encouraged to improve their products.

d. Suggested Modifications

Modified procedures which, it was believed, would encourage innovation are use of variable specifications, acceptance of qualified bids, and more frequent use of the value incentive clause in contracts. These are defined below.

(1) Variable Specifications

A variable specification, as opposed to one that defines requirements in complete detail, would allow bidders some latitude in proposing a variation to the defined product on the basis that it would provide equal or superior performance or be less costly in the long run though possibly more expensive initially.

(2) Qualified Bids

A similar concept is that of a qualified bid. This would enable a prospective supplier responding to a specification to offer an alternative, providing he could demonstrate that it is of equal or superior quality and comparable cost.

(3) Incentive Clause

A third device is the value incentive clause, which would provide that after a contract is awarded the producer could suggest a money-saving innovation which, if agreed to, would result in an amendment to the contract, with savings shared by contractor and the government.

e. Performance Specification Tests

Responses to performance specifications must be supported by testing to establish that the product will perform as the requirements specify. Development of satisfactory tests usually is expensive and may be time-consuming. There may be occasions when the urgency of the needs of customer agencies is such that there is not time to prepare a performance specification.

Nevertheless it was urged that greater emphasis be placed on awarding contracts on the basis of product performance rather than design. It is the function of the product that is significant, it was stressed, rather than how it is made, and creativity is stifled when suppliers are confined to furnishing their products according to strict specifications as to size, weight, and design. It was felt that procedures for developing performance specifications would be improved by their more frequent use.

To insure uniformity of testing methods and equal competence, it was suggested that personnel of government testing laboratories work closely with laboratories already established in industry. Many industries have developed testing facilities, equipment and procedures that have involved large investments. Some participants thought that when credibility has been established in industry laboratories their specifications for product performance should be accepted rather than have the government duplicate the expensive process.

f. Multiple Award Technique

The multiple award system enables the government to contract with a number of suppliers of a given product. A strong consensus favored this system and considered it useful in providing the government with a wide selection of products and encouraging innovation on the part of suppliers. It was suggested, however, that since new products often are not offered nationally at the early stages of introduction, multiple award contracts should be offered by regions. This would permit the contractor the necessary sales and after-sales service on the new product and the government would obtain a new product before national service coverage is available.

2. Life Cycle Costing

The concept of life cycle costing was considered virtually unanimously to be a process that should be employed more frequently in government procurement. This concept shifts the emphasis from the initial price of a product to the total cost of ownership to the government. Numerous examples were given to illustrate that if means can be found to assess the total cost, including operating, maintenance, and replacement costs, a higher initial cost often may be justified, and indeed be more economical in the long run.

a. Quality Product Economical
A simple example was cited in the use of paint. Different grades of paint are manufactured to satisfy demands of a variable market. However, considering the fact that most of the cost of a repainting job is in the labor, it often is economical to use high quality, and perhaps expensive, paint initially so that repainting will not be needed for a longer period. If government specifications permit cheaper paint to be procured under competitive bidding practices the initial cost may be lower but the total cost considerably higher.

3. Government-Industry Communications
The objectives of the conference addressed the need for greater interchange between government and industry, and the point was repeatedly made both in the general sessions and in the workshops that benefits will accrue to both sides by frank and open communications.

An example of the value of close communications was cited by a representative of a trade association who reported that as a result of a recent joint government-industry effort a new type of price-adjustment clause was developed for his industry which many of his associates believe will generate more interest in bidding on future solicitations. This should result in a broader competitive base and ultimately in improved products.

a. Technical Seminars
One method, it was noted, of promoting closer relations and broader exchange of information is to encourage greater participation in joint technical seminars. Such events provide an excellent forum for communication, despite some constraints imposed by Fair Trade Practices laws and the need to protect proprietary information.

b. New Item Introductory Schedule
The "New Item Introductory Schedule" program was cited as a useful vehicle for government-industry dialogue on technological advances. This procedure provides for acceptance of unsolicited proposals for new products or services and negotiation of contracts when they can be justified as favorable to both sides. Sentiment was evidenced that this program should be expanded, and that a central contact point should be established within the government for receiving new product ideas or improvements.

c. Incentive Program

Concern was expressed that procurement personnel are not given sufficient encouragement to keep abreast of new technology in products for which they have responsibility. An incentive program might be developed, it was proposed, to motivate procurement personnel and encourage them to participate in seminars, activities of professional societies, and trade association meetings. It was suggested also that commodity-oriented groups in the procurement system be given more direct responsibility for product improvement.

d. Information Dissemination

A strong feeling was manifest that the government should re-examine its system of dissemination to industry of information on products, procedures, and regulations. Too often, it was said, such information appears only in abbreviated form in the news media, and it was suggested that greater attention be paid to business journals and trade publications.

An example cited was the inadequate knowledge in some industry sectors of the impact of various government-supported socio-economic programs through small business and labor set-asides and priority treatment for prison industries and the handicapped. Large companies may be adversely affected when they invest heavily in development of a new product, then, after a year or so, are ruled out of competitive bidding. It was urged that if firms developing new products cannot be protected against small business set-asides, at least until they can recapture their investment costs, they should be made fully aware of the adverse possibilities before incurring costs for research and development.

e. Manufacturer-User Communications

It was emphasized that improvement in communications is especially needed between manufacturers and users of products. In order for a manufacturer to be in a position to assess new ideas or improvements he must be able to gauge the effectiveness of his product in its ultimate use. Current procurement practices tend to insulate the user from the supplier and opportunities for useful product improvements often are missed because of the lack of feedback to the manufacturer. It is particularly important, it was said, for the manufacturer to be informed of failures or deficiencies in a product so that corrective action can be taken and quality control improved.

f. Local Government Communication
It was noted that some state and local governments have had difficulty in attracting innovative products in their procurement activities, in part because of the dispersion of purchasers and lack of uniformity in specifications. A better flow of information between the federal and local governments could help alleviate this problem. A joint federal, state and local panel on procurement already is addressing this problem, and the National Institute of Governmental Purchasing and the National Association of State Purchasing Officials are making important contributions in this area.

g. Market Research
Industry would profit considerably, it was stated, from long-range consolidated forecasts of government requirements. A well-received suggestion was that the Federal Supply Service establish a Market Research group to identify user's needs, ascertain how well users are being served by products, and provide procurement forecasts that would include types and quantities of products required and identify potential users.

h. Engineering and Marketing Personnel
A problem frequently encountered in the procurement process arises because specifications for products usually are devised with the aid of technical personnel in industry, and coordination with customer agencies by procurement people is with engineers. Responses to invitations to bid, on the other hand, usually are from industry marketing personnel. Although the specification may be sound from the engineering standpoint, it may not be considered profitable by the marketers. A closer relationship between engineers and marketing personnel, both in industry and government, was urged.

i. Long-Term Relationships
The advantages of long-term relationships between manufacturers and users were discussed by several industry spokesmen. Research personnel in industry often work closely with customers to achieve greater performance efficiencies and facilitate long-range production planning that often results in reduced prices.

Present government regulations, which limit contract authority to one-year periods, inhibit the long-term relationships that are conducive to cooperation in improving products, performance, and service life. There was general agreement that efforts should be made to promote legislation that would permit longer-term contracts.

RECOMMENDATIONS

Recommendations of the working groups appear in the reports in the appendix. The following recommendations appeared to be favored by a consensus of symposium participants:

1. Eliminate if possible and at least minimize the use of design specification in the procurement of "standard commercial" items.
2. Avoid use of definitive specifications that allow no flexibility for acceptance of innovations.
3. Use performance specifications whenever possible in preference to design specifications in all procurement activities.

    a. Establish a laboratory facility for the Federal Supply Service for use in testing and the development of performance standards.

4. Change the words "lowest price" in all procurement regulations to read "lowest cost," and add the words "considering all factors such as acquisition cost, operating expenses, productivity, support services available and other factors bearing on value."
5. Increase exchange of ideas between government and industry by:

    a. Holding more technical seminars and encouraging greater participation of both government and industry personnel.
    b. Establishing a control point in government for receiving presentations of new and improved products.
    c. Establishing an incentive program to motivate procurement personnel to keep abreast of new technology, and encouraging participation of procurement personnel in the activities of professional societies.

d. Establishing in the procurement process commodity-oriented groups with responsibility for product improvement within their commodity areas.
e. Disseminating procedural, program, and regulatory information in places and in a manner to make it more accessible to industry.
f. Fostering closer working relationships between suppliers and users to insure adequate feedback that would enhance manufacturers' quality control.

6. Establish closer relations among federal, state and local governments to work toward improved procurement practices.
7. Establish a market research group within the Federal Supply Service to identify user needs and provide forecasts.
8. Include industry marketing as well as research and development personnel in procurement and contracting discussions.
9. Increase the use of the multiple award schedule. Allow multiple award contracts by region.
10. Seek legislation to permit multi-year contracts.

USCOMM-NBS-DC

WORKSHOP REPORTS

GLOSSARY OF FEDERAL SUPPLY SERVICE TERMS

PARTICIPANTS/ATTENDEES

Report of Workshop on

ADP -- Peripheral/Supplies

Co-Chairmen

Elliott Gold - Government
Norman Ream - Industry

Procurement Practices to Stimulate Suppliers

Current methods of procurement, which utilize requirements type contracts, impose burdens on both supplier, and the Government in several known commodity areas. These commodity areas are those which are characterized by a limited (low) number of potential suppliers, high volume, and the Government as the major market. Current practices have the effect of further reducing the number of suppliers, taxing supplier production capabilities, increasing the risk of accepting inferior products and deterring new prospective suppliers.

Procurement procedures should be developed which will help to alleviate these problems and have the effect of maintaining several sources of supply, stimulating new prospective suppliers, reducing production burdens of suppliers, and assuring the Government-end-user of new and improved products.

Commodity Examples:
- Magnetic tape (instrumentation type)
- Tab cards
- Executive office furniture
- Manual typewriters

RECOMMENDATION

Have ETIP study innovative procurement practices which will allow participation by additional suppliers in commodity areas where the number of suppliers is minimal, requirements are high, and Government is the prime user.

Incentives for Software Innovations

The manner in which the Government and the private sector normally acquire ADP systems is a combined procurement of the hardware and software. Combined primarily because most manufacturers do not identify as a separately priced item, certain software products, including operating systems.

The recommendation is to separate all software products from hardware prices. This separation will create a dual incentive for both the manufacturers and independent software houses as follows:

1. It will give the hardware manufacturer the necessary incentive to continue to support, maintain, and improve for the life of the system, software products and operating system, because he will now realize that he will have competition for those items from the independent software houses.

2. The independent software houses on the other hand will have an open opportunity, if the above can be accomplished through the procurement process, to compete for any operating system, as well as other software products, the requirements for which exist in the ADP community.

RECOMMENDATION

That ETIP study the feasibility of the separation of all software from hardware and have it separately priced. This recommendation should not be construed as implying mandatory separate acquisitions but as providing a basis for such acquisitions as deemed appropriate.

Policy Impact of Government's Socio-Economic Program on ETIP

The Government currently supports various socio-economic programs through its procurement process, such as:

1. Small business set-aside

2. Labor surplus set-aside

3. SBA's Section 8(a) Program (minority business contracting)

4. Federal Prison Industries (FBI)

5. Committee for the Blind and Other Severely Handicapped (NIB)

Industries developing new technology must be made aware of the possible adverse impact these socio-economic programs may have on their firms becoming Government suppliers for the new products they have developed.

Adverse impact may occur as follows:

1. Large business develops a new product, but a year later the Government set-asides the procurement for small business.

2. Large and small business cannot be suppliers on items they have developed, if FBI or NIB develops capability to manufacture the product. All competitive bidding may be eliminated in these instances.

3. Labor surplus set-aside may also eliminate firms from being suppliers to the Government.

Typical examples: Ball Point Pens
Felt Tip Markers

NIB is sole supplier to the Government.

RECOMMENDATION

ETIP should attempt to develop means to protect all firms developing new products against the aforementioned adverse possibilities for a specific period of time (at least until the firms can recapture their investment costs). All necessary exceptions to statutes authorizing the above socio-economic programs should be obtained prior to asking firms to develop new products.

If exceptions cannot be obtained, all firms must be made aware of the adverse possibilities prior to the firm incurring research and development costs.

Incentive for Offering New Products

Current Government procurement practices in the ADP field require that they provide for the offering of general purpose ADP equipment by industry. However, upon the receipt of offers, those items that are not sold commercially in substantial quantities are segregated and the Government requires "Cost or Pricing Data," from the manufacturer. All major companies have refused to supply such data and will decline to offer these products rather than reveal company confidential information.

To assure that the Government will have the ability to accept all commercial-type general purpose products, and provide an incentive to offer such new products, procurement rules should remove this deterrent.

RECOMMENDATION

That ETIP determine the feasibility of removing deterrents, and if necessary recommend a legislative revision to accomplish this end. Falling short of this goal a finite definition of "substantial quantities" should be created.

Development of ADP Compatibility Through Standards

Increased compatibility of ADP hardware is a requirement in order to maximize the life of equipment, and minimize the life cycle cost of equipment. Further, compatibility will act as an incentive to smaller members of industry to fully utilize their ingenuity in advanced development efforts with some assurance that they will recoup their investment.

Compatibility in ADP is normally achieved through the adoption of national and/or international voluntary standards.

RECOMMENDATION

Emphasis should be placed on the development of such standards. Such voluntary standards should immediately be adopted as Federal Information Processing Standards (FIPS).

ADP Product Innovation

Product innovation and improvement is not being fully encouraged, because of the absence of Government facilities and mechanisms to accommodate unsolicited proposals. The lack of encouragement has resulted in adverse impact on the innovative incentive for all ADP suppliers to come forward with their innovation ideas.

RECOMMENDATION

To promote and encourage ADP product innovation the following should be instituted:

Policy, procedures, and operating facilities should be established to receive, evaluate, and where deemed appropriate; take further action regarding unsolicited proposals for new and/or improved ADP products.

Further, recognition should be accommodated to those advancing such unsolicited innovative proposals.

Report of Workshop on

Automotive Products
(after market replacement parts and tires)

Co-Chairmen

Dennis Poll - Government
John R. Church - Industry

DISCUSSION #1

In the initial discussions of this group, it was determined that some changes in existing GSA purchasing procedures would further enhance the opportunities for industry to respond to ETIP's objectives.

In the majority of case histories discussed by the committee, it became evident that close adherence to some of the existing GSA bid procedures precludes the opportunity for suppliers and GSA personnel to establish a long-term relationship. Long-term associations are conducive to a better climate, wherein government and industry could work together to improve products, product service life and performance.

In private industry, manufacturer's R&D personnel work closely with commercial fleets in the technological development of products; the objective being to supply the fleets' needs for greater efficiencies in performance and life-cycle costs. This type of cooperative effort can be attained only under "long-term association" conditions. Further, the manufacturer should have some assurance that, if their products meet the requirements, they will be used for a reasonable length to time, and thereby justify at least a portion of development expense.

This system works very well and most manufacturers are not hesitant to fund such programs, with the expectation of obtaining a fair return on their investment. In a majority of cases, manufacturers do not ask the fleet operations to participate in the costs other than the use of the fleet's vehicles, maintenance equipment and the keeping of essential records by fleet personnel.

RECOMMENDATION #1

We, therefore, venture that the development of a GSA long-term government-industry agreement would produce the following benefits for the government:

a. Encourage industry to invest, and cooperate, in long-range product development programs.

b. Improve product quality and performance.

c. Facilitate long-range production planning.

d. Assist in automatically upgrading standards and specifications.

e. Simplify servicing.

f. Further facilitate communciations between government agencies and suppliers.

DISCUSSION #2

The automotive Products Committee discussed the feasibility of placing more emphasis on awarding contracts based upon specified product performance. Creativity is often stifled and improved technology discouraged when suppliers are confined to furnish their product according to tight specifications as to weight, size, design, etc. when the function of the product is actually the priority rather than the design.

RECOMMENDATION #2

Establish method for evaluating products and awarding contracts based on specified performance requirements. These methods should also be established with a provision for acquiring products having performance values which exceed the requirement but which render an overall cost savings based on the "life-cycle" concept.

DISCUSSION #3

Members of the committee were concerned that, in many cases, government purchasing personnel are discouraged from informing management of their desire to purchase new and improved products because of the extra "paper work" involved.

One example: Somewhere in the purchasing system, procurement personnel could still be purchasing cotton-cord tires for an application or usage where new synthetic fibers would render better performance and life, solely because of not wishing to be troubled with all the procedures necessary to obtain a change in the specifications.

Another example: Improper maintenance of batteries is the major cause of failures. Yet, if a maintenance free battery

became available at a higher initial cost, it is unlikely, under existing procedures, that it could be purchased without a considerable amount of effort.

Packaging is another area which has considerable potential for cost savings by the government. Industry is often forced to make deviations from their regular packaging to meet the government specifications, yet within their industry they have developed new and improved packaging which, in many cases, exceeds the government specifications. In other situations, specifications written years ago are no longer valid and industry again must deviate to meet the government specifications and, in doing so, must pass these costs on to the government or suffer a profit loss on the packaged product.

RECOMMENDATION #3

Initiate an incentive program to motivate government procurement personnel to recognize and keep abreast of new technology on the products for which they have procurement responsibilities. Further, to extend the efforts necessary in the procurement procedure to take advantage of these products, where and when they meet the requirements and are advantageous to the government.

DISCUSSION #4

Although the suggestions of this committee are basically related to finding ways the government can accomplish step #1 in their objectives by taking better advantage of the technologies which already exist, we would like to reiterate our beliefs that industry has been discouraged from offering the government improved products because the bid system limits procurement personnel from considering a more costly product, regardless of the potential for better performance and life cycle cost savings.

RECOMMENDATION #4

Develop a system which makes it easier for government to have new or improved products evaluated and accepted by the government.

DISCUSSION #5

Modern industry has regrouped and realigned management to produce specialist in the development of purchasing and marketing of related products. Industry personnel assigned

such responsibilities become experts in these related products and have management responsibilities. Our group feels that these efficiencies and new methods of management could be well applied in the procurement areas of the government.

As an example, a government purchasing specialist assigned to hand tools and related items, would become an expert in that field if given the responsibilities listed in our suggestion. A top priority in his management responsibility would be to research and market for innovations in that particular field and encourage industry to further innovate to satisfy the needs of the government usage or application.

RECOMMENDATION #5

Conduct an experiment to accommodate a product group manager who would have the total responsibility for management of a line of related products. This responsibility would encompass the following:

a. Marketing research.

b. Product development and specifications.

c. Purchasing.

d. Quality assurance.

e. Marketing.

f. Distribution.

g. Inventory control.

h. Customer service.

DISCUSSION #6

In the automobile and vehicle fields, industry has developed sophisticated testing equipment and procedures requiring large investments. From these facilities they have developed their own specifications which their products must meet. When companies have established creditability in their laboratories, it seems logical that the government could accept these specifications for product performance without the necessity of duplicating all of the expensive equipment and procedures.

RECOMMENDATION #6

Increase acceptance of industry test results from qualified laboratories for product life and performance.

DISCUSSION #7

This committee endorses the expansion of government test laboratories, where feasible, and feels that the personnel with test laboratory responsibilities should work closely with industry. They can then determine which product testing can be accepted and the necessary equipment the government should have. They can also determine which procedures should be developed for further testing to satisfy the government's needs. Testing could then be initiated on GSA vehicles.

RECOMMENDATION #7

Expand and improve government test laboratories to perform product testing as required and to develop specifications for subsequent procurement.

Further, establish an automotive product testing group, within FSS, which would test and evaluate products on selected GSA vehicles in cooperation with industry to determine product performance and cost effectiveness.

Report of Workshop on

Chemical
(coatings, cleaning agents, and detergents)

Co-Chairmen John M. Montgomery - Industry
David B. Smith - Government

The Chemicals Workshop was composed of four industry representatives, three government representatives, and one interested observer. The expertise included paints, coating systems, floor finishes, waxes and cleaning agents.

A. The following factors were identified as impeding government and industry from achieving the ETIP objectives:

1. Lack of knowledge of procedures and convenient channels inhibits suggestions from industry.

2. Government resistance to change.

3. Industry concern over the limited availability and utilization of testing (laboratory and field) and evaluation by GSA.

4. Industry and Government's difficulty in identifying and justifying the need for change.

5. Total time and expense to accomplish change in specification and/or to market a new or improved product.

6. Government's lack of application of LCC to justify increased initial cost.

7. Industry's concern over lack of promotion of new and improved products by GSA to federal agencies.

8. Requirement for special packaging for many bids, where available commercially-accepted packaging is deemed to be quite satisfactory, can inhibit manufacturers from bidding.

B. The following factors were identified as desirable or necessary to stimulate achievement of ETIP objectives:

1. Demonstration of total commitment of top management of FSS to support the new policy.

2. Dissemination of FSS desire to obtain new and improved products.

3. Establishment of a central contact point and procedures by FSS for receiving new ideas.

4. Ability to have prototypes purchased, tested, and evaluated by GSA.

5. Adaptation of Life Cycle Costing; Value Incentive Clause; and "guaranteed percent of business" concept.

6. Cooperative government-industry development and implementation of performance specifications.

7. Feedback to industry on product acceptance.

8. Reduction of time and expense to accomplish change.

9. Wherever possible and practical, FSS should permit commercially-acceptable packaging that has been proven satisfactory in normal distribution channels.

C. Recommendations for action:

Action I

Structure FSS and involved government activities to implement ETIP concept to include:

a. Establishment of central contact point for presenting new and improved products.

b. Establishment of a first class laboratory facility for FSS use.

c. Establish procedures for field testing.

d. Funding for additional personnel and facilities.

Action II

Communicate the ETIP concept and procedures to government and industry by:

a. Developing a modus operandi for all government agencies with specification and procurement activities.

b. Notifying trade associations and technical societies.

c. Publicity through trade journals.

d. Special announcements to selected company presidents.

Action III

Accelerate development of performance specifications through increased cooperation with industry.

a. Establish government industry working committees to:

    1. Establish priorities.

    2. Assist in the development of performance standards and testing methods.

    3. Obtain sufficient industry acceptance.

b. Prepare interim specification and use for procurement pending full coordination.

c. Obtain full coordination.

Action IV

Establish procedure for surveying Agency users regarding product acceptance of new or improved products developed under ETIP concept, and -- publish technical papers reporting the performance of the new and improved products.

D. General comment:

The likelihood that new and improved products purchased by the government will be sold in non-federal markets also was discussed.

It was concluded that government purchase should have immediate impact on the commercial market, but to a much lesser extent on the consumer market because of current advertising policies.

Report of Workshop on

Containerization/Packaging

Co-Chairmen — Frank Rubinate - Government
James Goff - Industry

1. What are some of the major impediments that inhibit the government and industry from pursuing new and improved products? What are the attributes of these impediments?

   a. Additional packaging personnel and facilities are required to communicate adequately with industry.

   b. Definitive specs permit no flexibility to allow acceptance of packaging innovations.

   c. The present system is based upon selecting packaging systems which are in use by a sufficient number of suppliers to provide broad procurement base.

2. What are some of the major incentives that might be used by the government and industry to pursue new and improved products? What are the attributes of these incentives?

   a. Guaranteed procurement to get new technology.

   b. Sharing the benefits of improved technology in the form of additional profits to the contractor.

3. How can the government routinely and systematically obtain suggestions from suppliers regarding new or improved products that meet valid government needs?

   Government people should participate in the activities of packaging associations, etc. (At the present time the government should be participating in the NSIA.)

4. How can the government most effectively use performance specifications, life cycle costing, value change proposals, and other procurement incentives to stimulate desirable changes in products purchased by the government?
   The government can most effectively use procurement incentives in packaging by piggybacking packaging innovations on other procurements (e.g., a revised or opened up version of packaging specification PPP-P-600 for appliances in connection with an experimental procurement of appliances).

5. When is each of the foregoing procurement incentives the most preferred means for stimulating desirable product changes? The least?

   The use of performance specs (in most cases) will be the most effective in stimulating technological change.

6. How can the government increase the likelihood that new and improved products it purchases will be sold in non-federal markets?

   This question does not apply to Workshop 3.

SUGGESTED PROJECTS FOR ETIP

1. Palletization

2. Mailing envelope for documents.

3. Piggyback a performance requirement on another ETIP procurement.

   a. A revised or opened up version of packaging specification PPP-P-600 for appliances in connection with an experimental procurement of appliances.

4. Establish performance requirements for fibreboard.

Report of Workshop on

Electrical Equipment

Co-Chairmen Joseph G. Forbes - Government
Bob Weiler - Industry

This report will cover the major points which this workshop believed to be important to the objectives of the symposium.

The group began by examining current procurement laws, regulations, policies, methods, practices, and techniques to identify factors in the procurement process which may impede, actually discourage or fail to encourage desirable technological change. A number of barriers were identified and much time was spent trying to understand and find ways to minimize or eliminate those stumbling blocks. Many of these barriers are interwoven within the total procurement process and will be difficult to eliminate without making major revision in current procurement policies and procedures. Also, a major reeducation of a large number of people involved in the procurement process would be necessary.

In the area of Regulations, the following barriers were identified. In some cases remedial action is recommended.

(a) Federal Laws -- May be somewhat outdated -- Recommend they be reexamined and changed to minimize present barriers to technological innovation.

(b) Procurement Regulations -- Industry often has difficulty understanding how they are used and applied. They often seem to be inflexible, complex, and incompatible. Two sets of regulations, FPR and ASPR, cause confusion. It is recommended that they be consolidated.

(c) Environmental Regulations and Product Safety Standards -- These are relatively new and changed frequently without warning. Often industry finds it difficult to meet the target dates set for implementing the changes. (No specific recommendation)

(d) Ordinances and Codes -- These vary from one locality to another and can cause delays in implementing technological changes in products. (No specific recommendation)

(e) Buy American Act -- It inhibits foreign competition and may somewhat discourage the introduction of new technology from foreign sources. (No specific recommendation)

In the area of Specifications, the following barriers were identified. In some cases, remedial action is recommended.

(a) Design Specification -- They are usually too restrictive, often reflect old technology, and inhibit innovation. Often new technology is sacrificed as a compromise to achieve competitive fairness. It is recommended that this form of specification be used only when the performance type spec is not suitable.

(b) Performance Specification -- They are costly and difficult to prepare and use in the bid evaluation and contract enforcement. The size of the market also has an influence on the success of this type of specification. However, it is recommended that this form of specification be used whenever possible, these problems notwithstanding.

(c) Qualified Products List -- They freeze design, require volume orders, and can be costly to get products qualified. The group endorsed the use of the QPL Technique when really needed.

(d) Bid Samples -- They do not always reflect the same quality as production models. Samples are costly to both parties. The number required sometimes makes it difficult to meet bid submittal deadline. It is recommended that "bid sample clause" be used only when absolutely necessary.

(e) Preproduction Inspection -- This is costly to supply and increases the required lead time. It is often difficult to certify inspection and prepare test manuals. Some firms like it -- others do not.

(f) Feedback -- Feedback from the users is normally too slow to provide for timely modification of specifications to include new technology for follow-on procurement. (Group felt this was a serious "inhouse" Government problem.)

In the area of Procurement Methods, the following barriers were identified. In some cases, remedial action is recommended.

(a) Fixed Quantities -- This method, as it is now practiced, lacks a long-range, consolidated forecast which would permit potential bidders to do advanced planning. Industry indicated a strong preference for the "Fixed Quantity -- Definite Delivery" type of contracts.

(b) Indefinite Quantities -- This method presents problems with production schedules and the element of inflation adds to industry's risk -- and these factors tend to restrict competition, (i.e., the number of bidders).

(c) Multiple Award Schedules -- This method is acceptable. The only adverse comment had to do with small quantity orders.

(d) Two-Step -- This method is acceptable. However, it was noted that it is costly to submit a proposal, and there is also concern over the danger of disclosure of industrial proprietary data. It is also difficult to establish evaluation criteria.

(e) Decentralized -- This method lacks the "big picture" and does not provide good feedback mechanism for information that may be

beneficial to other locations. Usually this provides better communication between supplier and ultimate user rather than the centralized system.

(f) Centralized -- One small but negative field experience or negative voice from one location in the procurement cycle could mean the loss of total Government account. It is more difficult to communicate -- up and down -- in and out -- under the centralized system. It extends the administrative lead time.

After the group identified the "barrier" features to technological innovation in the current Government procurement process, they were then reexamined to explore additional ways to overcome or minimize those barriers. After the examination of these barriers, the following conclusion was made:

> Find ways to modify procurement techniques to allow the Government to catch up with the mainstream of industry's production lines which employ industry's latest technological innovations. The one specific "Catch-up" action recommended is:
>
> > "To utilize the multiple award schedule, to broaden the procurement base, using performance specifications in order to buy the best current product technology available.
>
> This recommendation would improve the Government's opportunities to take advantage of industry's current planning, production, marketing, distribution, and service systems. It would make available to the Government those commercial products which have broad customer appeal and acceptance. Some evidence that some Government procurement actions do not attract the major suppliers of the commercial market indicates that current contracting methods need review and updating of the procurement processes.

Those actions which this group recommended to stimulate technological innovations are:

1. Use modified procurement methods to supply technology innovations; with guaranteed minimum, or definite quantity with Life Cycle Costing and Value Incentive Clauses. Where design requirements are used for

procurement, the Value Incentive Clause should be used. Explore use of "design to cost" concept in procurement of commercial items.

2. Provide long-range (up to five years) consolidated forecast of Government's requirements. Make this forecast widely available to industry, and with regular update. This will be a valuable tool for industry's use for advanced planning.

3. The group recommended the expansion of ETIP pilot projects to include other household appliances and power tools. The objective of pilot projects would be to achieve, among other things: (a) energy conservation; (b) pollution abatement, including noise; (c) increased product safety; (d) consideration for special human factors.

4. Provide for increased Government procurement personnel participation in various industry groups, trade associations and professional technical societies in order to exchange ideas and to obtain the latest information for development of performance specifications.

5. Encourage broader use of the New Item Introductory Schedule to introduce new items to the Federal Supply Service. Provide means for "selected" feedback of user experience to ETIP.

6. Utilize, to whatever extent necessary, in-house GSA, other Government, and contractor facilities and personnel to increase the capability to implement the above recommendations.

7. "Buy Performance, Not Products"

(Minority report not fully discussed in Workshop)

In the context of the "Electrical Equipment" Workshop, this recommendation relates specifically to household appliances (though it can be extended to other commodities). Appliances are purchased by GSA and are placed in dwellings occupied by Defense Base personnel and families. The recommendation is that instead of purchasing these products, GSA experiment with purchasing performance of the function which these products presently serve. This may stimulate the emergence of new business enterprises which, like AT&T, would contract to sell performance of delivery BTU's of heating/cooling, or of washing/drying clothes, etc.,

just as AT&T contracts to sell performance of the voice-communication function. This "mode" of business, (i.e., selling performance versus discrete products) inherently provides incentives to that business for making profits that are in line with national objectives. For instance, such a "functional performance" business must strive to use advanced technology in order to render its delivery of performance, (e.g., heating/cooling, etc.) with (a) minimum energy consumption, (b) maximum useful life of hardware, (c) minimum maintenance problems, etc., because all these items are "costs" to the supplier of "performance" and thus affect his profits. Even if the proposed "rate" charged for providing performance passes on these "costs" to the consumer, competition between alternate suppliers of performance, will provide incentives to lower costs to gain larger share of the market, or make more profit, etc. Lowering of these "costs" will require use of advanced technology. Therefore, selling/buying performance instead of products can be a powerful incentive for technological innovation as demonstrated by AT&T, IBM, and Xerox. Home appliances are a fertile field in which to experiment with this concept, because considerable technological advances are potentially feasible but hard to sell in a product ownership route, and also because these products tend to stay put in the dwelling where they are first placed. Family mobility, particularly military base personnel, thus places little premium on ownership. An ETIP/DOD experiment would be means for buying useful information since it is unlikely that any other single large enough group of appliance users (owners) could be found to test the viability of this concept.

Additional General Comments:

1. These comments are observations of the Co-Chairmen and are not made as criticisms but only to assist in planning future conferences.

2. The Electrical Equipment Workshop would probably have been more productive if more blackboard space had been available or if some other means such as an easel for flip charts had been provided so we could have kept a visual record of items discussed and decisions made in view, convenient for reference at all times.

3. It was an unfortunate fact, but the Government/Industry mix of the group was not very well balanced -- too heavily weighted towards Government.

4. Some members of the group felt that they could have been much better prepared for the conference if some of the handout material had been made available to them a few days in advance of the conference, (i.e., data on yearly procurements).

Report of Workshop on

Furniture
(wood and metal office types)

Co-Chairmen

Edward Bateman - Government
Richard Gordon - Industry

Background

General Objectives -- The general objectives of the conference are to open government-industry dialogue on ways to encourage (technological) innovation in the development of products purchased by the Federal Government; to explore methods of developing a "spin-off" effect so that the consumer marketplace might benefit from such innovations; to set up procedures for analyzing the effect on the consumer marketplace and to establish procedures for continuing a government-industry dialogue.

Recommendations

We found that the objectives set for the ETIP program by GSA/NBS are realistic, obtainable, and desirable. These objectives should be vigorously pursued at the highest levels in the Federal Supply Service with an increased allocation of manpower and other resources.

The furniture group strongly supports the recommendations set forth by Dr. Lester C. Krogh, Vice President, Commercial Chemicals Division, 3-M Company, in his keynote address opening the Symposium:

-- That GSA develop a procedure for inviting both marketing people and R&D people from supplier firms.

-- Acquire and staff (or have access to) a laboratory facility, which will enable technical people to talk to technical people.

-- Use purchase performance, not design; increase use of commercial products and packaging.

The furniture group recommends that the current policy and procedures used by the Federal Supply Service in acquiring furniture and furnishings be changed drastically. An immediate and abrupt change must be made in the acquisition of furniture and furnishings by formal advertising (with the

related use of design specifications). This method of procurement necessarily perpetrates the status quo, therefore inhibits innovation. As a result, new and improved products of the industry are not available to the Government user on a timely basis.

We recommend that Federal Supply, in developing a new method of procurement for furniture and furnishings, evaluate and test the following as possible perimeters of the new method:

- -- Develop a policy and procedure to pre-qualify suppliers and their products.
- -- Establish a GSA furniture industry group for establishing minimum standards for product acceptance.
- -- Utilize performance specifications.
- -- Conduct extensive testing to insure quality level product.
- -- Take immediate steps to implement Dr. Krogh's recommendations on the industry dialogue.
- -- Allow flexibility of construction to achieve a given design/appearance (when standardized design is important).
- -- Use a modified method of two-step procurement
  - -- use of technical proposals to establish qualified products/suppliers list
  - -- make more than one contract awarded in second step (resulting in some form of multiple awards).
- -- Expand use of two-step as it exists now (i.e., large scale new projects).
- -- Develop some type of incentive system whereby a supplier receives compensation for contribution of technological or design innovations to the supply system. This could be achieved in the form of a design credit on the first procurement, actual payment for prototypes, and/or payment for technological changes during performance of a contract.
- -- Upgrading the training qualifications, etc., of procurement personnel (provide incentives to encourage professionalism in the procurement area).

-- Minimize the numbers and types of standard items available to most Government customers; permit special procurement to meet special needs.

-- Adopt Life Cycle Costing to the extent possible, including secondary considerations beyond the product itself.

-- Encourage unsolicited proposals for new and improved items, and providing means for evaluating such proposals.

-- Revise the multiple award concept, developing performance standards which exclude marginally acceptable products.

-- Use value incentive clause(s).

Report of Workshop on

Instrumentation
(optical and electrical measuring devices)

Co-Chairmen — Donald Whitworth - Government
Jack Beckett - Industry

The Co-Chairmen of the Instrumentation Workshop of the Procurement Symposium consider they were exceptionally fortunate in having the proper mix of Federal Government and non-government participants. Additionally, the participation of each of the participants was active and fruitful. A considerable amount of discussion covering a number of hours in session, led us to a consensus on a number of specific points. These dealt both with barriers in the procurement process and ways item innovation could be encouraged and enhanced. These points have been condensed and follow. Each, in itself, perhaps could be the subject of intense study. A few may appear to be unobtainable. A few others impossible without enabling legislation. Nevertheless, the workshop, as a whole, took its assignment seriously. We considered that we had no restrictions placed upon us in arriving at the following specific suggestions and recommendations.

1. Major impediment to development of new products and product improvements is the overriding emphasis on lowest price. Today's procurement practices inhibit improvements which enhance characteristics affecting use of the equipment, its operation, maintenance, reliability.

2. The consensus was that the government's penchant for worshiping at the altar of "lowest price" definitely stifles innovation. Life cycle costing was mentioned as a move to break away from the "lowest price" tradition. The group felt this was the right direction but would have limited application. Doubt was expressed whether commercial type over-the-counter items would lend themselves to this approach. Although government must find other ways to get <u>somewhat</u> away from "low price," the Contracting Officer must always document reasons why - and these reasons must be convincing.

3. To emphasize product innovation and to break from the tradition of lowest price, a <u>Reverse Two Step</u> procurement system could be considered.

First: Establish dollar amount (budget allocation) which is fixed and applies to all offerers. Reasonable price for what is desired or, establish funds available.

Define desired performance (not limited to fixed quantity). Outline objectives and anticipated result.

Second: Evaluate proposals for most innovative offer with consideration of all cost factors of ownership and usefulness and future needs.

Award to the offeror who comes closest or exceeds meeting established objectives for set price

4. Negotiation is a procurement process that if used more extensively would permit constructive dialogue between government and industry. By this is not meant sole source negotiation, although in some instances of item development this mode is desirable. Legislation to enable broadening of negotiation authority should provide recognition of competitiveness of negotiation procedures (probably only hope to successful legislative change).

5. There is much to recommend the greater use of negotiated (multi-source) procurement in lieu of formal advertising. Interplay between industry and government is enhanced allowing for fairer exchange of ideas and resultant innovation. Caution was expressed. Negotiation cannot be used to set up an auction atmosphere--play one vendor against another. Negotiation is particularly recommended for instrumentation. The use of multi-awards based on benchmarks was mentioned as an example of negotiation that did not promote technical innovation.

6. The idea and expanded use of the New Item Application Schedule technique is worthy of careful consideration in government procurements.

7. Design specifications inhibit advancement in technology. Performance specifications are preferred. Product evaluation techniques are conducive to product improvement. The innovator likes to have his product evaluated by qualified examiners. Bid sample requirements inhibit the copier but not the innovator.

8. "Brand name or equal" has been, and continues to be, a difficult procurement method. Equivalency cannot be proved, resulting in endless arguments. Multiple award supply schedules are generally accepted as the best known method for purchase of similar but not identical proprietary items.

9. The Life Cycle Costing clause approach is interesting and worthy of pursuing but its definition must be consistent with industry practices for the item involved as well as clear and reasonable. The method is probably not acceptable for low dollar volume and most small expendable and low-rate-of-use items.

10. Value change provisions have limited application. It has no place in established catalog products of fixed price contracts where the strongest possible incentive to the supplier is to increase his profit. Simplifying the product is part of product improvement but is an evolutionary process ever present with the responsible supplier.

11. There is a need to identify and promote commonality of items so that government can contribute to a larger overall market.

12. Inability of government specifications writers to keep up with the state of the art acts as a deterrent to industrial innovation because industry must lower its standards to meet inadequate government design or performance requirements. Performance specifications could do much to remedy the situation because they set up a target for industry to shoot at while design specifications do not.

13. User input is essential to the improvement of items and introduction of new ideas. Government procurement practice insulates the user from the supplier. Useful product improvements are often missed because user feedback is prevented by the procurement officers. To avoid loss of useful product improvements, more direct and meaningful approaches must be developed to assure user feedback.

14. After warranty period, a "failure feedback" system to the manufacturer is important for quality control and to enable better innovation and item improvement. Industry quality control could be greatly enhanced in the major equipment areas through such a feedback system.

15. Demonstrated performance is a strong incentive technique for a supplier to improve his commercial type product. For example by:

    (1) Bid sample - not used enough.
    (2) Panel review (limited usefulness except for large procurements--there being an inherent difficulty of assembling a qualified panel).

16. There are government "Rules of the Game." A barrier is raised here because government may implement basic rules differently, thus making it difficult for suppliers to understand them. Procurement Officers should be encouraged to be innovative in procurement techniques. They should ensure that all parties are well informed in a timely fashion on the objectives.

17. We need greater free flow of information from the Federal Establishment to state and local governments as well as a reverse interchange. Much depends on receptivity, but procurement incentives from local governments are as important as federal procurement incentives. The National Association of State Purchasing Officials and National Institute of Governmental Purchasing should be listed in the total ETIP effort from a dissemination point of view. Work groups in similar disciplines attacking similar problems would enhance this objective.

18. Providing a free flow of information from the Federal Government to others will permit the not so sophisticated non-Federal supplier to contribute his bit to technological innovations.

19. Government and industry should move closer together in procurement areas to find ways and means to improve productivity and encourage innovation. The government should establish commodity oriented groups with product improvement responsibilities to continually probe for suggestions in item development particularly as related to health and safety.

20. The practice of annual federal budgeting depresses innovation. If multi-year budgets were legislated, long term commitments could be made and technological advances (which often run farther than the budget span of one year) are made more practical.

21. The government should promote a freer exchange of technical knowledge with foreign countries, especially in the areas of conservation of materials and energy, and encourage a reverse exchange because foreign technology in some fields is far ahead of our technology.

22. Defense contractors are barred from contributing to technology transfers because of prescribed cost accounting limitations on independent research and development.

23. Commercial suppliers are barred from defense contracting because of incompatibility of accounting standards and DoD limitations on independent research and development.

24. While all did not agree, the point was made that government regulations and resultant paper work put the small business man at a disadvantage, discouraging him from wanting to do business with the government, thus drying up innovations that could conceivably come from that source.

25. The Commerce Business Daily is considered by industry and government representatives alike as a potentially potent force in bringing industry and government closer together in the promotion of mutually beneficial procurements and consequently enhancing the probabilities of innovation. But the CBD is far from perfect. It should be:

    (1) More Carefully Classified
    (2) Better Proofed
    (3) Deliveries could be more timely
    (4) Cross Indexed
    (5) Mailed in a Distinctive Envelope (e.g., diagonal colored stripe)

    The feeling ran strong that a constructive overhaul of the vital link between the selling public and the purchasing government is useful now.

26. New government legislation, Executive Orders, etc. (example -- The Clean Air Act) should be explained fully and in a manner that will reach the producer.

    The government should take a more direct and affirmative approach in disseminating product, program, procedural, or regulatory information in an easily accessible form with which industry is familiar - for example, trade journals or the Wall Street Journal - rather than let such information be disseminated as a shortened or sometimes distorted version by the news media.

    Make a conscious effort to get the information in a place and manner that the producer is most apt to see it early enough to be of value.

27. One respresentative from industry particularly wanted to make the point that the government should have a "desirement" data bank which would permit no-cost entry by all businesses and government activities to determine government desirements. The rationale for this unique and

noteworthy suggestion is that engineering and procurement personnel would have the ability to express their positions without a formal announcement being involved. This data bank might be especially useful in connection with items 16, 19, and 24 above.

Report of Workshop on

Office Machines
(typewriters, calculators, copiers, and microfiche)

Co-Chairmen W. Gorman - Government
A. M. LaFave - Industry

INTRODUCTION

After considerable discussion, the participants in this session agreed that the best system for procurement of Office Machines by the Federal Government is by the multiple award system. With this assumption firmed, the balance of the meeting was devoted to discussion of ways and means of improving the multiple award scheme of procurement, particularly as the multiple award system is involved in obtaining for the Government prompt access to new and improved products. The following are the recommendations to achieve this objective.

1. The GSA contract requirement for national distribution delays introduction to the Government

   Recommendation

   Since it is often the case that new products are not offered nationally at the early stages of introduction it is suggested that GSA allow multiple award contracts by regions. This would allow the contractor the necessary sales and after sales service on the new product and the Government would obtain a new product before national service coverage is available. It would also permit small business operating only in one region an opportunity to supply the Government with new products in that area.

2. The "Mandatory Use" of GSA contract may deter the acquisition of new products not available under the contracts

   Recommendation

   That GSA give contracting offices greater latitude in procurement of new products and that GSA be liberal and prompt in the waiver of the mandatory requirement when new products or innovative products are offered.

3. The provision for a simple vehicle to encourage communication between user and manufacturer would result in product improvement

One of the greatest sources of new products and new innovations is the communication link between the manufacturer of a product and the user. It was discussed at some length that there is considerable lack of "feedback" from user locations to the manufacturer on candid opinions of product performance, product evaluation and suggestions for improvement.

Recommendation

Contractors should include in their Government Price List, or in the instruction manual or operator's manual, a "request for comments" or an invitation to fill out a form giving the users' opinions and suggestions on the office machine he is using. GSA could encourage users to offer comments of the machine performance to the highest level of the contractor.

4. Uncertainty on part of both contractor and user concerning legal and patent considerations highly restricts exchange of ideas concerning new products or improvements

Recommendation

Government and industry task force be established to identify causes of constraints and develop solutions.

5. Statutes and regulations dictate that design specifications, advertised procurement and lowest price are always in the best interest of Government in the procurement process

These dictates not only retard new product development but in fact tend to squeeze quality to the minimum accepted by specification and may cut quality out of the product.

Recommendation

Certainly other procurement techniques should be given equal status with the historical "spec-bid" system. The contracting officers should be given greater authority and the system of indiscriminate reviews be reduced. Design specifications should be strictly limited. Performance specifications give greater reliability to the

Government user but the inclination to meet specifications at "lowest price" is still a deterent to new product development. The performance specifications must be changed as the product performance and productivity improvements are introduced. Specification procurement of standard commercial items should only be used when it is clear that the Government could save a substantial sum, and when it is clear that the specification will not retard technological improvements.

6. The word "lowest price" appears throughout the regulations

Recommendation

Change this wording wherever it appears to read "lowest cost" (not price) and add "considering all factors such as acquisition cost, operating cost, productivity, support services available, and other factors bearing on value."

7. Statutes and regulations dictate that advertised method of procurement is generally preferred

Recommendation

The negotiation method be given at least equal status, and its use promoted where it is in the best interest of the Government.

8. The present policy of maximizing procurement by specification impedes innovation

Recommendation

That design specifications be used rarely (if at all) and performance specifications be used only for equipment and supplies when both 1) an appropriate high level dollar threshold exists and 2) it is clear that this method will encourage advancement of technology (not used if it might retard technology).

9. Contracting Officers are forced into a position of deciding by price rather than value

Recommendation

Contracting Officers be given decision authority commensurate with responsibility, and reviews be sharply reduced.

10. Users of multiple award contracts would benefit from innovations which would simplify the acquisition of products which represent greatest value

Recommendation

A. Develop and publish a grid or matrix by machine type which contains key performance features, including new features, advanced technology.

B. Determine means to either refuse or discontinue items which do not meet key performance characteristics (objective is to simplify both contracting job and users' selection process).

11. Users of multiple award contracts are not always alerted to new developments, and suppliers who improve or develop new products are not always given recognition

Recommendation

Request that contractors (under multiple award contracts) include in their contract price list a section to contain summary statements describing 1) new technology, 2) new (or improved) performance characteristics, and 3) new items and their features.

12. Current catalog techniques sometimes result in making difficult the most value effective procurement

Recommendation

Review cataloging procedures to assure that their use does not impede the acquisition of new or improved supply products, and to facilitate the use of life cycle costing.

13. Buy American Act principles need reexamination

Recommendation

Review principles to determine if their application impedes introduction of new technology.

14. Increased emphasis on safety needed

Recommendation

All items available under multiple award contracts (or any other type) should be required to conform with

recognized safety standards (currently they may or may not meet a safety approval).

15. Need for regular Government-industry exchange

Recommendation

The exchange should continue with 1) greater industry participation, 2) further refinement by commodity category, 3) more clear definition of objectives, and 4) greater publicity.

Report of Workshop on

Photographic and Audiovisual

Co-Chairmen — Robert Ashenfleter - Government
Hank Kyhos - Industry

MULTIPLE AWARD

The multiple award concept of procurement best provides the Government with a complete selection of products. Multiple awards provide for the most technologically available products at reasonable prices and timely delivery. This concept also encourages Government users to seek more commonly available products to suit their need.

EXPERIMENTAL PURCHASING

Experimental purchasing, with a single type award, offers a practical tool for focusing on innovation and implementing value incentives. The single award contract is a useful tool to develop the multiple award universe out of which the broad Federal needs for that product category are ultimately served.

TECHNOLOGY

The advanced state of technology in the photographic and audiovisual industry may not lend itself to the ETIP concept, since generally industry is ahead of Government requirements with technology for which Government is not yet prepared. Government must take steps to update requirements within to permit commercially available technology to be accepted more rapidly.

MARKET RESEARCH

General Services Administration should establish a Market Research group to determine how well they are serving their user and to identify the user's needs. This group should also provide Federal procurement forecasts of potential user requirements for a given period of time. This forecast would contain such information as type of product needed, approximate quantity and agency or specific user involved. This forecast should be made available to industry as well as within specific areas of Government. It should include Department of Defense, as well as all other departments of the Federal Government.

SPECIFICATIONS

For commercially available product(s), specifications, other than those provided by the manufacturer, should not be used in procurement functions, as industry provides the latest technology available. If, for some reason, a specification is deemed necessary, a Performance Specification provides the flexibility needed for innovation. A Design Specification should be used only for Research and Development procurement peculiar to Government.

Formal Advertising
Procurement by competitive bids and awards through appropriate publication of invitations for bids and awarding the contract, after bids are publicly opened, to that responsible bidder whose bid, conforming to the invitation for bids, will be most advantageous to the Government, price and other factors considered. (One of two procurement methods; the other is procurement by negotiation.)

Negotiation
Under certain circumstances, which are prescribed by law and applicable regulations, Government procurements may be made by negotiation with qualified suppliers and without formally advertising for bids. Negotiation enables the contracting officer to obtain the benefits of competition on an informal basis, and, where competition is not available, to use cost and price analyses to the extent necessary to obtain fair prices.

Formal Advertising, Two-Step
A form of formal advertising designed to promote the maximum competition practicable when available specifications are not sufficiently definite to permit a formally advertised procurement. It is especially useful in procurement of complex and technical items, to prevent the elimination of potentially qualified producers from the competitive base. The first step consists of the request, submission, evaluation and, if necessary, discussion of technical proposals to determine the acceptability of the supplies or services offered. The second step consists of a formally advertised procurement with participation limited to those firms submitting acceptable proposals under the first step.

Purchase for Storage and Issue (GSA Stores Stock)
A method of supply in which requirements are consolidated and purchased for delivery to GSA supply distribution facilities from where they are issued to agencies as needed.

Consolidated Purchase for Direct Delivery
A method of supply in which requirements are consolidated and purchased for direct delivery to the use points.

Purchase through Indefinite Delivery Type Contracts
A method of supply, such as Federal Supply Schedules and Non-stores Term Contracts, in which the contract provides for the furnishing of an indefinite quantity, within stated limits, of specific property or services, during a specified contract period, with deliveries to be scheduled by the

timely placement of orders upon the contractor by activities designated either specifically or by class.

Definite Quantity Contract
A contract which provides for a specified quantity of property or for the performance of specified services for a fixed period, with deliveries or performance at designated location(s) upon order.

Firm Fixed Price Contract
A contract which provides for a price which is not subject to any adjustment by reason of the cost experience of the contractor in the performance of the contract.

Fixed Price with Escalation Contract
A contract which provides for the upward and downward revision of the stated contract price upon the occurrence of certain contingencies which are specifically defined in the contract.

Brand Name or Equal (Purchase Descriptions)
A description of a commercial product by brand name and make or model number or other appropriate nomenclature by which such product is offered for sale to the public by a particular manufacturer, producer, or distributor and setting forth those salient physical, functional, or other characteristics of the referenced product which are essential to the needs of the Government.

Bid Sample
A sample which is required specifically in the invitation for bids and which a bidder is to furnish as part of his bid to show the characteristics of the product offered.

Preproduction Sample
A sample, required by the contract, to be produced under production method techniques and submitted for approval prior to the start of production. Also called Pilot Model.

Bidder's Supply Potential
The bidder's indicated monthly production capacity.

End Product, Domestic Source
An unmanufactured end product which has been mined or produced in the United States, or an end product manufactured in the United States, if the cost of the components which are mined, produced, or manufactured in the United States exceeds 50 per cent of the cost of all its components.

End Product, Foreign
An end product other than a domestic source end product.

Federal Specification
A description of the requirements of materials, products, or services, used by or for potential use of two or more Federal agencies (at least one of which is a civil agency), or new items of potential general application, promulgated by the General Services Administration and mandatory for use by all Federal agencies.

Federal Standard
A description which establishes engineering or technical limitations and applications for materials, processes, methods designs, etc., and related criteria necessary for obtaining uniformity, interchangeability of parts, etc., for use in specifications and solicitations for offers. Federal Standards are promulgated by the General Services Administration, and are mandatory for use by all Federal agencies, including the Department of Defense.

Standards
Descriptions which establish engineering or technical limitations and applications for materials, processes, methods, designs, etc.; and related criteria necessary for obtaining uniformity and interchangeability of parts, for use in specifications and solicitations for offers.

Purchase Description
A statement or document which generally reflects the same type of requirements set forth in a formal specification, and which is normally developed for a particular purchase requirement not covered by an existing specification.

Value Analysis
An organized effort directed at analyzing the function of systems, products, specifications/standards, practices and procedures, for the purpose of satisfying the required function at the lowest total cost of ownership.

Life Cycle Costing
A procurement technique which considers operating, maintenance, and other costs of ownership, as well as acquisition price, in the award of contracts. The objective of applying the LCC technique is to insure that the item acquired will result in the lowest total ownership cost during the time the item's function is required.

Life Cycle Costing Elements
The cost elements of LCC fall in three major categories.

1. Acquisition (A) Cost is the unit price of the product or services being procured.
2. Initial Logistics (I) Costs are the one-time logistics costs that are identifiable and would be incurred by the Government for the item being procured.
3. Recurring (R) Costs are the costs that can be identified as those which would be incurred in connection with the operation, maintenance, management, and other support requirements for the product or service being procured.

The LCC concept recognizes that the "I" and "R" costs can be a significant part of total ownership costs, and should be considered with the traditional acquisition cost. The inclusion of any "I" and "R" cost elements in a contract depends both on the characteristics of the item, and on the ability to clearly identify, measure, and evaluate the items' performance in terms of these costs.

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