

THE MEANING OF COST ANALYSIS

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TRANSCRIPT OF A TALK GIVEN TO THE L.A. CHAPTER OF THE  
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I don't know what you expected when you invited me to talk to you today. I'll start by sitting down. I resigned from the standing population about 20 years ago having reached a certain age. You probably can hear me even without a microphone.

As a result of Colonel Goven's invitation, I read carefully the proceedings of the Institute of Cost Analysis's First Annual Symposium (holding the paper up for all to see) which I received about three days ago. I'm always impressed with the words cost analysis, since I think I introduced them, surely to the military, and perhaps to general economic usage.

I just told the chairman, the first name of what became the Cost Analysis Department at Rand in 1950 was Resource Analysis. But the generals and the blue suiters didn't seem to understand that and we changed the word Resource to Cost.

Cost analysis is, of course, an important part of systems analysis. In systems analysis we're trying to select from a group of existing or potential weapon systems, the preferred means of air warfare of the future. That's the language of the original Rand contract with the Air Force. It was a man, who's no longer with us, by the name of Ed Paxson who conceived of weapon systems analysis.

If you've read my "Beginning of Military Cost Analysis," which has now been published in at least four different places,[1] you know

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[1] Including the Institute of Cost Analysis Newsletter (which some of you receive), Defense Resources Management Education Center of The Naval Postgraduate School, the National Estimating Society's proceedings for 1980, and Science Applications, Inc., Economic Analysis Division, where I originally gave the talk as an introduction in the education to their cost analysts.

that in the beginning this whole thing started because Rand's first systems analysis came up with a recommendation for a turbo-prop strategic bomber as opposed to a pure jet. This may surprise you at this time but in those days--1950--the latest bombers were the piston-engined B-29 and the B-36. We had not yet gotten into jets in any form.

When that study was briefed to the Air Staff everybody present nodded and the generals all agreed. The turbo-prop dominated the available choices. General Curt LeMay was the only one to raise a question. He challenged the results on the basis of cost.

The cost numbers had been obtained from the Comptroller at Headquarters USAF. They had also been reviewed by the Comptroller at Headquarters Wright-Patterson. As a result, Rand felt confident about the data. So when they went to the meeting in Dayton in early December 1950, they were somewhat surprised and very shook-up by the fact that the price of the turbo-prop had doubled between Washington and Dayton and the price of the pure jet had gone down by some 50 percent. Now the previous dominant solution was changed: the turbo-prop was no longer preferred. As a result, the President of Rand as well as Ed Paxson and the others who were involved in the analysis came back to Santa Monica confused and angry. More important, they vowed it must not happen again. Rand must have its own costing capability and not have to depend on estimates provided by others.

It turned out I was the only one in Rand who had ever been associated with the word "cost." Reason: as Chief Investigator of the U.S. Tariff Commission from 1937-1941 my principal activity was cost of production investigations of U.S. articles and those of the chief competing foreign countries. So I got the newly established job.

Now in a systems analysis, we are comparing existing and all kinds of alternative weapons systems. And in Paxson's concept a weapon system was more than just an airplane or a missile. I wrote down his components so I wouldn't forget them and I'll read that list. In addition to the hardware we have to include the essential supporting elements: men, military and civilian; maintenance and supply; real estate, both land and buildings; medical care, food service, recreation, and everything else that's essential for the operation of the system. This was the first time that anyone proposed estimating costs beyond the airframe and large components like engines. We started to do resource studies because it was obvious that just as we had compared a turbo-prop and a pure jet, there would be many versions of pure jets, and there could be numerous versions of turbo-props and other possible means of air warfare in the future.

Probably more important in the concept of systems analysis, you measure not only the resources required directly for the weapon system (which I just enumerated) but also you want to determine the impact on the total resources of the United States. For example, if titanium alloy (titanium sponge) is essential to the weapon system: Does the United States have an adequate supply? And then we get into questions like the ones that Washington should be exploring today - adequate supply for what? For military aircraft only? For military and essential civilian aircraft only? For military and essential civilian aircraft and other military and essential civilian equipment of one kind or another?

By and large the concepts of pricing, cost estimating, budgeting, contracting, accounting, and many others do not embrace these

fundamentals. So if you want to accept my definition of cost analysis, the proceedings of the Institute of Cost Analysis's First Annual Symposium are disappointing because they essentially lump cost analysis, pricing, cost estimating, and a couple of handfuls of other things as though they were all identical.

Actually these other areas are some of the components of a cost analysis, but no one of them constitutes cost analysis. One of the reasons that I'm taping this talk is that I hope that the tape comes out well enough for the secretary to put it on the typewriter. If it gets on paper I intend to send these words to General Driessnack and the members of the Board of Regents because somewhere, somehow, even though I have made these same statements to most of them, the basic ideas seem to get lost. This symposium was December 7, 1982 and that's quite recent. In fact, surprisingly recent. In terms of professional publication it's amazing that something that happened on December 7th should come out in early May.

Well I'm sorry if I haven't helped too much with the context of professionalism which the Institute wants to emphasize and develop. That's because if I were writing the examination questions for certification for Cost Analysts (they are going to give exams for would-be cost professionals and certified cost analysts) much of the subject matter would be quite different from questions I see growing out of papers like these in the proceedings of the first annual forum.

Let me conclude by saying that if I've stimulated you to think a little further about what cost analysis is, I will have satisfied my objective. Thank you.

