

***INCIDENTAL PAPER***

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**Seminar on Command, Control,  
Communications, and Intelligence**

**With AT&T in Iran  
Hubert L. Kertz with Anthony G. Oettinger**

**Guest Presentations, Spring 1984**

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**February 1985**

# ***Program on Information Resources Policy***



***Center for Information Policy Research***



***Harvard University***

The Program on Information Resources Policy is jointly sponsored by  
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I-85-2

## With AT&T in Iran

Hubert L. Kertz  
with Anthony G. Oettinger

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*Prior to his retirement in 1979, Mr. Kertz was President and Managing Director of American Bell International, Inc., a subsidiary of AT&T. His career with AT&T also included service as Vice President, Construction Plans Department; Vice President, Operations Department; and numerous other posts within the company. He joined the Bell system in 1926 as a Cable Splicer's Helper for Pacific Telephone and Telegraph Company. Mr. Kertz is a Fellow of the Institute of Electrical & Electronics Engineers, and a member of the Armed Forces Communications & Electronic Association, and the National Industrial Conference Board.*

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**Oettinger:** How did the Iranian telephone network come to be used as the command and control vehicle for the Khomeini people? How was that permitted to happen, and what was the structure of the system? What role did AT&T play? For contrast, when the Poles established martial law to knock off Solidarity, they did a very professional job. They neutralized civilian communications but kept their military nets functioning, and so they were able to maintain command and control links with the security forces while disconnecting the civilian sector. But in Iran, one has the impression that, whether for technical, political, or whatever reasons, the Shah was unwilling or unable to do that.

**Kertz:** I should explain to you how the takeover got started. After all, the 40 million people in Iran only had something like 500,000 telephone lines, practically all of which were in Tehran. In addition to the civilian network, the military had a rather elaborate, physically distinct network of its own. So did the railroad, and the steel company, and the radio and television division of the government. To improve the communications in Iran, the thing we had to do was combine all these duplicate facilities into one big network, like that of the United States.

We went to Iran in 1975 to draw up some consolidation plans, and improve overall service. The idea was to meld all the private networks together. It quickly became clear that our engineering plan was going to have to take into account special interests and considerations, particularly the nature of the military network. On the other hand the telephone networks of the government copper industry and the government railroad organization were vastly underutilized, whereas the civilian network was heavily overloaded. So we drew up an engineering plan that would more than double their telephones within a reasonable time.

When we had completed the plan it was submitted to the Shah for approval, and he agreed to it. They gave us the job of implementing the plan, and we became, really, the prime contractor, with supervision over all the other contractors.

Well, the problems were many. First of all, a start had been made on improving the telephone network before we got there; but it was along the wrong lines. The switching equipment that was being installed, for example, was incompatible with the existing switching equipment. For a while it looked like we were going to have to have two separate networks, but we managed to figure a way out of that and combine them into one network. Still, like anything else

in the Middle East, things move awful slowly, and there seem to be roadblocks almost everywhere you go.

Another part of our job was to improve the existing network, which was a step-by-step German switching system and a very good one, except that it was grossly overloaded. We helped them with that, and we were making real progress in improving the service in Iran when the trouble started. Of course, it didn't just happen overnight. The Shah left in 1979, and Khomeini showed up the following February.

By that time we had been there for four years altogether. But there never was any attempt to shut off civilian communications. There were difficulties, of course, but not deliberate ones; the facilities had just overloaded. And, as I say, we were making some progress when the trouble started. After that it became more and more difficult to do anything. But there was never any attempt, on the part of the Shah or anybody else, to shut off the civilian network while keeping the military network going.

We had partially integrated the military into the civilian network, to the benefit of the military network. We gave them better service. For example, on certain routes they could use part of the civilian network. They had been limited to their own before; now they had not only their own tactical circuits, but civilian circuits as well.

**Oettinger:** I have heard it hinted that, while Savak and the Shah were well aware of this use, some of the unions or workers within the operation may have taken matters into their own hands.

**Kertz:** Within Telephone Communications of Iran (TCI), the government agency, there was a great deal of dissension, and after the Shah left, many of the liberals there began to run the show. The results prove it. There was a lot of sabotage, bombings; they blew down a microwave tower and deliberately fouled up the switching equipment. But that was the revolutionists trying to disrupt things. The military, which was at the time pretty loyal to the Shah, was worried about its own facilities. We assisted them in many ways to make sure that their facilities were just about as foolproof as you could make them. At one point there was a question: if everyone in TCI walked out, how would they keep their military going? We worked out a plan for them to do that — but as far as I know, the government never thought of cutting off civilian communications.

**Oettinger:** So it's your impression that in spite of, perhaps even because of the integration of the military with the civilian facilities, they could nonetheless have kept the military network going, and in fact had contingency plans to run the former military network in some way, even if other things got out of hand?

**Kertz:** That's correct. There was never any doubt that we could have kept the military network going, even if all of TCI walked out.

**Oettinger:** So any failure would be due more to stupidity or inadvertence than to some problem in the network configuration, or to some physical impossibility?

**Kertz:** Yes. Towards the end of 1978 dissension was breaking out within the military. The noncommissioned officers staged a revolt, and the regular army repressed it, which made the population even more agitated, especially in Tehran. The result was that the martial law which had been declared was completely ignored. Finally the military, even those loyal to the Shah, were ordered back into their barracks, and they just turned the streets over to the mobs. That led to the takeover.

**Oettinger:** How much of the system, by the time of the revolution, was automatic switching — electronic or step-by-step — and how much was operator-controlled?

**Kertz:** It was all automatic. Operator services were almost nonexistent. But the automatic step-by-step system was still working, though greatly overloaded. While 25 electronic offices were on order, 12 were in the process of being installed (they never did work), and the other 13 were in warehouses. By January 1979, because of the lack of air conditioning, attention and so on, none of them would work, and they were practically ruined. To the best of my knowledge they're still not working; they're practically junk. That's true for lots of other stuff, like cable, work trucks and so forth — they just let them go to pot.

**Oettinger:** You mentioned AT&T's role as general contractor. Who did the actual construction and installation — Iranians? Europeans? Other subcontractors?

**Kertz:** General Telephone & Electronics, Continental Telephone, KDK, which is Japanese, and French. There were about 30 different contractors, and we were supervising.

**Oettinger:** What a management problem!

**Kertz:** It was terrible.

**Oettinger:** Suppose one had wanted to control incoming or outgoing communications so that Khomeini, sitting in Paris, and his people couldn't have run their revolution from a distance. Is that something that, given the configuration of the network, was possible?

**Kertz:** Very much so. Practically all the long-distance calls are transmitted by satellite, over the Indian or the Atlantic Ocean. There is one microwave route that runs from Tehran into Europe, but it's very limited. All those lines terminate in the big long-distance building in the middle of Tehran. I can't say that any real attempt was made to shut off those communications, though.

**Oettinger:** But no technical reasons would have prevented it?

**Kertz:** No. Moreover, there was a tremendous amount of monitoring; I am sure that every call was monitored. We in American Bell International had a couple of satellite circuits that we used to call our headquarters in New Jersey, and I'm sure those calls were monitored too.

**Oettinger:** Who was doing the monitoring, Savak? The KGB?

**Kertz:** Savak, and probably military intelligence. Not KGB. My impression, based on brief association with them, is that they're too dumb; that may not be right, but it was my impression.

**Oettinger:** In a sense that makes it all the more puzzling: if they were doing any kind of effective monitoring, then there must have been complete obliviousness, stupidity, or else complicity in the revolutionary movement. Were there any indications that Savak or groups in the military might have been sympathetic to Khomeini?

**Kertz:** They may have been, but you've got to remember that Khomeini's speeches were readily available on tape recordings all over the place, and so was a lot of anti-government literature. At the same time President Carter was strong on human rights, insisting that, in return for military aid, the Shah let up on censorship and violations of human rights. This got the military people and others upset, because it amounted to letting a lot of radicals out of the Evin and other prisons, and they just returned to the streets to foment more problems.

**Oettinger:** Yes, this seemed to us perhaps the first instance where "retail information technologies" — tape recordings, long-distance calls and so on — were used to direct a revolutionary movement. Maybe it all adds up to the element of surprise. Perhaps there was not terribly much one could do about it. That contrasts very sharply with the Polish events a couple of years later and, more recently, the Soviets shutting down automatic switching and direct dialing into the Soviet Union, which had become, as far as I could tell, a fairly rich path of communication with Soviet internal dissidents.

**Kertz:** Though I can't prove it, I feel that US policies had a lot to do with the results in Iran. I'm positive that Carter told the Iranians, in effect, that if they didn't act more democratic he was going to cut out any further aid. That may not be right, but it's certainly my impression.

**Oettinger:** It's been said that people found it necessary to walk around with a gun there. Were conditions that bad?

**Kertz:** They were that bad, but I never walked around with a gun. I had a lot of guns poked at me, by the revolutionary guards. I had a military body-guard for a while, until the soldiers went back into the barracks. And of course the revolutionaries thought it was great fun to come walking up with a gun and point it at you. They were absolutely crazy, I think; they acted like a bunch of children. Can you imagine riding three or four on a motorcycle, all with automatic rifles, coming to an intersection and, just for the fun of it, shooting their guns off in the air?

**Oettinger:** You must have been very glad to get out of there.

**Kertz:** Trouble was, we had a hell of a time getting out.

**Oettinger:** So, essentially, what came of all your effort was some unification of the Iranian networks, and a lot of switches rotting in the warehouses?

**Kertz:** That's right. I'm sure the new equipment that we were getting ready to install is still sitting there rotting. I've talked to people who have been there since. I went back in August 1979 to argue with them about the contract. I didn't get anywhere. At that time the new equipment was just sitting out in the desert, so all that effort went down the drain. We had a grandiose plan to put up a domestic satellite for them. We were going to put Iranian radio and TV on the satellite, using the existing terrestrial facilities. We got the earnest money from NASA, and had the laboratories design the satellite; we were going to put it out for bids for the transponder, and then the whole thing came apart. The satellite was to go up on the first space shuttle. Well, it's all gone now.

**Oettinger:** Is there less to this than meets the eye? Was it just one element in the crumbling of the Shah's regime? Or was the telecommunications part particularly significant?

**Kertz:** The communications were a vital part, but they were only one part of the structure. An interesting sidelight is that Iran was doing its best to improve its power supplies as well. While we were being hampered all during 1978 and 1979 by all the dissension within TCI, the power company went right on working, and they had big contracts with the Japanese for construction of a high-voltage line from the

Caspian to the Tabriz. They worked from 1978 until they finished in the middle of 1980, and never had one interruption in their work schedule for the whole electric grid. It always puzzled me that the power company could complete its work with foreign contractors. Granted, they were Japanese, but how different it was with TCI: we were hampered all along the line, and never did get finished.

**Oettinger:** So it was that erratic in the different sectors?

**Kertz:** It may have been that the revolutionary government wanted to get the power working, so as to keep the population calm. After all, they were used to not having a telephone, but they really needed power. It would have been very easy to shut down the civilian communications and still keep the military, Savak and even the power companies and railroads all working. But as I've said, in spite of the monitoring, there was never any attempt to do that.

**Oettinger:** Technically, then, the nets that were being linked together still retained enough identity and survivability on their own, as separate units?

**Kertz:** That's right.

**Oettinger:** Was this a deliberate element of design? It suggests an AUTOVON-like structure rather than a hierarchical one.

**Kertz:** Well, of course, we never did get to meld them together completely. But the part that we did complete could readily have been kept working while we shut off the rest. That wouldn't have been any problem.