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**REFORMING THE PENTAGON: AN INSIDE JOB****A CONSUMMATE ACADEMIC-CUM-POLICYMAKER STRUGGLES TO CHANGE THE DEFENSE COLOSSUS.**

One of John Deutch's first official decisions in the Department of Defense last spring was to change his title. The position he came to Washington to fill in the early weeks of the Clinton administration was undersecretary of defense for acquisition. He quickly crowned himself undersecretary of defense for acquisition and technology. It was a fitting change, for Deutch is hardly the glorified purchasing agent that the shorter title implied. A physical chem- agency. "When the shorter title implied. A physical chemist and an Institute Professor at MIT, he earned a reputation as a stern but broad-minded administrator during an earlier stint as the institute's provost and dean of science.

Deutch's responsibilities at the Pentagon put him near the epicenter of the seismic shift in resources occurring as the United States attempts to rethink security in a new era. Deutch is wrestling with how to bring the Department of Defense into a world with a radically diminished nuclear threat, a world wherein national security derives as much from economic strength as from military might. The New York Times has called the sometimes tough-talking Deutch, who has responsibility for some \$100 billion in defense spending, a "gathering force of one" in the Pentagon's sometimes painful readjustment to a world without the Soviet Union.

The Belgian-born Deutch, 55, is no stranger to the federal government: he has come and gone for three decades with the tides of Democratic administrations. In the early 1960s he came to the Pentagon as a systems analyst, one of Robert McNamara's "whiz kids." He joined the MIT chemistry faculty in 1970 but returned to Washington during the Carter years, serving as undersecretary for research at the new Department of Energy while the nation rode out oil shocks and nuclear mishaps. He has become a senior statesman of science policy, serving as a member of the White House Science Council and of the Defense Science Board, and on presidential commissions on intelligence and strategic forces.

Deutch evinces little patience with the glacial pace of progress in the nation's capital. The Clinton administration's stumbling start last spring delayed his appointment to the DOD post even after it had been unofficially announced. Frustrated, Deutch said he would turn the job down unless it was officially offered within two weeks. He didn't have to make good on the threat.

Technology Review senior editor Herb Brody recently interviewed Deutch at his office in the Pentagon. With military helicopters roaring past the window every few minutes, Deutch discussed the changes under way in his new domain.

**TR:** What should government be doing to smooth the conversion of military facilities to civilian purposes?

**Deutch:** We prefer the word "reinvestment."

**TR:** What's the distinction?

**DEUTCH:** The government is not especially well equipped to convert specific companies or specific groups of workers from national defense work to civilian work. Rather, we must focus on the investment activities of the Department of Defense that can lead to new opportunities in the economy for people and for businesses--but not necessarily by selecting the specific businesses that have been affected by reductions in defense spending.

**TR:** What sort of investments are you talking about?

**DEUTCH:** Three types. One is with respect to people--men and women who formerly served in the armed forces or worked for the defense industry. We invest in these people by providing them with things like job-retraining programs, severance pay, and information about job opportunities and vocational opportunities, the idea being to reinvest these human resources of the country into new activities. The second kind of investment has to do with facilities. What happens to closed bases, for example, or unneeded technical laboratories or equipment. This is reinvestment of capital assets. The third part of investment has to do with technology. We do not speak of "converting" swords into plowshares. Rather, we are looking at the common technologies that can be used to make both swords and plowshares more efficiently and at lower cost. The emphasis is on applying these "dual-use" technologies to both commercial and military purposes to help the country create jobs and improve economic growth.

**TR:** Are your investment efforts hampered by barriers of corporate culture? After all, the aerospace and defense industries are not accustomed to private-sector markets.

**DEUTCH:** That's correct--and there's no reason to assume that large, traditional defense contractors are the best vehicles for creating these new dual-use technologies. We don't exclude them, but we want to open this opportunity to all companies, including commercial ones. Some defense companies, like Raytheon, also have extensive commercial operations. Others, like Martin Marietta, do not. But in general, our view is much more inclusive than the traditional defense companies. That's why we talk about reinvestment and not conversion.

**TR:** What technologies in particular do you see as having common value for both civilian and military purposes?

**DEUTCH:** The key technologies that underlie large parts of both the military and the commercial sectors are materials, information technology--particularly software and software-engineering tools--and advanced microelectronics, such as gallium-arsenide circuits. These technologies are fundamental to creating efficiencies in the commercial sector and creating capacity in the defense sector. Federal

investment in these technologies would bring advantages to both.

**TR:** What about the objection that the market makes wiser choices than the government in choosing which technologies to develop?

**DEUTCH:** There are those who say that the government is not good at picking winners. I don't believe that's quite right. What I like to say it is that losers know how to pick the government.

**TR:** How might the government avoid being a target for "losers"?

**DEUTCH:** Government can minimize the risk in two ways: by involving industry in formulating programs, and by asking industry to share the costs of technology development.

**TR:** The "information highway" that's on everyone's lips owes much to the computer network technology developed for ARPANET in the 1950s and 60s. Is there anything that's going on right now in military technology that you see as having such seminal value?

**DEUTCH:** Yes--computer simulation. Its integration across all aspects of product development--computer-assisted design, engineering, and manufacturing--has the potential to be as revolutionary to industry as the ARPANET and packet switching have been to telecommunications.

## **TRANSFORMING PROCUREMENT**

**TR:** What parts of the defense acquisition system are broken and need to be fixed?

**DEUTCH:** Well, I can't think of anything about the defense acquisition system that isn't broken. It's very cumbersome and expensive. An extraordinarily long time elapses before an idea gets executed in the field. And it is full of rules that are intended to stop abuse but that in fact only make matters more costly.

**TR:** For instance?

**DEUTCH:** During the Gulf War, the Department of Defense wanted to buy mobile radios. The best mobile radio available was a commercial product from Motorola. But the rules require that before DOD buys a commercial item, the contractor must have in place a government-approved system of cost-accounting to justify the selling price to the government. Motorola did not have such a process in place. It was selling a commercial item. The company said: Buy it for this price or go somewhere else. And the government--remember, this is in time of war--the government wouldn't bend. So what happens? Japan buys these radios and donates them to the United States. There used to be good reasons why those regulations were in place, but we have now reached a point where they have become folly.

**TR:** But isn't the military changing the way it does business as it gets smaller?

**DEUTCH:** The defense procurement system was designed for a different world--a world of large-scale systems and defense-unique items. That system is not designed to deal with the problems that the department faces today. We can no longer afford a defense-unique industrial base, where there are high

unit costs and small production runs of items built to military specifications. Also, as the defense budget goes down, the amount of money available for procurement is more than proportionally reduced. That's because we are putting more attention into "readiness"--that is, training and current operations--leaving less available for R&D and procurement.

**TR:** So what's your solution?

**DEUTCH:** We must make more extensive use of lower-cost commercial products and services.

**TR:** Do you mean that the military should be buying more things off the shelf?

**DEUTCH:** I mean it should be buying them commercially. In some cases that means off the shelf. The key point is that the DOD ought to behave more as if it were just another buyer in the marketplace. That means that we'll have the advantage of larger production runs and lower unit costs, and we'll have a more efficient system. Incidentally, this would strengthen the U.S. commercial sector and enhance our industries' ability to compete internationally.

**TR:** Won't this disrupt longstanding relationships between the Pentagon and suppliers of specialized military equipment?

**DEUTCH:** That relationship will remain where we have unique needs, such as submarines, nuclear weapons, high-performance aircraft, tanks, and ammunition. There is a long list of DOD systems that are unique. But more than 50 percent of what we buy are items where there's no need to have special military specifications--things like clothes, food, fuel, cars. A large amount of the electronics and software we buy could be commercial as well.

**TR:** What barriers do you see impeding this change?

**DEUTCH:** The shift will be difficult for three reasons--one of them legitimate, the other two not legitimate. One is the cultural habit of doing business a certain way, with a certain supplier. That's true everywhere, the Department of Defense included--but in times of change that has to be overcome. There is also a congressional interest; the DOD has been a good customer for companies in a great many congressional districts, so members of Congress don't want to see changes that will shift jobs out of their districts. This is an understandable concern but not of general benefit to the nation.

**TR:** What's the legitimate reason?

**DEUTCH:** The way the government has bought items in the past has often been used as an instrument of social change. Buying from small businesses, buying from minority-owned businesses, buying from businesses that give special preferences to veterans--a whole series of restrictions have been put in place so that the government procurement process is, in part, an important and progressive instrument of change. When you say you want the Department of Defense to behave more like a normal commercial buyer in the marketplace, that role will end.

## CHANGING THE NATIONAL LAB LINEUP

**TR:** Some have questioned the continuing need for the large national laboratories, which were originally set up to develop nuclear weapons. What role do you see labs like these playing?

**DEUTCH:** The national laboratories have a long and distinguished history of producing technology of the highest quality. What we're looking for today, however, is greater efficiency in applying our technology to low-cost manufacturing of items such as electronic circuits, with the possibility of both commercial and military use. This calls for attention to developing and manufacturing commercial products, and that has not been the great strength of the national laboratories. Yet these labs, as well as universities, can play a supporting role in developing dual-use technology--though most of the work will have to be done by industry.

**TR:** Do you think it makes sense to convert the national labs in part to for-hire contract research organizations?

**DEUTCH:** I don't know that we have to do that. If there is a need for contract research, there may be existing mechanisms to fulfill that need. There are many competent R&D service companies in the private sector.

**TR:** So if the national labs are not particularly suited to dual-use technology development or to contract R&D, what should they be doing? Or should they be eliminated altogether?

**DEUTCH:** The labs should focus on their core missions: technology bearing on nuclear weapons, including environmental cleanup and counter-proliferation; energy technologies and associated environmental technology; and basic science and technology. Collaborative work with industry is especially appropriate in the energy technology area.

**TR:** I understand that before coming to DOD, you criticized the department for allocating a growing portion of research funding to in-house labs, such as those run by the Army, Navy, and Air Force.

**DEUTCH:** Yes. I have made very clear that I believe it is necessary to downsize the government's in-house laboratories. But I'm talking here about the government-owned, government operated, or GOGO, laboratories run by the military services and by numerous other federal agencies. The government-owned, contractor-operated, or GOCO, model, as typified by the large DOE facilities such as Los Alamos, Sandia, and Lawrence Livermore, is much more efficient from the technical point of view, and better serves the needs of the country generally.

**TR:** What's wrong with the government's in-house labs? What makes them less efficient than the contractor-operated facilities?

**DEUTCH:** Contractor-operated labs have more flexibility in personnel and procurement practices; such flexibility is especially important for a technical operation. The contractor-operated facilities are also more insulated from special interests, which often attempt to influence program direction. The Department of

Defense is therefore going to allocate a larger fraction of its research and technology dollars out-of-house. Senior technical officials, both uniformed and civilian, agree with this approach. There's no question that some of these in-house laboratories will be considered candidates for closure. At the same time, we will work to strengthen the in-house DOD laboratories that remain. My responsibility is to ensure that a scrupulously fair process is in place to evaluate which technical facilities will be needed and which will be closed.

## FROM LEMON TO LEMONADE

**TR:** The previous administrations sought to build an ambitious missile-defense system. Even though the Strategic Defense Initiative is gone, much of the same work appears to be continuing under the name of ballistic-missile defense. What has changed?

**DEUTCH:** First of all, the programmed amount of money under President Bush's budget was \$39 billion over a five-year period. The amount of money we are programming over a five-year period is \$18 billion. That \$21 billion difference is a huge amount of money--it represents the GNP of many countries in the world. The second change is a vastly different emphasis. We're concentrating not so much on defending the United States against ballistic missiles but rather on theater missile defense for use as part of our protection of NATO and Japan. Some of these countries face a clear and present danger.

**TR:** How is the system itself different from what was envisioned for Star Wars?

**DEUTCH:** We no longer pay any attention at all to weapons in space, which were a big part of SDI. There are no more lasers in space, no nuclear weapons in space, no "brilliant pebbles"--that's all gone. We do, however, include space-based sensors--the "brilliant eyes" program, for example, is part of a long-term strategy for dealing with theater warning.

**TR:** What threats would such a theater missile defense protect against?

**DEUTCH:** There are several examples, depending on which country you ask. If you ask the French, they're worried about Scud missiles from Libya, and potentially Algeria. If you ask leaders in Turkey, they're worried about Iraq and Iran. If you ask the Japanese, they are concerned about the Long March missiles of China and North Korea.

**TR:** It sounds as if the emphasis has shifted toward defense against conventional as well as nuclear weapons. Some might see this as a way to perpetuate the program despite the virtual disappearance of its original reason for existence--a long-range nuclear threat to the United States.

**DEUTCH:** The change in emphasis is really from intercontinental to theater-range threats. Theater-range missiles can carry conventional ordnance or bacteriological, chemical, or nuclear payloads.

**TR:** You recently tried to persuade the Japanese to cooperate in developing missile defense systems. Why?

**DEUTCH:** The traditional way that the United States and Japan have collaborated on defense is that we permitted Japan to purchase finished weapons systems from us. I, along with William Perry--then deputy defense secretary and now President Clinton's choice for secretary of defense--decided to offer the Japanese a different avenue, based on technology cooperation. We would let Japan participate more in developing our defense technology--in theater ballistic-missile defense, for example. In exchange, Japan would provide participating U.S. companies with dual-use technologies that would be of value to us. In particular, we would want access to Japanese expertise on manufacturing and process engineering.

**TR:** Had Japan asked for our missile-defense technology?

**DEUTCH:** There's no question about the Japanese interest in theater ballistic missile defense. They have a significant security problem. Eastern Russia, China, and, most definitely, North Korea are matters of both short-term and long-term concern. Theater ballistic-missile surveillance and defense are subjects high on Japan's agenda.

**TR:** Is this to be a government-to-government agreement, or would it be between individual companies?

**DEUTCH:** You have to be careful, because when you say something like "government to government," that has a different meaning to the Japanese. The governments will set a framework, but ultimately the exchanges are going to be executed by the participating U.S. and Japanese companies.

**TR:** What's the status of the proposal?

**DEUTCH:** It's under consideration by the Japanese. This is quite a different approach and I think it's going to take some time. It may be a year before we know exactly how the exchange will work.

**TR:** Do you expect the recent weakening of the Japanese economy to affect that country's interest in this proposal?

**DEUTCH:** The Japanese spend a small proportion of their GNP on defense, so the weakness is unlikely to signal any significant reduction.

## **THE PENTAGON AS PARAGON**

**TR:** In general, how willing have you found the defense bureaucracy to change its ways of doing business?

**DEUTCH:** I've been pleasantly surprised to find that the uniformed military is willing to embrace dramatic changes. They realize that the Department of Defense must broaden its view of its role in the new world to include the interaction of national and economic security. Greater reliance on the commercial sector for goods and services is an element of that interaction.

**TR:** Are these changes related to Vice-President Gore's moves to "reinvent government"?

**DEUTCH:** Absolutely. Gore's procurement-reform initiative is heavily influenced and motivated by the

same irrationalities and inefficiencies that we're talking about in DOD acquisitions--the case I mentioned earlier of how hard it was to buy a commercial radio during the Gulf War is one of the vice-president's favorite examples. But Gore frequently uses the Department of Defense as an example of an agency that has undertaken initiatives to solve its problems. I know of no other government agency that has a plan for reform as comprehensive as that produced by former Secretary Aspin's "bottom-up review"; the plan is a complete roadmap of the new way of doing business for every aspect of the department, including lower force levels, reoriented modernization programs, and changed management practices at, for example, depots and labs.

**TR:** One doesn't usually think of the Pentagon as a model of efficiency and reform.

**DEUTCH:** By comparison to other government agencies, it doesn't do so badly.

PHOTO: JOHN M. DEUTCH

ILLUSTRATIONS

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An Interview with John M. Deutch

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