



U.S. Department of
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Office of the Assistant Secretary for Public Affairs
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Contact: Marion C. Blakey
Tele.: (202) 366-4570

TRANSPORTATION SECRETARY ANDREW H. CARD, JR.
NATIONAL TECHNOLOGY INITIATIVE
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What we are doing here today in Orlando is extremely important. This nation far too often has failed to turn its scientific excellence into marketplace winners fast enough. As one expert summed up the situation: "we're Olympic gold medalists in scientific discovery, but also-rans in the race for new markets."

You already know the story of how the transistor, the VCR and other technologies were invented here but were successfully commercialized elsewhere.

Another similar tale could be said for the most part of the robotics industry. The fact is, when one of the inventors finally developed a working proto-type robot, he booked it on the Tonight Show -- in hopes it would arouse interest in his invention. It did, but not the way you would expect. While talent agents in America quickly called to book his robot as a comedy act -- as something that could lead a band and open a can of beer -- the Japanese government flew the inventor to Tokyo to address some 700 industrialists and to field questions for six hours.

The moral of this is quite clear. If we as a nation are truly going to succeed in today's competitive global economy, we must first develop new technologies ... figure out how to use them to meet consumer demands ... then market them and make them an effective contributor to the world economy.

This is a tall order, but as scientists, inventors and entrepreneurs, you are used to making the impossible happen. We therefore need your help if we are to turn this frustrating situation around. We need your expertise to discover the practical and commercial value of our scientific and research efforts.

As Secretary of Transportation, I am especially aware of how transportation technology is critical to our productivity and our economic well being. Nearly one dollar out of five spent in the U.S. annually goes to transportation related products and services -- amounting to about \$800 billion a year. So as never before, new marketable technologies are needed to promote everything from traffic congestion relief, to fuel efficiency, to environmental quality and improved safety.

Just the other day, in fact, I discovered how a new series of technologies should help us accomplish many of these worthy goals. More specifically, of how engineers are devising unique ways to give bridges, airplanes and other structures their own nervous systems, muscles and brains to allow them to sense problems and correct them.

As a former structural design engineer, I was impressed to hear of a possible bridge design where special sensors act as nerves, warning of stress and corrosion. And where metals called "shape memory alloys," serve as tendons and muscles, flexing themselves to compensate for structural weakness. This then is the kind of technology, engineering and manufacturing we need to bring to market -- NOW.

We at DOT, of course, have not been sitting idly by. We have had scientific research and development -- in partnership with the private sector -- as one of our cornerstones since the creation of this agency 25 years ago. And with the passage of the new surface transportation act, which further encourages technological research, DOT will be even more involved with the private sector in commercializing transportation technology.

In fact, the FTA just announced a \$12 million grant program for proposals advancing such transportation technologies as alternative fuels and electric vehicles.

We are able to facilitate the transfer of technology to the private sector -- and its commercialization -- through a number of means besides simple grants. As in the case of other federal agencies, we have Cooperative R&D Agreements. Right here in Florida, under such an agreement, we are working with Embry-Riddle Aeronautical University on ways to improve our air traffic control system.

And then we have the Small Business Innovation Research Program -- where the DOT actively assists small entrepreneurial technology-based firms in developing specifically needed transportation related products. One of the projects involves the development of a mounted vehicle detector using infra-red sensors -- something you have already heard about this morning from Willam Schwartz, President of the Orlando based Schwartz Electro-Optics, Inc.

Another means we use to transfer technology to the private sector involves the use of our own labs and technological centers -- such as the FAA's Technical Center in Atlantic City, New Jersey, the Turner Fairbank Highway Research Center in McLean Virginia and the John Volpe National Transportation Systems Center in Cambridge, Massachusetts. And I invite you to come visit and explore with us some the projects currently underway.

One such product coming out of the Volpe Center, is the DOT Aircraft Situation Display -- which I hope you've had time to visit at the Tech Fair on the second floor. Here, real-time flight data from 20 FAA air traffic control centers and radars is fed by satellite communications link, to the system wherever it is installed. In fact, an important commercial by-product of this work is the continuous creation of real-time data on aircraft operations -- data which are of value not only to airlines, but also to businesses which serve the airlines and air travelers.

Also upstairs for your inspection, is a display of something I just experienced this morning -- the Intelligent Vehicle Highways System (IVHS) or as it is often called, "smart cars / smart highways." Here again is another prime example of innovative

technology applied to transportation needs. And how through IVHS America -- a joint business, university and federal partnership -- we can successfully commercialize these dynamic technologies.

IVHS is really an umbrella concept covering a wide range of systems.

Perhaps the most familiar example is centralized computer control of a region's traffic lights -- continually revised on the basis of real-time sensing of actual traffic flows. This approach has proved its worth in various cities, but the concept is just beginning to be exploited for other purposes as well. For example, several toll roads now exist which can collect tolls electronically as cars speed by, thereby reducing a major source of delay.

But the part that may be the most interesting to average drivers -- particularly when they are tourists in unfamiliar areas -- is the one I just experienced. I had the opportunity to drive a car using the TravTek system. They call it "Test Driving the Future," and I have to say that I'm very impressed with the potential market for systems of this type.

This is a multi-million dollar development and demonstration program involving 100 cars, which has just become operational in Orlando -- though other in-car information technology systems can be found in Chicago and Los Angeles.

Travelers in the area can now get from a central facility, real time navigation ... route selection assistance ... travel and tourism information ... and advisory services -- all via electronic display maps and synthesized voice messages located on or originating from the dash-board of the car.

Each car tracks its location the same way some aircraft and ships do: by using the space-based Global Positioning System network of satellites. The very same system which was a navigation tool for our forces in Operation Desert Storm.

IVHS technology, however, is not just another toy. This marriage of automotive and electronic technologies will have a direct impact on U.S. productivity. By using radio links to roadside sensors, as well as to company computers, interstate commercial vehicles can go door-to-door without having to stop for permits, or to be weighed or inspected. They can also be dispatched more effectively and guided to the least congested routes.

But while all of this is a real possibility -- with the markets for technologies contributing to IVHS being almost limitless -- the primary responsibility for conceiving systems and developing products will be with you: the private sector. Our role lies primarily in stimulating and coordinating R&D, conducting demonstrations, and developing national standards.

TravTek is actually but one example of Florida's energetic and forward looking leadership in exploring the use of advanced transportation technologies. Orlando is planning to have the first high speed, commercial magnetic levitation system built in America.

And how could we not mention Florida's lead in space technology and commercialization? Through our Office of Commercial Space Transportation -- we have been working closely with the Spaceport Florida Authority and others in

streamlining licensing and safety guidelines. All of which is necessary if we are to make the "final frontier" widely available for business opportunities.

In closing, you've heard how we are helping translate advanced technology into successful commercial products. And I've mentioned some of the innovations now generating a lot of interest in transportation -- such as intelligent vehicle-highway systems, the space-based global positioning system, and Maglev high speed rail.

But again, it's truly up to you to successfully carry the ball on commercializing these and all the other technologies represented here today. I encourage you to take this opportunity seriously and to make the most of it.

Thank you and have a good session this afternoon.