

**Regional Research & Development Consortiums –
A New Way of Thinking**

By

**Ron Lawrence
Rocklin Police Department**

September, 2010

Command College Class #47

The Command College Futures Study Project is a FUTURES study of a particular emerging issue of relevance to law enforcement. Its purpose is NOT to predict the future; rather, to project a variety of possible scenarios useful for strategic planning in anticipation of the emerging landscape facing policing organizations.

This journal article was created using the futures forecasting process of Command College and its outcomes. Defining the future differs from analyzing the past, because it has not yet happened. In this article, methodologies have been used to discern useful alternatives to enhance the success of planners and leaders in their response to a range of possible future environments.

Managing the future means influencing it—creating, constraining and adapting to emerging trends and events in a way that optimizes the opportunities and minimizes the threats of relevance to the profession.

The views and conclusions expressed in the Command College Futures Project and journal article are those of the author, and are not necessarily those of the CA Commission on Peace Officer Standards and Training (POST).

Regional Research & Development Consortiums – A New Way of Thinking

In 1958, a little known secret government group named the Advanced Research Projects Agency (ARPA) was created for the purpose of high-level defense research & development, with the mission to create, develop and execute technologies for Military services (Belfiore, 2009). Later renamed DARPA, (*Defense Advanced Research Projects Agency*), the organization exists today for the purpose of research & development of technologies for U.S. Military and National Security purposes, including space exploration. In his book Department of Mad Scientists – How DARPA is Remaking our World, from the Internet to Artificial Limbs, Michael Belfiore details how this unique group of creative and brilliant minds has played a major role developing technologies for the United States Government over the past 50 years, without most people even knowing of their existence...

“...summing up much of DARPA’s work: find an area of technology that could go a long way toward serving the needs of the country if improved but that wasn’t getting much attention in the private sector, put some well-considered research and development money into it to get it on its feet, and then cut it loose.” (Belfiore, 2009)

DARPA illustrates the critically important function that research & development (R&D) plays in future technologies and in shaping the world we live in. But DARPA plays opposite the private sector; instead of competing with technologies emerging in the private sector, it focuses on technologies not getting much attention. This is a brilliant balancing of R&D to ensure the United States remains competitive in technology advancements. Following the DARPA philosophy, law enforcement can lead the

development of technologies if it also collaborates with the U.S. Military, research institutions and private vendors with a shared purpose.

Establishing regional research & development centers devoted to the development of law enforcement and military technologies would harness collective scientific and practical capabilities to create cutting-edge equipment for peace officers across the Nation. This is not only a very possible concept, but one that will lead to an exciting and unimaginable future. Let's take a peek into the possibilities that could be derived from such collaboration.

Once Upon A Time...

Think for a moment about a future where integrated R&D produces DARPA-like results for public safety. Some stories begin with *once upon a time*, and others begin with *no kidding, there I was*. This particular story begins with, *no kidding, there I was*. I arrived to work early that day prepared for patrol duty on my thirty-year anniversary with the Police Department. As I reflected on the amazing transformation law enforcement has made over my three decades of service, I grew to appreciate how the profession had evolved into the technology-sharing consortium it had become today...October 10, 2019.

I gained access to the building by an electronic palm print and retinal eye scan at the back door, a gigantic leap from the hard, large brass key with *Do-Not-Duplicate* stamped on both sides I used to carry in my hip pocket. As I arrived in the locker room, I walked to a computer mounted on the wall which resembled a large vending-machine instead of my locker. I again offered my retinal eye scan and palm print up for the large computer to identify me as a police officer. From behind the wall I could hear the turning of wheels and shifting of machinery as a medium-sized door opened up displaying a

futuristic bullet-proof, fully self-contained bodysuit and computerized Smart-Helmet fit to my size.

The cops in our precinct often made jokes that police armor in the 21st Century reminded them of Storm Troopers or Ironman from old movies; today's generation has largely forgotten those old films, though. As I suited up, I felt fortunate to work in a city that valued technology and progressive thinking and knew that I was employed by one of the most technologically advanced police agencies in the world.

After suiting up, I took my seat in the briefing room. The sergeant emerged from a back room and began discussing the previous shift activities, his discussions accompanied by a three-dimensional hologram in the center of the room depicting the crime scenes and various suspects wanted by the police department. The holograms included every known fact about the wanted suspects including detailed description, their last known whereabouts, acquaintances, criminal history and everything a cop needs to know about wanted suspects. We all took electronic notes in our *Smart-Helmets*; not with a pen and paper; the notes automatically uploaded into our helmets, equipped with mobile video & audio recording hard-drives.

Unlike generations of haphazard patrolling of years gone-by, today's policing is much more surgical in nature, and designed with goals and objectives in mind. We all had a stake in policing the City, and we all held ourselves accountable for the wanted persons in our beat, new crime trends and the community care of our citizens. At the conclusion of briefing all officers on our shift exited the room, seating ourselves on a group transport monorail and headed for "*the Warehouse*", a common nickname officers used for the *California Regional Law Enforcement Technology Consortium*.

The Warehouse, a mega-structure where top innovators, scientists and law enforcement engineers work together, develops cutting-edge technology for crime fighting in California. It's gigantic, large enough for at least five football fields; its hundred or so employees all worked to develop equipment and technologies for domestic field use. The Warehouse seemed to be straight from the James Bond movies; lead engineers instruct all officers on the latest gadgets and crime-fighting equipment for their use and even provide some prototypes to be tested by officers in the field. After about thirty-minutes, we were issued our new equipment and sent on our way to the flight-deck, where after a pre-shift inspection of our electric patrol units we were deployed to our various beats accompanied by a cadre of flying, unmanned drones.

Single-Government-Thinking

If the officer of the future looks and acts very differently, it will have been because of work necessary today to enhance our R&D. For many decades, federal, state and local governments have operated largely as proprietary entities, especially in information sharing and technology development. Information sharing has improved over time, particularly after the terrorist attacks on the United States in 2001. Technology development and sharing, though, continues to be hampered by single government thinking. The National Association of State Chief Information Officers (NASCIO) which represents many Chief Information Officers and Information Technology Managers of State Governments across the U.S., tout their success collaborating amongst different government entities, breaking the single-government thinking.

In an article released by NASCIO titled *Connecting State and Local Government: Collaboration through Trust and Leadership*, the authors express the importance for

government to embrace collaboration, specifically related to information and technology sharing:

“Crossing organizational boundaries is an endeavor that requires a great deal of trust on all sides. Particularly in state-local collaborations, where the processes and the players can differ greatly, it is important to construct and cultivate trust at the outset of collaboration. Establishing a sound governance model is the first step in establishing this trust. A sound governance model for state-local collaboration is one that encompasses shared accountability, establishes leadership, encourages mutual trust and promotes collective dedication to achieving the same strategic goals.”

(Jamison, 2007).

Government entities only considering what affects them and not giving consideration to or inclusion with, other government agencies could limit the ability to share resources, combine expertise and capitalize on efficiencies. Embracing a regional approach to R&D will allow for maximum benefits from experts and practitioners towards the development of weaponry and technologies, but will require a specific approach according to NASCIO.

“While the advantages of collaboration can be applied universally, the approach and methodology of collaboration will vary depending on the initiative. When engaging in state-local collaboration, state agencies can provide services to citizens within the local communities in which they live and work. In turn, localities can take advantage of shared resources and deliver services that may not otherwise be possible.” (Jamison, 2007)

Single government thinking will not be easily eradicated in the near future, but when it comes to fighting a common enemy or having a common interest, we must strive to think more regionally, even more globally. With technology advancing at such a rapid pace, government can not afford to be left behind, particularly law enforcement serving to protect our communities from the criminal element. Creating regional research & development consortiums will allow law enforcement to transition into the technology future more easily. As criminals advance their technology and methods for criminality, so too must we advance our technologies and equipment to maintain an upper edge.

Identity theft is an example of one area of technology that criminals have exploited at a rapid rate, and law enforcement has not been able to keep up. According to a report released by the Federal Trade Commission (FTC) in November of 2006, about 8.3 million U.S. adults were victims of identity theft in 2005 (FTC report, 2006). As identity theft and other high-tech crimes continue to soar, law enforcement must have the ability to create and maintain faster and better ways to address them. We must not allow this type of disparity to occur with other areas of technology that criminals have access to. The issue of criminals using technology for identity theft crimes has become such a huge problem that a report from the U.S. Department of Justice describes a Federal Identity Theft Task-Force created to combat this cybercrime.

“In response to the growing prevalence of identity theft, on May 10, 2006, President George W. Bush signed an executive order creating the President’s Identity Theft Task Force (President’s Task Force). ...The stated purpose of the Task Force was to “use federal resources effectively to deter, prevent, detect, investigate, proceed against, and prosecute

unlawful use by persons of the identifying information of other persons.”¹⁰

Members of the President’s Task Force included, among others, the Secretary of Homeland Security, the Postmaster General, and the Commissioner of the Social Security Administration... Subgroup on Criminal Law Enforcement,...Subgroup on Education and Outreach, ...Subgroup on Data Security, and ...Subgroup on Legislative and Administrative Action.” (DOJ Report, 2010)

Creating regional research & development centers to develop new ways to combat things such as identity theft is one of the many benefits of such a lofty endeavor.

Extending on the success of this model to create comprehensive R&D would significantly expand the manner in which agencies develop, share and deploy safety technologies on the cutting edge.

Research & Development – Making it a Priority

Dedicating resources to R&D can be costly, especially in medium-sized and smaller agencies that lack resources and expertise. This may prevent smaller and medium-sized agencies from participating in the development of equipment and technologies necessary to combat crime; it may even preclude them from using appropriate technologies all together, according to a special report on small and rural law enforcement agencies released by the National Institute of Justice, which states:

“Small and rural law enforcement agencies, as a group, are susceptible to falling behind their urban and suburban counterparts in adopting and using computers and other new technologies—“ (National Institute of Justice, 2004)

Relying on the U.S. Military to develop technologies for use in the field has been a long standing tradition, but has its limitations. First, the Military develops technologies and equipment for the field of battle, not civilian law enforcement. It's true there are many correlations between the two, but the gap between equipment designed for a battlefield and that for civilian law enforcement has been left to private vendors to bridge. Second, this gap between battlefield equipment being transitioned to civilian law enforcement comes with a significant time lapse. For example, the U.S. Military first began using flack-jackets during World War II, but it was another 25 years (in the late 1960's) that the flack-jacket morphed into a usable bullet-proof vest for civilian law enforcement use.

Unmanned Aerial Vehicles (UAV's) are another example of a significant time-lapse between military-technology being developed for civilian law enforcement uses. According to the 9/11 Commission, the U.S. was using UAV's heavily to spy against al Qaeda in 2000, "*During 2000...The CIA also produced a plan to improve intelligence collection on al Qaeda, including the use of a small, unmanned airplane with a video camera, known as the Predator*" (9/11 Report, 2004). Additionally, in 2003 a research group called *List Lab* from the University of Florida explained that the U.S. Military has used different forms of UAV's for many decades, and has used UAV's consistently since the Vietnam War (List Lab, 2003). Today there are numerous UAV's sporting multiple names developed by several different companies, and intended for just about any type of military and commercial application (List Lab, 2003). It was not until 2004, though, that the Los Angeles County Sheriff's Department began experimenting with UAV's for surveillance in their jurisdiction (Bowes, 2006). One can imagine the multitude of

civilian law enforcement uses for UAV's such as surveillance, random patrol, real-time traffic reports, crowd observation and many others.

Funding Issues

The U.S. Military does a phenomenal job of R&D, and has the funding to support it. Earlier this year, the U.S. Army requested \$10.5 billion to spend on R&D in 2011. Even still, Rep. Howard McKeon (R-Calif.) has said it is not enough (Matthews, 2010). The Military is a model from which local, State and Federal law enforcement could learn.

While most agencies aren't going to suddenly find the funding to devote significant fiscal resources to R&D, law enforcement would be wise to create a close relationship with the scientists, engineers and developers in the Military to more quickly adapt technology to fight crime in the United States. This could be successfully accomplished through the creation of regional research & development consortiums.

Collaboration – The First Step

According to the 9/11 Report, a critical failure of the U.S. Government prior to the terrorist attacks of September 11, 2001, was a lack of imagination. *“The most important failure was one of imagination. We do not believe leaders understood the gravity of the threat”* (9/11 Report, Exec Summary, page-9, para-3). Imagination is indeed central to R&D as well. Imagine the speed of law enforcement technology advancement if a specialized regional research & development consortium brought together experts from the U.S. Military, private vendors such as Northrop Grumman, DuPont, Taser International®, Glock, Motorola and many others together with federal, state and local law enforcement. This highly skilled and dedicated group of professionals could create futuristic patrol vehicles, the most advanced weaponry available and

futuristic information and database systems all using biotechnology, nanotechnology and all other emerging cutting-edge technology available.

Experts Weigh In

On September 11, 2009, an expert panel of twelve individuals comprised of the U.S. Military, federal and local law enforcement, entrepreneurs, venture capitalists and private vendors convened to participate in a Nominal Group Technique (NGT) session at the Rocklin, California Police Department. The purpose of the NGT was to brainstorm the real possibilities of creating regional R&D consortiums of shared experts from the Military, law enforcement and the private sector to develop advanced law enforcement weaponry and technologies.

The panel's consensus was that such a consortium would revolutionize the manner in which the United States developed technologies for policing, but that it would require significant collaboration between those involved, which in their opinion had been a barrier in the past (Lawrence, 2010). Creating a relationship between the U.S. Military, private vendors, and federal, state and local law enforcement will be a monumental task. Imagine, however, if the brightest and most brilliant minds from those groups were housed together to work on developing technology and equipment for use in the field by both the Military and civilian law enforcement, how much faster technology would be available for front-line use on the streets.

Imagine UAV's patrolling city sectors, self-contained body armor on patrol officers, immediate intelligence available in the field in real-time, flying patrol cars, robotics used for incursion into dangerous situations, and many other technologies developed by a collaborative R&D consortium that only the imagination can see today.

Arguably, this is a radical and different way of considering R&D, but if California law enforcement is going to close the significant time lapse of technology advancement, we must begin to open our minds and think in more efficient ways.

Establishing regional research & development centers devoted to the development of law enforcement and military technology and equipment will create a cutting-edge environment which will keep us ahead of the crooks. Working together instead of remaining in our proprietary silos can only assist in the advancement of law enforcement and will become a strong cornerstone of collaboration among governments.

The Final Call

Back to 2019...As I patrolled my assigned sector during my last day of work, I marveled at the flying drones assigned to my beat, feeding me up-to-the-second updates on criminal activity in my area. Responding to an in-progress call, I zoomed across town in my solar / electric patrol vehicle, collecting data on the involved criminals by use of facial recognition being fed from the drone to my patrol unit. Police radio traffic had long been supplanted with automated, computerized advisories, making everyone on my shift aware of where everyone was and what they were doing without saying a word. My bodysuit and Smart-Helmet constantly monitor my heart-rate, body temperature and other vital signs. If any metric goes into the red zone, help is summoned automatically.

Many tactical calls didn't even require getting out of the patrol unit. The car's external semi-automatic guns, multiple Tasers, net-cannons to capture criminals and other weaponry are a formidable arsenal, one well-known to the criminal element. As I zoomed to what was likely the last call of my police career, I felt amazed at how far law

enforcement had advanced over the past thirty years, and know the future of policing had arrived...

Certainly, the scenario played out in 2019 might appear far-fetched. In fact, with the advent of consolidated R&D, all or part of that future is within our grasp. Without the development of regional research and development consortiums, keeping up with the fast paced advances of technology would likely be impossible. Research and development can often be the easiest line-item to eliminate when reducing budgets, but combining monetary, intellectual and managerial efforts with other entities can create a powerful and very successful force.

REFERENCES

- 9/11 Commission Final Report of the National Commission on Terrorist Attacks Upon the United States
Official Government Edition (July 22, 2004)
- Belfiore, Michael The Department of Mad Scientists – How DARPA is Remaking Our World, from the Internet to Artificial Limbs
Harper-Collins (2009), New York, New York
- Bowes, Peter UAV's Over Los Angeles
BBC News article (June 7, 2006)
- Department of Justice The Department of Justice's Efforts to Combat Identity Theft
U.S. DOJ, Office of the Inspector General Audit Division
Audit Report 10-21 March 2010
- Federal Trade Commission 2006 Identity Theft Survey Report
(November 2006) <http://www.ftc.gov/>
Report prepared by: Synovate
- Jamison, Stephanie Connecting State and Local Government: Collaboration through Trust and Leadership
Copyright © 2007 NASCIO, all rights reserved
<http://www.nascio.org/publications/documents>
- Matthews, William Congressman Decries Drop in U.S. Army R&D Funding
Defense News article (February 25, 2010)
- National Institute of Justice Law Enforcement Technology—Are Small and Rural Agencies Equipped and Trained?
U.S. D.O.J., Office of Justice Programs (June, 2004)
- Lawrence, Ronald How will a Regional Law Enforcement Research & Development Consortium Benefit Mid-Sized Law Enforcement Agencies in California by 2019?
California POST Command College (June, 2010)
- List Lab Commercial Use of UAV's: A Brief History
<http://www.list.ufl.edu/uav/index.htm>
University of Florida (January 17, 2003)