COMMERCIALIZATION PLANNING SESSION

PARTNERING WITH FEDERALLY-FUNDED RESEARCH ENTITIES TO COMMERCIALIZE TECHNOLOGIES: DESIGNING A PROCESS THAT WORKS FOR OUR REGION

JULY 27, 2012

SESSION NOTES

On July 27, 2012, Project 17 International sponsored an invitation-only commercialization planning session with assistance from the Agricultural Research Service and the Naval Post Graduate School. This session was held in collaboration with Hartnell College and the Grower-Shipper Association. The objective of the session was to design a process for commercializing technologies out of USDA's Agricultural Research Service (ARS) and the Naval Post Graduate School (NPS) that could benefit the economies of the California Ag Triad: Monterey Bay, Fresno and San Luis Obispo areas.

Dr. David Nicholson of the Agricultural Research Service and Dr. Rudolph Darken of the Naval Post Graduate School presented a sampling of innovative technologies being developed in their respective institutions. They each reviewed their institution's process for those interested in availing themselves of existing intellectual property as well as collaborating with researchers in their entities. After their presentations the group -- comprised of representatives of the agricultural sector, investment community, entrepreneurs, economic development agencies, and education -- outlined what a process for commercialization would need to look like in order to bring an idea to commercial product for the agricultural sector. The following notes document the output of the group discussion, primarily, as well as key points from the presenters. Discussion themes included:

- Process needed to be in place to make the commercialization process complete, effective, and timely;

- Constituents in the regions that might avail themselves of these technologies;

- Considerations from NPS and from ARS that affect the transfer of technology or the commercialization (e.g., holding on to the IP; or taking a cut of the "action");

- Considerations from the agricultural sector about the final products they need and at what point of the development process they would be interested in engaging; and

How Project 17 International will facilitate this commercialization process among Ag Triad players.

PARTICIPATING COMPANIES AND ORGANIZATIONS INCLUDED:

- AT&T External Affairs
- Brown Dog Partners
- California State University, Monterey Bay
- Carter Consulting
- CECO Innovation, LLC
- Duda Farm Fresh Foods, Inc.
- Eco-Deli
- Huntington Farms
- J L White International, Inc.
- Marina Technology Cluster
- Monterey County Economic Development Department
- Monterey Institute of International Studies
- Naval Postgraduate School
- Ocean Mist

- Paraiso Vineyards
- Peterson Communications
- Royal Packing Company, a subsidiary of Dole Fresh Vegetables
- Ranch Systems
- SmartWare
- Steinbeck Country Produce
- Sustainable Productivity Solutions
- TechScan
- TrueTrac
- U.S. Department of Agriculture, Agricultural Research Service
- Wilbur-Ellis Company
- Project 17
- Smart World Center

GOALS OF THE SESSION

- Learn about the kinds of technologies coming out of ARS and NPS that could be of use to the agricultural sector.

- Delineate what works and what does not work in the current commercialization processes for both ARS and NPS.

- Design a commercialization process that would be effective for all the stakeholders, especially for agriculture.

PROS AND CONS OF THE COMMERCIALIZATION PROCESS

Pros – Naval Postgraduate School Commercialization Process

- SBIR, STIR – postings out to small businesses and entrepreneurs

Cons – Naval Postgraduate School Commercialization Process

- Word of mouth communications about the "Treasure Trove" at Department of Defense exist using old-fashioned social networks.

- The federal government, funding -- NPS is looking at 3-, 4-, to 5-year horizons for a product. This may not be of much use to the agricultural sector.

- It is hard to get the information out to end-users <u>and</u> to the <u>entrepreneurs.</u>

- How can NPS identify the biggest problems of agriculture to know what to develop?

Pros – Agricultural Research Service Commercialization Process

- There are many intellectual property and research projects at ARS.
- ARS has a searchable website.
- ARS issues specific licenses.
- Growers spend less and get more (re: research perspective of agriculture).
- ARS technologies can solve industry-wide agricultural problems.

Cons – Agricultural Research Service Commercialization Process

- There is a lack of awareness among the ag sector of what exists at ARS.
- Agriculture is short sighted regarding their own needs (i.e., they have immediate problems in the field or in the plant to solve).

CONSIDERATIONS FROM THE AGRICULTURAL SECTOR ABOUT COMMERCIALIZATION OF PRODUCTS OF USE

- Challenge: there are so very many end-users in agriculture. Many ag companies do not want to be the one to step forward to try a new solution. Suggestion from the group: Why not aggregate the agricultural need through, for example, Grower-Shipper Association?
- Maintaining a competitive edge for an individual agricultural company makes it hard to invest in a commercial solution that many others may end up deploying.
- Agricultural companies have their own pace and priorities for problem-solving.
- For our region, the specialty crops don't have that big an impact on the whole industry.
- There are areas where agriculture is being innovative: food safety and traceability, but if only one company does it, that's not enough.
- Agricultural sector is risk adverse and, therefore, less likely to take a chance on a new solution when the old solution works adequately.
- Marketing of a new technology-based solution: One needs personal contact in the ag sector and with the local community to identify ag-oriented entrepreneurs and end-users (growers and shippers) with a willingness to experiment with new ideas.

DESIGNING A PROCESS OF COMMERCIALIZATION THAT WORKS

Key Factors to Consider

- There are very different needs throughout the agricultural industry.

- The Ag industry has a short-term mind set vis à vis ROI.

- "Have to Innovate to Separate"

- Agriculture has both hardware and software components in their process of growing and shipping.

- Developers need more input and buy-in from agriculture early on in process.

- There is labor union resistance to automation.

- Identify a group of agricultural visionaries (aggregated).

- Each company may have one visionary looking for one disruptive technology.

- Outside forces: PTI: Produce Traceability Initiative, agricultural waiver.

- <u>What the end-consumer wants is really</u> important, whether it be a large company like Wal-Mart or the customer in the grocery store.

Obstacles

- Long time to commercialization

- Identify needs and solutions earlier for the ag sector

- Agricultural industry is fragmented – how to reduce that fragmentation?

Stakeholders and Players in the Commercialization Ecosystem

- Small entrepreneurs willing to take risk

- Large corporations accessing ideas out of ARS Labs

- Agriculture Extension (e.g., University of California)

- Suggestion: Entrepreneur-in-Residence at each ag company

- Aggregated "Research Units" working on behalf of agriculture to identify innovations
    - Matching with agricultural demands
    - Matching with commercialization "team"

- Need a vetting group to determine commercialization viability

- AT&T funds innovative technologies via 1) grants and 2) their "Foundry Lab" in Palo Alto

- Especially for IT solutions, it is easier to start a business without much funding than it used to be, but for those working on hardware solutions for ag, this might not be as easy.

Leadership and Catalysts

- Can we have universities convene the research aspects around agricultural industry's needs?

- Do internal research & development versus collaborating and/or identifying <u>outside</u> technology.

- Project 17 International can provide the "glue" to solve these challenges.

AG – TECHNOLOGY COMMERCIALIZATION PROCESS TIMELINE

- From IP/ideas from ARS and/or NPS -> to partners in commercialization to -> agricultural industry

- Improve the communication from NPS and ARS to ag and business developers.

- Make ideas visible and accessible.

- Identify agricultural needs, through universities, with end-users, investors, business developers.

- Set up problem identification over a course of time for the ag industry: 1 year; 3-5 years; 5+ years.

- Create a forum showcasing advanced technologies and bringing the agricultural industry together to vote on best ideas (like the ARS Technology Showcase).

- Provide the commercial product to the AG end-user.

NOTE: The Next Session on De-nitrification of Water will be held on **September 14, 2012**