

Innovation Valley BLOG Kickoff

Can the Merrimack Valley Business Community Align with Predicted Business Opportunities for the Future

Seth J. Itzkan & John Michitson

This month's article kicks-off the Innovation Valley BLOG (www.ivalley.org); in fact this article is a BLOG entry. So by design it reads like a BLOG. Forrester Research (www.forrester.com) defines social computing as "a social structure in which technology puts the power in individuals and communities, not institutions" A BLOG is one of many social computing technologies. We happen to agree with Forrester on the power of social computing; consequently, we are initiating a peer-to-peer conversation across the Merrimack Valley and web to answer the following question: Can the Merrimack Valley business community align with predicted business opportunities for the future? Only you as a peer can answer that question. We are hoping that you will visit the BLOG to respond to this article with comments, or better yet, provide additional content to shed light on the topic.

Of course the first step is to try to identify the best business opportunities for the future, which isn't easy. Since there are no crystal balls available, we decided to confer with a reputable source to start the conversation, namely The RAND Corporation. Specifically, we reference findings in the following publication by RAND: "The Global Technology Revolution 2020, In-Depth Analyses Bio/Nano/Materials/Information Trends, Drivers, Barriers, and Social Implications", dated 2006. The document can be found at www.rand.org/pubs/technical_reports/2006/RAND_TR303.pdf.

Report Summary

The RAND Corporation is a highly respected non-profit think tank that performs objective analyses in the public interest. First, RAND identified technologies with the most economic

promise in the long term based on their extensive research and analysis, and then they estimated the future impact of the postulated technologies on society.

In the detailed RAND report, the technology applications that appear to be both technically feasible and likely to be implemented widely by 2020, because they serve at least a medium-sized market and raise little to no significant public policy issues, include the following: 1. Cheap solar energy; 2. Filters and catalysts for water purification; 3. Rural wireless communications; 4. Communication devices for ubiquitous information access anywhere, anytime; 5. Green manufacturing; 6. Targeted drug delivery to organs or tumors using molecular recognition; 7. Rapid bioassays using bionanotechnologies (the capability to rapidly perform tests to verify the presence or absence of specific biological substances and to perform multiple tests simultaneously); 8. Tissue engineering (the design and engineering of living tissue for implantation and replacement); 9. Ubiquitous radio frequency identification (RFID) tracking of commercial products and individuals (RFID tagging); 10. Hybrid vehicles; 11. Improved diagnostic and surgical methods; 12. Quantum cryptography (the use of quantum mechanical methods to encode information for secure transfer); 13. Drug development from screening (design and screening of molecules for drug development based on computational analysis of drug-related data); 14. Body monitoring and control for disease management; and 15. Smart systems (systems that respond to external stimuli or

instructions - for example, buildings and roads that adjust properties based on environment, kitchens that cook with wireless instructions.)

The RAND report highlights that most of the technologies listed above depend on developments in more than one of the technology areas (e.g. biotechnology, nanotechnology, materials technology, and information technology) being investigated. The convergence of these disciplines and technologies is contributing to the accelerated pace of development. Examples of such cross-discipline integration include electronic textiles with consumer and medical applications; and continued miniaturization and increased functionality of RFID chips.

It is strongly suggested that you browse the referenced RAND report in areas that you have interest in. There is a wealth of detailed information that is not typically available to corporate business development organizations or government strategic planners. The RAND report, together with other sources, could prove to be a viable tool for economic development.

There are many more sources, including content on the web, that also address future business opportunities. Do you have a source that you are familiar with that you want to reference on the BLOG? Does the content re-enforce or refute the RAND findings or drill down into more specific market segments? Are there any additional business opportunities for the future that you would like to bring to the attention of peers?

After debating and predicting the most likely economic development opportunities for the future, the next step will be to address whether or not the future business opportunities fit in with the Merrimack Valley. For example, do we have, or can we build, the appropriate work force for the potential enhanced or new industries? What hurdles stand in the way and can we mitigate them? What specific actions can the collective business, academic and government sectors take to enable new business opportunities? These are just some of the tough questions that we need to grapple with down the road.

Preliminary Observations

Let us jump the gun with some initial observations regarding RAND's view of

long term business opportunities and whether or not there is potential to exploit them in the Merrimack Valley.

We are very excited that Green manufacturing was identified by RAND as a key technology for future business opportunities. As you know, we are trying to jumpstart the Green Chemistry industry here in the Merrimack Valley. Our preliminary business plan is posted on our BLOG. The RAND opinion correlates with information contained in an Associated Press article, "Venture Savant Doerr Bets on Green", dated April 11, 2006. It indicates that Venture capitalists invested more than \$1.6 billion in clean technology companies last year, up 35 percent over 2004.

The field includes technologies related to water purification, air quality, nanotechnology, alternative fuels, manufacturing, recycling, and renewable energy. Renowned high-tech VC John Doerr is earmarking \$100M additional funds for "green technology", on top of \$50M already invested. (Mr. Doerr made his name and fortune with early investments in Netscape, Amazon, and Google). Mr. Doerr says, "This field of greentech could be the largest economic opportunity of the 21st century".

RAND's citing of rural wireless communications as a significant economic driver in the future also hits close to home. As we covered in a previous article, Haverhill's USAi.net (www.usai.net) is already providing Internet service to farm country and plans to provide wireless services there in the near future. As an outgrowth of MVA.NET, based on Washington Street in downtown Haverhill, they are now a national player in wireless Internet services. According to USAi.net president, Dave Spaulding, they have rooftop access on 30 buildings in Boston and are equally represented in New York, Los Angeles, and ten other major U.S. markets.

Finally, when it comes to cheap solar power, another future business opportunity cited by RAND, the Merrimack Valley may have a leg up on the competition. As covered in a previous article, Konarka (www.konarka.com) has developed a process to print sheets of photovoltaic film that can be woven into clothing and building materials. Using nanotechnology, Konarka makes low cost sources of renewable power universally available.

Konarka has a multi-million dollar contract with the Pentagon for solar products, including a tent made of photovoltaic material. Consumer products are next.

The Innovation Valley initiative seeks to help stimulate economic growth and quality-of-life enhancements in the Merrimack Valley. Every month we will report on innovative businesses, practices, and ideas that are helping to make Merrimack Valley the place to be. Look for our article in print media and online at www.ivalley.org.



Seth Itzkan is president of Planet-TECH Associates, a consulting agency identifying innovations in economic development. Recently, Mr. Itzkan helped The Boston Foundation to conceptualize and implement its Hub of Innovations tool. You can email him at seth.itzkan@gmail.com.



John Michitson served as a Haverhill city councilor for 10 years; the last two as president. He is a manager and electrical engineer at the MITRE Corporation in Bedford, Mass. John and his wife, Heidi, are enjoying the childhood of their 4-year-old daughter and 6 year-old son. jmichitson@mva.net.



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