

*Innovation Valley (www.ivalley.org)*

# Our Future Economy: The Movie

Seth J. Itzkan, Karl Thidemann, John Michitson

Imagine the year is 2107 - one century from now. You're not around, of course, but your great-grandchildren are. Like you once did, they now live in the Merrimack Valley. One Saturday afternoon, a group of your kin decides to go to the newly created Visitor Center for the Merrimack Valley National Innovation Park and Incubator. This facility, a greatly expanded version of what you and I once called the Lowell National Historical Park, now focuses on the entire Valley, with branches in all constituent cities.

At the center, your descendants relax, sitting down comfortably in an atrium that is a marvel of technologically advanced, environmentally-friendly design. You and I, silent witnesses peering wide-eyed through time, could not begin to fathom how it's possible for the fabrics covering the walls, the floor, the furniture - and even our future family's clothing - to respond to one's gaze and touch by changing color, texture, and pattern. But not all would be so mysterious and unfamiliar. The sounds of children playing and the smell of freshly cut grass thankfully remain ageless.

Your future clan is about to experience a multi-sensory show that recaps the great regional achievements of the previous century. Triggered by an unseen signal to dim the room lights, the numerous transparent skylight panels comprising the atrium's cathedral ceiling each assume a different color, slowly becoming nearly opaque, resulting in a stunning stained-glass ceiling.

As the show begins, your kin are surrounded with the sights, sounds and smells of our present era. A narrator intones: "The year is now 2007, the year historians mark as the beginning of a dramatic rebirth of the region - catapulting it, once again, to the height of world envy it enjoyed one-and-a-half centuries earlier."

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Now, let's come back to today. It's February. It's cold, but not as cold as it should be. In fact, it's been one of the warmest winters in a lengthening chain of warm winters.

The skiing industry is melting into the red and the newest reports of the Intergovernmental Panel on Climate Change (IPCC) have just hit the papers, issuing their strongest words yet on the "unequivocal" evidence of human-induced global warming. They say that our impact is going to continue to warm the Earth for centuries, even if we stopped production of heat trapping gases today. The best we can hope to do is curb the burden. Argh. You need a break.

So, what do you do?

Well, of course you go to the Lowell National Historical Park where every 30 minutes they show a film on the city's great industrial heritage. The film is titled Lowell: The Industrial Revelation.

You notice the title does not contain the word "revolution," as you had momentarily thought, but rather, "revelation." Revelation, which, according to our friends at American Heritage Dictionary, means (1) The act of revealing or disclosing, and (2) Something revealed, especially a dramatic disclosure of something not



previously known or realized. Hmm. You are intrigued by the second definition - "a dramatic disclosure ..."

Within the film you hear inspiring language, such as:

"What happened here was so successful and so profitable that it convinced young America to pursue a course of industrialization ... Lowell is America's first great industrial city ... The city is a revelation to all who see it. Indeed, American technology is to reach new heights in 19th century Lowell.

The city is transformed into a huge laboratory for experiments in waterpower, engineering, textile chemistry, and machine design."

Of course you are familiar with this story and have heard similar language, but what you really loved about this breathless prose was the opening phrase of the last sentence, "The city is transformed into a huge laboratory ...," repeat, "laboratory." And a laboratory for what, you ask yourself rhetorically? Well, like it said, "experiments in water power, engineering, textile chemistry, and machine design." This gives you pause, and you wonder, are such experiments still going on? Are we still breaking new ground?

OK. Now the movie ends. You go outside and walk down to the banks of the Merrimack River where Boott Mill is being transformed into luxury condominiums. You take a breath of the cool air and ask yourself, what does the future hold for the Merrimack Valley? What would it look like decades from today if, like the past, the whole region acted as a "laboratory" for experiments in industry, energy, engineering, and chemistry? What would it look like if a whole region were the fertile nexus of a new industrial "revelation"? What is the "dramatic disclosure of something not previously known or realized" that this region can offer to the World?

In a quest to answer those questions, your first task is to do a wide-area scan. What do we know about industry and economic growth today? Five points come to mind:

(1) All industry is now global. Competitive advantage is driven almost entirely by innovation and quick implementation. Any industrial rebirth must focus on intellectual capital.

(2) Environmental considerations are paramount. There is zero room for the belchers of yesteryear. Any industrial growth must not only be environmentally friendly, but, in fact, restorative. It must restore the environment even as it creates jobs and commerce.

(3) Fossil fuel dependence is a non-starter. The energy requirements of tomorrow's industry must be satisfied through non-carbon sources.

(4) Human safety and dignity are rule one. Toxic environments are unacceptable. Tomorrow's industry must find ways to create products that are benign and pose no threat to workers or consumers.

So, you ask yourself, can the Merrimack Valley achieve this?

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Your next task is to perform a local scan of what is innovative locally and indicative of possible growth for the region. Many highlights come to mind, however, you only have room, at the moment, to jot down three of them.

(1) The Merrimack Valley is home to the UMASS-Lowell Center for Green Chemistry, the world's premier academic program for the study of environmentally benign approaches to industrial chemistry.

This innovation is growing rapidly in major commercial sectors, such as pharmaceuticals, plastics, electronics, and consumer goods. It is saving industrial interests billions of dollars in energy and environmental compliance, and producing not only products of equivalent, but often superior quality. It helps industry to do more with less. Companies around the globe send their top researchers to Lowell to better understand how to apply this innovation to their own businesses; they envy this knowledge.

2. The Merrimack Valley is home to what is likely the world's largest geothermally-heated residential development. The Wood Mill in Lawrence, now known as Monarch Lofts, is in the process of becoming a complex of 600 condominiums and 30-plus offices heated and cooled largely through natural, non-polluting processes. It serves as a shining example of how to build high-density urban dwellings of the future ... precisely what every major developer around the world now wants to know.

3. The Merrimack Valley is home to Konarka Technologies, the world's leading innovator in the emerging industry of nano-scale photovoltaics. This exciting technological breakthrough is opening a new world of solar-powered materials, such as plastics, films, and even fabrics that can all create electricity when exposed to light. Konarka is prototyping solar powered tents where the canvas-like fabric is, itself, the electrical generating material.

They also have designs for backpacks and other self-powered solar fabric products. In 1850, the mills on the Merrimack River were producing more than 2 million yards of cotton cloth a week. How much longer before Konarka and its cousin companies are generating 2 million yards a week of solar powered fabric?

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Well, that was a mindful, you say to yourself, as you reconsider the questions with new insight: What's in this multi-modal movie that my progeny are going to watch 100 years from now?

What happens, beginning today, that allows this region to become a laboratory for the economy of the future? What are the combinations of innovations that once again will allow the Merrimack Valley's industrial revelations to shine forth upon the world?

Suddenly, it becomes clear, the answers start with you.

The lights go dim. The movie begins.



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](mailto:seth.itzkan@gmail.com)



John Michitson was a Haverhill city councilor for 10 years; the last 2 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. email: [jmichitson@verizon.net](mailto:jmichitson@verizon.net)

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](http://www.ivalley.org).