



# Trenchless Technology Center *Newsletter*

J U N E 2 0 1 5

## TTC Promotes the Living Lab Concept to Advance the Underground Infrastructure Industry

Asset management of our buried treasures (infrastructure) and the utilization of trenchless technical solutions are critical components for meeting societal needs and keeping future rate increases to a minimum. Societal needs are manifested through our quality of life (QOL), public health and safety, and economic development. QOL embodies components such as minimizing greenhouse gas emissions and other environment and social impacts.

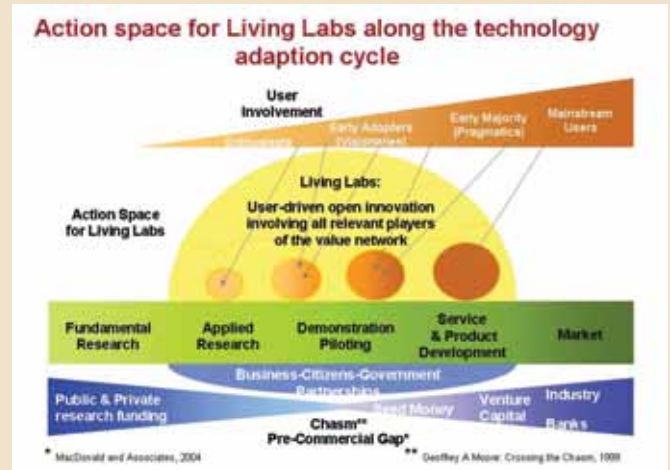
During the past 25 years, TTC has seen the industry transition from being very dynamic and rapidly changing to being even more dynamic and changing even more rapidly. This trend is predicted to continue as we see more commitment to innovation at all levels related to how we manage and solve challenges relating to our underground infrastructure.

TTC is pleased to announce that it will continue to be a leader in the process of moving best practices and technical solutions to the end users. The two main initiatives that TTC is committed to accomplish this are:

- Partnering with Benjamin Media, Inc. to conduct the first ever Underground Pipeline Innovation Summit in 2016. The executive program committee has already been activated. It will involve the water sector and the oil and gas sector. More information will be provided later.
- Developing living labs to be a resource for moving innovations to the end users as rapidly as possible.

The illustration in the figure best defines the concept of a living lab. The yellow bubble represents the action space for a living lab. Please note that it spans the gap from the basic scientific fundamental research to the full market acceptance/commercialization. It involved applied research, demonstration, piloting and service and product development. The four circles within the yellow action space show the progression from the enthusiasts to the early adopters (visionaries) to the early majority (pragmatics) to the mainstream users. This figure is packed full of excellent information that is relevant to the underground infrastructure industry, and TTC would like to express appreciation to Geoffrey A. Moore: Crossing the Chasm, 1999 and MacDonald and Associates, 2004, for developing this figure. From the references for the developers, it is noted that the concept of living labs is not new. It tackles the most challenging components of taking an idea or concept to becoming a sustainable and profitable business, service or product. It deals with transferring research into practice (TRIP).

TTC was established almost 25 years ago and during this time has been involved in the full range of basic scientific fundamental research to successful commercialization. Unfortunately, many great ideas and never become successful due to not being able to overcome the market barriers of entry. This is where the living lab can provide value through generating user-driven envi-



**A living lab represents a user-centric research methodology for sensing, prototyping, validating and refining complex solutions in multiple and evolving real life contexts.**

ronment for driving innovation involving all relevant players of the value network. This includes business-citizens-government partnerships to the maximum extent possible.

So, what is a living lab? According to William Mitchell, a living lab represents a user-centric research methodology for sensing, prototyping, validating and refining complex solutions in multiple and evolving real life contexts. This approach allows all stakeholders to consider the performance of a product or service and its potential prior to adoption by users. Hence, a living lab constitutes an experiential environment that could be compared to the concept of experiential learning. This can be used for developing technical solutions to helping policy-makers and regulators understand the impact of new policies and regulations before their implementation.

Dr. Tom Iseley is not new at working with the development of a living lab for underground infrastructure. He was successful in receiving a grant while serving as a professor in the Purdue School of Engineering and Technology at IUPUI (Indiana University-Purdue University, Indianapolis). This grant was matched by 50 percent from the Buried Asset Management Institute-International (BAMI-I) from contributions from AP/M Permaform, Sanexen Environmental Services, Midwest Mole, CH2M Hill, and the Plastic Pipe Institute. This project involved the establishment of a living lab in the Riverside neighborhood, which borders the IUPUI campus. This became known as RWELLS (Riverside Watershed Environmental Living Lab for Sustainability) and led to a partnership with Global Water Technologies, a company that has been actively promoting the concept as a founding member of the US EPA's national water cluster initiative. The idea for RWELLS was to

serve a place where new and emerging technical solutions could be evaluated by rate payers, utility operators, regulators, academic researchers, students, potential investors, potential installers, etc. RWELLS also offered an economic development component. As new and emerging technical solutions improved and were validated for being market ready, new companies would be formed through entrepreneurship initiatives to help with the commercialization phase. The focus on developing new companies was to develop more minority and women-owned businesses to increase the underrepresented segments of prevalent in the underground infrastructure industry.

When Dr. Iseley returned to TTC as director, he has continued to promote the living lab concept. TTC will be seeking utilities to partner with in establishing five to 10 living labs in North America. While several utilities are considering joining this initiative, the names are not being released at this point. Several of the objectives are:

- Identifying an area, such as a drinking water pressure zone, where various pipeline condition assessment technologies can be evaluated from a systems approach,
- Evaluating SUE (Subsurface Utility Engineering) applications based on ASCE 38-02,
- Evaluating pipeline cleaning technologies such as the recently developed Tomahawk system,
- Evaluating various pipeline renewal systems,

There are many topics that could be added to this list. The idea is not just to conduct a pilot project but to put in place a continuous learning mechanism that can be used by the utility to development best practices for utilizing appropriate technical solutions. It can be used for training operations personnel and their input and buy in.

TTC is pleased to announce that the following donations have been received:

- \$100,000 from the Construction Education Trust Fund (CETF). The mission of the CETF, set up by the Louisiana State Licensing Board for Contractors, is to promote programs used for contractor educational purposes. Fines and penalties levied against violators of the state's contractor licensing law are sent directly to the fund. This is a unique program established over 20 years ago to make sure that the State of Louisiana maintain strong construction education programs.

Dr. Iseley expressed much appreciation for the investment that CETF has made in TTC. This investment will be used to help students learn more about underground infrastructure through field trips to jobsites and conferences. It will be used to expand the TTC Municipal Forum program and the Certification of Training in Asset Management (CTAM), as well as the assisting with the general operation of TTC.

- \$1,000 from the Louisiana Engineering Society (LES)

This donation was presented to Dr. Iseley at the recent TTC Municipal Forum in Shreveport, La. Iseley expressed much appreciation for this investment in TTC. He explained that as an industry/university/government research center investments such as this provide seed money for TTC to multiply to benefit our industry through matching public and private grants.



Left to Right: Jadranka Simicevic., TTC Assistant Director, Ali Mustapha. Caddo Levee District, Dr. Tom Iseley, TTC Director, Tyler K. Comeaux, Burk-Kleinpeter Inc. inc.

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### Trenchless Technology Center

Louisiana Tech University

**DIRECTOR:**

Dr. Tom Iseley

**ASSISTANT DIRECTOR:**

Jadranka Simicevic

**RESEARCH PROGRAM MANAGERS:**

Dr. Shaurav Alam  
Dr. Arun Jaganathan  
Dr. Carlos Montes

**FINANCIAL MANAGER:**

Fredda Wagner

**SENIOR ADVISOR:**

Dr. Ray Sterling, Professor Emeritus

**MAILING ADDRESS:**

PO. Box 10348  
Ruston, LA 71272-0046 USA  
Phone: (318) 257-4072 | Fax: (318) 257-2777  
E-mail: ttc@latech.edu  
Web site for TTC: www.ttc.latech.edu

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