



Technology Integration and Support Services (Webinar Series Session #8)

July 14, 2020

Presented by Ray Deatherage



Webinar Series Overview – 8 Sessions

- Session #1: VR Users Committee Introduction (April 9)
- Session #2: Industry Training Challenges and VR Benefits and Use Cases (April 21)
- Session #3: Hardware Equipment, Software, and Network Requirements (May 5)
- Session #4: Control Center Overview* (May 19)
- Session #5: Scoring Manager* (Authoring Tool) (June 2)
- Session #6: Module Development and Maintenance Process (June 16)
- Session #7: Current and Future VR Training Modules and Platform Features (June 30)
- Session #8: Technology Integration and Support Services (July 14)

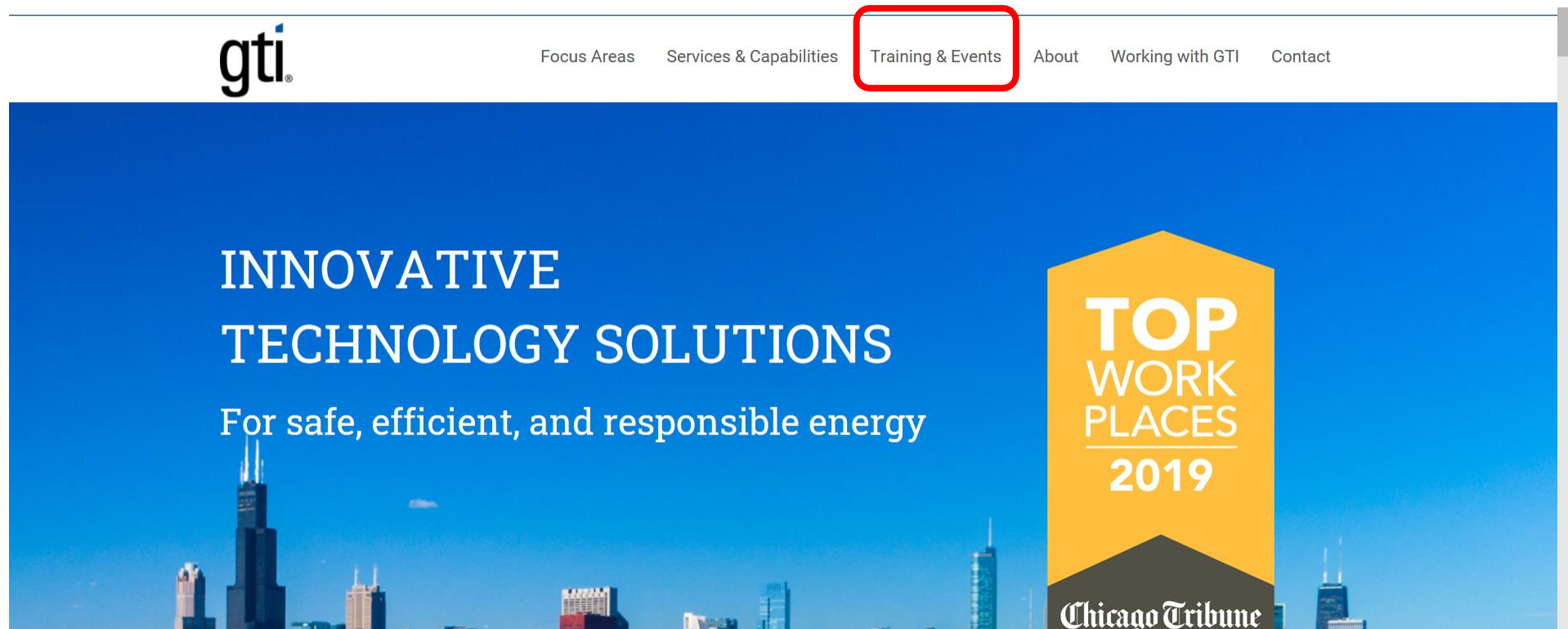
Presentation Agenda

- Recap Session #7
- VR Training Technology in the News
- Technology Integration and Support Services
- Group Discussion
- Next Steps



GTI VR Webinar Presentations and Training Information

- GTI Website (<https://www.gti.energy/>)



Session #7: Current and Future VR Training Modules and Platform Features

Current Modules Available

- Inside Meter Inspection
- Emergency Response Procedure
- Appliance Inspection*
- Facility Locating and Marking*
- Outside Leak Investigation and Classification*
- Pipeline Patrolling*
- Inside Leak Investigation*

Future Module Development

- Gas Handling
- Meter Change
- Regulator Inspection
- Industrial Regulator Inspection
- Valve Inspection
- Leak Survey
- Hazard Mapping a Jobsite
- Pre-Excavation Inspections



Session #7: Additional VR/AR/XR Training Platform Features in Development (Q4 2020)

- **Virtual Classroom:** Learner and training modes for tools and equipment.
- **Operator Qualification (OQ) Evaluator Tool:** Improve consistency and remote capability of evaluations.
- **VR/AR/XR Content Manager:** Manage and deliver customer created content (e.g., 360 degree video).



VR Training Technology in the News

New Program Combats Racial and Gender Bias in the Workplace Using Virtual Reality

PRNewswire/ – Live In Their World, a Software-as-a-Service (SaaS) company that combines psychology and technology to help ...

 PR Newswire · 7d

 IEEE
SPECTRUM

A Virtual Reality Bias Simulator

New company aims to create better workplaces by putting employees in others' shoes



TRAINING
INDUSTRY

Encouraging Civility Among Remote Employees: 7 Strategies

These continue to be uncertain times, creating unfamiliar territory. In such conditions, it's even more...

Interplay Learning, Leader in Online and Virtual Reality HVAC Training, Partners with NATE

About Interplay Learning Austin, Texas-based Interplay Learning is the leading provider of online training for the skilled trades, utilizing Virtual Reality and 3D simulations. With almost a ...

Business Insider · 6d

Revolutionizing Aircrew training through virtual reality

The Virtual Reality Procedures Trainer, released during a milestone demonstration of its capabilities July 7 at StrikeWerx in ...

AF.mil · 21h



GTI VR/AR/XR Technology Integration Support Services



GTI VR/AR/XR Evaluation and Integration Support Services – Different Levels and Approaches

- Conduct Presentations and Demonstrations for Key Stakeholders (Onsite/Remote)
- Provide Short-Term Module Licensing and Hardware Equipment Leasing
- Provide Pilot Project Support Services (e.g., equipment, licensing, training, etc.)
- Assist with Business Case Development Support - Return on Investment (ROI) Reviews
- Procure Hardware Equipment, Set-Up, Test, and Train on Usage
- Coordinate Licensing of Content
- Provide Development and Customization Assistance of VR/AR/XR Content
- Assist with the Evaluation of VR/AR/XR Technology Providers (e.g., soft skills, empathy, etc.)

GTI Can Also.....

- Assist with gaining organizational support (e.g., leadership, operations, field, Union, etc.) for this new training technology.
- Introduce the technology to your organization at all levels.
- Help identify technology goals for your organization - Year 1, Year 2, Year 3, etc.
- Help identify development opportunities for work activities performed by the largest group and/or have the highest risk. VR training works best for honing skills on activities with a sequence of complex steps.
- Design and set-up training areas at your facility for best use of technology.
- Assist with identifying best ways to fund technology evaluation and integration (e.g., Capital, O&M, R&D, etc.)

VR/AR/XR Technology Training Offerings

- Benefits and capabilities with stakeholders
- Hardware equipment (e.g., benefits, usage, etc.)
- New system set-up (e.g., laptop, headset, etc.)
- Control Center functionality
- Authoring tool usage
- Train-the-trainer or even field personnel
- Workforce training due to a lack of resources available.
- VR/AR/XR technology use (e.g., 360 degree video, codeless development, etc.)



VR/AR/XR Content Development Offerings

- Computer generated randomization multi-user training
- Virtual classroom tools and equipment for multi-users
 - Instructor mode
 - Training mode
- Operator Qualification (OQ) evaluator modules for remote or local evaluations
- Codeless AR/XR training content (e.g., hot spots, knowledge questions, etc.)

Example of VR/AR/XR Technology Integration Plan

- Single year and multi-year integration plan.

Item	Year 1	Year 2	Year 3
Hardware Equipment	X		
Platform Access	X	X	X
GTI Support Services	X		
Content Development Budget	X	X	X

**Note: Platform access to content is similar to any third-party provider of training content. This is commonly referred to as annual licensing. This varies depending on the total number of users, available content, and platform features.*

Return on Investment (ROI) Example

	Total Trainees	Trainee Initial Training Duration	Trainee Remedial Training Duration	Trainee Total Duration	Instructor Initial Training Duration	Instructor Remedial Training Duration	Instructor Total Duration	Trainee + Instructor Wages + Benefits (\$100 per hr)	Dollar Value Savings	Labor Hours Recovered
					5 classes	5 classes				
Current State	50	40 hrs	16 hrs	2,800 hrs	48 hrs	24 hrs	360 hrs	\$316,000	\$0	0 hrs
25% Improvement	50	30 hrs	12 hrs	2,100 hrs	36 hrs	18 hrs	270 hrs	\$237,000	\$79,000	700/90 hrs
50% Improvement	50	20 hrs	8 hrs	1,400 hrs	24 hrs	12 hrs	180 hrs	\$158,000	\$158,000	1,400/180 hrs

**Note: Besides the overall labor value savings, organizations should really consider the recovered unproductive labor hours that can be reallocated to perform O&M tasks (e.g., meter changes, industrial regulator inspections, valve inspections, etc.).*

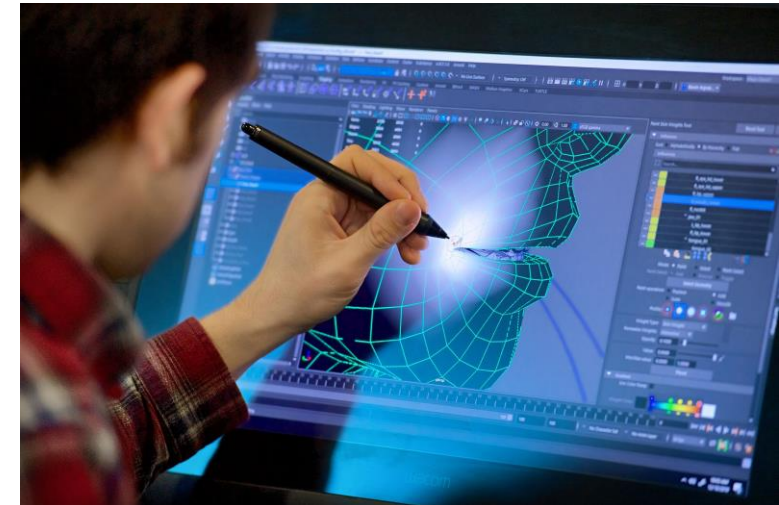
Training Program Example for ROI

	Current Program	25% Improvement	50% Improvement
Pre-Class Webinar		1/1 hr	1/1 hr
Pre-Class VR		1/0 hr	3/0 hr
Classroom (Initial)	40/48 hrs	0	0
Classroom (Initial) + VR		32/38 hrs	20/26
Classroom (Remedial)	16/24 hrs	0	0
Classroom (Remedial) + VR		8/14 hrs	4/8
Labor Hours for 50 Trainees	2,800 hrs	2,100 hrs	1,400
Instructor Labor Hours x 5 Classes	360 hrs	265 hrs	175
Trainee & Instructor – Total Labor Hours	3,160	2,365	1,575
Training Cost	\$316,000	\$236,500	\$157,500



Questions?

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Next Steps

- Please contact GTI (Ray) if you are interested in continuing your evaluation of VR/AR/XR training technologies outside of these webinars.
- Also, during the October/November timeframe GTI will be in position to showcase the new VR/AR/XR Platform features via a webinar, an invite will be sent out to the group.

Thank you again for your time over the past 16-weeks and I look forward to continuing our discussions.

Presenter Biography

Ray Deatherage – Senior Program Manager with GTI

- 27+ years experience in the natural gas industry
- 25+ years experience with a gas distribution company
 - Operations, Standards, Materials, Failure Analysis, Quality Assurance, Compliance, Training, and Operator Qualification
- 15+ years experience developing, delivering, and maintaining training and qualification programs
- 4+ years experience evaluating and developing VR training technologies
- VR/AR Association Member – Chicago Chapter
- VR/AR Energy Committee Member
- MEA Technical Training Committee Member