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Accelerate H2O Host Inaugural Texas Water Technology Investor Forum and Announces Major Initiatives

SAN ANTONIO, TX (July 2, 2015) – Accelerate H2O, a Texas statewide entity created to discover, promote and invest in new and existing technologies that have potential to fill demands and needs in Texas' \$9 billion water technology market hosted the first-ever Texas Water Technology Investor Forum on Tuesday June 23rd in Austin, Texas, attended by 135 global, national and regional water, technology, and investment experts.

“Investment in new technology is desperately needed if the water industry is to tackle grand challenges ahead. We brought together global experts with Texas investors to identify opportunities and address limitations to bringing world-class innovative water technologies to key stakeholders in Texas. In turn, the Forum recognized that we have new technologies and the brainpower within the state that we can introduce to the rest of the world,” said Ed Archuleta, Chairman of AccelerateH2O and the former President of the El Paso Water System.

The Forum gathered 100 Texas investors from among family offices, venture funds, corporate venture directors, private equity, public finance with 35 leading experts from Asia, Canada, Europe, Israel, and throughout the United States. Keynote speaker Tamin Pechet, Chairman of ImagineH2O and founder of Banyan Water (a Texas-based firm) provided remarks on comparative returns on investment across several technology areas, sectors, and ventures. “Based on the data we have collected through Lux Research, ImagineH2O and other sources, the reality is that water technology IS a great investment scenario for Texans and that the myth about long lead times for seeing a return on your money is not accurate.”

Panels on Market Intelligence, Global and National Investment Perspectives, Sector and Industry Perspectives, and Texas' Immediate Investment Scenarios suggested that Texas is “a prime location for global investment in local challenges, while also connecting technologies and resources to the Fortune 500 companies based in our State scouting for new solutions, partners, and export relationships,” stated Bryan Daniel, Director of Economic Development for Governor Greg Abbott.

Mr. Daniel was joined by Texas Commissioner for Environmental Quality (TCEQ) Toby Baker and Texas Agriculture Commissioner Sid Miller in encouraging Forum participants that the State of Texas is “looking to you and your colleagues in the investment arena to work with state agencies and AccelerateH2O for encouraging and

driving the most innovative ideas and strategies for meeting our current demands and long-term economic competitiveness,” stated Mr. Baker of TCEQ.

Commissioner Miller noted: “the drought may be over for now, but we know it will return. And in some Texas communities, we are still at pre-2011 levels. Agriculture is an example of where innovation in water reuse and conservation is wide open for investment partners. We produce a majority of the Nation’s commodities and unless we encourage farmers, ranchers, food production, and all our sectors to think differently about water, then we will have abandoned our responsibility to future generations!”

Announcements made during the Texas Water Technology Investor Forum included:

- Expansion of Fathom Water to Texas and the formation of *Fathom Labs* in collaboration with AccelerateH2O to spark a statewide “smart water” initiative;
- Partnership agreement with Hutchison Kinrot – the Singapore-Israeli investment venture firm – with AccelerateH2O to bridge global firms, investors, innovators, and opportunities for product demonstrations and expedited market entry;
- Partnership agreement with WatrHUB of Toronto Canada to develop a data base and market intelligence tool on Texas’ 4600 water agencies and utilities technology procurement strategies, needs, and future plans;
- State of Texas \$600,000 grant from the Texas Workforce Commission to ensure that a new generation of skills and talent will be trained and certified to meet the demands from deployment of emerging technologies, engineered solutions, and products;
- Frost Bank commitment of \$250,000 towards AccelerateH2O’s statewide water innovation mission and goals;
- Launch of the Texas Water Technology Innovation Clearinghouse and Collaboratory - a one-stop digital tool for connecting experts, communities of interest and practice, academic-government-industry collaborations, and problem-solvers in real-time. The Innovation Clearinghouse and Collaboratory can be accessed at <http://www.accelerateH2O.org>;
- A statewide Water Technology Innovation Showcase planned for October 2015.

The agenda, speaker bios, presentations, and a report on the Forum can be found at <http://www.InvestH2O.com>.

About Accelerate H2O

There will always be water challenges in Texas as well as barriers and limitations to innovating water. AccelerateH2O was formed to identify the most efficient and effective pathway for technology development and deployment across Texas’ residential, industrial, agricultural, and utility end-users. With over eighteen university research centers, 4600 water agencies, 5000+ medium and large corporate campuses, and thousands of farms and ranches, Texas represents an undiscovered \$9 billion water technology marketplace. We connect the market of ideas, resources, and products.

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Texas Water Technology Investor Forum

June 22-23 2015

Austin Texas

Forum Executive Summary



HOBBY FAMILY
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Forum Agenda

7:30 - 8:30 a.m. *Breakfast and Registration*

8:00 - 8:30 a.m. *Welcome, Introductions and "Forum Agenda Setting"*

- Bill Freed, Executive Committee, AccelerateH2O; Investor, Nueces Marketing
- Bryan Daniel, Office of the Governor, Director for Economic Development
- Richard Seline, Executive Director and Sr. Advisor, AccelerateH2O

8:30 – 9:30 a.m. *Market Intelligence (Research, Analysis Findings)*

- Laura Shenkar, Co-Founder, Artemis Water Strategy
- Paul O’Callaghan, Founder, BlueTech Research
- Brent Giles, Research Director, Lux Research and Water Intelligence
- Frank McGrew, Managing Director, Raymond James

9:30 - 9:45 a.m. *Coffee Break - Sponsored by Mandarin Environment and Mandarin Communications*

- John Robinson, Jr., Publisher - Mandarin Environment; Principal Consultant - Mandarin Communications

9:45 – 11:00 a.m. *Global & National Investing Perspectives*

- Amanda Brock, CEO, Global Water Standard
- Dave Henderson, Managing Partner, XPV Capital
- Roy Wiesner, Hutchison Kinrot
- Christopher Gasson, CEO, Global Water Intelligence

11:00 - 12:00 p.m. *Sector Perspectives (Desalination, Reuse, Smart-Water, Conservation)*

- Rob Steiner, Managing Director, Summit Water Infrastructure Group
- Jason Bethke, President, Fathom Water
- Jeff Moeller, Director of Water Technologies, Water Environment Research Foundation
- Tom Pankratz, Editor, Global Desalination Report

Noon - 1:30 p.m. *Special Guests Speakers and Keynote Address*

- *The Honorable Toby Baker, Commissioner, Texas Commission on Environmental Quality*
- **“The Future of Water Technology Investing: Lessons Learned”**

Tamin Pechet, Chairman – ImagineH2O; Founder, Banyan Water

- *The Honorable Sid Miller, Commissioner, Texas Department of Agriculture*

1:30 - 2:30 p.m. *Texas Water Challenges & Investment Opportunities* - Immediate and Near-Term Demand

- Tom Kasun, Senior Project Manager, ALCOA
- Troy Allen, General Manager, Delta Lake Irrigation District
- Ed Archuleta, former CEO, El Paso Water System
- Russ Conser, former Senior Vice President, Shell USA - Gamechangers

2:30 - 3:15 p.m. *Wrap-up Session: Impact for Texas Water Tech Investing*

- Richard S. Seline, Executive Director, AccelerateH2O
- Margo Cardwell, Trey J Blocker PLLC; Former Natural Resources Advisor, Greg Abbott for Governor campaign

Welcome and Introductory Remarks

Bryan Daniel – Governor’s Office for Economic Development

Great opportunity to discuss water and water tech due to current circumstances:

- Bryan came from both Federal and State agriculture departments; his perspective is informed by a rural, agriculture background.
- Water in Texas is a critical economic and very real resource that plays a huge role in competitiveness and economic development.
- As Texas attracted food processing and manufacturing – for instance frozen food production he and the state leaders recognized that water was key to relocation, expansion
- Texas is a great home for businesses – proof of its continued population and job growth, less regulations and taxes, and a hospitable setting for technology
- We have shifted some of our prior economic development programs to attract the best minds and higher education expertise to our State
- Governor Abbott views government’s role as regulating *only* the things that *need* to be regulated – and in limiting the federal overreach that might damage our industries
- *“Conversations that start here today will not finish until some time in the future- - and we look to this investor forum and the work of AccelerateH2O to guide us in supporting water investments”*

Richard Seline – Executive Director, AccelerateH2O

AccelerateH2O operates on three value propositions:

1. Water is on ongoing challenges in Texas
 2. Best plan is to bring the world’s best tech to make all sources of water to go further, but there are barriers that limit our ability to compete and innovate
 3. Therefore AccelerateH2O was formed to identify world-class technologies to solve our challenges, remove and address barriers and limitations, and spark a \$9 billion market for water technology.
- A number of reasons for holding this inaugural investor forum *“How can we look past using investment dollars only for water rights and water ownership – there a more opportunities for investors in and beyond Texas – and we should create the eco-system that is highly successful”*
 - Leveraging and responding to the needs of 5000+ corporate plants, campuses, facilities requiring water for production and manufacturing – identifying technical products and services that are missing or need to scale in Texas – we want to learn from the Forum today on what are these technologies and where investors can be our partners
 - Role of Accelerate H2O is to connect the 18 plus universities, 4600+ water agencies, 5000+ corporate and business facilities, and thousands of farms and ranches by focusing on desalination, reuse, smart water, conservation technologies.

Market Intelligence Panel

Summary of Key Points:

1. No middle markets typically in water technology (Paul, Frank)—is this a problem or an opportunity in Texas?
2. Water Tech SWAT teams as a solution for infrastructure (Laura) – putting expert-teams of technologists, engineers, former operators and managers for example – to put integrated solution sets together.
3. Water is considered close to free (Laura/Brent)
4. Need to empower consumers---tech is there to alert users to when they may have a leak but no one is calling the consumer (Frank). Higher water prices will encourage users to pay more attention.
5. Innovative applications for desalination--pipeline infrastructure and local reuse connected into a “systems” approach (Frank)

Paul O’Callaghan (BlueTech Research)

- *“Not everyone who starts the race make it to the finish line. You can have to get through the Valley of Death as quick as possible.”*
- Change happens faster than we think – its hard to keep up with the innovations occurring – and that does not make this a simple sector to
- BlueTech companies usually either get acquired or go bust
- Types of tech: Membranes, chemical treatment, bio treatment, sensors and control systems, them sludge treatment, thermal desalination

Laura Shenkar (Artemis Water Strategy)

- VC boom in Israel started in the early nineties because right pieces assembled. Laura is seeing that in Texas. *“From the opportunities in water business perspective, I see a lot of similarities in the landscape between Israel in 1992 and Texas now”*
- We also talk about how does water facilitate other activities – and that is what Texas has to consider in its near-term planning? Artemis focuses on tech-driven water resilience. We work with companies that are looking beyond the current price of water and planning for 10 years ahead.
- There is a great sense of community and also fierce competition in Texas. The ability to say that Texas has the toughest customers on earth that are also ready to step forward and try something new is a hurdle worth exploiting as it signals ‘if you can make it in Texas, you can make it anywhere...’. AccelerateH2O seems prepared to bring world-class experts to look at the capabilities, and look at technology as well as business capabilities. This is the kind of self-organizing environment that would enable an initiative out of Texas to take worldwide. We don’t see Hollywood or Silicon Valley of Water in water, so this is a great opportunity.
- The anticipation for exits in water technology are always looking at how you can help a big investor limit their risk. (tech-driven risk needs a tech-driven hedge)
- Oil and Gas—Permian Basin is water scare. Unconventionals are an unprecedented opportunity for the US. We have a 10-15 year jump on the rest of the world. \$800 savings

per household from this additional energy production, but cannot realize this opportunity without water.

- “Off-grid water solutions within the grid”—one Walmart store could save 90% of its potable water and 85% of its emissions with proven water tech solutions
- Water integrated micro-grids are the next “advantage” for regions and large-scale campuses
- Two business models: Turnkey services: Water Tech SWAT Teams and “Plug and Play” product development and application

Brent Giles (Lux Research)

- CDP identified 853 water risks threatening growth for world’s largest industries/companies
- Climate change is increasing the number of extreme storm events. The Northeast US is getting hit particularly hard and they have the oldest infrastructure. Texas has seen a 25% increase in extreme storm events. Do not discount the issue of storm-related floods, management, and technology scenarios
- Water pricing isn’t always rational
- Regional issues: Frac water treatment and reuse is far behind in Texas. This is largely tied to the geology of the state—it is really cheap to dispose of water. This has been a tough area for start ups, because production companies have little incentive to use their technologies; however, this could change if increasing seismic activity leads to disposal wells being shuttered or additionally regulated. The world expects that Texas has been working on solutions.
- Industrial opportunities are rising. Aquaculture is on the rise and its value is increasing even faster due to lost of coastal fishing and other climate related challenges. Going from low-tech, small pond systems to huge recirculating systems – this kind of harvesting with less water is the “new farming”. Some start-ups have already had quite a bit of success. Going to see a move from a small cottage industry to big corporate models.
- Sensors—having the right sensor, in the right place, in the right system adds tremendous value – collection, assessment, and analysis of water, the surrounding setting, the infrastructure, the service and maintenance – a number of opportunities are ready to go to market
- Water is way behind factory automation. In part this is because water systems are so spread out and water quality is difficult to measure. This reps a huge opportunity.
- MBRs are helping solve sludge problems

Frank McGrew (Raymond James)

- Investors have lots of questions without any significant understanding of the sub-sectors and reach of water technology so we had to analyze where in the water market to invest. Segments include filtration/chemicals, infrastructure/equipment, instruments/controls, engineering/constructing, utilities/consumer. When we advise high net worth individuals and investors, many are just now grappling with the breadth of opportunities in water
- Three Macrothemes: regulation (monitor, comply, adapt); scarcity (conserve, transport, develop); infrastructure (prevent, repair, replace)

- Texas has one of the highest water and sewer infrastructure investment needs in the country to address past, current and expected future growth. However infrastructure and technology are not standalone paths for investment.
- Profitability is correlated with value (filtration is the winner here)
- Lots of small independents (up to \$10M EBITDA) and Large Publics (\$50M EBITDA or more) and very few middle market participants. Challenges for middle markets: PE hurdles, lack of scaled players, fragmentation of smaller users and consumers.

Four focus areas that we have found to be of interest to high net worth investors – and are areas for which Texas can be a leader:

1. Energy and Resource Recovery
2. Water and Unconventional Fossil Fuels
3. Smart Water
4. Water Reuse and Alternative Uses

Discussion:

- Investment opportunities: water as a closed system, water in energy micro-grids, connect companies that they haven't gone down this route and can introduce improvements (industrial water use improvements). Water free technology such as dry cooling...
- One trend we are not seeing: thermostat. Water is mispriced, there is not big driver and need to measure it. Once water increase we might see more on the municipal side (we see some on the industrial side).
- Tell the story of Texas to Chinese as Milwaukee, a bit louder, and in Chinese!

Global and National Investing Perspectives

Summary of Key Points: Be pragmatic and realistic. Look at the facts. It's not always about the technology. The business plan is equally important. Understand the failures – which are plentiful – and learn what put these companies and investors in the wrong place on the wrong counsel.

Amanda Brock (Global Water Standard)

- Water is hard. As water people we are eternal optimists with very short memories. Not every technology has a place on the table. How do you identify which technology has the best market opportunity? How do you identify the killer application? It's like you are great athletes, but someone had a better smile and got chosen for the team. Sometimes there is very little logics until you really understand what drives the market decision-making.
- Finding the right themes – Water-Energy Nexus, Water-Energy-Food Nexus – these are global scenarios that are unique opportunities for advancing technology and innovations
- Recycled ideas and technologies clutter the market, but often a tweak here or there can make a significant difference to something that is now a more valuable solution

- Without O&G we innovate. Without water we die. We cannot think that water is similar as a commodity in all cases.
- Is there a technology crisis? No! Technologies are out there but not ever tech has a place at the table. Identifying a technology for the right purpose, the right end, and the right industry is critical. Making money in water is hard. It's local or regional – and rarely national or even global.

Dave Henderson (XPV Capital)

“Top 10 Lessons Learned as an Investor”:

1. Water is a theme—It's not a sector or an industry. There's no homogeneous set of suppliers.
2. Do not get fooled by macro trends. No correlation between macro-trends and making money
3. Marketing is a foreign language to this sector.
4. No one will pay you to save the world's water: Value prop cannot be all about being green, sustainability, and saving the world's water. Need to understand how your tech is solving a potential customer's problem
5. Tech is irrelevant. There are tons of technologies out there. Data is what matters. Don't invest unless you can see the demonstrated data
6. Be aware of the global start ups—you have to be able to generate references
7. Sustainable growth—it does not pay to pour \$\$ into this sector. What pays off is strategic investing. References are useful in this vein
8. There is a massive disconnect between the hype and the payout. This market is a collection of niche markets so you must understand the market you're servicing. You cannot become a \$100M company if you are only servicing a \$100M market.
9. Be aware of what your horizon is and what your co-investors horizon is
10. It's all about the business plan. If you go in too high because you misjudged the business model, you will never catch up. Reasonable milestones for spending invested capital.

Roy Wiesner (Hutchison Kinrot)

- Incubators are on the ground with their portfolio companies – and therefore the more incubation, acceleration, and investment partnership around Texas' portfolios the more success for responding to market conditions.
- Responsive R&D and sustained dialogue with the industry has been a priority – not just research for research.
- Identify and fix problems early on but be prepared that this is a long-haul – sometimes can take 10 years to see a profit or market share – unless your firm and investors can be the champions in the market to take on your technology to solve some significant problem right now
- Manage and protect your IP portfolio – ideas can become solutions when a market becomes more ripe, more advanced – and you haven't found a way to protect your ideas

- We have formed an MOU with AccelerateH2O to bring technologies and investments to Texas that match needs – and here are four examples for partnering:
 - Aquarius Spectrum: In-line water network monitoring by Acoustic Sensors: Changing the way we look at pipe networks lifecycle management. Deals with issue of non-revenue water. Cities lose 10-20% of the water value that goes into the system.
 - HydroSpin-mini generator that produces electricity from water running in city pipelines which then power monitoring devices
 - SoIX—new treatment for produced water from the O&G industry. You need 3 gal of water to produce 1 gal of oil.
 - Liquid-liquid extraction based tech using non-toxic solvent to treat wastewater contaminate with dissolved minerals and organists. Minimizes disposal amounts by nearly 90% at a fraction of the cost while simultaneously providing a new source of usable water.
 - WellTODO—uses a chemical process to convert nitrate to a non-polluting compound. Allows you to reclaim water wells that have been shut down

Christopher Gasson (Global Water Intelligence)

- You need to come up with new business models that overcome the risk averse nature of your clients (better risk sharing). Alternatively, go for the industrial sector that is not caught up with the political, public sector space.
- Another challenge, the sector is very fragmented. Each of these niche needs its own proof for employing new technology before going ahead. You need a pundit that knows the particular niche to be out on the circuit talking about the innovativeness of your idea, product, service
- Three main problems with water investment: 1. Fact that there are a lot of bad technologies out there (forward osmosis, graphing membrane, microbial fuel cells, other novel membranes); 2. Bad customers—Texas is supposed to be a Republican, business oriented state, but most of the customers are working on a “socialist” business model where loans displace market and private equity resources; 3. Risk aversion—we need better risk sharing between innovator and customer. Each niche needs assurance that a tech will work in its sector before it takes that tech on board
- Three main failures: In first category, people didn’t care because the activity was not regulated. 2nd category was scalability and 3rd was dud investors.
- Some companies are looking into selling not just their technology, but the whole treatment process plant. They are a bit impatient. Building out the largest plant, facility, or infrastructure is not a great approach.

Eric Bielke (GE Ventures)

- Water economics vary by basin – and as long as that remains the case for Texas – adoption of technologies will remain slow
- Water and water innovation remains very fragmented. Solutions are developed for very specific problems which means they do not have broad applications or scalability

- Hot technologies: EC, Thermal, Humidification and dehumidification, MF, Cost target below \$1 in Eagle Ford. We see the capability to get to this amount but not enough adoption.
- Doubt about the link between seismic activity and disposal wells is disappearing – but there is a need to understand how to reuse all the potential water that is not going back down the fracking hole.
- Oilfield water takeaways—localized economics; low cost-to-treat margins (need to get in there fast and apply tech to a lot of volume); take “like” tech and apply it in customized way to get capital out there quickly.
- Integrated technologies and capabilities: Software players that help with logistics. Cost to treat water is low – cost to pre-treat water is also coming down because inventions used in other sectors. Find technologies that work in multiple settings and sectors.

Discussion:

- Channels are everything! It’s more about channels than fancy technology.
- Texas is not leveraging its global market relationships and positions in advancing entry for technologies that can be tested, evaluated, demonstrated here first in tough conditions

Sector Perspectives – Desalination, Reuse, Conservation, Smart-Water

Summary of Key Points: Moving away from old paradigms is necessary to truly innovate water in Texas. Not just the technologies but the business practices of technology consumers such as water agencies and municipalities, even new partnerships between public and private interests.

Jeff Moeller (Water Environment Research Foundation and Leaders Innovation Forum for Technology)

- Nonprofit dedicated to water quality and storm water research – WERF has been in the forefront of applying new technologies to critical issues facing public and private water systems
- Waste water treatment plants are striving to become energy neutral or energy positive (this is not being driven by regulations). An opportunity for Texas given its depth and breadth of energy and alternatives (solar, wind)
- Move to “one water” instead of wastewater, drinking water, etc. – this is already underway but regulations, oversight, and operations are not as updated as the technologies
- Smart infrastructure – the integration of sensors, data, IT – will create more opportunities AND innovations.
- Our LIFT program provides access to listening to the market, finding advances in technologies, and connecting those technologies to investors, decision-makers, managers.

Rob Steiner (Summit Water Infrastructure Group)

- Investors in waste water treatment, etc.
- Focusing on conservation (as a co-founder of water smart software)
- Was looking for a tool to help manage water use in the home.

- Developed a customer engagement platform. Way to engage customer around their water use.

Jason Bethke (Fathom Water)

- When utilities hear the word “conservation” they really hear that you want to decrease their revenue.
- It’s a tough sector and if you don’t think of how to scale you won’t make it.
- Successes at Fathom
 - Fathom emerged from a regulated, IOU
 - Incredible opportunities in utilities—totally fragmented sector so we must look at all we can bring in economies of scale. Business plan needs 1. Good value proposition, 2. Transfer risk away from utility, 3. Focus on buyer.
 - Began to assimilate data—began to create a platform that they could plug into to solve system issues.
 - Need to ID the best technologies
 - Channels are everything

Tom Pankratz (Global Desalination Report)

- Desalination definition: most people think of processing seawater to make it potable, but the applications of this tech are much broader than that.
- US has second largest installed desalination—most of it deals with brackish water
- Lots of desalination tech employed to filtering concentrated brine.
- Beneficial reuse of wastewater needs to be included in the technology strategies of Texas
- Removing contaminants from polluted surface water with semi-permeable membranes – how do these and other technologies get adopted in Texas given the huge market scenario?
- Dow built one of the first and largest large-scale seawater desalination plants in the US during JFK’s administration here in Texas.
- Wastewater reuse is a big deal around the world. When you look at the history of direct potable water reuse in Texas, in Big Springs we became the second place (Namibia was first) to do this.

Discussion:

- How much marketing do we have to do to value water appropriately? Valuing water appropriately would move the investment in the sector forward.
- Drivers of water conservation measures: peer pressure and price signal.
- We could do a better job on the marketing side – communications, awareness, engagement with decision-makers, consumers, customers about the value of technology
- Do people want to drink water only from their local utilities rather than buying water bulk? Or is there a place for decentralized treatment facilities? Is the market open for disruption in its operations, delivery?

- People are making money. It might be not just you that isn't. The more successes the more investments. Better information, data, and knowledge of what is working, how and where – within sectors and within communities – can generate more resources, support.

Special Guest Lunch Speakers and Keynote Address

Toby Baker - Texas Commission on Environmental Quality – Commissioner

- Not long ago, the hot topic at TCEQ was air. One of the first issues Toby worked on was whether to release water to downstream rice farmers.
- Public has a short memory when it comes to draught.
- Population has boomed. Water supply has not grown and has in fact been constrained by draught. This is unsustainable
- Challenge for TCEQ is keeping up with private sector, making sure regs match and are not designed in such a way to stifle innovation.
- Toby invites group to come speak with the water team at TCEQ to raise issues and work with them. (We need to encourage investors and companies to follow through on this)

Tamin Pechet—Chairman, ImagineH2O, Founder Banyan Water

- Takeaways:
 - Always meet the person next to you
 - Water investing is an amazing opportunity
 - We have to innovate in water. Who will be responsible for innovation? Start-ups? Existing businesses? Policy-makers? Elected officials? There are few entities that focus on innovation but many entities that focus on their specific concerns, interests, policies, regulations.
 - Water tech companies don't perform well? Not true... they might be slow to start with but then outperform. You have to match the valuation to what the growth rate potential is.
 - There is a ton of money in bonds and no one is thinking about it. \$27 billion dollars There is a liquidity partner that is worth exploring in Texas.
- How money flows *should* work in water the same way it does in other sectors:
 - Capital inflows→educated stewards→attractive risk-adjusted opportunities→realized successes→outcomes that meet our goals financially and beyond
- Misleading beliefs creating opportunities:
 - People aren't making money in water
 - Investors aren't interested in water
 - Water is not just a government-regulated industry, it's a business
 - It's hard to find a large industry sector that is still considered open
 - You have to go against the status quo to succeed in water. We have to innovate, true, but not everything has to go against the grain.

- Isn't water too cheap? It doesn't matter. Most companies aren't making money based on the price of water. They are making money based on the value water adds to something else (this was a great point given previous decisions about the difficulty in commoditizing water).
- Can't make money until water policy changes? It's already getting better>
- Are you aiming for social/environmental returns or financial returns? Opportunity to get paralyzed capital flows moving. We do need capital markets in water.
- It's too late; all the institutions own the space, right?
 - Unlocking institutional capital flows is a big opportunity
 - Most don't have a coordinated water effort
 - Great opportunity to partner
- Can't a just buy public, liquid equity and debt? There are opportunities for better products.
- Who actually wants to buy water innovation?
 - Buyer is changing—younger, more motivated and tech savvy
 - Need becoming more pressing
 - Innovators are getting better
- Highlights
 - Getting to market has been a primary challenge in water innovation.
 - Fathom---managed to get customers to buy product because they are the utility. The more data, the more software – the better the connection between the utility, consumer, and water conservation, use strategies
 - Farmlogs is another example for the agriculture sector – connecting soil, water, operation sensors and monitoring
- “Connecting the Pipes”
 - Not long ago, there was no real ecosystem for the people doing this type of work. Tamin started ImagineH2O to address the need through business, leadership, and policy.
 - Business: path-to-market
 - Leadership: engaging and educating the next gen
 - Policy: connecting regulation with innovation

Sid Miller, Commissioner Texas Department of Agriculture:

- 1 in 7 Texans are employed in agriculture – this is one of the leading industries and employers in our State – and of course one of larger water consumers. But it is also one of the more innovative industries. Farmers and ranchers often have no other choice but to innovate for the lack of resources or alternatives.
- Rainwater catchment – we are the first state talking about it in a serious and meaningful way. We need to incentivize more use of catchment techniques and technologies.
- We lose three farms per week in Texas due to urban encroachment. We have to do more with less. We have reduced the amount of water used by 40% in the past year...

- One of the goals of our department for finding out how much water we use in Texas. We need more data, more intelligence on what is really happening at a level that quantifies where we can apply technologies, innovations, conservation, reuse.
- We needed agriculture and our department to have a seat at the table, a voice in the planning for water – so today I am pleased to announce that we have formed an Office of Water and to leverage our rural and economic development roles with a renewed commitment to addressing challenges such as those being discussed at this forum and by AccelerateH2O.

Texas Water Challenges, Opportunities for Technology and Innovation

Troy Allen (Delta Lake Irrigation District, General Manager):

- We have tried different approaches to reducing water consumption. We tried metering. When we started the loss factor was 40%. A lot of the meters were not installed properly. Farmers found how to trick them. Next vision? Continue the process but take it to the next level. We want information that goes to and from the farmer, producer.
- Smart metering, smart sensors can improve the knowledge about our water flows, demands by customers, and the market. The idea that we can develop a first-ever smart-irrigation district that supports our management goals and achieves improvements for our customers is critical to our future business model.
- Diversion point from our major source – the Rio Grande River - for additional water can take up to 7 days. Efficiency in timing the need for diversion with the end-user can save money, be more responsive to planning, and determine our cycles of peaks and valleys.
- There is a lot of technology, but none of the technology works together as seamless as it should. We need to solve the integration challenge by creating demonstrated solutions for bringing all the various pieces into alignment.

Ed Archuleta (Former CEO, El Paso Water System, and Chairman, AccelerateH2O):

- Desalination—Texas has a lot of brackish water and El Paso is almost always in a drought. Ed leads the development of a long-term strategy to diversify El Paso’s water portfolio.
 - Dealing with the brine/concentrate byproduct is a big challenge, but Ed sees it as an opportunity. El Paso worked with TCEQ to develop a deep well injection system.
 - *“Technology is moving faster than regulations”* - this is one of the reasons why AccelerateH2O is seeking to create large-scale demonstration sites in partnership with industry and the regulatory agencies.
 - Opportunity on supply side re: conservation—best water you have is the water you already have. We have been only focused on consumer, customer conservation – and both industry AND water utilities must include supply-side strategies.
 - The opportunity is in a real-time monitoring of water reuse facilities.

Tom Kasun (Senior Vice President - Alcoa)

- NEWT—Natural Engineered Wastewater Treatment. 3 step process, the marquee of which is a constructed wetland system that Alcoa has benefited from in other locations – and one that addresses our challenges in Wichita Falls.
- Our aim, target is to reduce freshwater withdrawal by 65%. The system will be operating in November in Texas – and should be seen as a demonstration for other communities.
- Alcoa, like many other manufacturers, believes water conservation, reuse – sustainability – is a competitive advantage – and therefore are committed to identifying and using innovations wherever these support broader internal and external goals.

Russ Conser, former Senior Vice President- GameChangers, Shell USA

- Shell is a significant user of water and we had to determine where the latest technologies and innovation would come from – often from entrepreneurs that could work outside of the traditional constraints
- What has been missing Texas are demonstration locations for bringing entrepreneurs and the best ideas from within Texas or beyond to showcase their innovative capabilities and ways to transform the water sector
- Entrepreneurs, inventors, investors are always willing to gravitate to locations that are welcoming and ready to support their interests to changing the game. Between the big global players like Shell, Dow, Valero – we have some of the best partners for innovation.
- Texas has some of the best universities, industry experts, and innovative talent that can be organized to solve significant issues – but water has not been a priority and still requires more awareness of the scale of the opportunity and market potential.

Wrap-up and Next Steps: Recommendations and Actions

Overall Themes:

- **Fragmented regulatory scheme and water being a fragmented sector in general.** The problem goes back to highly localized nature of water. People do not want to give up their control over their water, e.g. Texas has 4600 water suppliers and utilities that often work at cross purposes to each other, compete in ways that are no longer logical, and are so locally focused as to exclude regional collaborations. Fathom has done a great job of integrating markets and technologies and provides a good case. Artemis Top 50 helped encourage breakthroughs and entrepreneurs to be innovative disrupters across sectors regardless of the fragmentation.
- **Infrastructure – we need to think that word means more than concrete and rebar.** Brent Giles of Lux Research talked about sensors and data collection. Laura Shenkar talked about Water tech SWAT teams. Roy Wiesner talked about acoustic sensors and HydroSpin’s generators. All these are “new forms” of infrastructure – so-called soft infrastructure – that has to be included in Texas’ strategic thinking and planning.

- **Water markets and water being too cheap**—water will never be a true commodity, but do we need to raise cost of water beyond current levels to reflect the real costs? Chris Gasson mentioned that we usually don't like capitalism controlling water markets. Rob Steiner spoke to us about his company, WaterSmart—which engages customers around their water use. Tamin Pechet made a great point: for many successful companies and investments, their success isn't based on price of water. Its related to the value water adds to other activities or products.
- **Marketing, Communicating**—What effect will recent rains have on conservation conversations? How do we keep consumers mindful of importance of conserving water. Dave Henderson explained that marketing is a foreign language in this sector.
- **Regulation often drives innovation –if its balanced, across geographies and service providers, and consistent**—for many of Chris Gasson's examples of failures, lack of stable often shifting regulations and rule interpretation led to companies decline. Tamin Pechet noted that water policy is improving but not fast enough to incentivize innovation.

Challenges, Opportunities, and Actions

CHALLENGES:

- **Uncertainties in Texas:** drought, growing population, permitting/water policy, diversions, cross-border considerations (Mexico, New Mexico)
- **Runoff of storm water, impacts from flooding as critical as drought**
- **Water is “local”** —we heard this time and time again as the current environment for minimizing innovation – all water is treated as local – from source to end-use, from treatment to reuse. Such a 'local' perspective is limiting opportunities for creative and innovative solutions
- **No statewide water inventory.** Need integrated data and mapping of state's waters. HB 30 by Larson is a good start. Brent talked about sensors. Others talked about using satellite imaging and data. Seems that what Texas doesn't know is more than what it knows about itself.
- **Statutory restrictions on certain types of water use**, e.g. treated industrial water for irrigation (direct and indirect potable reuse). I suspect this is a big one but it was not discussed today. Perhaps because investors are unaware of how antiquated the Water Code is.

OPPORTUNITIES

- **Oil and gas**—seismicity and disposal wells. If disposal wells are shuttered, we'll see a greater need for treatment providers.
- **Desalination**—HB 30 by Larson will facilitate mapping for brackish groundwater and encourage TWDB to designate brackish groundwater production zones
- **Infrastructure and Smart Water**

- **Diversifying the state’s water portfolio to include broader use of technology and technology-driven water development**
- **Reuse**—Ed Archeleta predicts more reuse, Tom mentioned a number of exciting innovations that Alcoa has been working on.
- **Retention**—of recent rainfall, 3T gallons is already in the gulf and another 2T is expected to evaporate before the end of the year. That’s enough water to meet the entire state’s water needs for one year. Ed Archuleta discussed some of the planning changes made in El Paso regarding concrete use among others.
- **Aquifer Storage and Recovery (ASR) HB 655** by Rep. Larson repeal existing regulations and gives jurisdiction over ASR projects to TCEQ.
- **Prudent investing of SWIFT/SWIRFT** - to include non-traditional infrastructure, integrated approaches versus traditional infrastructure and construction loans, and incentivizing innovation in regional water planning.

Post Investor Forum:

- Provide access to all presentations, materials and notes through <http://www.InvestH2O.com> website and the relaunched AccelerateH2O website – <http://www.AccelerateH2O.org>
- Planning already underway for first **Texas Water Technology Investor Showcase** in October
- Post Forum information gathering among investor to determine need for a Texas syndication network, investment fund, and alternative resources for entrepreneurs, inventors, innovators, and technology firms.
- **“Opportunity Triage Network”** is being launched in August to connect the State’s incubators, accelerators, technology commercialization facilities, and related innovation-focused eco-system to support the vetting, scouting, and connecting of supply and demand for water technologies across Texas.
- New “technology and investor communities of interest” will be supported through **the Texas Water Innovation Clearinghouse and Collaboratory. (on the AccelerateH2O website.**
- Identification and implementation is underway for **Strategic High Impact Projects – Innovative Demonstration Hubs** in the produced water and waste from oil and gas, irrigation, storm-water, and brackish desalination sub-sectors. These demonstration hubs respond to the needs of investors seeking more than an R&D pilot or proof of concept. Conversations have been held with several state regulatory agencies as well as industry organizations and associations.
- Based on feedback from the Forum and a prior Water Technology Road Map in February, a white paper and possible benchmarking study is being explored on **Barriers and Limitations to Innovating Water in Texas.**