

# Investor “Tempus Flow IOT” Slide Deck

"If you can not measure it, you can not improve it."

LORD KELVIN (Sir William Thomson)

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“Pouring beer down a drain is nothing less than alcohol abuse”



- Global Beer Market to be \$688 Billion by 2020 (\$110B U.S. 2015)
- Draft Beer is over 20% of all beer sold!
- Industry statistics are ~ 20% waste/keg!
- Craft beer is a \$24B U.S. market and growing about 20% year over year through 2020

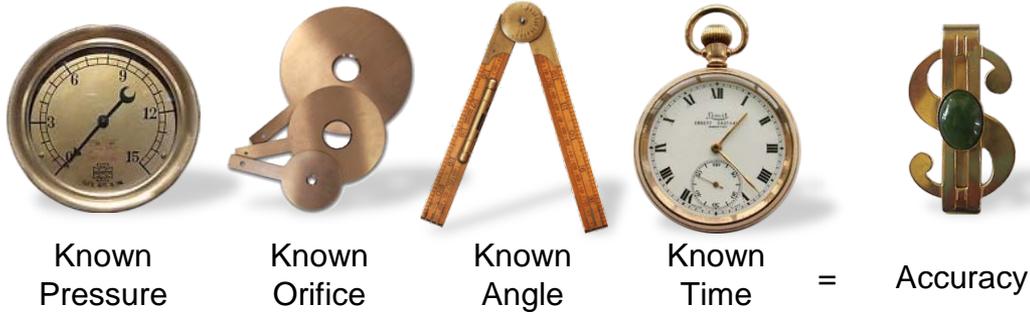


## Problem/Opportunity:

- Typical bar (especially tap beer) is very inefficient, low tech and unmonitored
- Typical sell price of craft/draft beer can be \$8-10 for a 20 oz. beer or ~\$2.00 down the drain per sale
- Loss due to spillage, foam (keg change), inefficient inventory, waste, down time, improper CO2/N settings, clean glass and bartender abuse/over pour, tap pre-pour, or after hours drinking can cost a bar owner/manager thousands per month in lost revenue



# Technology Overview

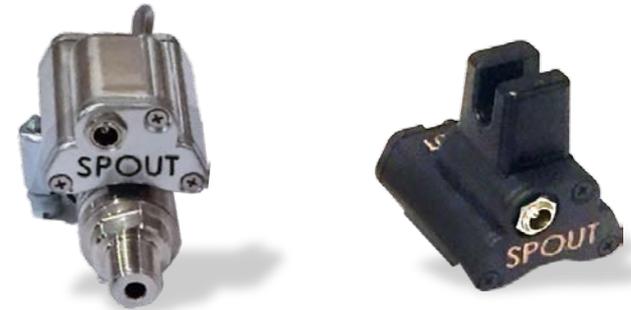


- Miniature Bluetooth® Low Energy Sensor Tag based Timing
- X, Y, Z Accelerometer, Gyrometer and Magnetometer tracking beer tap handle to determine 3D Space, event and angle of tap handle
- Precision timing of Tap On, including percent angle on (Low Flow)
- This along with known orifice(flow), pressure control and foam detection accurately determine product distributed
- Fits any industry standard tap handle/faucet

Patent Pending



SPOUT Tap Handle IOT Sensors



Pressure & Foam Detection IOT Sensors



## Tempus Flow

Timed Flow IOT Beer Distribution;  
Inventory and Measurement System



### Improvement of:

- Product Quality
- Every Pour, Every Time

### Reduction of:

- Over-Pouring
- Over-Foam
- Keg Change Down-Time
- Drain Waste
- Cash Skimming
- Free Drinks/After Hours

Patent Pending



# System Overview

## Total Bar Visualization/Control



Tap On/Off  
Tap Angle  
Time On  
Oz./Sec  
Status



Bar

Foam Detection



Back Room



Cloud Services/Security

Gas Pressure/Temp



Auto-Keg Switch Over



Patent Pending

# Software Overview



Real-Time Keg Status



Brand Status



Inventory Status



Data Rich Reports

Intuitive GUI Flow

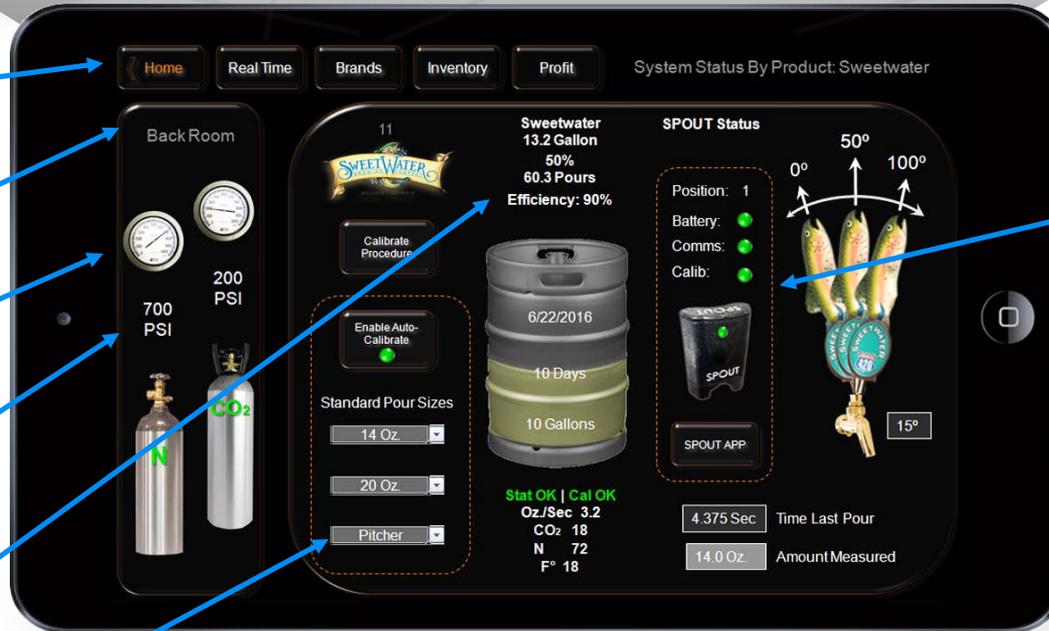
Touch/Gesture Friendly

Visual/Iconic Styling

Drill Down/ Hierarchal Detail

Predictive/Adaptive Analytics

Dropdown/Contextual Beer Database



Product Quality Status

Back Office:  
Real Time  
Hardened  
Secure



Patent Pending



# Tempus Flow Benefits

- Accuracy of Product Distributed (including low flow/partial pour)
- Cloud Service Model - overall bar efficiency and inventory management
- Non-Invasive Measurement/Inventory System @ Tap Handle
  - Sensor does NOT touch product nor part of cleaning process
- Predictive Keg change/pour status and maintenance
  - Foam Detection (200 ft of line waste)
  - Valve/Keg Auto Switchover (Option)
- Improved Quality of product served
- Reduction of waste and abuse
  - Tamper Proof Algorithms
  - Measured Pour each time
- Secure Wireless Bluetooth® Low Energy
- Technology applies to other products
- Low Cost!



Generations 1 - 2 - 3 - 4



Patent Pending



# Craft Beer Disruption

- The move is on for more Craft Beer on Tap!
- Management of 30+ beers on tap is not the same as 4!
- Craft is not just Draft and Waste is important!

This is an untapped market!



## THIS NORTH CAROLINA BEER BAR AND ITS 366 TAPS WILL SET A WORLD RECORD

BY MIKE POMRANZ | JUL 23 2015



Tagged: [Beer Run](#) [North Carolina](#) [Bar](#)



Courtesy of Raleigh Beer Garden



# Sales Model → Entry Points

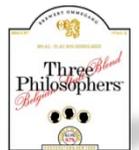


Relationships with  
Regional & Craft Beer  
Distributors/Installers



Strategic Relation with  
Spirits Metering  
Products/POS's &  
Installers

Organic Sales &  
Marketing: Large  
Franchises/Stadiums/  
Branded Craft Bars



# Sales Model Value to Bar Owner/Manager



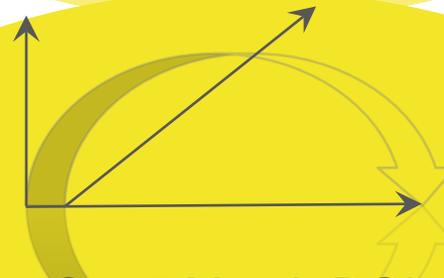
Deliver and Install:  
\$0 Initial Cost to Owner/Bar  
½ Hour Up and Running  
30 Day Free Trial



Enterprise Cloud Software  
Service:  
Any Device Any Time



+/- \$40/Tap/Month  
(Depending upon Value  
Model of Establishment  
Immediate ROI)



Our 5 Month ROI:  
Continued Subscription  
Revenue Model

High Value – Low Investment Cost to Bar Owner  
Better, Cheaper, Faster



# Draft/Craft Beer Waste Calculations

- Global Beer Market to be \$688 Billion by 2020 (\$110B U.S. 2015)
- Draft Beer is over 20% of all beer sold!
- Craft beer is a \$24B market and growing about 20% year over year through 2020

Your bartenders could over pour or waste 30 ml/1 Oz. per glass into 200 glasses. You would lose about 6 L / 200 Oz. of beer at the end of the day. They could also serve 12 glasses and not collect the sales revenues. You would still lose about the same amount of beer but a lot more money. It is mostly this daily "unknown and variable" number of uncollected beer glasses that can make a big difference on your bottom line.

Additional yearly beer sales revenues Vs number of recovered beer glass sold daily using a metering system

Price	1 per day	2 per day	5 per day	10 per day	15 per day
4.00	1,460.00	2,920.00	7,300.00	14,600.00	21,900.00
5.00	1,825.00	3,650.00	9,125.00	18,250.00	27,375.00
6.00	2,190.00	4,380.00	10,950.00	21,900.00	32,850.00
7.00	2,555.00	5,110.00	12,775.00	25,550.00	38,325.00
8.00	2,920.00	5,840.00	14,600.00	29,200.00	43,800.00

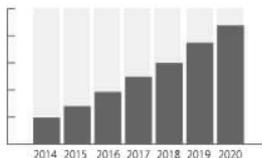
## Global Beer Market

Segmentation and Forecast (2014 - 2020)

Allied Market Research ©2015

### Global Beer Market

Global Beer Market is Expected to reach \$688.4 Billion by 2020



Growing at a CAGR of 6.01% (2015-2020)

### Global Beer Market by type



■ The comprehensive view on the % share of type segment (2020)

### Global Beer Market by Packaging



■ The comprehensive view on the % share of packaging segment (2020)

### Global Beer Market by Production

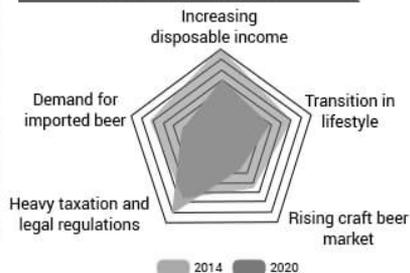


■ The comprehensive view on the % share of production segment (2020)

### Global Beer Market by Geography



### Top Impacting Factors



# Rollout Plan

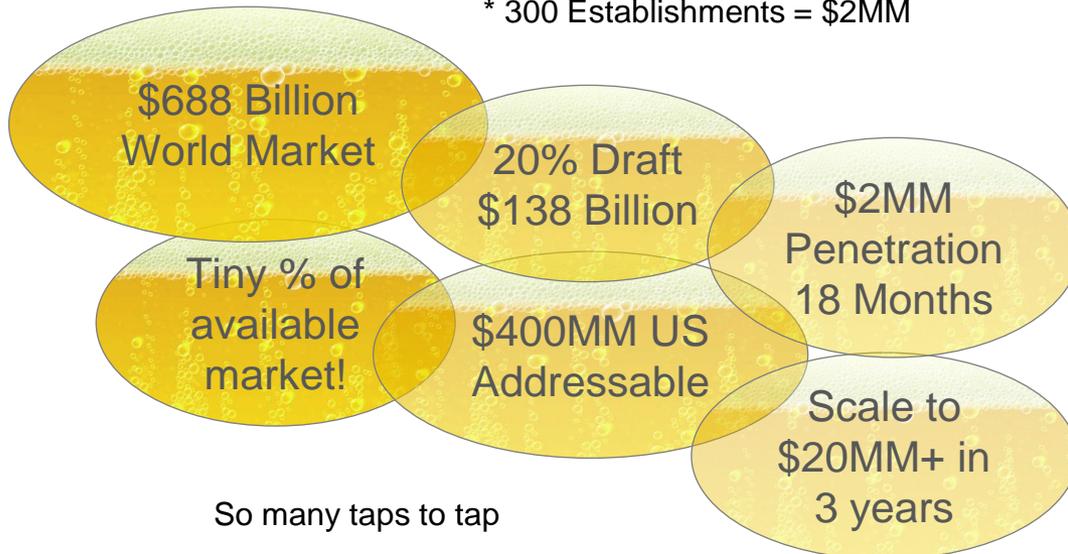
## Rollout Revenue Projection

Statistics and facts on the bar & nightclub industry in the U.S.

Infrastructure & Employment	Values
Number of enterprises in the U.S.	65,116
Number of establishments in the U.S.	65,224
Total employment at U.S. bars, taverns and nightclubs	363k
Average number of employees per establishment in the U.S.	5.56

\$45/Month Per Tap Average \* 12 Taps/Bar Average

\* 300 Establishments = \$2MM



# Tempus Flow Milestones

## Action Plan – Demo/Evaluation/Subscription Service

**TTR** -Time To Revenue - 6 Months

- Build Test Software – Time/Event - Done
  - Develop IP White Paper/Patent Process - Done
  - Patent Application/Freedom to Operate - Done
  - Foam Detection Bluetooth® IOT units - Done
  - Build High & Low Pressure IOT devices - Done
  - Build Alpha set of filter/data handlers – Done
  - Build Alpha Demo & Visualization – Done
  - Develop SaaS Model/Pricing – Done
  - Mitigate Custom Technical Risks – Done
  - Mitigate Industry Technical Risks – In Process
- > Today
- Build Beta Release Software/Hardware System - **Funding**
  - Demonstration Plan/Roll-Out (Beta MVP) – In Process
  - Scale 1-X number of Beta to Subscription systems - **Funding**
  - Develop Gen 4 Systems Software & Hardware - **Funding+**
  - Marketing and Product Launch - **Funding+**



# Tempus Flow – Team SPOUT

Champion



We are a group of Professional Product Developers

See [TeamDesignGroup.Com](http://TeamDesignGroup.Com)

We are a mix of Senior and Junior – Systems, Software, Electrical & Mechanical Engineers/Part Time Beer Drinkers

Industrial Design/Mechanical



Principal Electrical/Firmware



Software Visualization/Mobile



# Tempus Flow – Future Diversity

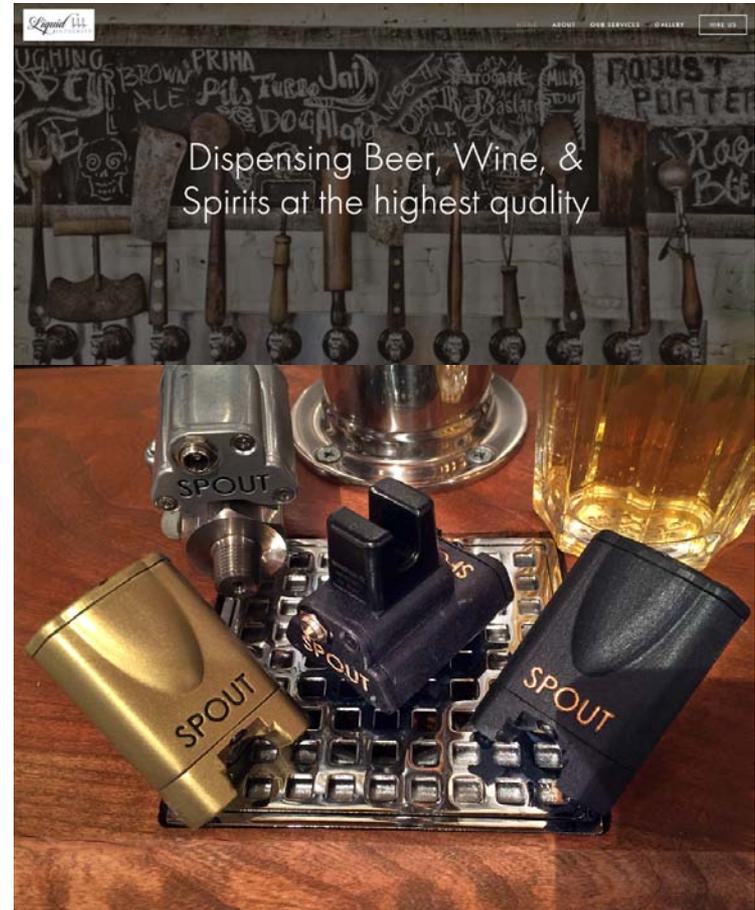
## Diversification - Social Media/Festivals/Supply Industry

- Social Media – Trending, Popular, Events, Buzz, Display Menu Kiosks
- Craft Ratings/Regional Supply/Availability, Ask the Experts
- Who's drinking where, ask my bar to stock, best head in town
- Festivals/Contests/Portable Outdoor/Temp Events
- Craft Beer Database – History, Blend, Trend
- Distributor/Supply – National/Global Alliances/Acquisitions
- Brand Building – Merchandizing, Perfect Head
- Spirits Metering Companies – Diversity to Wine, Spirits, Mixology
- Craft Beer Big Data – Real-Time Customer Ratings – Anytime Anywhere
- Other system environments, such as: soda/juice carbonated/non-carbonated drinks, spirits, corrosive chemicals, petroleum, hopper grain, loose candy, medical/pharmaceutical supplies or bulk product, coffee...



## Build Upon Existing Relationships

- Liquid Integrity in good position for initial product marketing/sales – major discriminator for their existing business
- Principals of Liquid Integrity are well known in the Craft Beer Industry and DC social scene.
- Help to identify Beta and Early Adopters

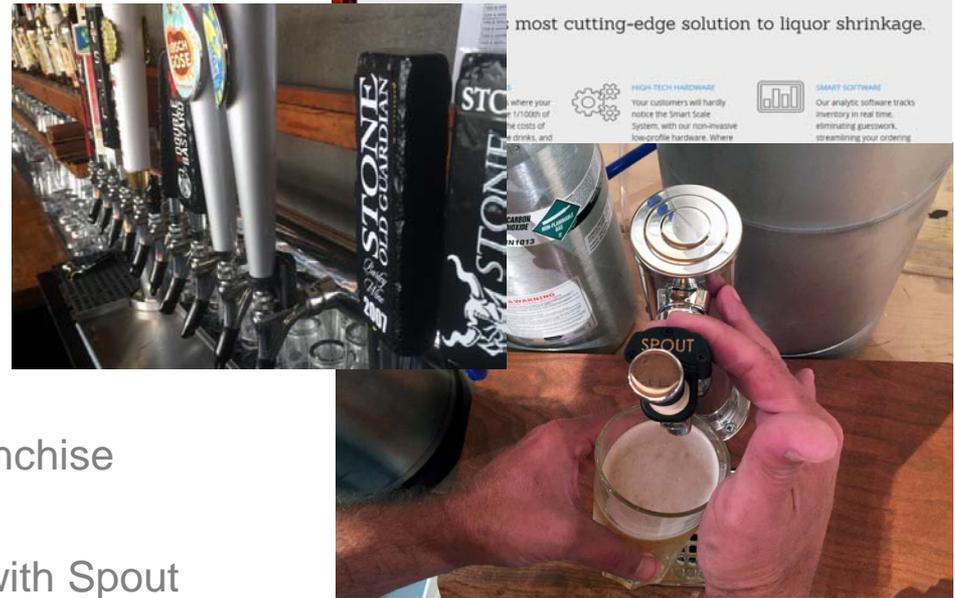


Dispensing Beer, Wine, & Spirits at the highest quality



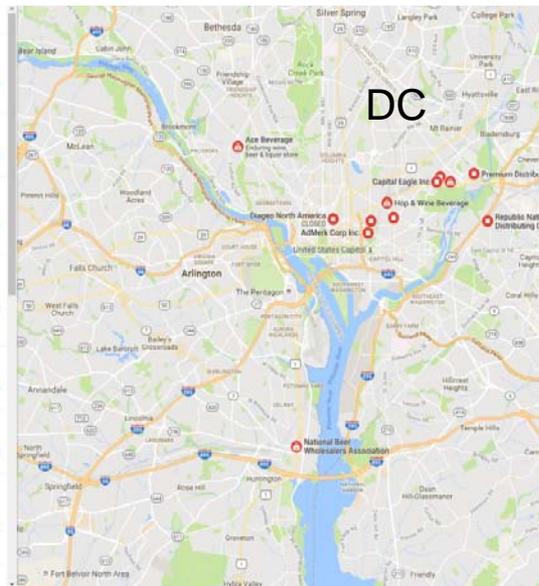
## Strategic Relationships

- Tempus Flow would complete the offering and value proposition for BarlinQ Clients:
  - Spirits & Draft Beer
- Existing Relationship
- Plug-in System component for existing software
- Beta Client Interest
- Investment Interest
- Good contacts/relationships in larger franchise restaurants/bars
- Established installed base will coincide with Spout product release



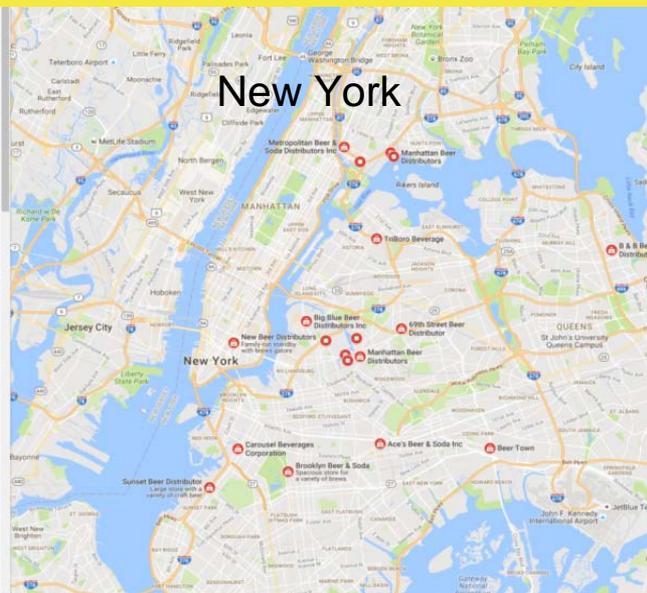
## Strategic Relationships: Value Added Revenue Sharing with Beer Distributors

- Inventory Management
- Direct Distribution Stock
- Real-Time Status
- Revenue Sharing
- Client Big Data



Up to 10 results for New York

<b>New York Beverage Wholesalers</b> No reviews · Beverage Distributor 151 Blackhawk Blvd (212) 831-4000	WEBSITE	DIRECTIONS
<b>Manhattan Beer Distributors</b> 4 reviews · Beer Distributor 989 E. 145th St (718) 252-9300	WEBSITE	DIRECTIONS
<b>Manhattan Beer Distributors</b> 4 reviews · Beer Distributor 27-27 Manhattan Ave (718) 854-3700	WEBSITE	DIRECTIONS
<b>Union Beer Distributors</b> 3.5 ★★★★★ (11) · Beer Distrib. 1213 Grand St (718) 497-2487 Open until 5:00 PM	WEBSITE	DIRECTIONS
<b>S K I Wholesale Beer Corporation</b> 4.4 ★★★★★ (8) · Beer Distrib. 100 Center Ave (718) 621-7200 Open until 5:00 PM	WEBSITE	DIRECTIONS
<b>Carousel Beverages Corporation</b> 4.5 ★★★★★ (5) · Wine, White. 430 3rd Ave (718) 400-7422 Open until 5:00 PM	WEBSITE	DIRECTIONS
<b>Manhattan Beer Distributors</b> 1 review · Beer Distributor 955 E. 145th St (718) 252-9300 Open until 5:00 PM	WEBSITE	DIRECTIONS
<b>Big Blue Beer Distributors Inc</b> 4.0 ★★★★★ (8) · Beer Distrib. 223 Greenpoint Ave (718) 387-6416 Open until 6:00 PM	WEBSITE	DIRECTIONS



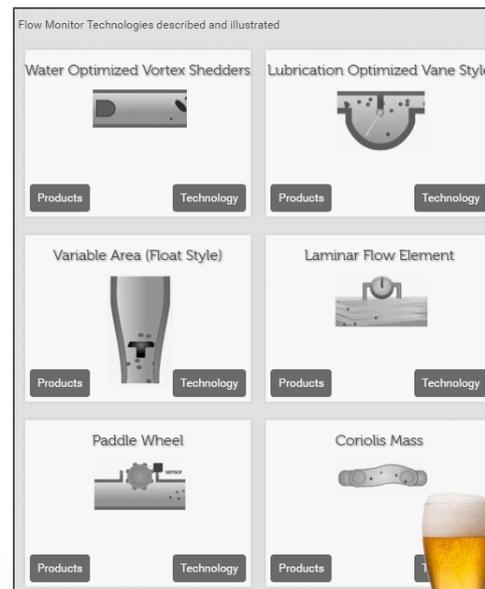
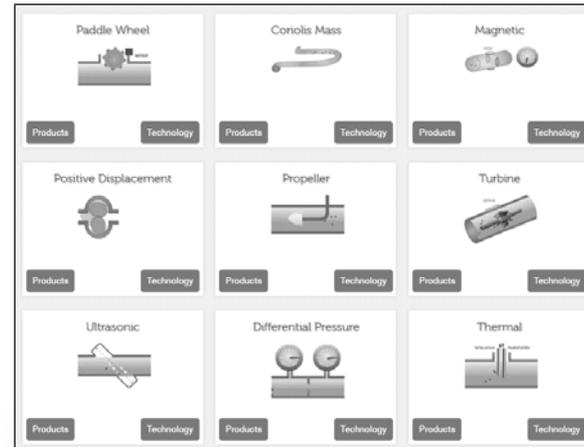
Back to web results for philadelphia beer distributors

<b>Bella Vista Beer Distributors</b> 3.4 ★★★★★ (31) · Beer Distributor Spacious showroom for domestic, imported & craft beers, plus kegs, soda, juice, water, ice & more. 755 S 11th St (215) 627-6405 Open until 9:00 PM	WEBSITE	DIRECTIONS
<b>Franklin Beer Distributors</b> 4.2 ★★★★★ (11) · Beer Distrib. Beer specialist with a diverse inventory, including micro & imported brews, all sold by the case. 1837 Callowhill St (215) 456-0111 Open until 8:00 PM	WEBSITE	DIRECTIONS
<b>Springfield Beer Distributor</b> 4.3 ★★★★★ (13) · Beer Distributor 2206 Washington Ave (215) 546-7301 Open until 7:00 PM	WEBSITE	DIRECTIONS
<b>Montgomery Beer Distributor</b> 2 reviews · Beer Distributor 1824 W Montgomery Ave (215) 763-2546 Closed today	WEBSITE	DIRECTIONS
<b>Moore Beverage</b> 4.8 ★★★★★ (8) · Beer Distrib. Microbrews & major labels share space at this industrial beer store carrying soda, smokes & snacks. 601 W Moore St (215) 334-8015 Open until 8:00 PM	WEBSITE	DIRECTIONS
<b>Bell Beverage</b> 4.8 ★★★★★ (13) · Distribution Longstanding store stocking	WEBSITE	DIRECTIONS



## Competitive Metering Technologies

- All other technologies' components are within the flow of liquid being measured
  - This subjects the devices to compatibility, corrosiveness, clogging and cleaning
- All other technologies become inaccurate during low flow situations
- Typical price of competitive flow meter technologies is \$300-\$1000 per line (no wireless)
- Alternative Keg weight approach
  - Non-Per Pour Technology
  - Subject to error – Placing items on Keg
- Tempus Flow mitigates all of these shortcomings and costs owner about \$40 per line
  - Precision timing of tap on, including flow percent & Keg Status



- Susceptible to Clogging
- In Flow of Product
- In Flow of Cleaning
- Low Flow Inaccuracies



## Tempus Flow Differentiators (Top Level):

- Free Space/Absolute Position (3D (X,Y, Z) monitoring) and use of three sensors (Magnetometer, Gyroscopic & Acceleration), 3D angle detection and partial tap openings in any axis – Accuracy @ the Tap Handle
- Based on known pressure, variable orifice and time, not container size or dependency on POS system
- Non-Invasive Measurement/Inventory System, with predictive Keg change and maintenance scheduling
- IOT Valve/Keg Auto Switchover & Foam Detection System
- Measured Flow Pour each time – Works through power losses
- Unique Real Time Status to Bartender (Over/Under Pour, Keg Status, Quality Status)
- Wireless Bluetooth® or other PAN Low Energy secure wireless communications
- Scalable Lower Cost Subscription Model



## Tempus Flow Differentiators (2<sup>nd</sup> Level Detailed):

- Unique Systems approach to liquid/gas/granular solid distribution based on 3D positioning of tap handle
- Patent at System, Utility & Method Level – Known Pressure, Known Orifice, Known Angle, Known Time = Accuracy
- Keg Change Detection & Status, CO2 Monitoring (High and Low), Nitrogen Monitoring (Mix Library/Brew/Environment)
- Further Derived IP: Keg Accuracy (from brewery), reduced waste of time and product from keg change downtime/re-purge
- Non-spout , free pour or spirits focused – Most IP is focused on Spirits not Draft/Craft
- Non-Threatening, but Aware status to bartender
- Invisible to Customer
- Improved Quality, not just inventory
- No Impact to current plumbing
- Enhanced but not dependent on POS
- Minimal Calibration and upkeep
- Enterprise Service Model – \$0 Entry cost
- Return On Investment (ROI) proposition
  - Cost Per Tap
  - Entry to Full System Scalability
- Patent IOT Foam Detection
- Patent IOT Pressure Sensor
- System Feedback to Bartender (LED's)
- Craft/Draft focused





## Bluetooth® IOT Pressure Monitoring



## Low Pressure Liquid CO<sub>2</sub>



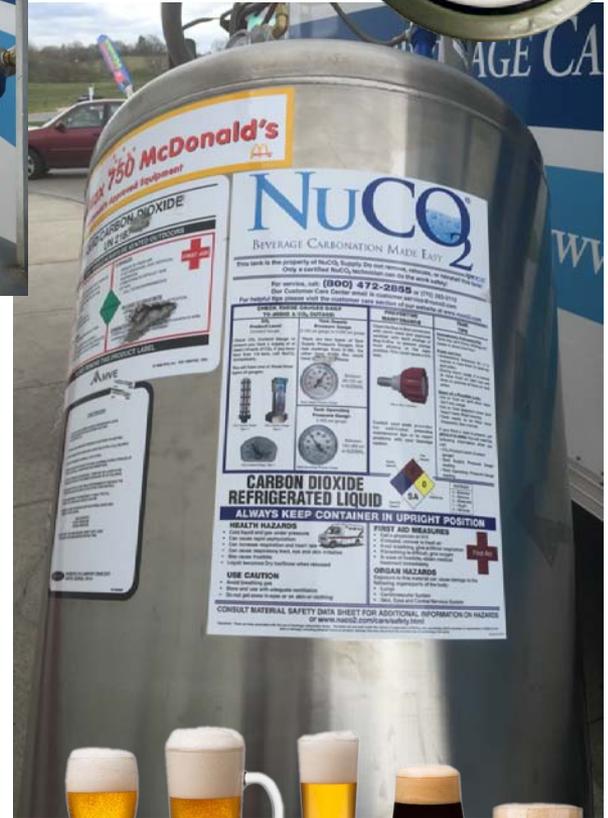
## High Pressure CO<sub>2</sub>

World's first Bluetooth® IOT Pressure Transducer!\*

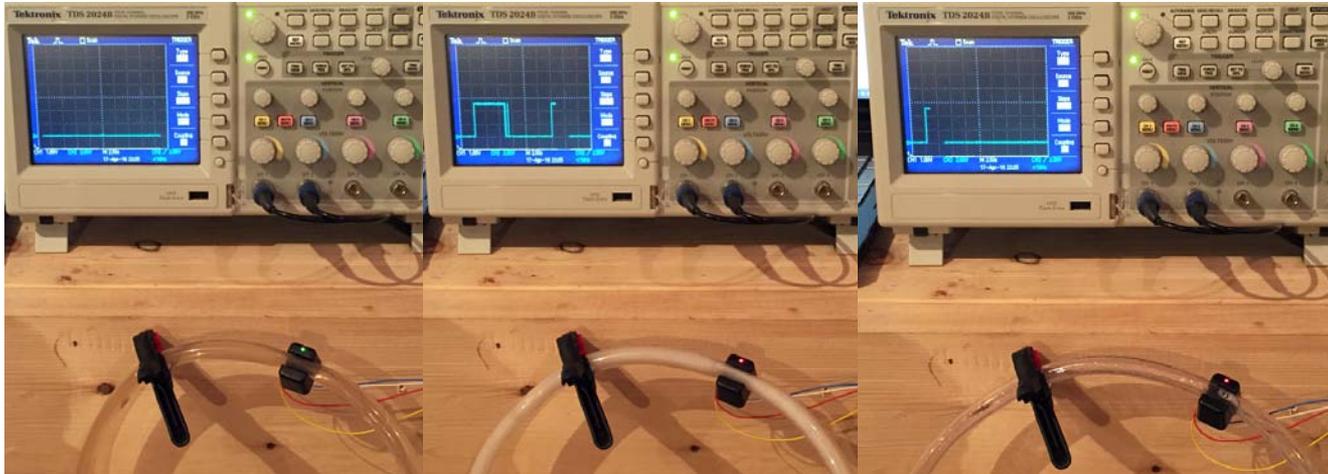
By 2020 there will be 50 billion Internet of Things (IOT) devices

Cisco – IBSG ©2011

Patent Pending



## Bluetooth® IOT Foam Detection/Switchover



 Liquid Flow

 Foam

 Empty



Kegs	Glasses wasted per week			
20	46	70	93	117
15	35	52	70	87
10	23	35	46	58
5	11	17	23	29
	100'	150'	200'	250'
Feet of beer line				

World's first non-intrusive Bluetooth® IOT beer foam detection unit!\*



Patent Pending

Automatic Switchover





**Christopher Toner**  
President/CEO

(240) 751-7224  
TeamDesign1@TeamDesignGroup.Com

Please contact us for further information or a private demonstration/discussion

