

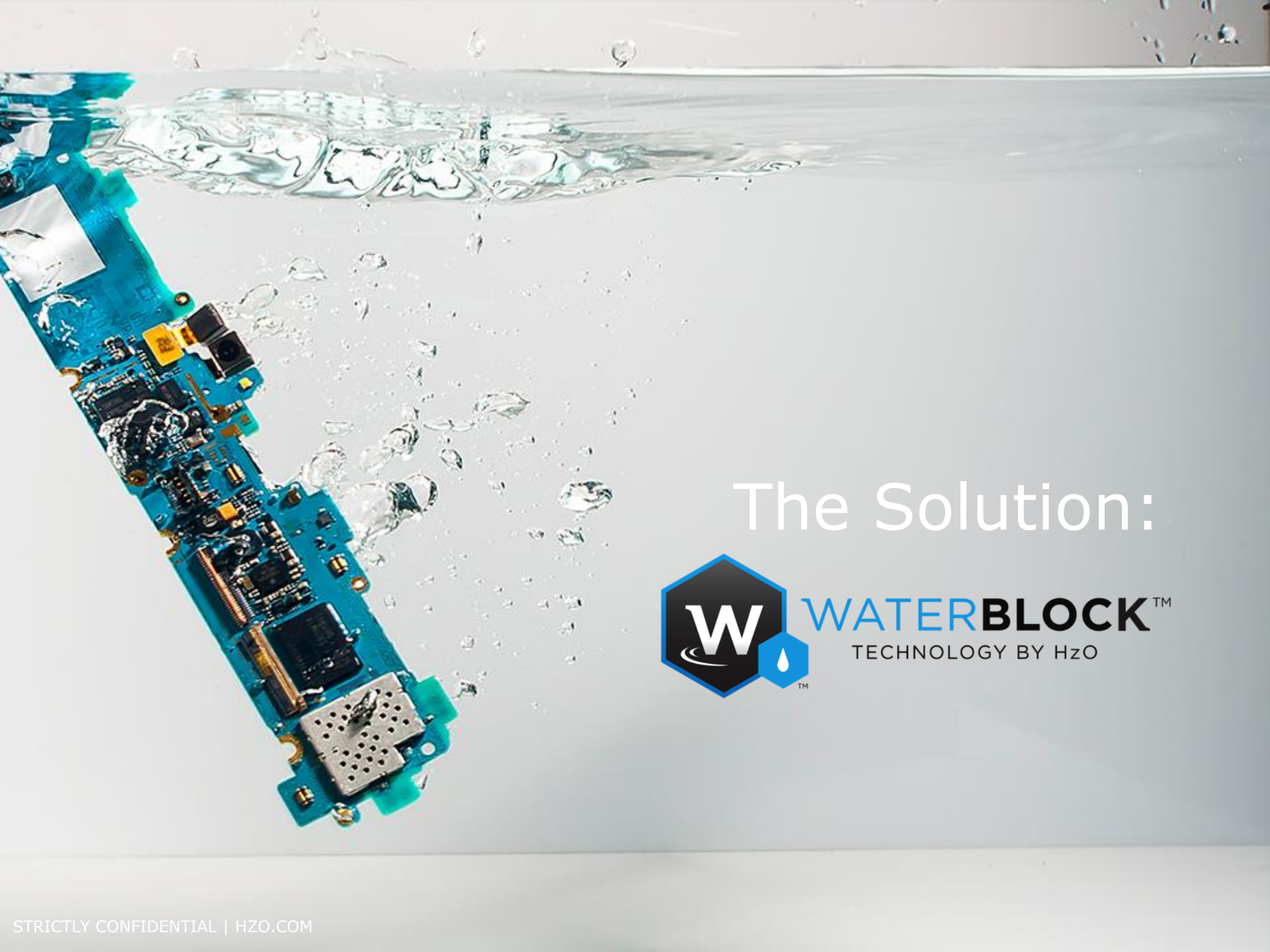


Protection from the Inside Out™

Case Study of Growth



HzO WaterBlock changes where electronics are used.



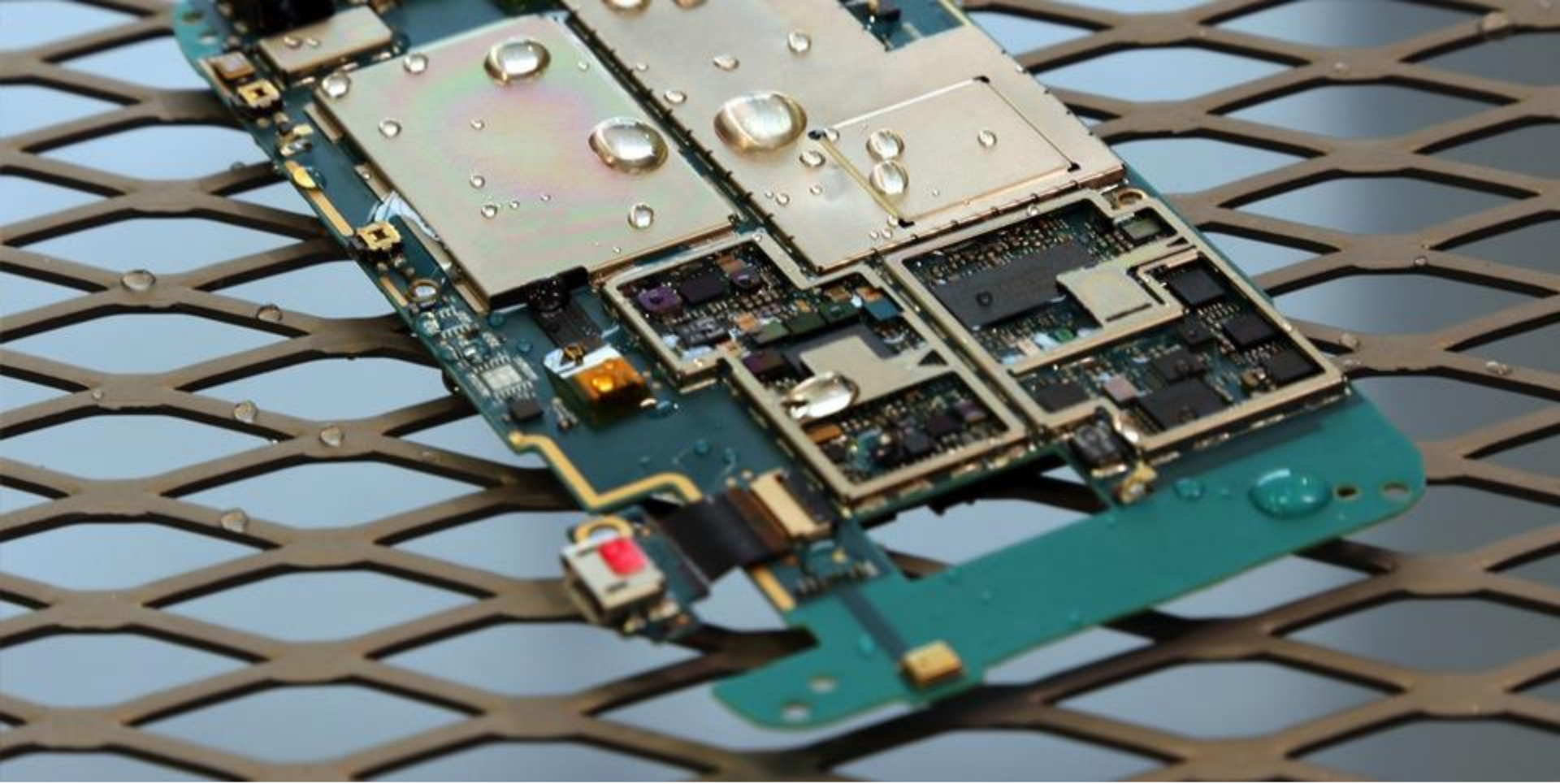
The Solution:



WATERBLOCK™

TECHNOLOGY BY H2O

HzO WaterBlock is an award winning thin film nano-coating applied to electronic assemblies and components during the assembly process



WaterBlock protects against water, other liquids, moisture, corrosives, and small particles & debris

Sample of **WaterBlock** Corrosion Protection

- Water
- Soaps & Detergents
- Bleach
- Salt Water
- Sweat
- Sports Drinks
- Coffee & Soda
- Oils



Right Time

Perfect Storm

Market forces driving need

- **Miniaturization**: we now carry our desktop in our pocket
 - Smart phones
 - Wearables
- Miniaturization drives dramatic increase in **mobilization** of electronics
 - Consumer
 - Communications
 - Medical
- Consumers/customers immediately understand **value of waterproofing** when viewed which creates strong demand
- **Stopping data loss** is now a greater worry than cost of device
- **Nanotechnology** development reaches level of common commercialization
- Known **legacy method ineffective**- mechanical seals - change form, function and are easily breached



Right Technology

Perfect Solution

H2O solution platform is right product for market need

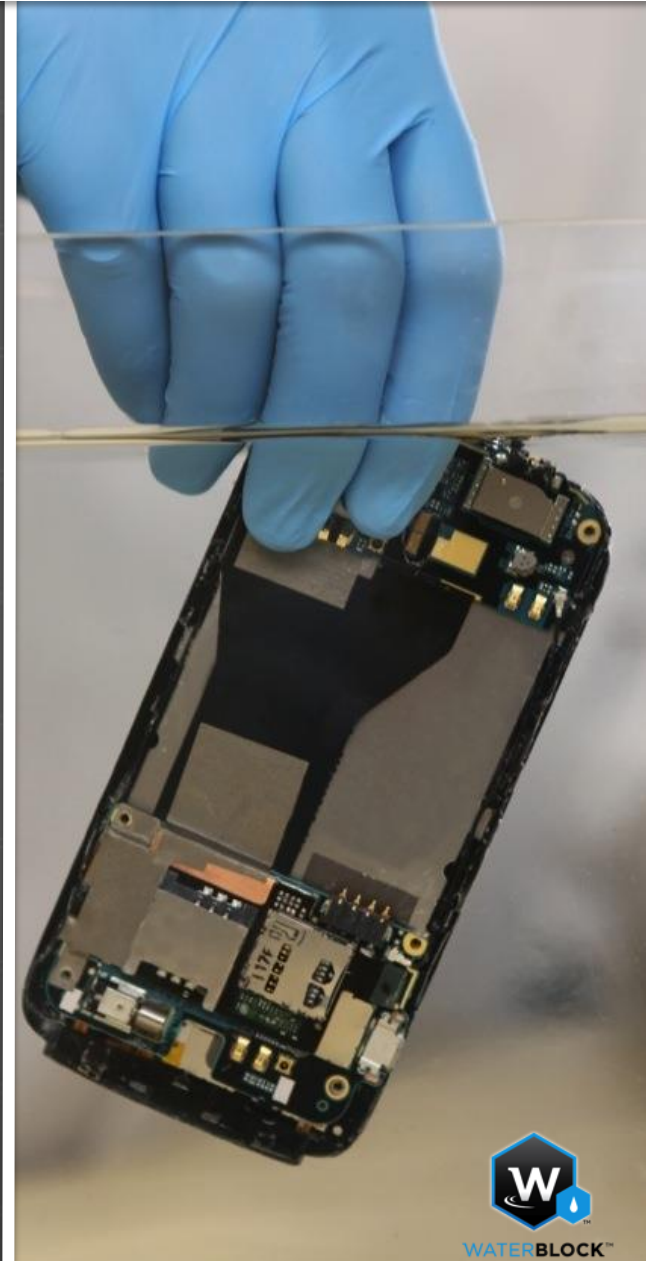
- Right chemistry
 - Non-toxic and environmentally sound
 - Nano scale – creates dense, compact anti-porous layers
 - **ASTM Water Vapor Transmission Rate (WVTR) is exceptional**
- **Right Team**
- Scalable low-cost production process
- Global recognition
- Robust scalable business
- **Market agnostic business model**; one solution platform addresses large array of disassociated markets



WaterBlock™ Coating

Small Particles – Big Impact:

- High density/compaction
- Consistent, uniform application
- Corrosion resistant
- Permanent, strong bonding
- Abrasion resistant
- Thin film
- Hydrophobic **plus** submersible
- Dendrite growth prevention



WATERBLOCK™

Independent Research on Dendrite Growth:

HZO engaged with a third party lab to test the WaterBlock coating's ability to withstand dendrite growth.



Cause of Metal Dendrite Growth:

When a liquid (electrolyte) is placed between the two terminals of e.g. a SMT Capacitor or Resistor and DC voltage is present, an electrochemical cell is created and reactions begin.

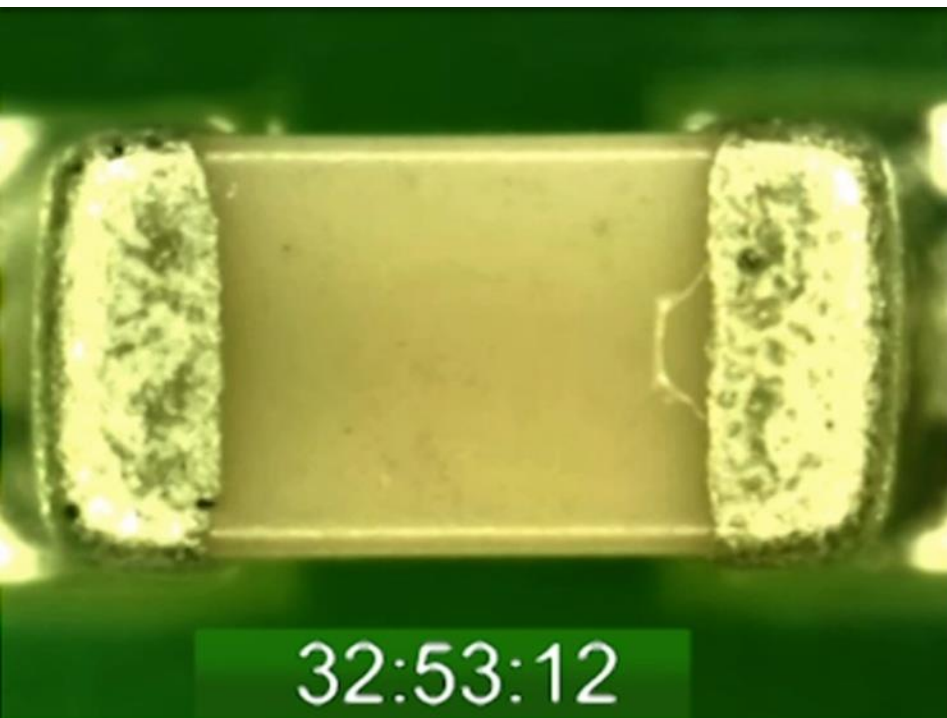




Migration testing on
un-coated vs. H₂O coated
electronic components

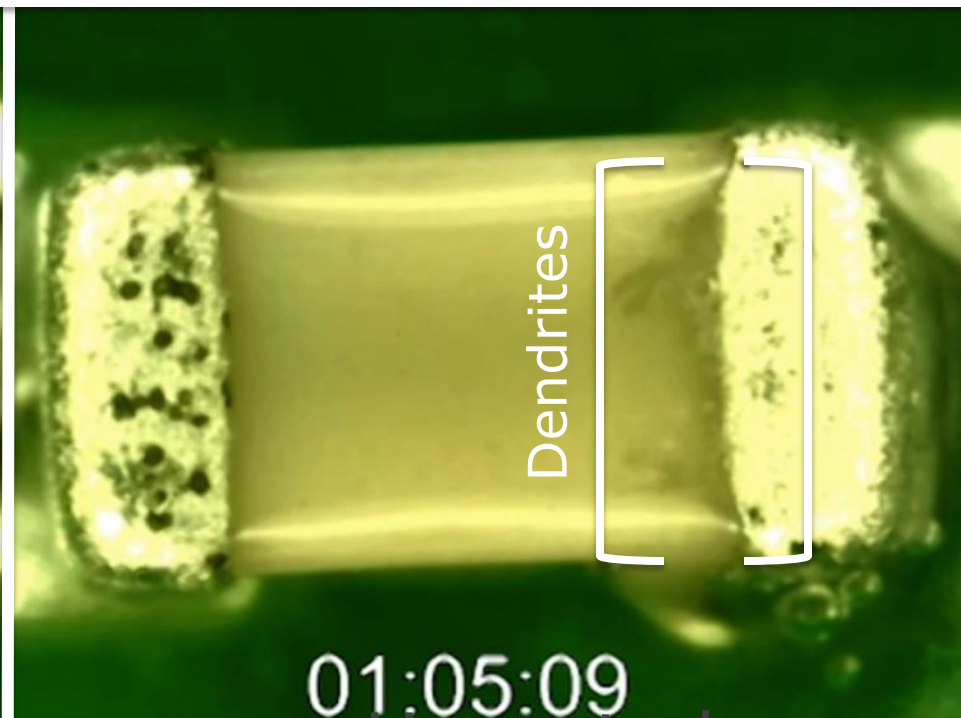


WaterBlock™ Coating



WaterBlock™

- No dendrite growth on WaterBlock coated electronic component when exposed to water
- Test concluded at 33 min., no sign of dendrite growth



Uncoated

- Dendrite growth began at 1 minute of exposure to water on uncoated electronic component

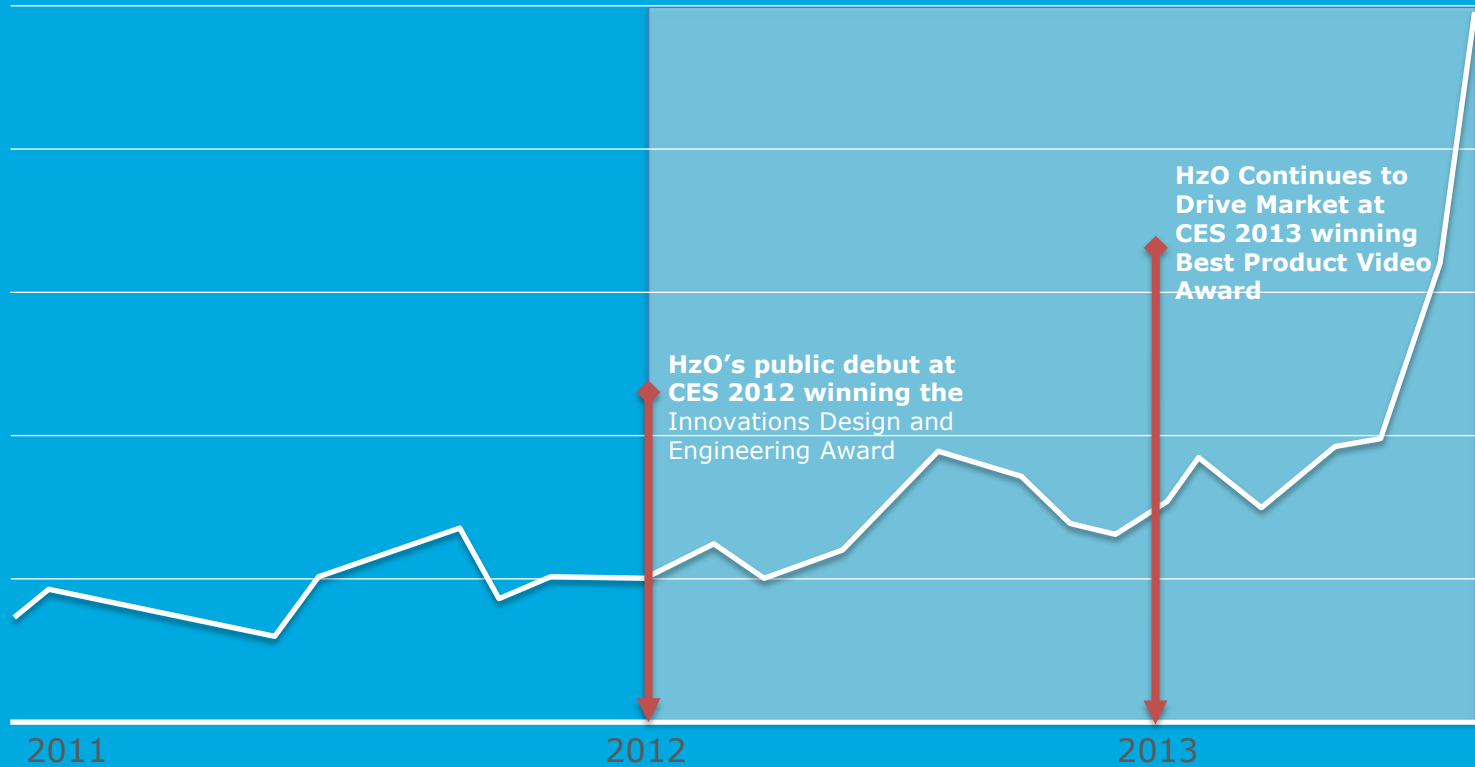
Production Equipment: WB-5000

- The proprietary WB-5000 design high throughput batch manufacturing.
- Large chamber will process currently processing 1000 UPH for mobile phones and over 3000 UPH for wearables.



Launch

Search Example: "Waterproof Phone"



H2O has Driven Global Awareness of Water Protection
Google Searches for Water Protection

World-Wide Press Exposure

**GOOD
MORNING
AMERICA**

**WALL STREET
JOURNAL**

The Asahi Shimbun
Japan's Leading National Newspaper



The Royal Gazette



B B C

**Belfast
Telegraph**

東方日報
Oriental Daily News

Forbes



■ NORTHERN IRELAND'S DAILY NEWSPAPER ■

HindustanTimes



trnd



The New Zealand Herald

Earned Media Report: CES 2013



Total Earned Media: **\$4,991,297**

Total Circulation: **145,831,405 People**

Total News units Covering HzO: **539**

Total "Shares" on Social Media: **125,434**



Sprint asked a question.



We've seen some amazing innovations at CES! Which one would you want the most?

- | | | | |
|----------------------------------|---|-----|--------------|
| <input type="radio"/> | Portable solar-powered cellphone charger | ... | 4,451 people |
| <input checked="" type="radio"/> | Waterproof phone | ... | 8,003 people |
| <input type="radio"/> | Bendable phone | ... | 704 people |
| <input type="radio"/> | Tap-to-transfer battery power between devices | ... | 1,184 people |

Like · Comment · Share

18

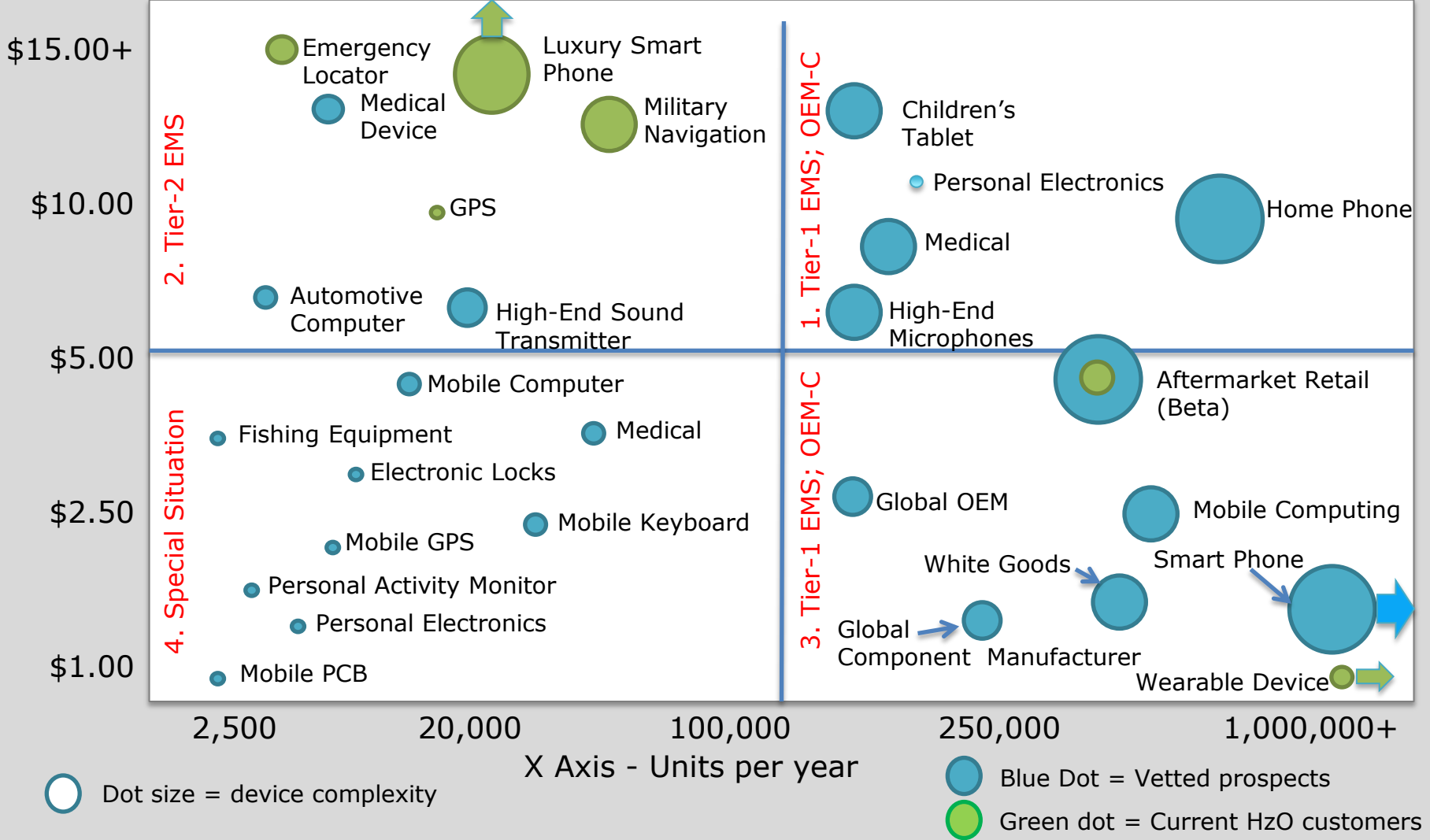
1,564 people like this.

View previous comments

1 of 398

Markets

Y Axis - Unit Royalty Per Device



Customer & Market Launch Analysis

Segmentation of customer opportunities by unit volumes, unit royalties, and device complexity

(All opportunities listed represent customers or prospects vetted)



Consumer Electronics

- Mobile phones
- Tablets
- Fuel band
- Jawbone up
- Smart watch
- Bluetooth accessories
- E-readers
- Computers
- Audio
- Musical Instruments
- Cameras

Life Sciences

- Medical Devices
- Biometric Monitors
- Personal Locators
- Sporting Electronics

Industrial

- Military
- Automotive
- Batteries
- Sensors
- Two-way radios
- Toys

Phase 1 Target Market Strategy

3 Current Business Units
 Business Unit Manager
 Cross Platform Collaboration

| | Market | Estimated Electronics Market Size | Addressable Coating Market | Compound Annual Growth Rate (CAGR) |
|------------------------|--|-----------------------------------|----------------------------|------------------------------------|
| Current Market Targets | Consumer | \$711 Billion | \$3.3 Billion | 40% |
| | Life Sciences | \$28 Billion | \$3.1 Billion | 73% |
| | Industrial (military, automotive, manufacturing) | \$161 Billion | \$733 Million | 5% |

| | | | |
|---------------|--------------------------|------------------------|------------------------------|
| Totals | >\$900 Billion | >\$7 Billion | 30% & increasing) |
|---------------|--------------------------|------------------------|------------------------------|

Addressable Market Size

Initial Target Markets

WaterBlock Competitors



WATERBLOCK™

WaterBlock™
Coating



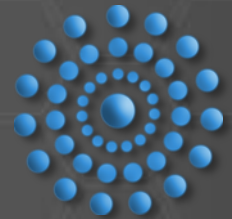
Mechanical
Seals



Plasma
Coatings



Traditional
Conformal
Coatings



Spray
Coatings

Mechanical Seals

Definition:

Mechanical seals (gaskets, O-rings, etc.) are usually constructed of rubber, silicone or plastic and are inserted into crevices and ports where liquids may seep.



Mechanical Seals

Limitations/ 'Red Flags':

- Seals age and crack
- Addition of bulk and heft
- Increased device cost
- Not effective on small and thin form factors
- Prohibits use by dexterity challenged users (elderly, disabled, etc.)
- Seals subject to breach with use (twisting, dropping, etc..)
- User responsibility for seal placement prevents warranty coverage



Better Solution

NavELite wrist compass, previously protected with mechanical seals sought a better solution with HzO WaterBlock.

The WaterBlock coated compass, now outsells the unprotected version 9 to 1.

Used by U.S. military special forces in front-line life/mission critical circumstances-ultimate testament to coating solution fidelity, reliability and longevity



Commercial Plasma Coatings

Definition:

The main purpose of plasma applied coatings are to make a surface more hydrophobic by changing the surface contact angle to help repel water. The coating is applied using plasma as a medium and is applied by vapor deposition.



Commercial Plasma Coatings

- Very thin coatings-poor durability
- Pinholes
- Application method creates uniformity challenges
- Susceptible to flaking/everyday wearing
- No submersion protection
- Not approved for conformal coatings per the IPC* standards for printed circuit boards.

*International Printed Circuits; Association Connecting Electronics Industries

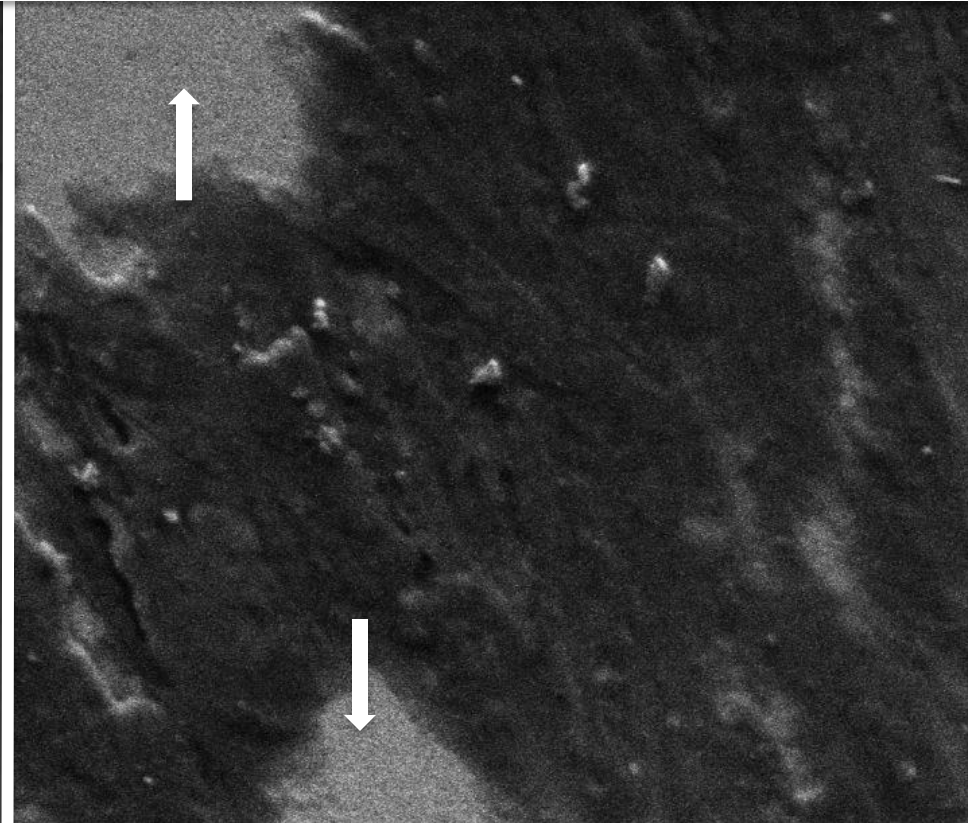


WaterBlock vs. Plasma



WaterBlock™

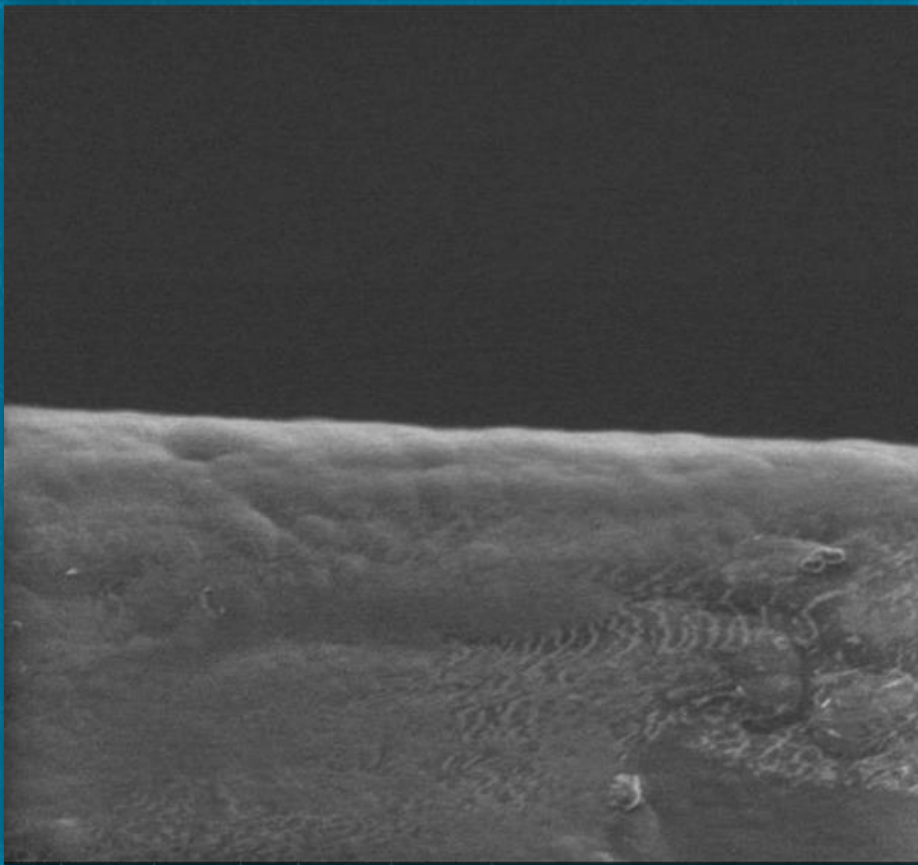
- Continuous coating
- Completely covers the substrate, no exposure to underlying electronics



Plasma Coatings

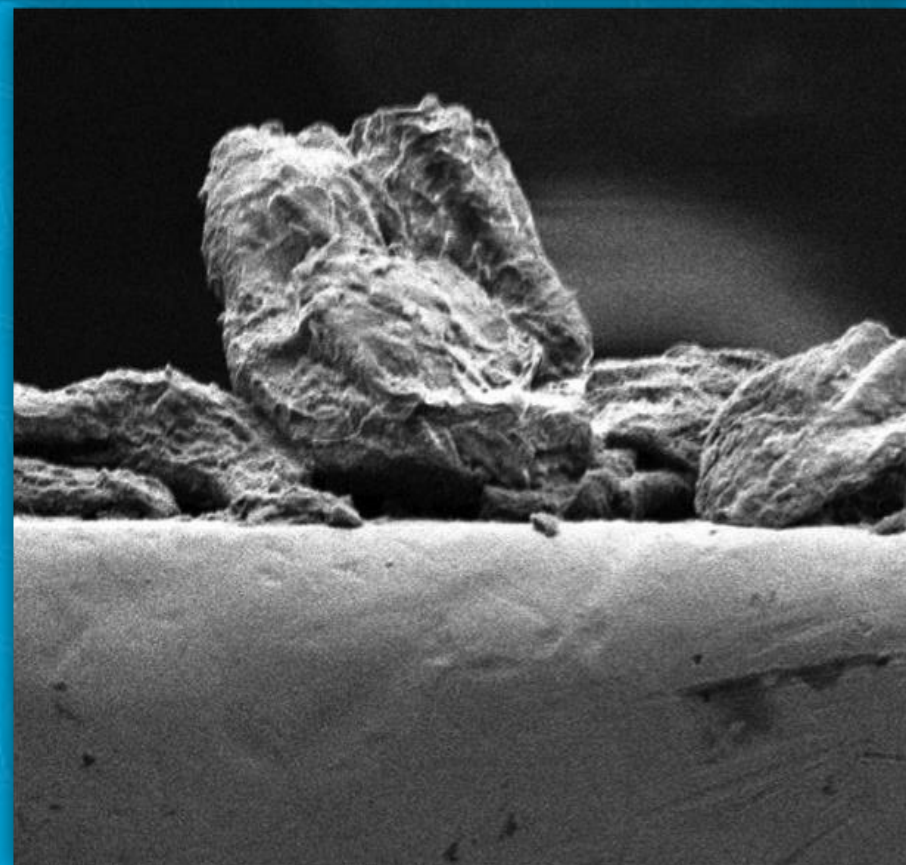
- Uneven coating
- Parts of surface uncoated and electronics are exposed

WaterBlock vs. Plasma – SEM



WaterBlock™

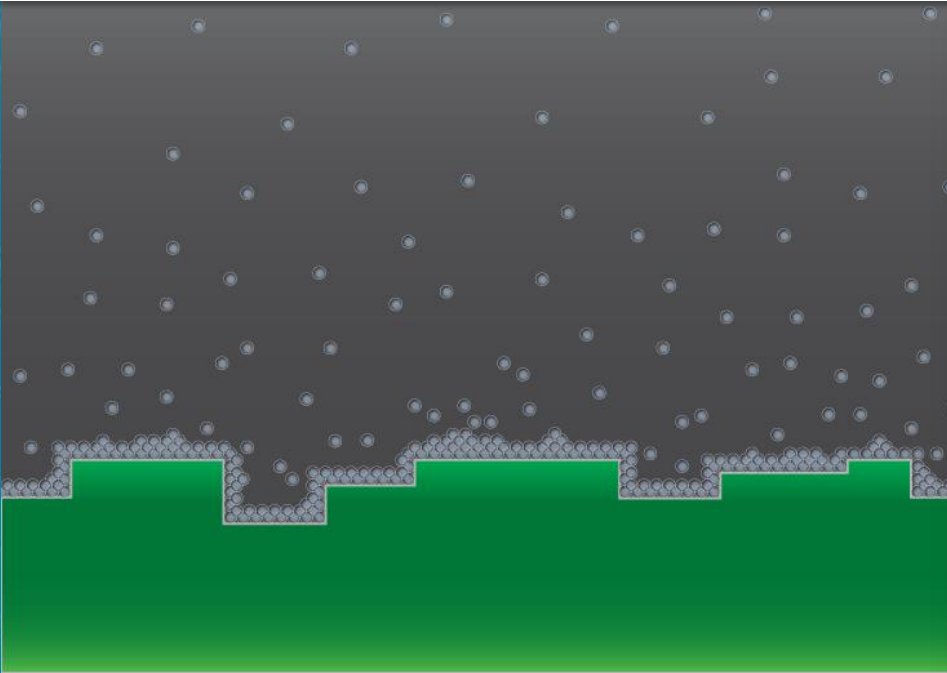
- Highly flexible
- Angstrom sized particles wrap corners



Plasma

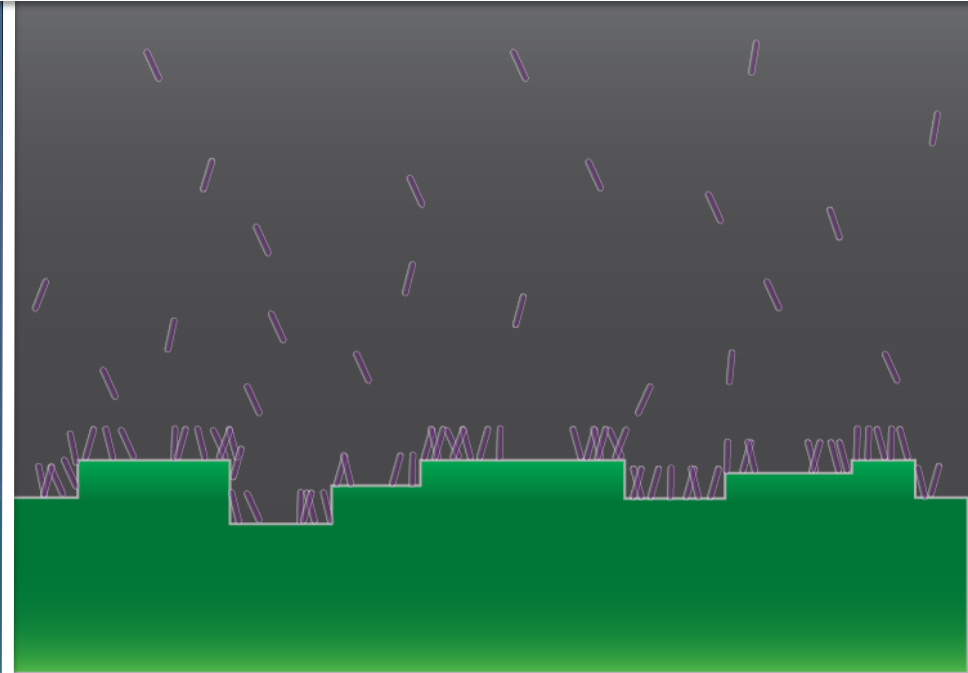
- Very brittle
- Agglomerated clumps create crack

WaterBlock vs. Plasma



WaterBlock

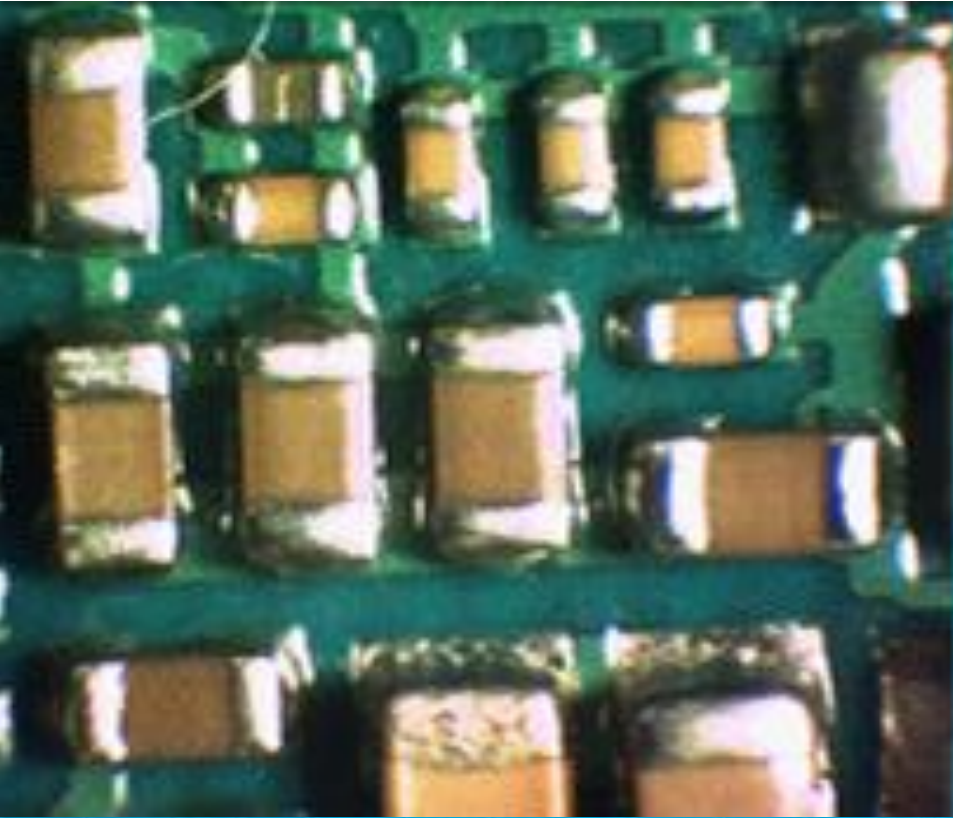
- Forms molecule by molecule on the substrate
- Strong molecular bonding
- Protection: Umbrella



Plasma Coatings

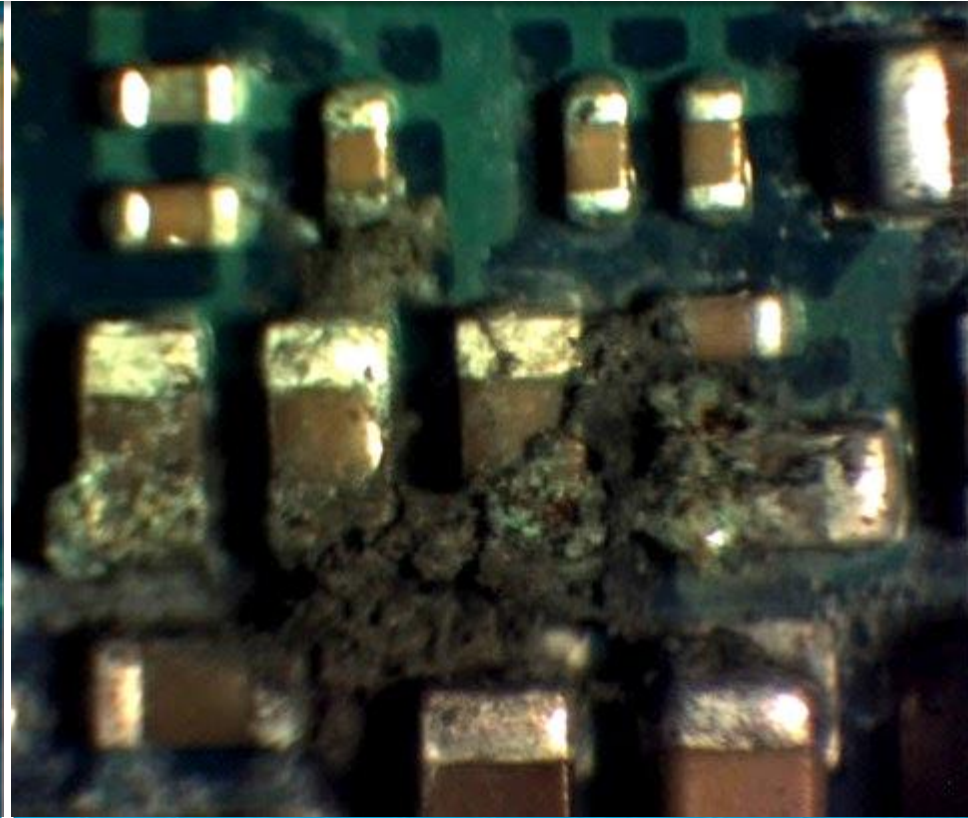
- Forms in flakes above substrate, lays down non-uniform
- Weak mechanical bonding
- Protection: Umbrella with holes

WaterBlock vs. Plasma



WaterBlock

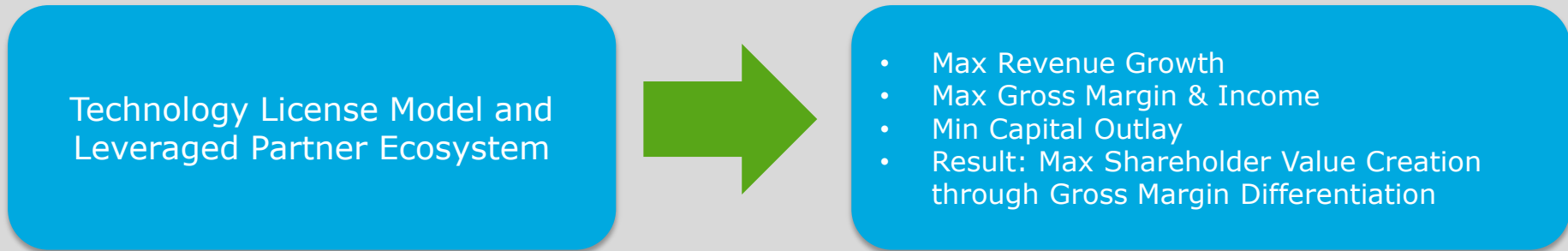
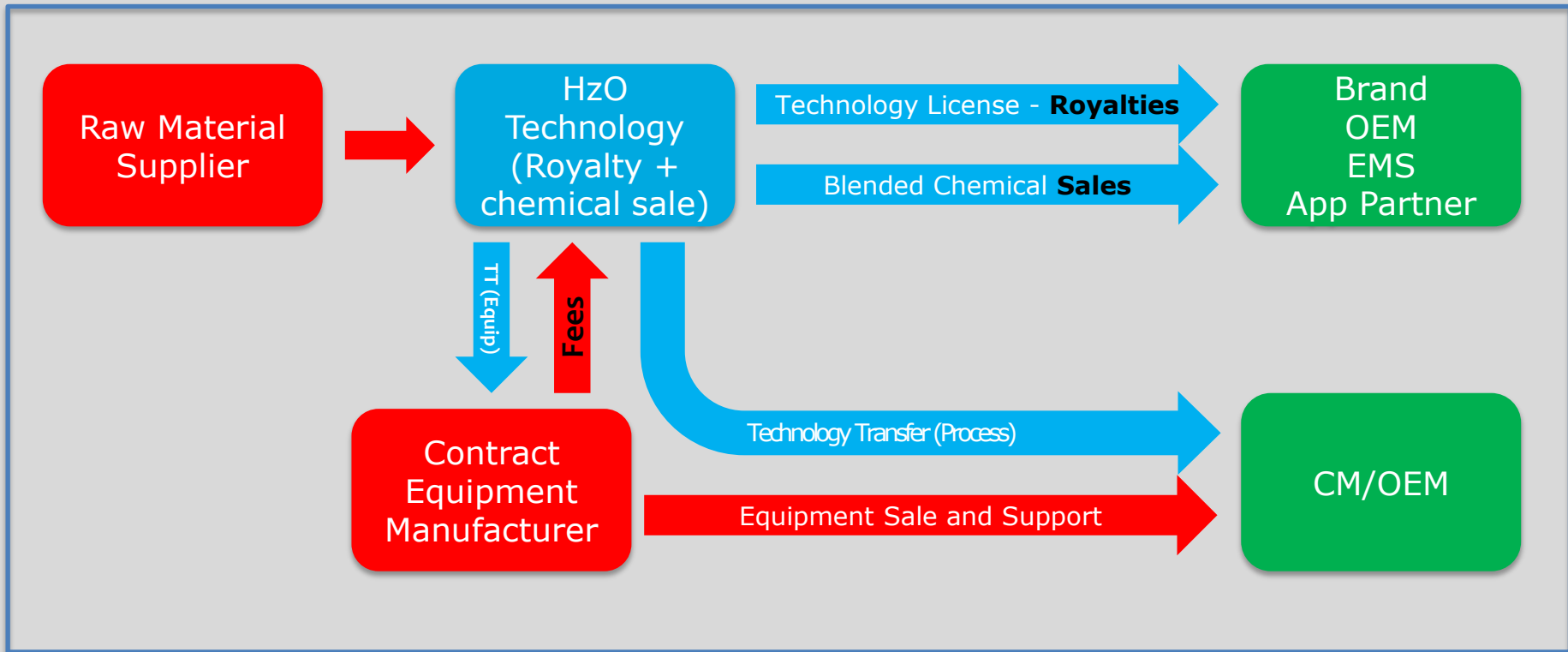
- Hours of submersion
- Total survival



Plasma Coatings

- Minutes of submersion
- Catastrophic failure

Right Model



HZO Business Model

Right Team

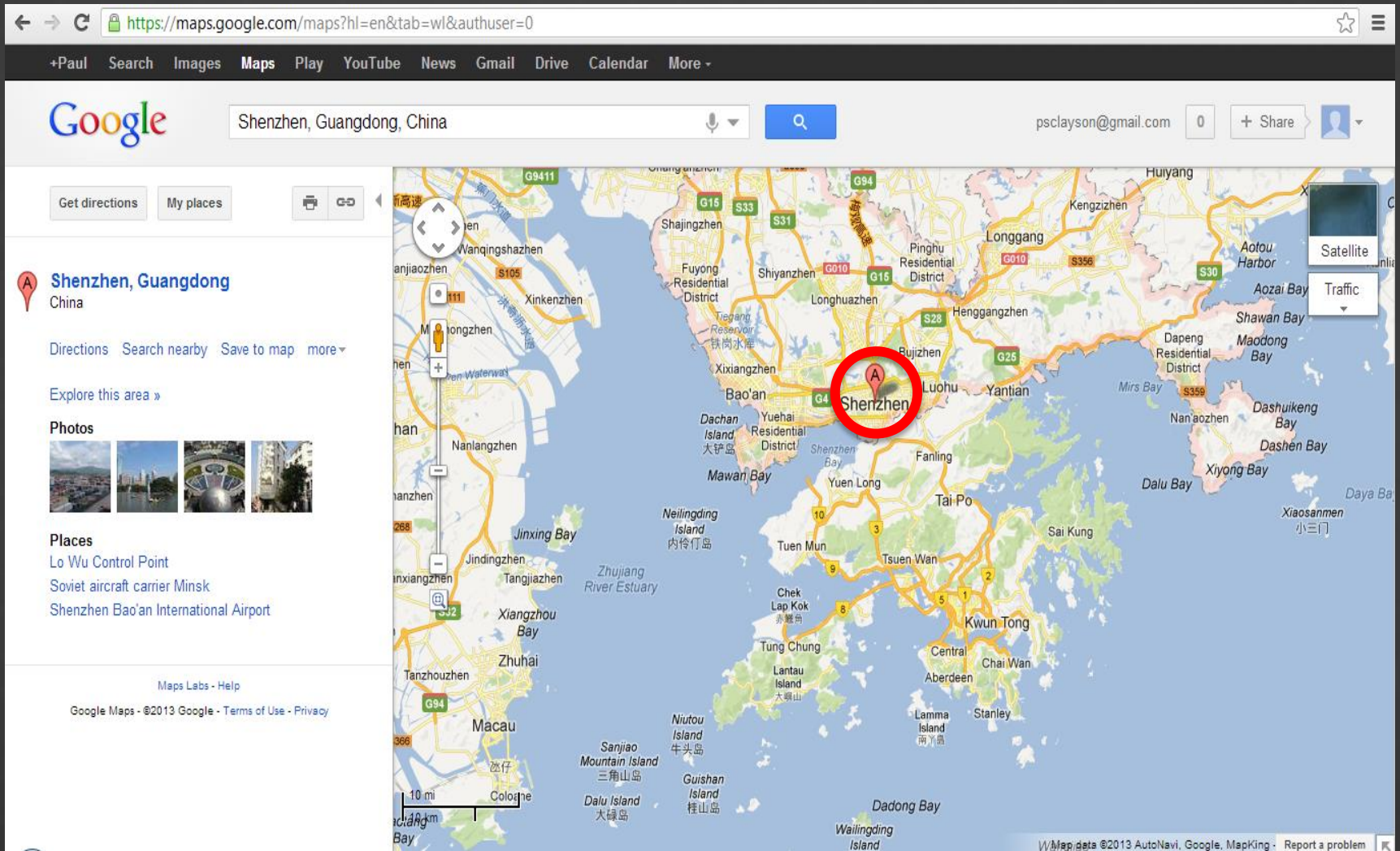
Core Team Differentiation

- 9 PhD's in the fields of:
 - ✓ Thin Film Deposition
 - ✓ Thin Film characterization
 - ✓ Materials & Surface Science
 - ✓ Device Physics
 - ✓ Polymer Chemistry
 - ✓ Barrier and Hydrophobicity Expertise and
 - ✓ Corrosion Prevention, among others
- Over degreed 30 Engineers in electrical, chemical, mechanical, manufacturing and process disciplines
- 20 Highly Skilled Technicians
- Experience from Flextronics, Jabil, Tyco, Nokia, Telephonica, Verizon, AT&T, Apple, Microsoft, Herraeus, , and many other multinational companies



Right Locations

Shenzhen – One Chinese City of Many



Shenzhen, Guangdong, China

- 1970's: Small village of about 20,000 people
- 1979: Declared 1st Special Economic Zone (SEZ)
- 1990: Grown to about 60,000 people
- 2010: <10.3 million people
- 2013: < 18 million people
- Guangdong Province: 79 million people on 68,700 sq. mi.
- Utah: 3.1 million people on 84,899 sq. mi.
- 96% more people on 20% smaller land mass



Global Deployments



Customers



Product Solutions

Sample Products Currently in the Market featuring WaterBlock

NavELite
Back-Lit Wrist Compass



ICEdot
Bicycle Crash Indicator



TAG Heuer
High-End Smart Phone



LaiPac Tech
S911 Bracelet Locator



Live Free
Life Beacon Medical Mobile Alert



Bully Dog
Diesel Engine Tuner





Example: HzO and TAG Heuer— High End Smart Phone:

TAG Heuer selected HzO WaterBlock to protect its high end line of luxury smart phones beginning with the **TAG Heuer RACER SUB NANO Smartphone**. Quotes from the TAG Heuer press launch include:

“WaterBlock™ works by creating a strong nano-barrier between the internal circuitry of a device and water, without any additional bulk, weight, or changes to the look and feel of the device. In addition to protection from splashes and spills, the nano-barrier allows the phone to survive complete accidental submersion.”

“This pioneering mobile device with WaterBlock protection advances TAG Heuer’s history of innovation, which is written into the brand’s very name.”



Wearables – the new frontier

Sales & Marketing Co-Branding



Protection from the Inside Out™

Snapshots

Commercialization & Growth



NavELite
Yesterday

Congratulations
Advanced Tech



Like · Comment

2 people liked this



Write a comment



ICEdot
July 23

This poor, poor man. A #CrashSensor would have been mighty helpful. Thankfully, the HzO Waterblock Technology keeps it safe and functional even if exposed to water.



s and HzO for featuring
ce in San Francisco.



Customer Recognition

- HzO was presented with an American flag as a gift from NavELite, one of its customers which features WaterBlock on its military grade wrist compass.
- The message stated, in part “this flag flew...in honor of you and your unequalled love and service to your country.”
- HzO works hard to build lasting relationships with its partners and customers.



WaterBlock is award-winning technology:

- Winner of 2012 CES Innovations Design and Engineering Award for Embedded Technologies
- Named one of the Top Emerging Nanotech Innovators in both 2012 & 2013 by the National NanoBusiness Commercialization Association
- Winner of 2012 Stoel Rives & UTC 2012 Innovation Award



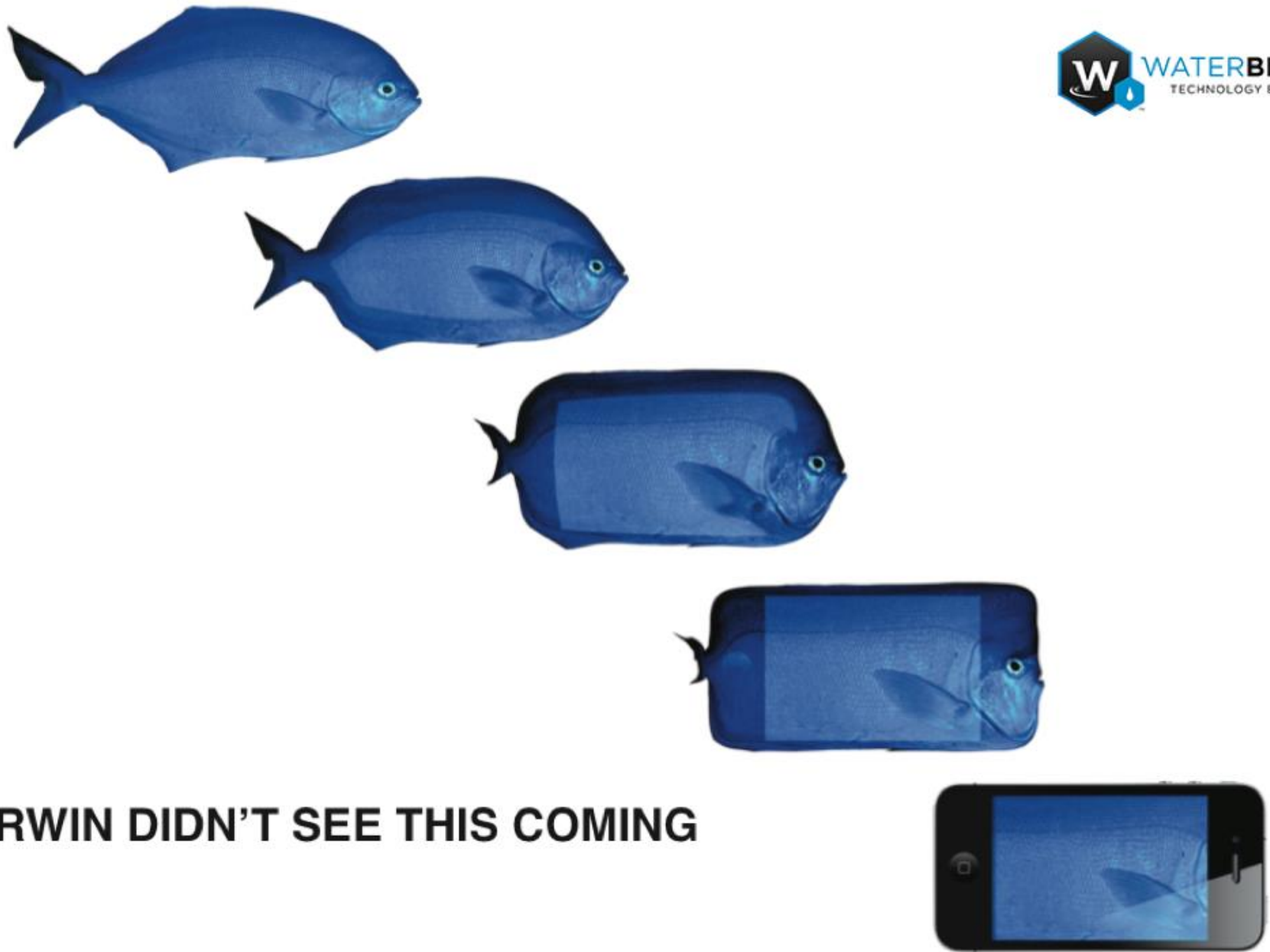
WaterBlock is award-winning technology:

- Named “Best Advanced Technology Award” at the 2013 Wearable Tech Expo
- Winner of International Business Award’s Gold Stevie Award for 2013 “Best New Product or Service of the Year – Consumer Electronics”





- Company **Commercialized technology and post revenue** after only 24 months and \$12m
- Proven **licensing model and leveraged partner ecosystem** maximum value with minimum time & cost
- **60 patents filed worldwide** - 23 original - multiple PCT and international filings
- **World-class management and technical talent** – global search found deep experience
- **Global recognition** of HzO enjoys OEM's, ODM's EMS and Brands
- Current customers in multiple industries including **major brands** and manufacturers
- Over **150 prototype validations** for the worlds largest electronics manufacturers
- Addressable market for initial target **market size estimated at over \$7 billion** with growth at over 30% CAGR across all sectors
- **Multi-industry reach** maximizes growth opportunity and minimizes industry concentration, economic cycle, and other risk exposure
- Machinery **deployed at tier 1 CMs in China** for major OEM/Brand; equipment installed in Japan and US with additional equipment deployments scheduled in US, Latin America, China, Korea, Taiwan, and SE Asia
- \$3-4m revenue in 2013 and will see **5X revenue growth in 2014 and 2015**



DARWIN DIDN'T SEE THIS COMING