



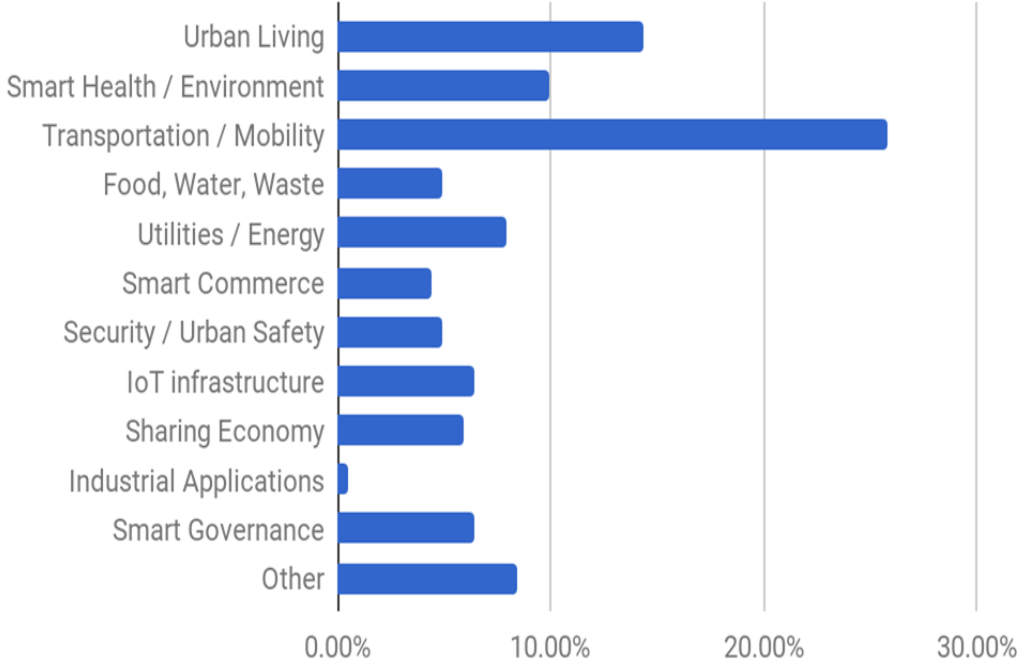
URBAN-X FOR NY ENERGY FORUM

MICAH KOTCH / DECEMBER 2017



URBAN-X Cohort 3

Applications by Theme



Applications by Location

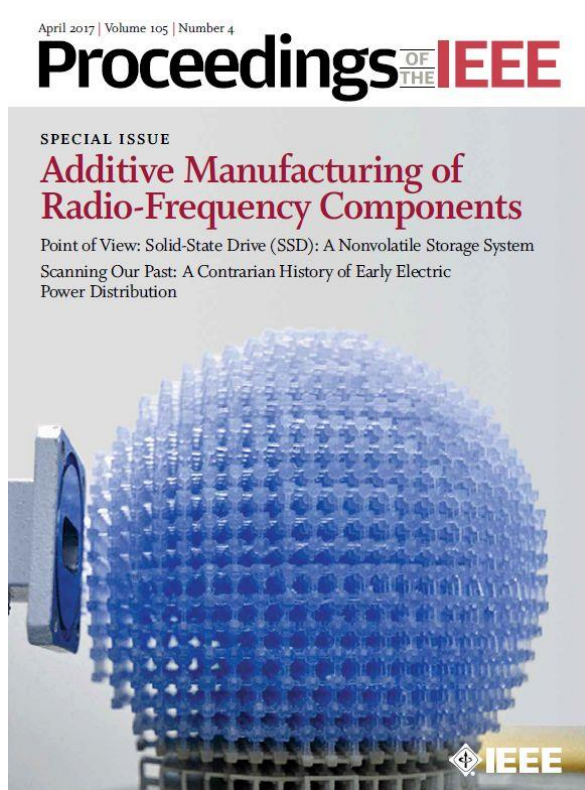




COHORT 3: SAMPLE TEAM OVERVIEWS



LUNEWAVE



Description: 3D printed, low cost, high resolution radar sensor for driver assist and autonomous vehicles.

Theme Mobility/ Transportation, Industrial Applications

Location Silicon Valley

Customer B2B

Website: <http://lunewave.com/>

Deck and/or Application [Application \(pdf\)](#)

Other Materials

Impact/Market Can expand and speed deployment of autonomous driving and driver assist systems by dropping the price of critical data acquisition. Has additional applications in remote sensing and robots that could impact anything from governance to built environment.

Team The CTO has a PhD from MIT and is an industry leading expert on microwave and millimeter wave tech, 3D printing for electromagnetic systems. CEO and other founding team members have over 30+ combined experience in biz dev and product dev. Lunewave is a NSF Phase I award recipient.

Product & Approach The team has developed and tested an antenna (77HGz Luneburg lens). Combining expertise in adaptive sensing and interference avoidance with hardware lens and customized circuit.

The Luneburg lens attributes are understood, but a key obstacle to date has been fabrication. The team has used metal 3D printing to unlock the potential.

Competition & Defensibility Other systems (lidar, traditional radar, camera, ultrasound) are not cost effective or as high of value. Lunewave's technology performs better in adverse weather conditions.

Low cost 3D sensing has a range of other potential applications in robotics and remote sensing.

Risks The team has demonstrated capabilities of prototypes, so primary risks relate to verification of relative performance and then design for manufacture. Assumptions about metal 3D printing millions of units needs to be verified.

Strategic Fit Incorporation into AV and driver assist roadmaps.

ROADBOTICS



Description

Roadbotics automates road inspection. This allows governments and contractors to be more effective in their budgeting and maintenance operations.

Theme Transportation / Mobility, Smart Governance

Location Pittsburgh, PA

Customer B2B, B2G

Website www.roadbotics.com

Deck and/or Application [Deck \(pdf of application\)](#)

Other Materials [Diligence Folder](#)

Impact/Market

Roads are one of the largest assets managed by local governments. In nearly all future mobility scenarios, they're likely to remain critically important.

Team

CEO has previous startup experience, including an exit. Rest of the team has been working on the problem at CMU at one of the leading machine vision and transportation technology research labs in the world.

Product & Approach

Product uses low cost imaging (smartphones) to analyze road conditions and prioritize interventions to maximize lifetime value of roads with available resources. Service is sold to local governments or contractors. Other interested stakeholders include insurance, financial services and potentially navigation.

Competition & Defensibility

Today most of the work is done via visual inspection. Defensibility comes from the data and workflow to get from images to optimize workflows and repairs to maximize the useful life of roads. This process improves with each mile of road analyzed.

Risks

Primary risk is long sales cycles from RFPs, but this can be mitigated via some of the B2B discussions with firms like AECOM.

Strategic Fit

Fits transportation/mobility, governance and IoT infrastructure. Not a current fit for iVentures, but they are positive about the deal and the team could expand into more relevant areas.

VERSATILE NATURES



Description

Re-organize construction processes to improve safety and productivity. IoT sensors are strategically located on the hook of the crane and use the data to analyze, predict, and prevent waste and safety incidents. The people on site get pin-point actionable audio and messaging alerts, not dashboards and more non-actionable data.

Theme Built Environment/IoT/Smart Manufacturing

Location Tel Aviv, Israel

Customer B2B and possibly B2G around safety

Website www.vnatures.net

Deck and/or Application [Application \(pdf\)](#)

Other Materials

Impact/Market

VNatures enables developers and contractors to execute projects faster and more safely with reduced cost and improved efficiency. Construction sites are relatively poorly organized manufacturing processes and VNatures is changing this.

Team

CEO was international BD at Intel, specializing in tech company management. CSO is a nuclear & electrical engineer with over 10 years of experience with quality and process control. CTO comes from Intel, Checkpoint and his own companies.

Product & Approach

Sensors are mounted onto cranes and soon, hoists, to do things like identifying locations of people and materials or loads on the crane. Proprietary IP is analysis of data to get actionable insights such reducing idle times of cranes or high risk events like load drops.

Competition & Defensibility

Trimble is focused on construction automation and recently acquired a company that has focused on collision detection for cranes. Uptake serves multiple industries looking for patterns in industrial data. Drones for construction solve a different set of problems because they are not continuously monitoring sites.

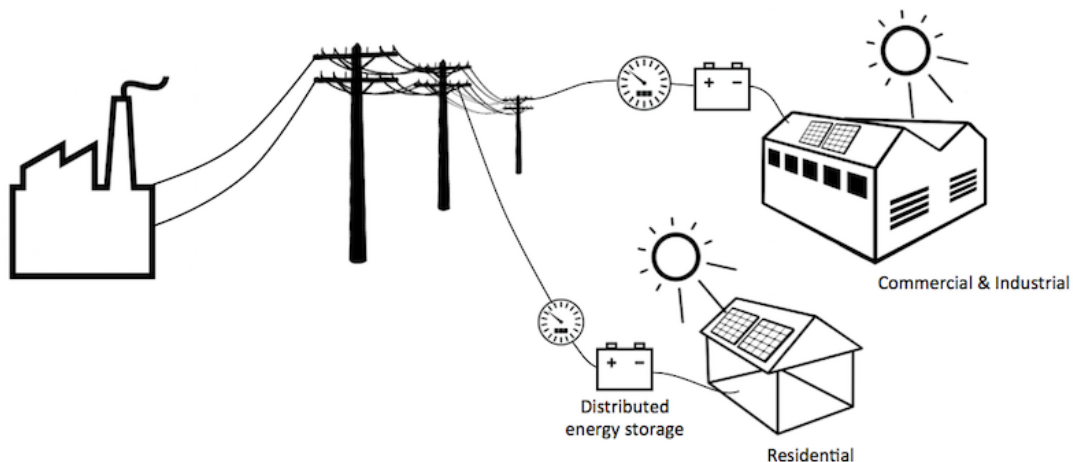
Risks

Primary risk is long sales cycles and the need for customer discovery in US market but conversations are already underway and this is something URBAN-X can help to de-risk.

Strategic Fit

Fits built environment, govtech and IoT infrastructure. Vision is to replace the construction foreman with AI and provides an interesting use case into smart manufacturing via worksite safety.

BLUEPRINT



Description

Blueprint will convert buildings into power plants, real estate into an energy business -- and bills into profits. Blueprint is coordinating the roll-out of smart building technologies with leading real estate portfolio operators. Rather than focusing just on potential savings, Blueprint will aggregate the energy assets to enable owners to operate like a utility to generate additional revenues.

Theme Utilities / Energy, Urban Living, IoT

Location New York

Customer B2B

Deck and/or Application [Application \(pdf\)](#)

Other Materials [Founder LinkedIn](#)

Impact & Market

Buildings offer a large opportunity to improve efficiency and comfort. At the same time, assets deployed into individual buildings can be organized into distributed utilities to provide resilience.

Team

Founders hail from top tier companies in tech, aerospace, energy, and real estate, including Google, Boeing, Bosch, and Lennar. They've designed and delivered high profile projects including microgrids at Branson's Necker Island, GooglePlex's 1.7 MW solar array, stationary storage systems and offshore wind.

Product & Approach

The team has brought together key real estate stakeholders in the United States to commit to the deployment of building energy management systems. Once deployed, energy assets will be aggregated to enable the sale of electricity to other users, creating additional revenues for participating building owners.

Competition & Defensibility

Several entities are trying to sell full services to building owners: GE Current; Siemens; Honeywell; Edison Energy; Shell;

There are few companies who are building a transactive energy marketplace: LO3 Energy (could also be partners); Power Ledger (in Australia). Core initial advantage is having largest real estate companies as investors/partners.

Risks

Phase two will require work with regulators to fully unlock benefits. Leading markets like CA, NY and TX are likely to be first and so this is where initial buildout will focus.

Strategic Fit

Includes urban living, energy, IoT. Overlaps with iVentures investment area in energy services.



SELECTION PROCESS + PORTFOLIO



STRATEGIC AREAS COHORT 3

URBAN LIVING	HEALTH / ENVIRONMENT	TRANSPORTATION / MOBILITY ⁱ	FOOD / WATER / WASTE
<ol style="list-style-type: none"> 1. Improved accessibility, affordability and experience for citizens 	<ol style="list-style-type: none"> 1. Improved health outcomes 2. Reduced impact on environment in areas like air and water 	<ol style="list-style-type: none"> 1. Support for electrification, autonomous and sharing systems 2. Non OEM stakeholders like local gov, insurance 	<ol style="list-style-type: none"> 1. Improved diversion and reuse. 2. Improved quality & resilience
UTILITIES / ENERGY ⁱ	COMMERCE	SECURITY / SAFETY ⁱ	IoT INFRASTRUCTURE
<ol style="list-style-type: none"> 1. Distributed utility architectures 2. Improved acquisition, finance and management of next generation assets 	<ol style="list-style-type: none"> 1. Faster, better, cheaper marketplaces & transactions 2. Online/offline and AR experiences 	<ol style="list-style-type: none"> 1. Online security & safety for urban systems 2. Physical security & safety for people and critical assets 	<ol style="list-style-type: none"> 1. Faster, better, cheaper infrastructure 2. Security for IoT infrastructure
INDUSTRIAL APPLICATIONS ⁱ	GOVERNANCE	OTHER	
<ol style="list-style-type: none"> 1. New fabrication & assembly 2. Mass customization 3. Improved logistics 	<ol style="list-style-type: none"> 1. Improved delivery of city services 2. Improved acquisition, finance and management of public assets 	<ol style="list-style-type: none"> 1. Unexpected opportunities with potential to impact urban life. 	

I-VENTURES STRATEGIC AREAS (2017)

<p>Autonomous Driving</p> <ol style="list-style-type: none"> 1. Machine Learning for Computer vision & sensor fusion 2. Smart tagging/labeling of training data 3. Sensors / Detection technology 4. Localization (high precision GPS; HD Maps, etc) 	<p>Digital car and automotive cloud</p> <ol style="list-style-type: none"> 1. Digital Car HMI (Input/Output technologies) 2. Augmented reality and displays. 3. Location-based services / content for map layer 4. Smart City & IoT 5. Automotive security 	<p>E-Mobility</p> <ol style="list-style-type: none"> 1. Battery technology: All solid state, Fast charging, Low cost materials, Low temp 2. Charging technology and ecosystem 3. High efficiency, high power electronic comp 	<p>Artificial Intelligence, Data & Cyber Security</p> <ol style="list-style-type: none"> 1. New business models on data 2. Cyber Security 3. Machine Learning Technology (Performance) 4. Analytics 5. Predict customer behavior 6. Predictive maintenance
<p>Industry 4.0</p> <ol style="list-style-type: none"> 1. Data and Analytics 2. Additive Manufacturing 3. Innovative Automation 4. Smart Logistics/Warehouse 	<p>Shared & On-Demand Mobility</p> <ol style="list-style-type: none"> 1. Digital Parking solutions 2. Intermodal & Navigation (routing & mapping) 3. From A-to-B mobility services 4. Ridesharing 5. Peer-to-peer mobility 6. Pay-per-use business models 7. Corporate Mobility 	<p>Customer Digital Life</p> <ol style="list-style-type: none"> 1. Financial Services (e.g. New car leasing & ownership models) 2. Sales (e.g. Point of sales innovation) 3. Aftersales (e.g. Predictive maintenance, on-demand roadside assistance) 	<p>Energy Services</p> <ol style="list-style-type: none"> 1. B2C Energy Services 2. Energy SaaS 3. Innovative storage services 4. Smart Grid

COMPANY OVERVIEW COHORT 1

(professional valuation exercise to be completed Q4 '17)

COMPANY NAME		TAGLINE	CATEGORY	ORIGIN
Nello	★ ▲	Your Existing Building Intercom As A Smart Lock	Security / Urban Safety	Germany
Brooklynness	★ ▲	World's Simplest, Intelligent Helmet For Urban Cyclists	Transportation / Mobility	Argentina
CTY	● ▲	Analytics For Places (Deployed in Las Vegas)	Infrastructure	US
Samocat	▲	World's First Kick-scooter Sharing Station (deployed in Paris)	Transportation / Mobility	Russia
Multimer		Mindrider Tracks Your Mind's Performance As You Ride	Transportation / Mobility	US
Industrial Organic	★ ▲	Scalable Indoor Food Waste Recycling (Pilot plant running)	Infrastructure	US
Buzzware		Urban Infrastructure Technology For Commercial Drones	Security / Urban Safety	Japan
Farmshelf	● ▲	Farmshelf enables one to grow amazing produce with minimal effort in soilless culture.	Health / Food	US
Stae	★ ● ▲	City As A Service (deployed in Atlanta)	Smart Governance	US

★ Funding Round Completed



Term Sheet Secured



Product Launched

COMPANY OVERVIEW COHORT 2

(professional valuation exercise to be completed Q4 '17 & cohort annual report launched Q3 '17)

COMPANY NAME	TAGLINE	CATEGORY	ORIGIN
Citiesense ● ▲	Local insights for urban development	Real Estate / Data	US
Contextere ▲	An intelligent personal agent for industrial workers	Augmented Reality / Work	Canada
Envairo ▲	Quantifying space use to optimize office buildings	Energy / Building Technologies	US
O2O2 ●	Fashionable facewear for urban air	Wearables	New Zealand
Revmax ●	Demand forecasting for on-demand fleet (working w/ DriveNow)	Transportation / Mobility	US
Sencity ●	The future of interactive public furniture	Connected Infrastructure	Australia
Upcycles ▲	The fastest way to deliver up to a quarter-ton in cities	Transportation / Delivery	US
WearWorks	Information through touch (NYT profile of blind marathoner)	Assistive Technologies / Mobility	US



Term Sheet Security



Product Launched

THANK YOU!

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