

KNIGHTSCOPE

Autonomous Data Machines
Predict and Prevent **CRIME**



**IEEE Santa Clara
Valley Consumer
Electronics Society**





Experienced CEO

Bill is an American entrepreneur with over 24 years of experience and has a broad and deep range of expertise gained from several global assignments in the automotive sector and a number of startups. During his career at Ford Motor Company, Bill held over 12 business and technical positions, focused on 4 continents, cutting across each functional area.

These positions ranged from component, systems, and vehicle engineering with Visteon, Mazda, and Lincoln; to business & product strategy on the US youth market, India, and the emerging markets in Asia-Pacific and South America; as well as the financial turnaround of Ford of Europe. In addition, he was on the AMAZON team, which established an all-new modular plant in Brazil. Subsequently, he served as Director of Mergers & Acquisitions.

After internally securing \$250 million, Bill founded and served as COO of GreenLeaf LLC, a Ford subsidiary that became the world's 2nd largest automotive recycler. Under his leadership, GreenLeaf grew to a 600-employee operation with \$150 million in sales - now part of \$8 billion LKQ Corporation.

After successfully establishing GreenLeaf, Bill was recruited by SOFTBANK Venture Capital to establish Model E Corporation as its President and CEO, a new car company where the "Subscribe and Drive" philosophy was first pioneered in California. He subsequently co-founded Build-To-Order Inc. (BTO) as its President and CEO, a new car company based on the direct distribution of build-to-order products. Bill also founded Carbon Motors, and as its Chairman and CEO, focused it on developing the world's first purpose-built law enforcement patrol vehicle. He also built a world-class advisory board comprised of senior officials that had worked directly for 3 different U.S. Presidents.

Bill earned a BSEE from Carnegie Mellon University and an MBA from the University of Detroit Mercy. He is fluent in Spanish and conversant in Portuguese.



WILLIAM SANTANA LI
Chairman and CEO

Seasoned entrepreneur, intrapreneur and corporate executive at Ford Motor Company

Founder of 2nd largest automotive recycler now part of \$8B publicly-traded company

Venture-backed founder including 10 years focused on homeland security; sat on U.S. National Security Task Force



**World is Changing
Dramatically
in
3 Ways**



Population Growth



Hardware Revolution



Autonomous Technology



A Real Problem

CRIME has a **\$1+ TRILLION** negative economic impact on the United States

KNIGHTSCOPE is developing an end-to-end technology solution to predict and prevent **CRIME** utilizing robotics, predictive analytics and social engagement



Crime Clock

A Violent Crime Occurs Every 26.2 seconds

One Murder every 36.0 minutes

One Forcible Rape every 6.3 minutes

One Robbery every 1.5 minutes

One Aggravated Assault every 42.0 seconds

A Property Crime Occurs Every 3.5 seconds

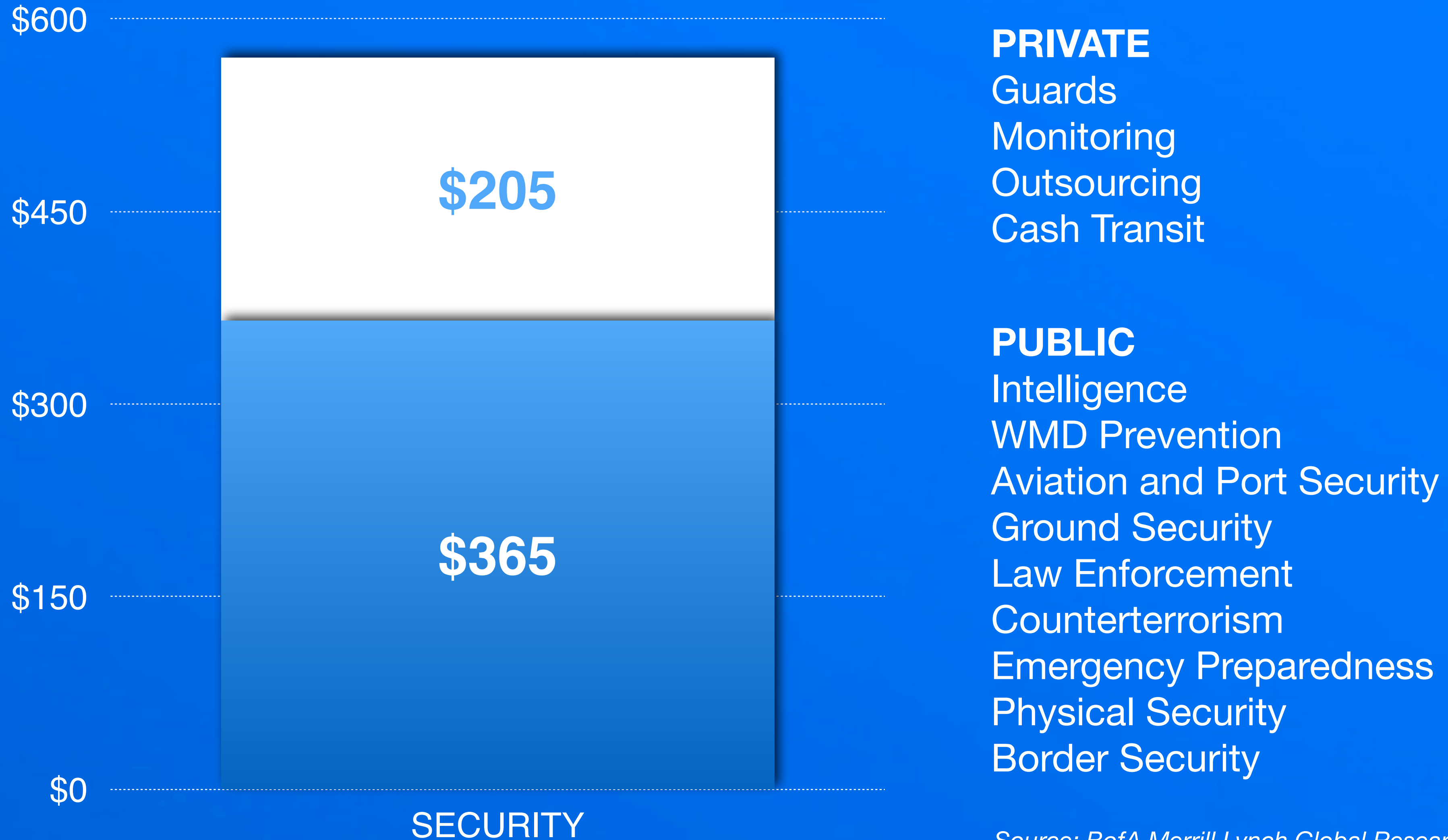
One Burglary every 14.4 seconds

One Larceny-Theft every 5.1 seconds

One Motor Vehicle Theft every 44.1 seconds



\$500B+ Security Market



Source: BofA Merrill Lynch Global Research



Security 1.0 is Analog

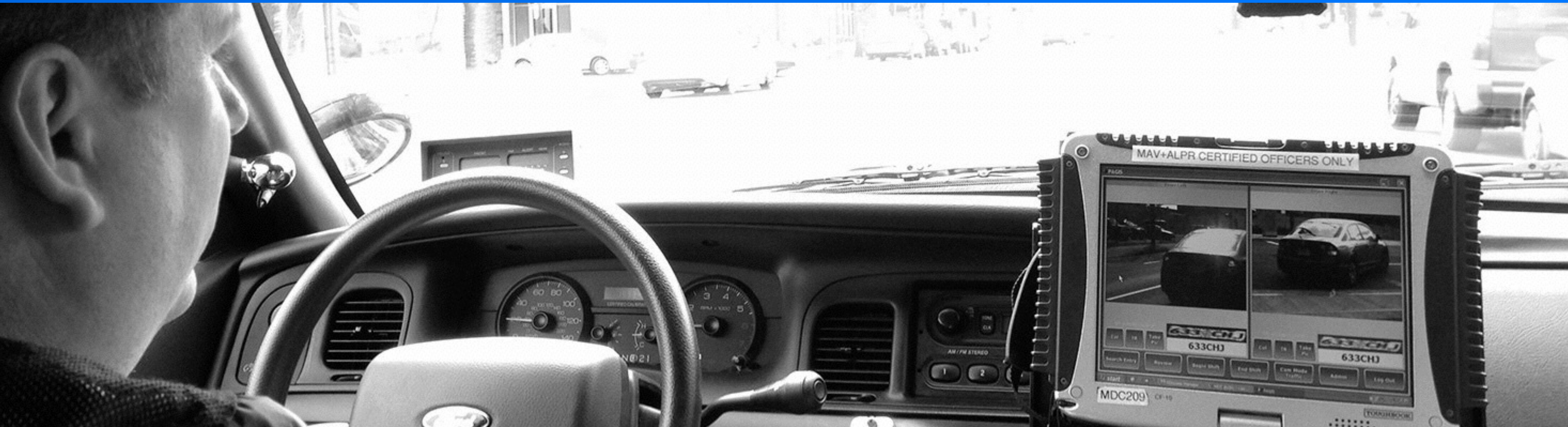
Security 1.0 = humans + car + radio





Security 2.0 is Digital

Security 2.0 = humans + car + data





Security 3.0 is Robotic

Security 3.0 = humans + robotics + intelligence





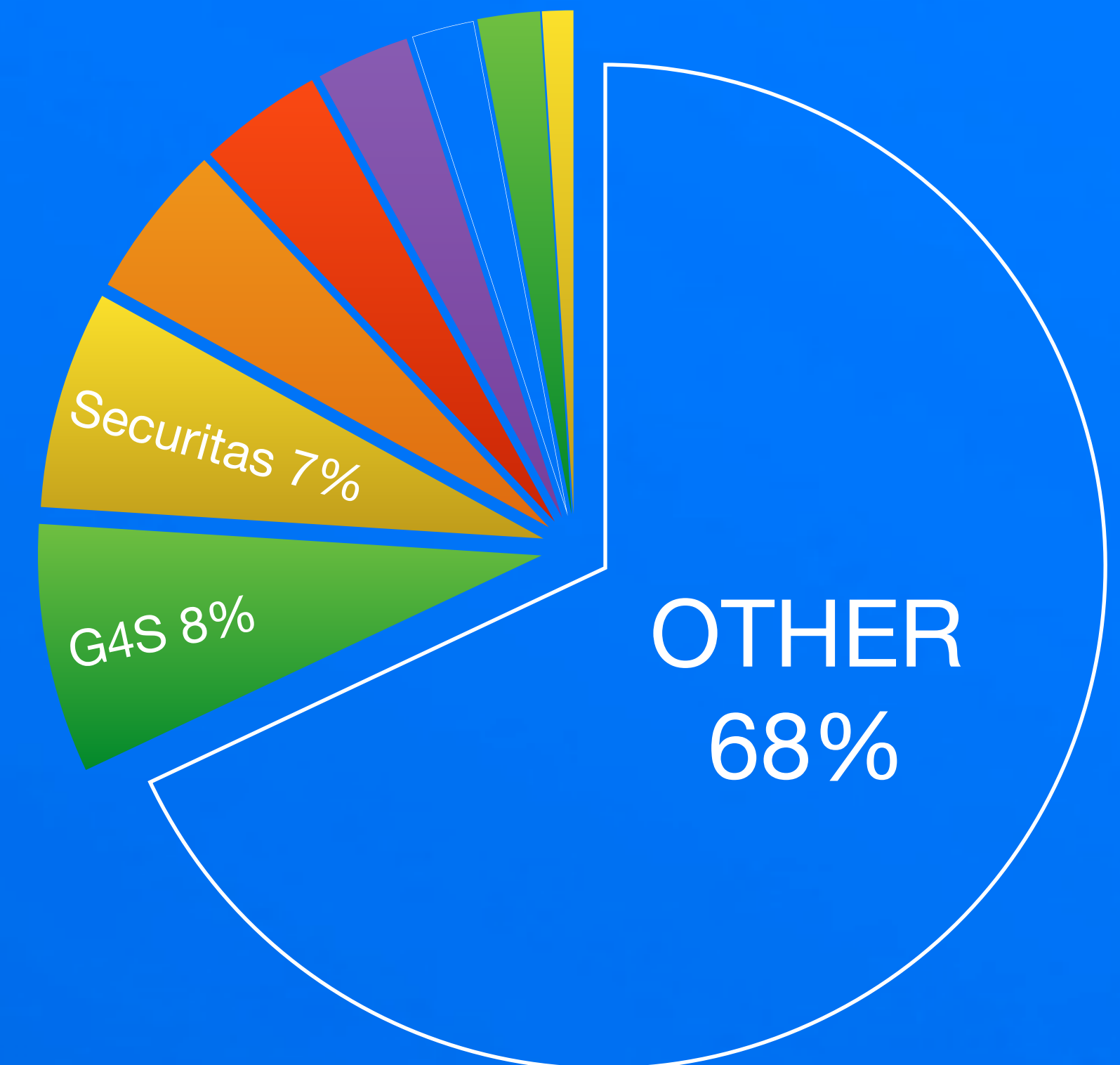
Time to Disrupt

1+ million private security guards (USA)

Up to 400% employee turnover rates

Large and highly fragmented market

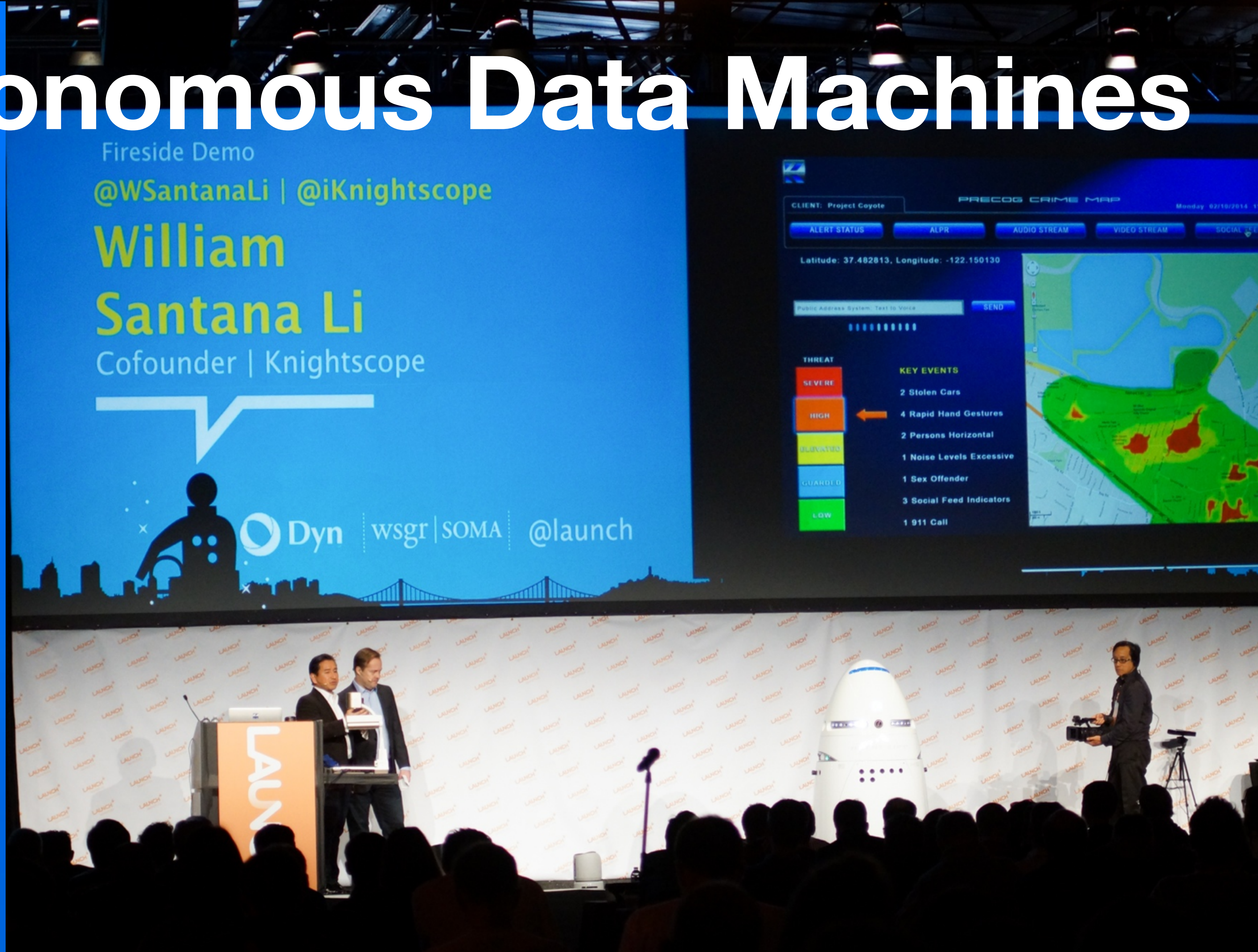
COMPANY	REVENUE	EMPLOYEES
G4S	\$11.3B	657,000
Securitas	\$9.8B	300,000





Autonomous Data Machines

- Physical Presence Deters Crime
- Sensor Array Gathers Real-Time On-Site Data
- Analyzes Machine, Geofenced Social and Existing Data
- Pushes Alerts Based on Risk Factors and Machine Learning





Autonomous Data Machine

SEE

Nighttime and Daytime 360 Degree Imaging
Optical Character Recognition
3D Mapping

HEAR

Directional Audio
Ambient Noise

FEEL

Gesture Recognition
Thermal Imaging
Temperature
Proximity

SMELL

Chemical
Radiation
Biological
Pathogens





Knightscope K5

- K5 Autonomous Data Machine is 5 feet tall, 3 feet wide and 300 lbs
- K5 utilizes a combination of laser scanning, wheel encoders, inertial measurement unit, and GPS to operate autonomously
- Uses lithium-ion batteries and electric motors for speeds up to 8 mph
- Utilizes autonomous recharging for 24/7 operations

LIDAR

Sensor Array

GPS

Inertial Measurement

Wheel Encoders

Propulsion

Battery





Machine Data

- **REAL-TIME ON-SITE** data is a key enabler to predicting crime
- Machines generate 90 TB of machine data per machine per annum
- Data in the form of video, audio and text

CLIENT: Project Coyote **MACHINE DATA FEED** **Monday 02/10/2014 15:58:35**

ALERT STATUS **ALPR** **AUDIO STREAM** **VIDEO STREAM** **CRIME MAP**

Weather: 16.4°C, 53% Humidity, Feels like 16°C, 21.4°C, 47% Humidity, Pressure 1006 mb, CO₂ 1040 ppm, 48 dB QUIET

Video Stream: 360 OCR, WEATHER, 3:05 PM, 70°, MOUNTAINVIEW CA, PRECIP: 0%, VISIBILITY: 50 MI, WIND: 10 MPH W, HUMIDITY: 53%, SUNSET: 8:30 PM, LOW: 16:54

License Plate Search: X06 QVZ, X06 QVZ

Hotlist Sync: Hotlist Modified Date Last Sync Time
FCIC 10/29/2008 9:00:27 AM 10/29/2008 3:00:37 PM
NCIC 10/29/2008 3:18:44 AM 10/29/2008 2:43:43 PM
Default 10/24/2008 12:34:02 10/29/2008 3:01:43 PM
Sexual Predators 10/28/2008 4:55:32 PM 10/29/2008 3:04:07 PM

Plate Detail: Date: 10-29-2008 3:29:47 PM, Hotlists Checked: NCIC, FCIC, Default, InCar, CMIS Results: X06 QVZ, X06 QVZ, X06 QVZ, X06 QVZ

Captured Plates: X06QVZ Front Left 10/29/2008 3:29:47 PM, LG4855 Front Left 10/29/2008 3:29:51 PM, FK020D Front Left 10/29/2008 3:30:01 PM, F02039 Front Right 10/29/2008 3:30:05 PM, LFT781 Front Left 10/29/2008 3:30:08 PM, B06F42 Front Left 10/29/2008 3:30:08 PM

Alerts: X06QVZ Front Left 10/29/2008 3:29:47 PM

AIR QUALITY: Detection 0% Elements Found, Chemical, Biological, Radiation

Timeline: 0 30 60 90 120 150 180 210 240 270 300 330 360



Social Data

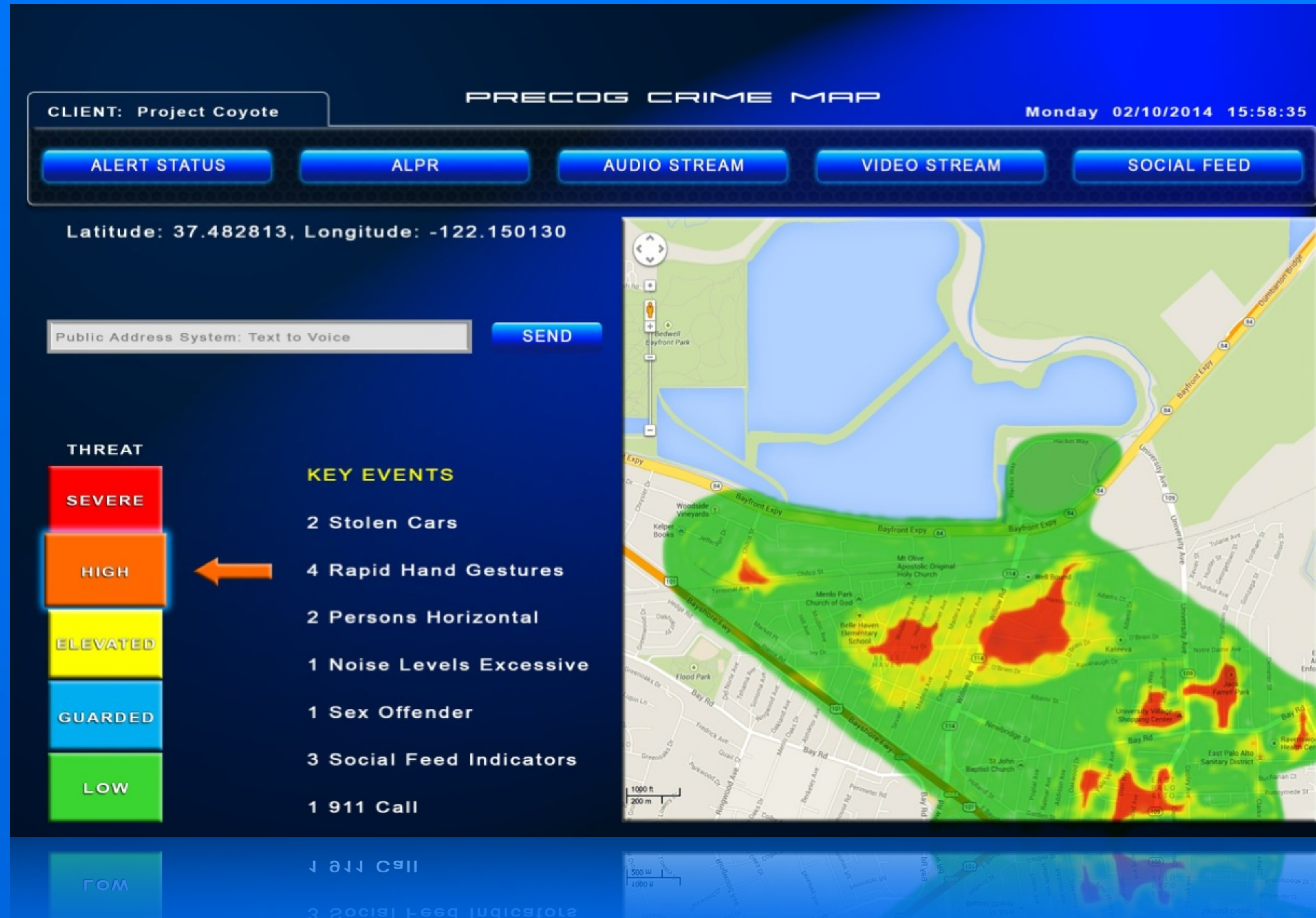
- Monitor geofenced publicly available social feeds for key words and context
- Additional real-time data supplements analysis of area of being monitored
- Publicly available data from Twitter, YouTube, Flickr, Instagram, Picasa





Precog Crime Map

- Analyze 120+ publicly available existing data sets for any primary, secondary or tertiary impacts on crime
- Generate a dynamic crime map from analysis of real-time on-site machine data, social feeds and existing data
- Alerts flagged for humans to conduct strategic work

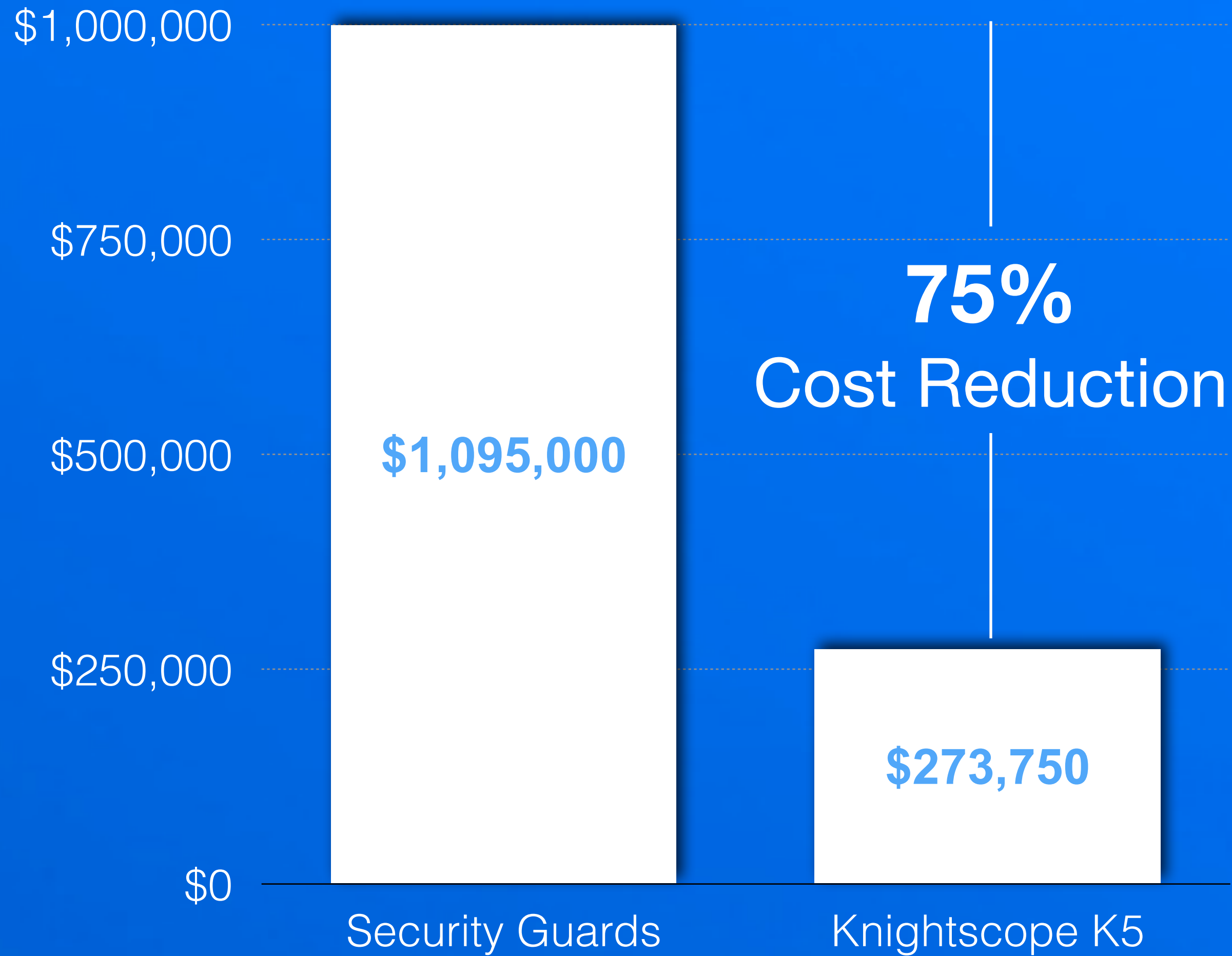




Machine-as-a-Service

MaaS

24 / 7 Operation of Single Post over 5 Years



\$25
per hour per guard
vs.
\$6.25
per hour per machine



Visibility



WINNER

2013 Plug and Play Winter Expo
2014 March HOTTEST Company



WINNER

2013 Sunnyvale Startup of the Year

Forbes

Bloomberg



The New York Times



TIME



VentureBeat

Newsweek

The Mercury News
The Newspaper of Silicon Valley
MercuryNews.com

Mashable

PCWorld



SILICON VALLEY / SAN JOSE
Business JOURNAL



Strong Team

STACY STEPHENS, VP Marketing & Sales

Former Dallas-area law enforcement officer and seasoned entrepreneur; named Government Technology magazine's Top 25 Doers, Dreamers & Drivers for commitment to advancing law enforcement technology



DR. ARNE STOSCHEK, VP Engineering

Autonomous robotic vehicle builds for winning entries in DARPA Grand / Urban challenges; Stanford research fellow on statistical data analysis; former Volkswagen/Audi and Better Place executive

AARON LEHNHARDT, Chief Designer

20+ years in two- and three-dimensional product and industrial design; expert in digital design and Alias 3D instructor at College for Creative Studies; former senior designer at Ford Motor Company



MERCEDES SORIA, Director Software Engineering

Software developer with experience in large-scale deployment of solutions in the enterprise space; former Deloitte and Gibson Guitars; certified Project Management Professional

DOMINIC VILLA, Platform Engineer

Experience in mechanical design including integration of battery packs, motors and controllers; founder of the Formula SAE electric program team at Santa Clara University



PHILLIP WONG, Software Engineer

Developed an integrated robotic arm with object detection in a defined area and grasping specific items; tutored students in assembly language at University of California, Santa Cruz

LUIS BILL, Robotics Engineer

NASA and Jet Propulsion Laboratory research associate; developed GUI for asteroid retrieval mission; robot app developer; developed water detection algorithm for airboats at the Robotics Institute at Carnegie Mellon University



SURAJ NARAYANA, Data Engineer

Worked on data mining social feeds, finger print recognition systems, symbol recognition of pen strokes, robot path planning and race car simulator technology; University of California, Riverside



We Are Hiring!

APPLY

www.knightscope.com

www.angel.co/knightscope

Data Scientist

Full Time · Silicon Valley
\$90k - \$120k · 0.1 - 0.5%

Electrical Engineer

Full Time · Silicon Valley
\$60k - \$90k · 0.1 - 0.4%

Robotics Engineer

Full Time · Silicon Valley
\$60k - \$90k · 0.1 - 0.4%

Production Engineer

Full Time · Silicon Valley
\$60k - \$90k · 0.1 - 0.4%

Computer Vision Engineer

Full Time · Silicon Valley
\$60k - \$90k · 0.1 - 0.4%

QA Engineer

Full Time · Silicon Valley
\$60k - \$90k · 0.1 - 0.4%

[Browse Candidates](#)

[Edit Jobs](#)

KNIGHTSCOPE FILMS





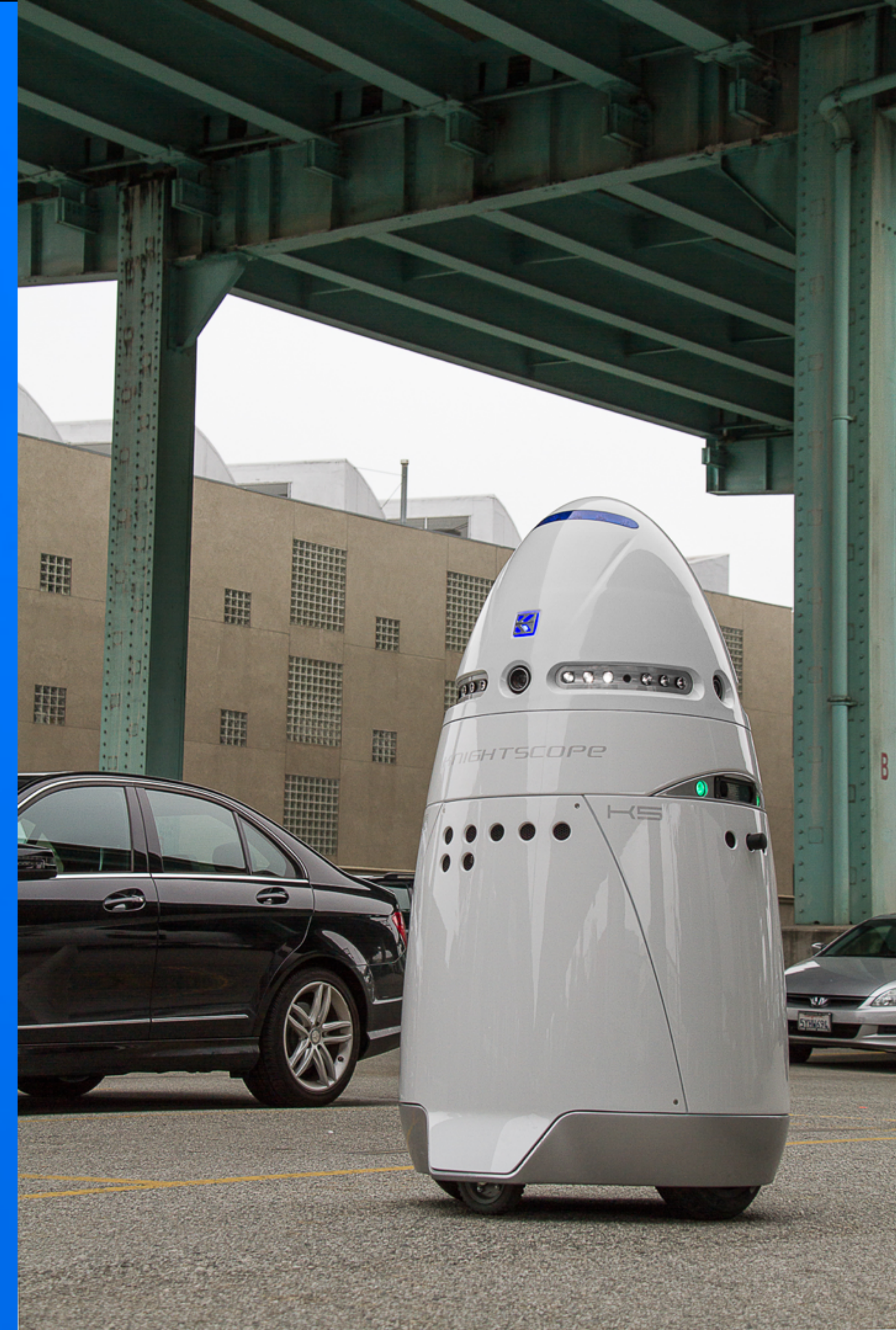
Funding

FUNDING

- Completed \$1.5M oversubscribed seed round
- \$5M Series A on track to be oversubscribed

USE OF PROCEEDS

- Complete v3.0 release
- Ruggedize scaleable version
- Transition from beta testing to production





Gathering Data Autonomously Since 2013

Knightscope, Inc.
1070 Terra Bella Avenue
Mountain View, CA 94043
www.knightscope.com

William Santana Li
Chairman and CEO
WSL@knightscope.com
[@WSantanaLi](https://twitter.com/WSantanaLi)