



Digital Cities Dell Technologies Unique Approach

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DELL EMC Romania

DELLEMC

The fifth utility: the digital infrastructure



WATER



ELECTRICITY



GAS



WASTE



DIGITAL

Imagine a world where cities



Optimize traffic flows in real-time

The city of Bellevue installed adaptive traffic lights and saved drivers **\$9 million** annually by reducing traffic times more than **36%** during peak traffic times.



Improve city functions

New York city used predictive analytics to increase building inspector efficiency.. Without analytics, only 13% of inspections found dire conditions, but with analytics, more than **70%** of inspections resulted in a vacate order.



Reduce energy consumption

Eight Spanish cities reduced their electricity consumption by **64%** and saved over **4,300 tonnes** of CO2 in 2014, thanks to efficient street lighting systems and technologies that both cut costs and benefit the environment.



Detect a drop in air & water quality

Chicago's Array of Things is a city-wide sensor network that measures temperature, barometric pressure, carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, pedestrian and vehicle traffic, and surface temperature.



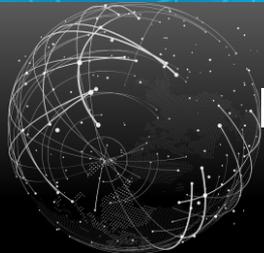
Use predictive policing

The Los Angeles Police Department used Predictive Policing to reduce crime rates and save more than **\$9 million** a year.



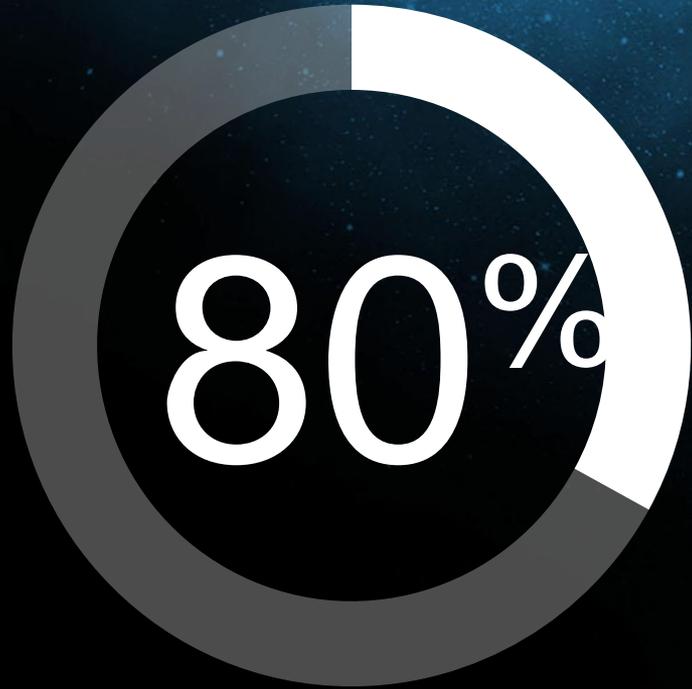
Automate Waste Management

Seoul used smart trash cans with real-time monitoring to cut waste collection costs by **83%** and increased the recycling diversion rate to **46%**



Interwoven in the fabric of our lives
Continuously adapting

Data has the power to disrupt entire industries



believe that by 2020 their industry
**will be disrupted by
digital trends**

Source: HBR Competing in 2020

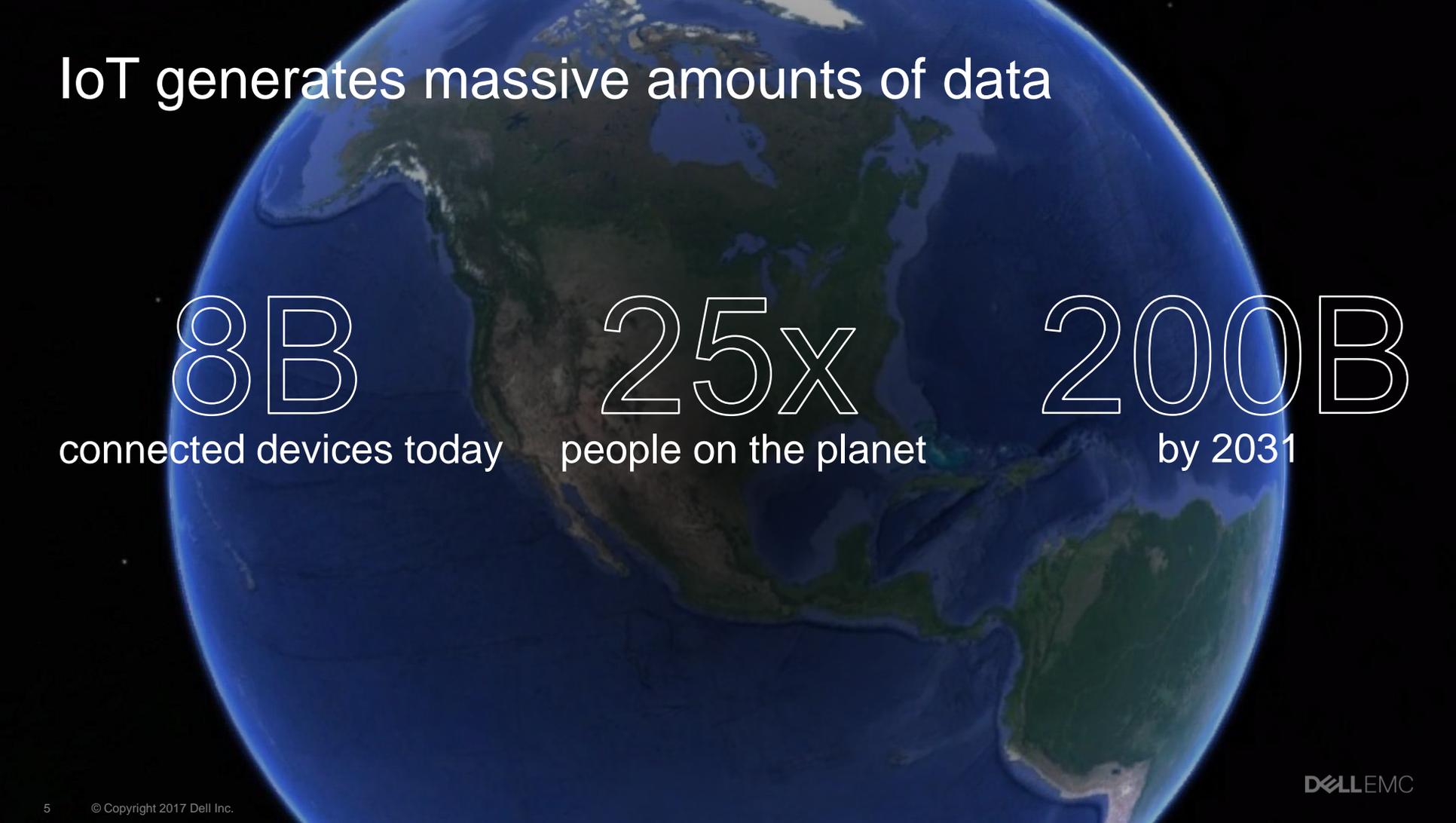
“Digital is the main reason just over half of the
companies on the Fortune 500 have **disappeared**
since the year 2000.”

— *Pierre Nanterme, CEO of Accenture*

“By 2050 more than 70% of the world population will live in cities and 70%
of global GDP is generated by cities”

— *Source: European Investment Bank*

IoT generates massive amounts of data



8B

connected devices today

25x

people on the planet

200B

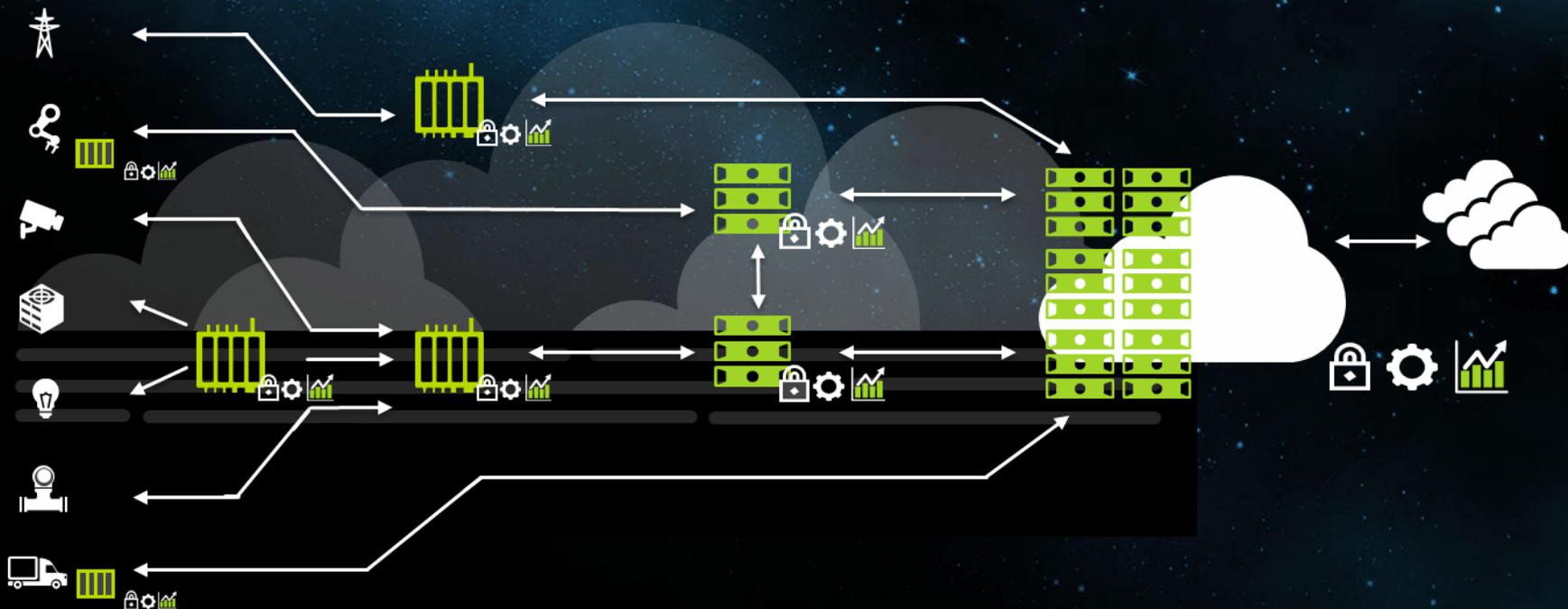
by 2031

Digital Cities require a flexible IT infrastructure

EDGE/FIELD

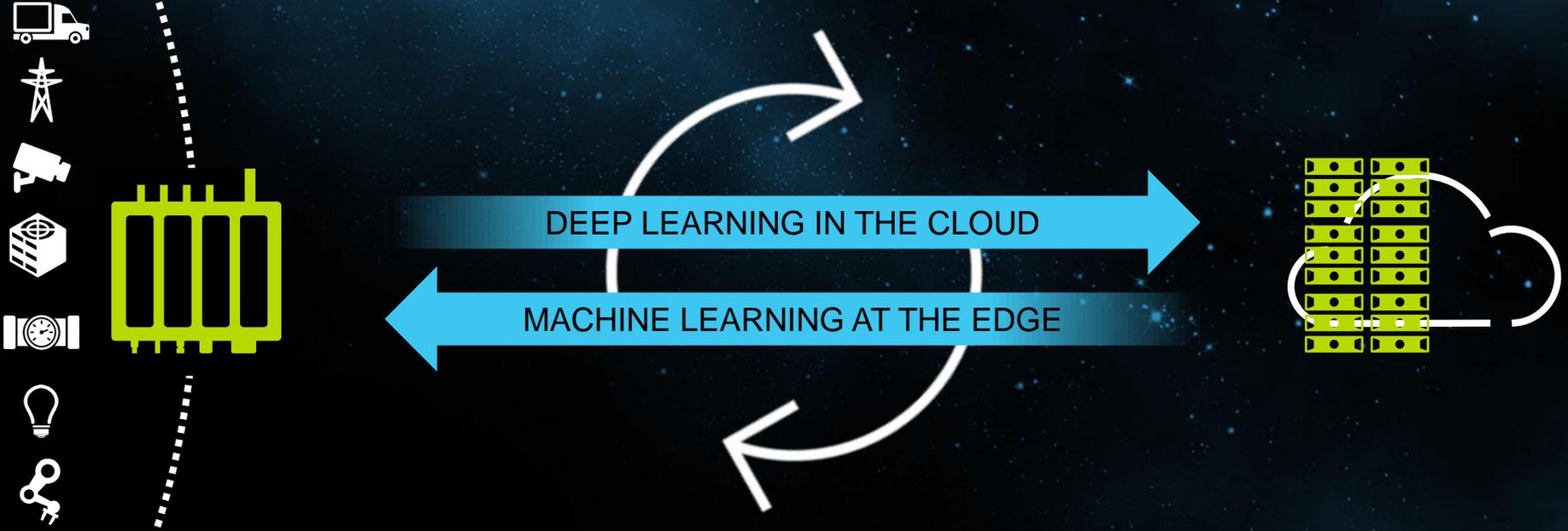
FOG

CLOUD



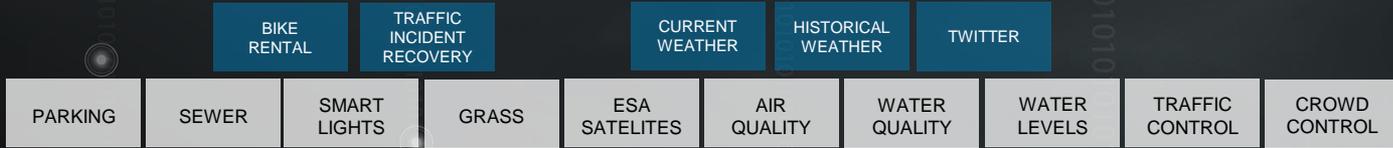
SECURITY | MANAGEABILITY | ANALYTICS

Technologies enabling distributed architectures

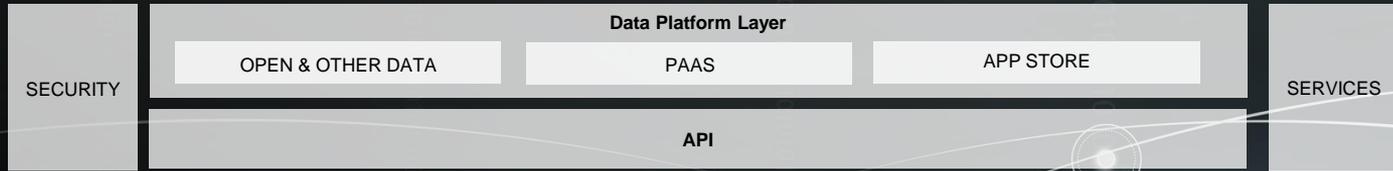


DIGITAL CITY PLATFORMS

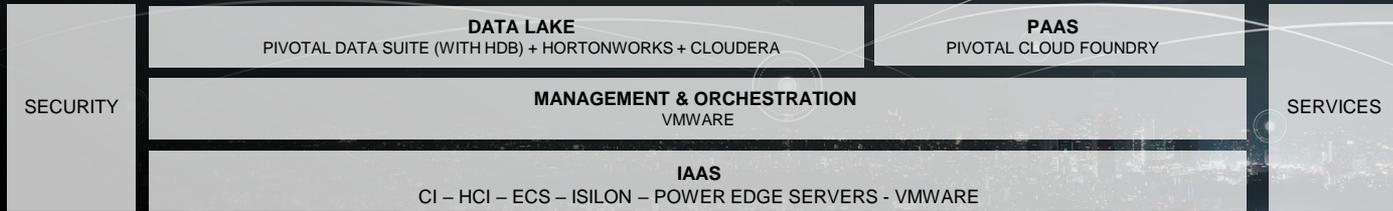
User Experience Layer



Data & Application Layer



Data Infrastructure Layer



Data Acquisition Layer



A collective force of innovative capabilities

DELL Technologies



Innovative devices, services and solutions designed for the way people work (and play).

DELL EMC

Transforming the data center with industry-leading servers, storage and converged infrastructure

Pivotal.

Leading intersection of Big data, PaaS and agile development leveraging data on one cloud-independent platform

RSA

Premier provider of security, risk and compliance solutions solving your most complex challenges

SecureWorks®

Elite and trusted intelligence that strengthens security and reduces risk in a dynamic landscape

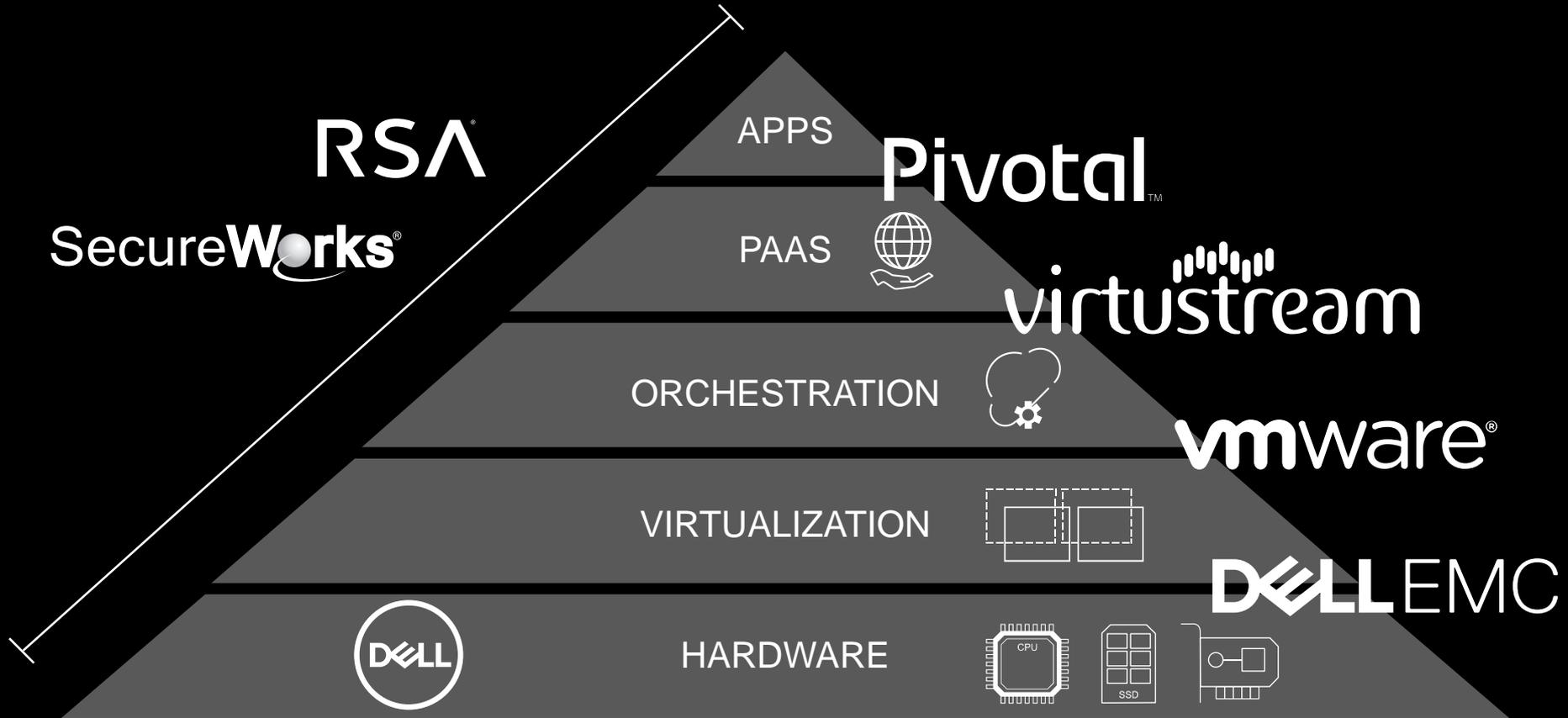
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Leading enterprise-class cloud software and solution provider

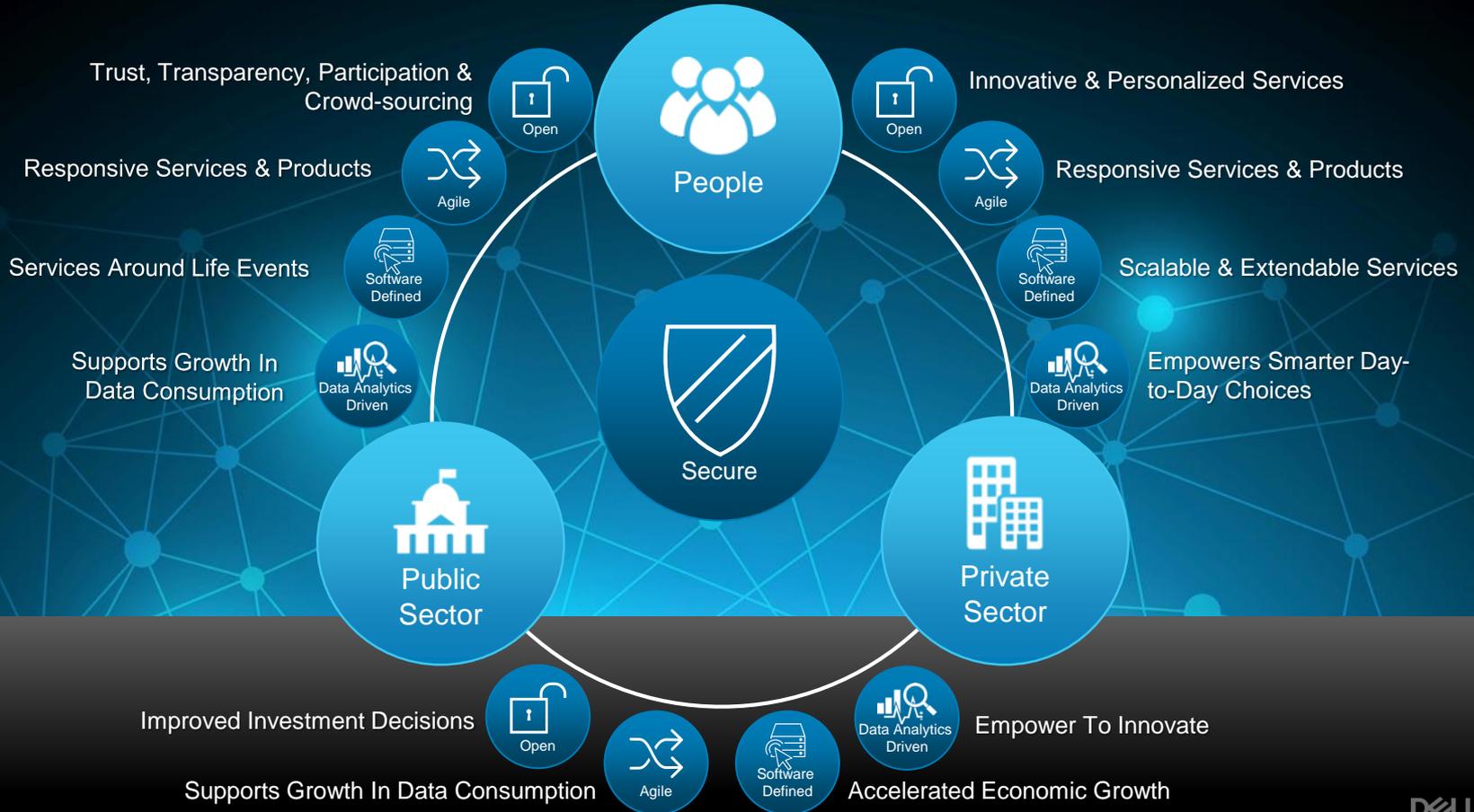
vmware®

Most trusted virtualization solution for desktop, data center and applications

Technology Leadership



Partnerships



City of Virginia Beach

Flood Sensor Network

By modernizing its technology, the City of Virginia Beach has built the foundation to enhance operational efficiencies and provide new services, **including a new integrated public safety system as well as a flood sensor network designed to detect and predict flooding around roadways and bridges.**

“Our mission to deliver a dynamic and evolving set of core services and innovative technologies that the citizens demand is critical. Dell EMC is helping the City of Virginia Beach achieve this mission by enabling us to develop and implement the best technology solutions to meet those demands.”

Matthew Arvay, former CIO, City of Virginia Beach, VA

City of Zhejiang, China

Intelligent Traffic Cloud

Problem:

Zhejiang Ministry of Traffic bears a number of responsibilities. An important one is to optimize the layout of roads, waterways, aviation routes and other traffic modes in order to effectively form a convenient, smooth, efficient, safe and integrated transport system. Another significant function is to promote equal access to public transport services in both urban and rural areas by giving priority to the development of public transport in rural area, and accelerating the integration of regional and urban-rural traffic.

Solution:

Implementation of an **Intelligent Traffic Cloud**, with high availability and protection from data loss. Edge + Centre Cloud solution involves Dell EMC, VMware and Pivotal products, make full use of federation capability on cloud and big data.

Results:

Secure private cloud for improved transportation services.

City of Rio, Brazil

Business Data Lake for City-wide Analytics

Problem:

The city needs to analyze greater data volumes, integration of a greater variety of data sources and the ability to handle high velocity data in real time to improve quality of life for city residents and to improve government operations.

Solution:

Dell Technologies Business Data Lake with Pivotal, VMware, RSA and Dell EMC. The **end-to-end solution meets the city-wide analytics, storage, and computing needs, providing a platform-as-a-service** that exposes data feeds & APIs for Internet-of-Things applications within a digital city context.

Results:

Improved transportation for the citizens, audit capabilities for the city, and reduction in public health risks such a improved dengue fever outbreak management. Makes full use of the edge capability, storage and computing.