



IRI 2016 MEMBER SUMMIT  
OCTOBER 16-19, 2016 JW MARRIOTT, CHICAGO, IL

# DIGITALIZATION AND R&D MANAGEMENT

## DRIVING A DIGITAL TRANSFORMATION: INNOVATION AND DATA

EDUARDO CONRADO, EXECUTIVE VICE PRESIDENT, STRATEGY &  
INNOVATION OFFICE  
PAUL STEINBERG, CHIEF TECHNOLOGY OFFICER  
MOTOROLA SOLUTIONS



Creating Innovation  
Leadership Solutions

# DRIVING A DIGITAL TRANSFORMATION: INNOVATION AND DATA

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**OUR PURPOSE:  
HELPING PEOPLE  
BE THEIR BEST IN THE  
MOMENTS THAT MATTER**

# SAFER CITIES

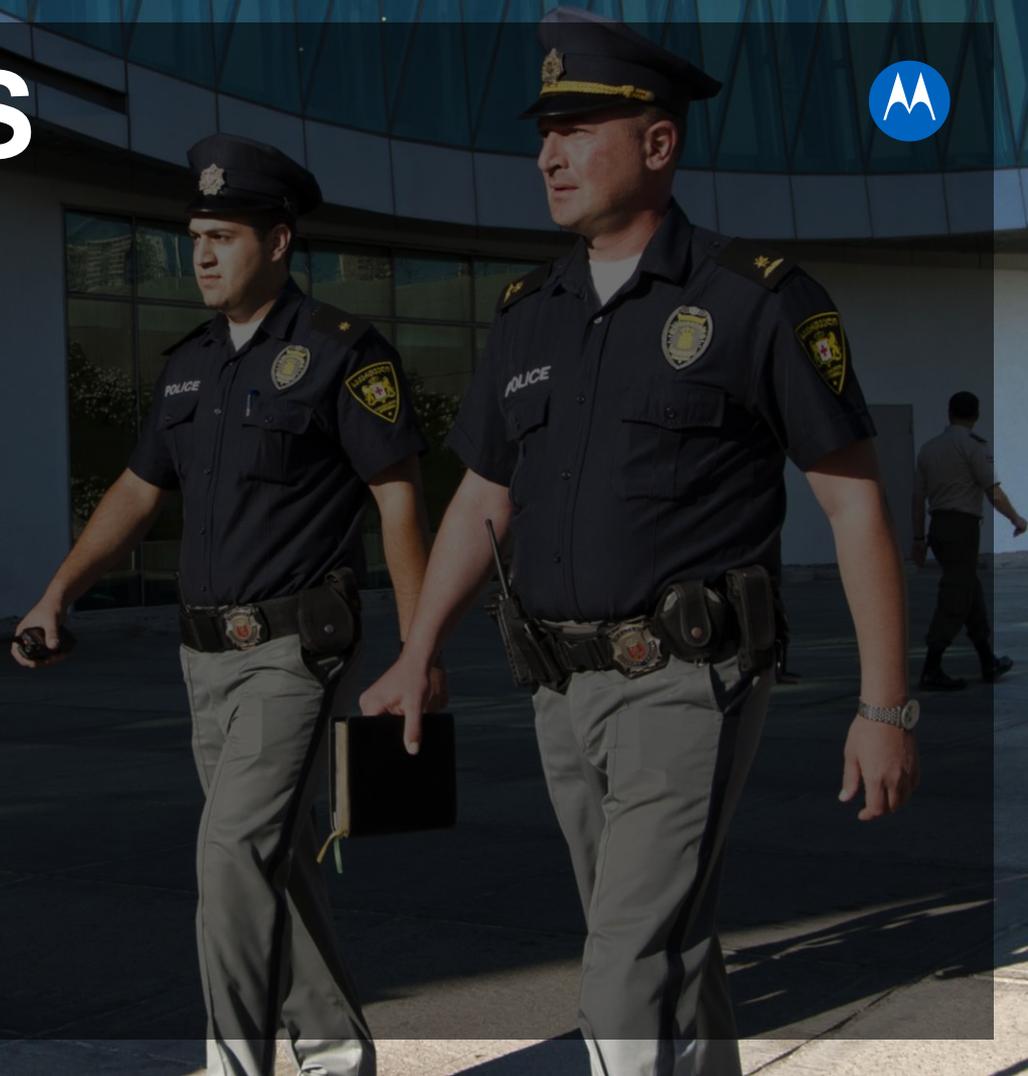
POLICE

FIRE

EMS

GOVERNMENT

PUBLIC SERVICES



# STRONGER BUSINESSES



UTILITIES

MINING, OIL & GAS

MANUFACTURING

HOSPITALITY & RETAIL

TRANSPORTATION & LOGISTICS





**SALES IN 100+ COUNTRIES**

**100K+ CUSTOMERS**

**13K EMPLOYEES IN 60 COUNTRIES**

**12K MISSION-CRITICAL NETWORKS**

# OUR WORLD IS CHANGING



**CONNECTED EVERYTHING**

**REAL-TIME**

**NEW MODALITIES**

**CONTEXT-AWARE**

**COGNITIVE COMPUTING**

# CRITICAL COMMUNICATIONS

# CRITICAL INTELLIGENCE



## CONNECTING PEOPLE

Voice-Centric



## CONNECTED EVERYTHING

Data-Centric

## SITUATIONAL AWARENESS

Command and Control



## CONTEXTUAL AWARENESS

Intelligent Edge

## PHYSICAL RESOURCES

Dedicated Network / Computing / Storage



## VIRTUAL RESOURCES

Shared Networks / Cloud / Data

## PRODUCTS / DEVICES

Hardware-Centric



## INTELLIGENT ECOSYSTEMS

Software-Centric

## CRITICAL COMMUNICATIONS

React & Respond



## CRITICAL INTELLIGENCE

Predict & Prevent



**USER EXPERIENCE**

**IT'S MORE THAN THE TECHNOLOGY**

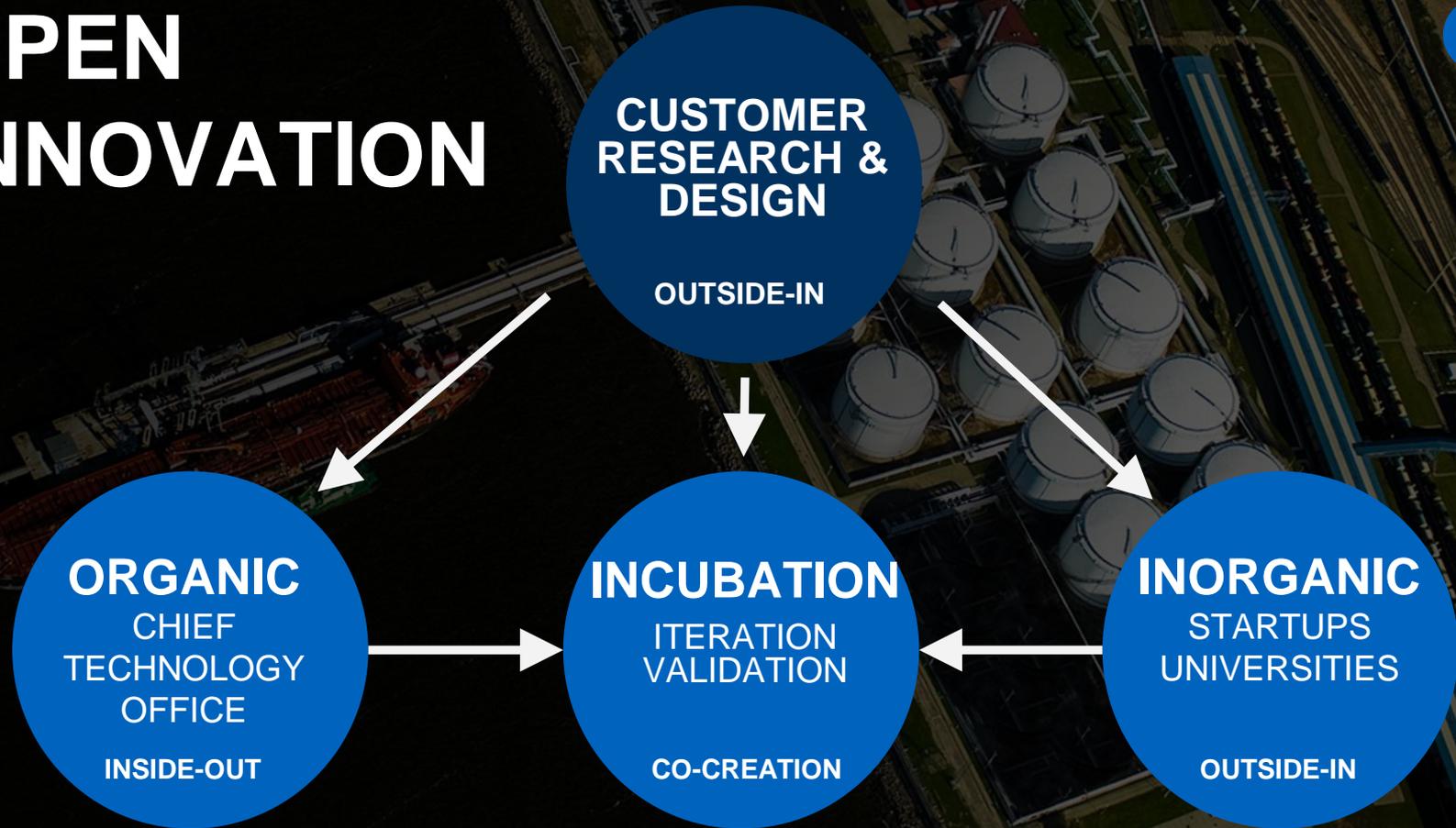
**ARCHITECTURE**

**SECURITY**

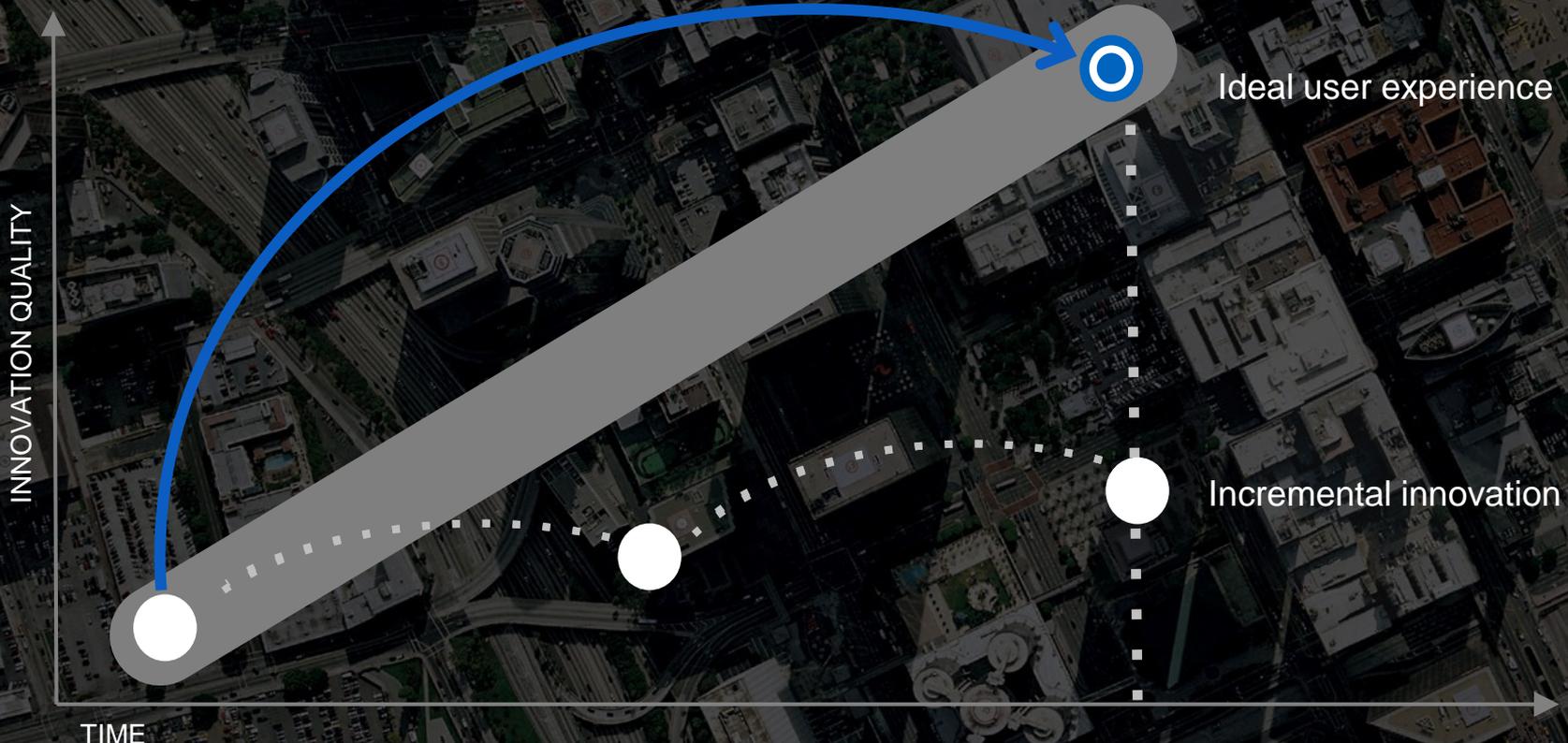
**TECHNOLOGY**

**DATA ANALYTICS**

# OPEN INNOVATION



# FROM INCREMENTAL TO IDEAL



# HOW WE DESIGN



**PURPOSE-BUILT  
HIGH-VELOCITY HUMAN FACTORS**

# DESIGN THINKING





**USER EXPERIENCE**

**IT'S MORE THAN THE TECHNOLOGY**

**ARCHITECTURE**

**SECURITY**

**TECHNOLOGY**

**DATA ANALYTICS**

# FOCUS ON ANALYTIC VALUE



The outcomes created

- Design thinking

USE CASES

## Analytic Value

The tools to  
extract value

- Media
- Data

ANALYTICS

DATA

The raw material  
for analytics

- Collect
- Integrate
- Secure
- Manage

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# DIMENSIONS OF DATA



**STRUCTURED VS. UNSTRUCTURED**

**REAL-TIME VS. HISTORICAL**

**SMALL VS. BIG**

**AT REST VS. IN MOTION**

**IN THE CLOUD VS. AT THE EDGE**

# DATA SOURCES



APPLICATIONS AND VALUE-ADDED SERVICES

Third-Party Data

Public Data

Customer Data

Personal Data

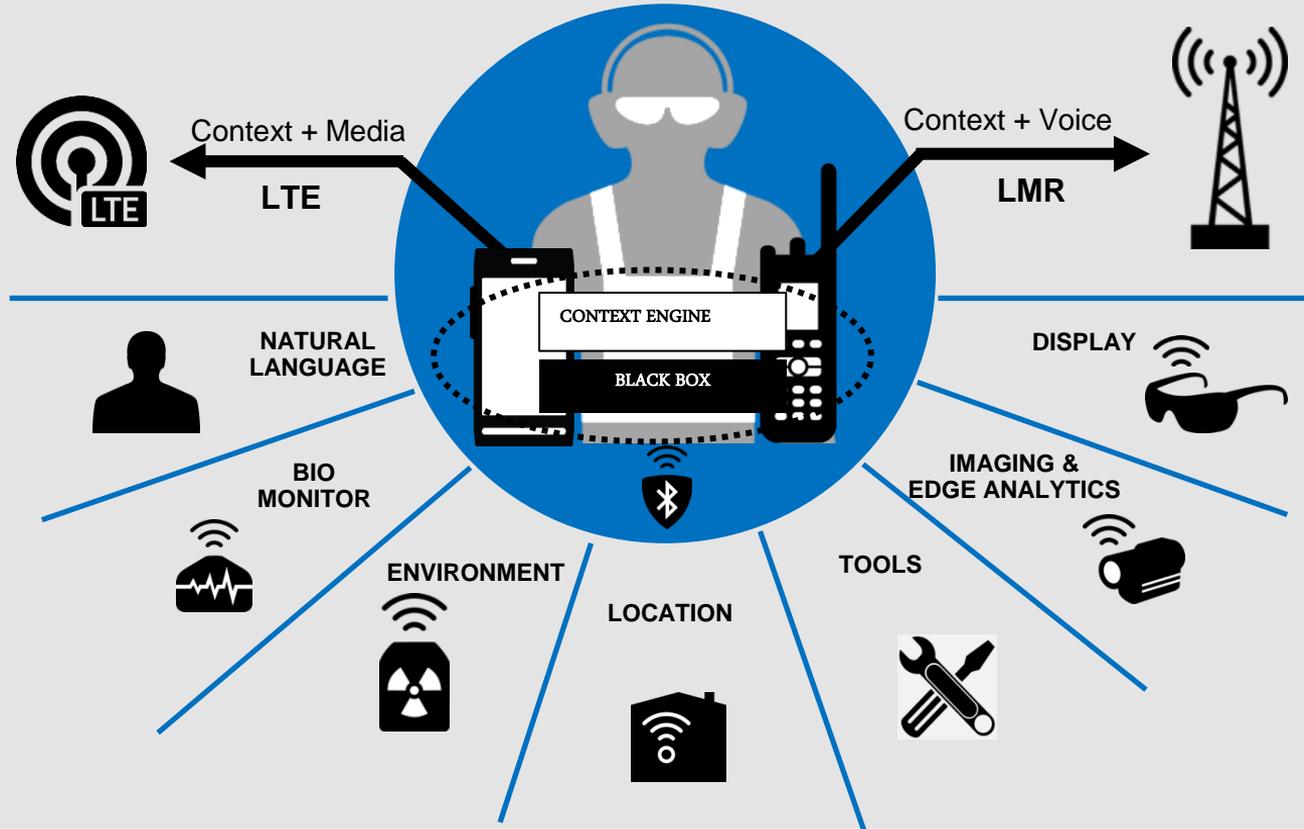
Network Data

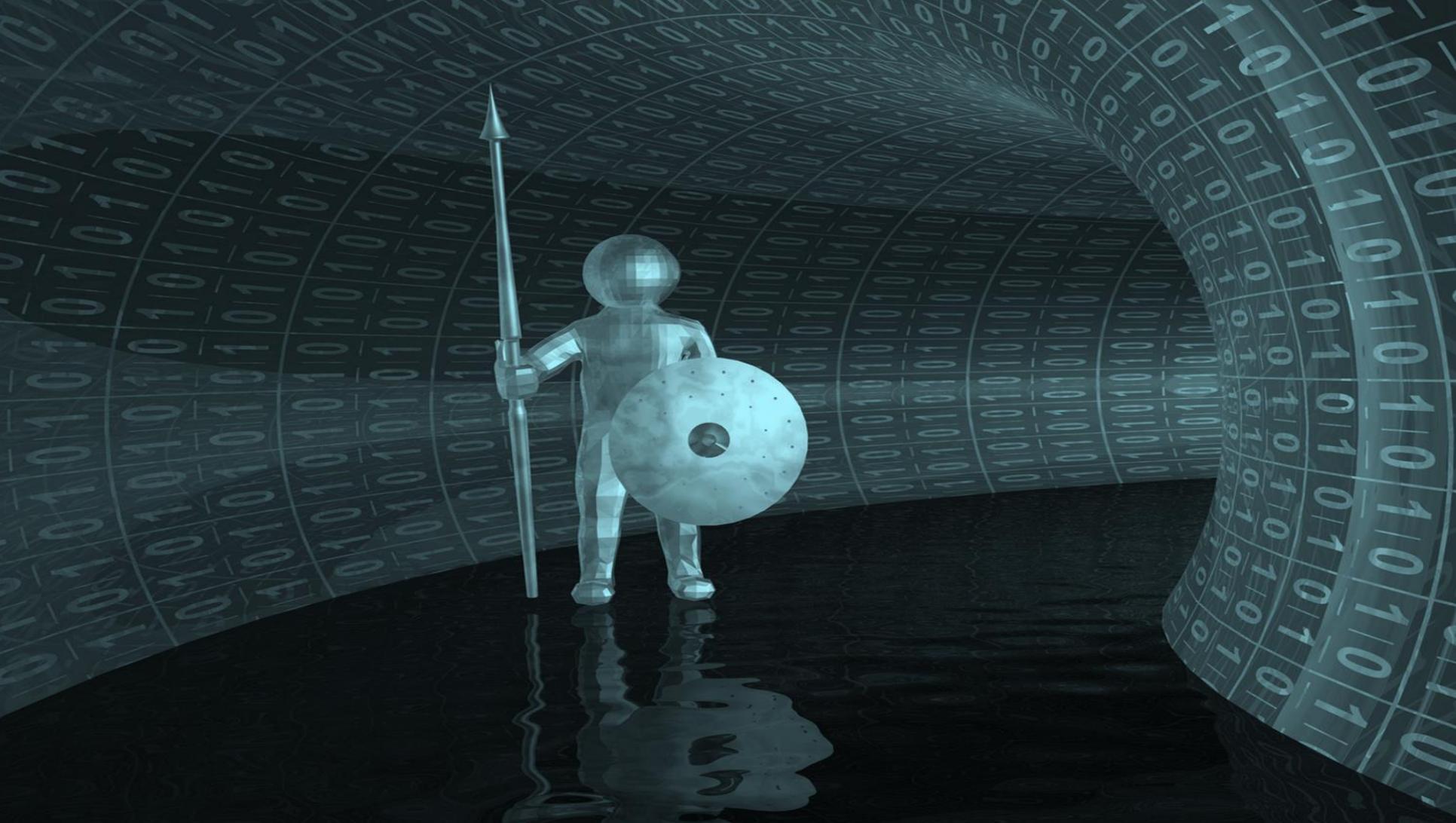
DATA PLATFORM

ANALYTICS  
PLATFORM



# PERSONAL DATA SOURCES





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# ANALYTICS DERIVE ACTIONABLE KNOWLEDGE FROM DATA



## UNSTRUCTURED ANALYTICS



Identify and count objects

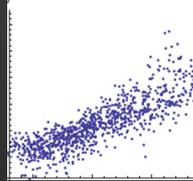


Turn speech into text and recognize sounds



Recognize faces and read license plates

## STRUCTURED ANALYTICS



Discover trends in data



Learn and predict



Trigger alerts and recommend courses of action

# ANALYTICS STACK

Analytics platform

Data platform

Complex

## ARTIFICIAL INTELLIGENCE

Facial recognition, natural language, deep learning

## MACHINE LEARNING

Modeling, prediction, anomaly detection

## BASIC ANALYTICS

Data visualization, search and query

## DATA INTEGRATION & SHARING

Data preparation, quality assurance, governance

## DATA INFRASTRUCTURE

Cluster management, infrastructure security

Foundational

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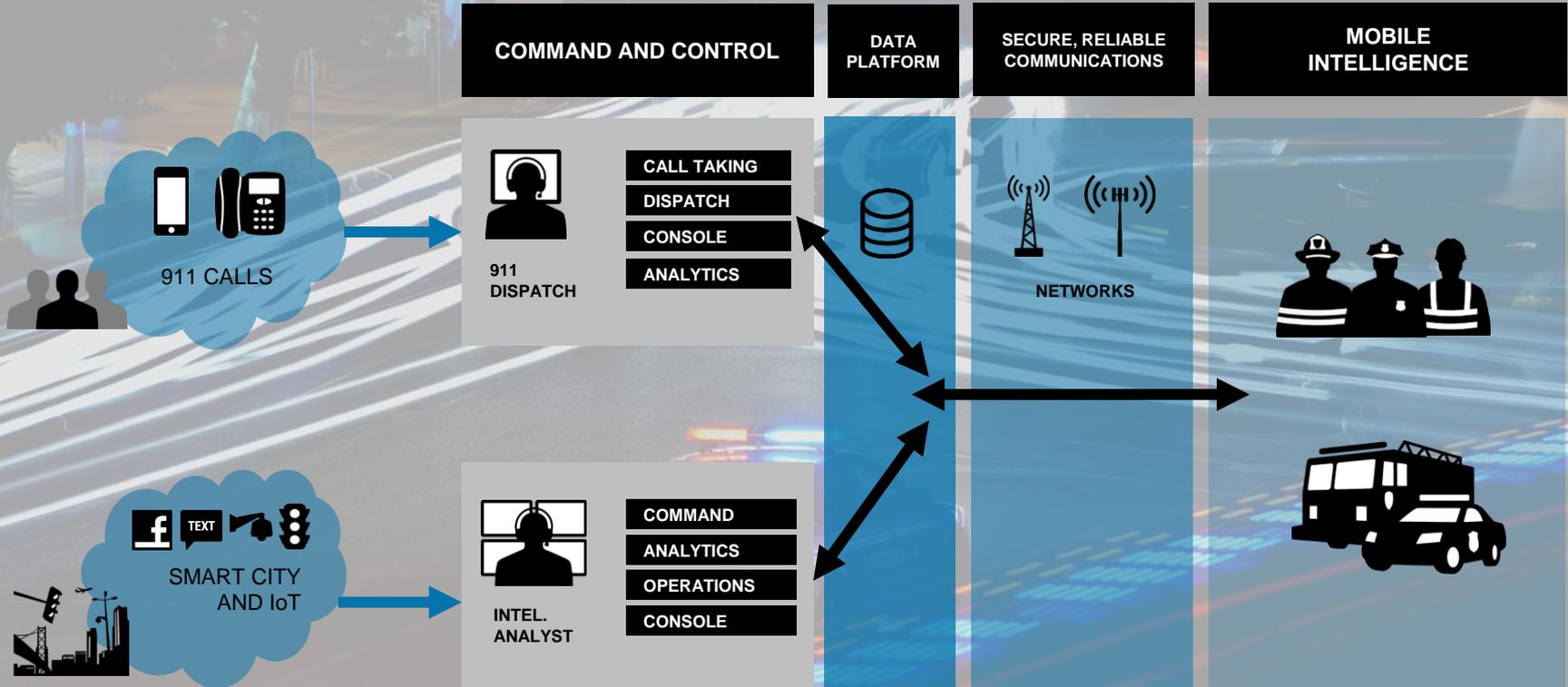
**ANALYTICS**

**DATA**

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# USE CASE LANDSCAPE



# USE CASE: USAGE DATA



**DEVICE DATA**

**CLICK-STREAM**

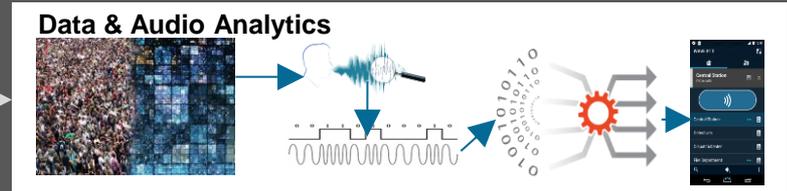
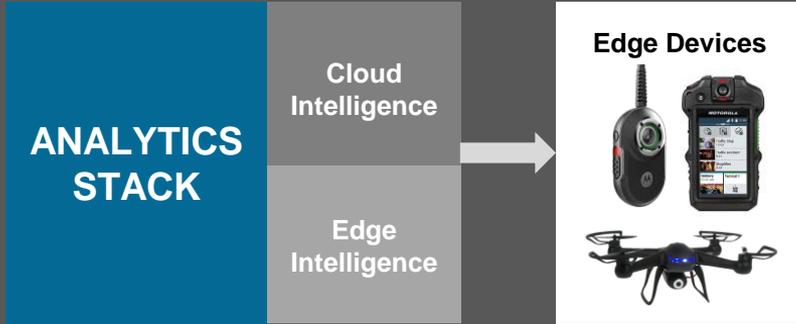
**FUSE WITH CONTEXT**

**EMERGENT WORKFLOWS**

**CUSTOMER INTIMACY**

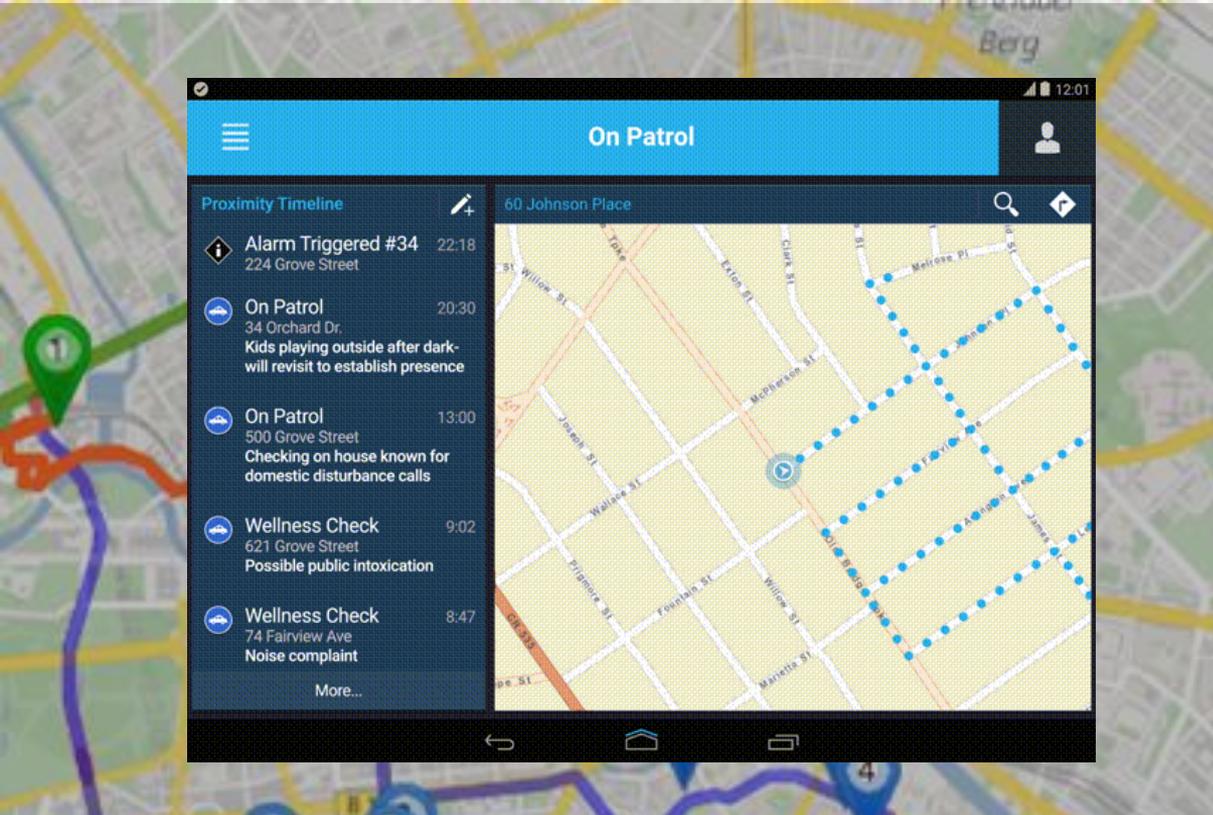


# USE CASE: MEDIA ANALYTICS





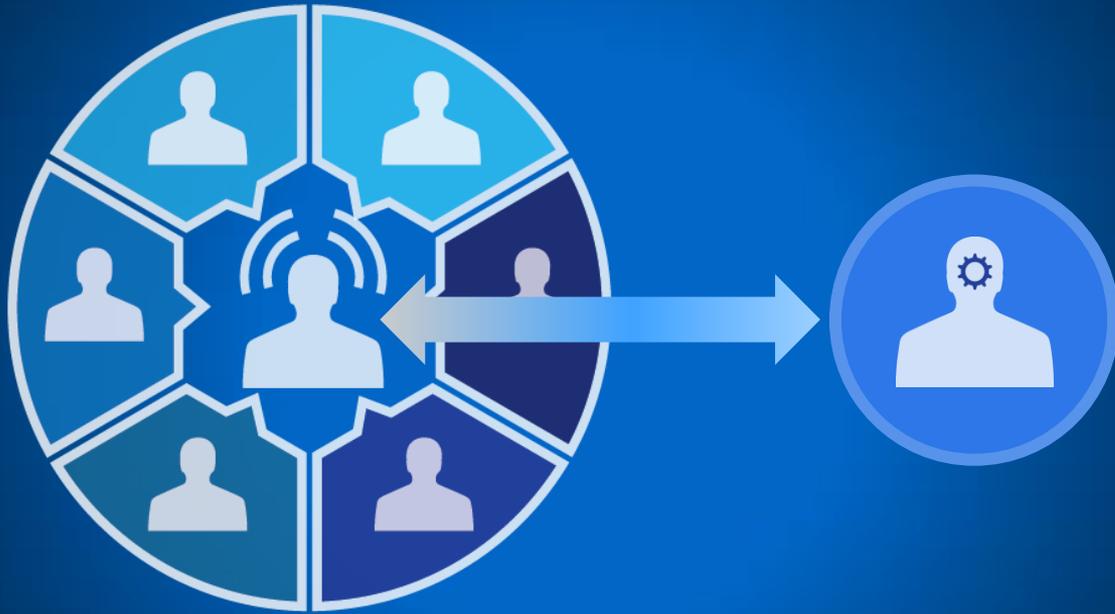
# USE CASE: WORKFORCE OPTIMIZATION



**NOW:**  
Beat-based policing

**NEXT:**  
Intelligent  
“breadcrumb” patrol  
routes

# USE CASE: INTELLIGENT BOT



**NOW:**

Human talk groups

**NEXT:**

Intelligent bots listen  
and respond



**USER EXPERIENCE**

**IT'S MORE THAN THE TECHNOLOGY**

**ARCHITECTURE**

**SECURITY**

**TECHNOLOGY**

**DATA ANALYTICS**

An aerial night view of a city, likely Chicago, featuring a river (the Chicago River) flowing through the center. The scene is illuminated by city lights, with numerous skyscrapers and buildings visible. The sky is dark, and the water reflects the lights from the surrounding urban environment.

# THANK YOU



**MOTOROLA SOLUTIONS**