HOW ARE YOU MANAGING THE GROWING WAVE OF DIGITAL EVIDENCE?

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AGENDA

About NICE

Trends and Challenges

Boston PD

Oakland PD

Concepts of an Encompassing Solution

Discussion
ABOUT NICE
A NASDAQ-listed company

25,000 CUSTOMERS
>80% FORTUNE 100
3,600 EMPLOYEES
SINCE 1986

$1B+ REVENUES
150+ COUNTRIES
35+ LOCATIONS
NASDAQ NICE
The market leader in audio capture & incident management systems for Public Safety

Global Market Leader

5,000 world-wide installations

Trusted by the largest agencies
What We Are About: Extracting Insight From Big Data
A wide portfolio of related solutions

INCIDENT RECONSTRUCTION & MANAGEMENT
VIDEO AND SITUATION MANAGEMENT
911 & RADIO AUDIO RECORDING
CUSTOMER INTERACTION MANAGEMENT
CRIMINAL AND SOCIAL MEDIA INTELLIGENCE
FINANCIAL CRIME AND COMPLIANCE

COLLECT
ANALYZE
MANAGE
TRENDS AND CHALLENGES

<table>
<thead>
<tr>
<th>Input: Growing Wave of Incident Data and Media</th>
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<tr>
<td>▪ Body Worn Cameras</td>
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<td>▪ 911 audio</td>
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<td>▪ Surveillance video cameras</td>
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<tr>
<td>▪ Crime Scene Recordings</td>
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<td>▪ Patrol Radio Recordings</td>
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<td>▪ Suspect Interview Recordings</td>
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<td>▪ Social Media: Facebook, Twitter</td>
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<th>Time Consuming Processes and Procedures</th>
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<td>▪ Manual process to piece together evidence</td>
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<td>▪ Critical evidence may go un-used/not accessible</td>
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<td>▪ Ad-hoc processes with physical media for record requests</td>
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<td>▪ Cumbersome sharing of case info with the prosecution and the public</td>
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<td>▪ Inability to extract correlations and see patterns</td>
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“...we have inadequate, ad-hoc and time consuming processes for handling requests for video and audio evidence for prosecutors, FOIA requests and investigators. Our DA/prosecutor is unhappy with the time it takes to process physical paper requests and physical delivery of DVD’s.”

“...we have access to over 8,000 cameras to help with mid-incident response but only ~1,000 are under direct city control. We only have a few hundred of those cameras geo-located on a map.”

“...our investigators don’t have the tools to locate potentially relevant content and when they do find it, it’s a manual time consuming process to collect a DVD. I could see real value in a platform that brought all that content together in one place.”

IT Director, Major Metro PD, Nov, 2014
Challenges With Current Digital Evidence Collection & Management Process

Digital Evidence Distributed Across Multiple Siloes

Evidence Material Owned By Multiple Parties:
- Public And Private
- Limited tools to rapidly locate, manage, analyze & share
- Potential loss of access to valuable evidence material
- Time delays in gathering evidence can hamper investigations

Lack of Analytics and other Tools to Help Investigators Find Relevant Content
- Limited analysis tools available to aid investigation
- Limited tools to provide Geo-spatial and temporal understanding

Lack Of Control Over The Collection and Sharing Of Evidence
- Little to no control on format and timing of evidence delivery
- Limited tools to process requests and share digital evidence
- What details were shared with whom, when, etc.
Everything gets stored in data silos (if at all)
Time consuming manual process to piece together evidence for a case
Cumbersome manual process for sharing case info with the prosecution
Time consuming to meet Freedom of Information Act requests
Affecting the entire law enforcement process

- Not all raw evidence used
- Not all correlations extracted
- Delayed responses and inefficient processes
- Poor data presentation
DIGITAL EVIDENCE MANAGEMENT AT BOSTON PD
911 Incident Reproduction

- 5500 requests per year
- Over 6500 CDs used per year
  - Many cases have 3-6 CD’s each just for audio recordings…
- Getting a data overload
  - 7TB of voice call data
  - Archiving 5 years of Data
Existing Deficiencies

- High CD failure rate
- No Automated distribution (DropBox, Email, Web)
- No Watermark or Timestamp
- No Automated Chain of Custody
- 3 separate recording facilities for 911 & radio, silos for surveillance video
- Time consuming data collection:
  - Officers need to request audio, video and MDT history data (CAD) from three different contacts
- Each case becomes monolithic and there is un-tapped information in each case which could help solve another case
Desired Capabilities

- Become more storage efficient – eliminate CD’s and move to drop storage or web portal

- Analytics powered search:
  - Find white van in video and in 911 calls
  - On all digital evidence to uncover new insights

- Centralized location for all evidence to prosecutor

- Verifiable chain of custody and source of content

- Provide controlled access for 450 detectives to review video cameras
How to Stay Afloat in a Sea of Digital Evidence

Gary Chan
Technology Manager
Oakland Police Department
Technology Revolutionized Traditional Evidence Collection Methods

Traditional Hardware

Social Media, Cloud, Smartphones, Storage Media, etc.
Sources of Digital Evidence

- Law enforcement sources
  - 911 phone calls & Radio recordings
  - Computer Aided Dispatch data
  - Messaging traffic between Mobile Data Terminals
  - Body Worn Cameras
  - Dash-Mounted Cameras videos
  - Suspects/Victims/Witnesses Interview Audios & Videos
  - License Plates Readers (LPR’s)
  - Crime scene photos and videos
  - Automated Vehicle Locators data
  - Red-light camera data
  - Gun shot detection system
- Cloud storage (e.g., Dropbox, Google Drive, Microsoft One Drive/365, Yahoo Flickr, etc.)
- Global Positioning System (GPS)
- Mobile carrier information (e.g., voice and data)
- Vehicle Computer Systems (e.g., black boxes)
- Third-party Closed Circuit Television & Surveillance camera footage
Sources of Digital Evidence

- Hardware (e.g., Servers, Storage Area Networks, Desktops, Laptops, VDI’s, etc.)
- Internet
  - Social media apps & tools
  - Browser search cache
  - Email messages, calendars, contact lists, etc.
  - Internet Service Provider connectivity data
  - VoIP calls information
- Mobile devices (phones, tablets, etc.)
  - SIM Chips
  - Call logs
  - GPS maps
  - Photo geotagging
  - apps with metadata
  - Email messages
  - Calendars
  - Contact lists
  - Hardware (e.g., flashlight) uses
Challenges with Current Tools & Processes

- Never have enough resources such as technicians, training funds, detectives
  - Information goes undetected or collected
  - Statute of limitations
- Delayed information gathering hampers investigations
- Lack of collaboration tools to tie separate silos of content together
- Officers spending time gathering and burning CD’s for all evidence sources (Audio, BWC, Surveillance Cams, etc.)
- Handoff to prosecution with information overload on multiple CD’s, DVD’s. Limited tools to package & highlight relevant content.
Vision

- Easily searchable digital evidence using smart metadata tagging (time/date, location, case #, etc.)
- User friendly access to specific and potentially related evidence
- Ability to link evidence collected across time, geography, patterns
- Shorten investigation cycle; Free investigators from routine administrative tasks
- Expedite prosecution & reduce time to charging decision
Digital Evidence Management

• Visualize digital evidence based on timeline.

• Integrate evidence according to verifiable associations to develop new investigative leads.

• Associate physical record with digital evidence record to create a “big picture” which expedites investigation and prosecution.
Digital Evidence Management

- Optimizing digital evidence sources with analytics is a “force multiplier” in crime fighting.
- Consolidating data sources (e.g., physical and digital evidence) would yield a drastically different view of collected evidence.
- Offenders do not respect jurisdictional borders and regionalized evidence collection could expedite investigations.
Considerations

- Establish a data warehouse (on premise or cloud-based) with comprehensive analytic tools.
- Maintain forensic examiners’ training & equipment to keep pace of technological evolution.
- Always maintain proper evidence chain of custody with authentication.
- Solicit external resources (e.g., USDOJ grants, collaboration of other law enforcement agencies).
Questions
DESIRED DIGITAL EVIDENCE MANAGEMENT SOLUTION
Connecting to all available sources of digital evidence

- City Video Cams
- 3rd Party Video Cams
- Body-Worn Video
- In-Car Video
- Radio Audio
- 911 Audio

- Social Media
- CAD Systems
- Records Mgmt. Systems
- Crime Scene Images
- Witness Statements
- Interview Video

Central Evidence Management Tool
From silo storage...
... to Unified Incident View, that is Chronological
... And Geo-spatial To Understand Where And When Events Occurred
With Ability To Share with Key Stakeholders

City Video Cams

3rd Party Video Cams

Body-Worn Video

In-Car Video

Radio Audio

911 Audio

PUBLIC

Central Evidence Management Tool

PROSECUTION

Social Media

CAD Systems

Records Mgmt. Systems

Crime Scene Images

Witness Statements

Interview Video
Digital Evidence Management Solution Objectives

Ease the Burden Of Evidence Collection & Sharing
- Save time spent collecting evidence from multiple sources
- Improve information sharing & reduce redundant work
- Reduce time spent duplicating media & sharing with other agencies and prosecutors

Close Cases Quicker
- More timely access to relevant evidence
- Analytics to generate new insights from structured/unstructured content
- Organize and view content by time and location to improve understanding

Enhanced Control Over Evidence
- Improve chain of custody/audit trail
- Adherence to retention policies for all content related to a case
LET’S TALK

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