

eBook

# 10

## Innovations to Modernize Investigations



## Introduction

In the ever-evolving landscape of crime and justice, modern investigators face a myriad of challenges, further complicated by the digital era's deluge of electronic evidence.

Detectives are inundated with data from smartphones, cryptocurrency transactions, car infotainment systems and wearables, leading to significant delays in device analysis, especially in high-profile cases. More than 52% of agencies report escalating case backlogs year-over-year.

The scourge of drugs, sex trafficking and crimes against children continues to ravage communities across the globe:



Imagine the transformative impact of expediting investigations by linking multiple fentanyl, sex trafficking and ICAC cases to broader networks of known criminals.

Investigators currently spend an average of 45 hours reviewing digital evidence per case, while also managing heavy caseloads and extensive paperwork, including redacting personal information and transferring data across disparate systems.

## 10 Innovations to Modernize Investigations

Investigators face a wide range of cases, demanding broad skills and a thorough understanding of each unique situation. Prolonged digital evidence processing leads to delays in case closures and erodes public trust.

To bridge the gap between processing time and public safety expectations, urgent change is essential. Here are 10 innovations investigators worldwide are using to modernize their investigations.

1

## Comprehensive Location Analysis

By integrating and analyzing diverse location data sources, investigators gain a holistic view of individuals' movements, enriching investigations and uncovering critical connections.

**Common Use Case:** Location data can reveal patterns of life and specific patterns of movement that may indicate involvement in criminal activities, such as frequent visits to known drug houses or crime scenes.

2

## Link Analysis for Unveiling Hidden Connections

Link analysis in investigations involves mapping and visualizing relationships between various entities, such as people, locations and events to uncover hidden connections and patterns.

**Common Use Case:** Investigators can identify key players and understand criminal networks.



3

## Linking Digital Identifiers to Person Resolution

Correlating various digital identifiers such as user IDs, phone numbers and usernames across multiple platforms and devices to attribute them to specific individuals.

**Common Use Case:** Investigators might analyze different email addresses and social media profiles and link the different online activity to a single suspect.



4

## Image Categorization and Search

AI can identify specific objects within a vast array of pictures, expediting the search for critical evidence.

**Common Use Case:** Reduce investigator search time when looking for narcotics, automobiles, weapons or people in phone dumps or video footage.





## 5


## Recognize Patterns with Topic Detection

AI can identify topics in conversations including in other languages, coded words or slang. AI can recognize patterns in how certain words or phrases are used within specific groups, such as gangs.

**Common Use Case:** Identify repeated phrases, unusual word pairings, or specific linguistic structures that indicate coded language.

## 6

## Case Identifier Deconfliction



By leveraging advanced algorithms to resolve identity conflicts across multiple cases and data sources, investigators are provided with accurate and up-to-date information to expedite their inquiries.

**Common Use Case:** In a large drug trafficking investigation, deconfliction might reveal that several smaller cases handled by different agencies are actually part of the same larger network.

This insight allows for a coordinated effort to dismantle the entire operation rather than tackling it piecemeal.

## 7

## Transform Speech into Text

Investigators and analysts rely on transcription to extract valuable insights from audio and video content. With speech to text capabilities, streamline the processing and analysis of verbal information, recorded conversations or other verbal content, facilitating decision-making.

**Common use cases:** In a human trafficking investigation, transcribing phone calls between suspects can reveal coded language used to discuss transactions.



## 8

## Multi-Device Data Analysis

Analyze terabytes cross-device to prioritize critical evidence quickly.

**Common Use Case:** Identify key communications and connections across multiple devices in a complex investigation, such as in organized crime or terrorism cases.

## 9

## Quick and Automated Open-Source Searches

Enrich evidence and generate new leads in an investigation by integrating open-source searches into the investigative workflow.

**Common Use Case:** When correlating phone numbers and email addresses, investigators can find new contacts to follow up with. Searching open sources for their information can reveal linked accounts, additional contacts, and associated online activities.

Input a single identifier.

Chris Wong x Search

Chris Wong 29 | Name | a few seconds ago

Profile



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## Automated Translation Services

In an era of globalization, manual translation processes hinder investigations, causing delays and draining resources. With automated translation services, law enforcement agencies can overcome language barriers, gaining rapid access to critical data and insights from digital evidence in multiple languages.

By automating translation tasks, agencies save valuable time and resources, enabling them to focus on swiftly resolving cases and apprehending criminals.

**Common Use Case:** Certain cases, such as border control scanning, require immediate translations. Quickly understanding information in a foreign language can be crucial for advancing urgent cases within hours instead of days or even weeks.





## How Automation Can Do the Heavy Lifting

AI is revolutionizing law enforcement with advancements in digital forensics, significantly enhancing operations, productivity, and case resolutions. Key benefits include:

- **Data Analysis Efficiency:** AI swiftly processes vast data, identifying patterns and relevant information faster than manual efforts.
- **Automation and Acceleration:** AI automates repetitive tasks like data sorting and extracting relevant information - allowing investigators to focus on the evidence that advances the case.
- **Enhanced Forensic Analysis:** AI can rapidly examine digital evidence, detect data alterations and reconstruct events, aiding forensic experts to craft defensible case narratives.

## Check List: What to Look For in a Modern Investigations Platform

When evaluating a modern investigations platform, consider these key features:

**Robust Data Analysis:** Ability to analyze multiple and diverse data sources for comprehensive case understanding.

**Large language models (LLM):** AI-driven data processing, contextual recognition, and algorithms to surface the specific data for which you are searching.

**Interoperability and Collaboration:** Secure data sharing, real-time communication and role-based access for seamless teamwork.

**Scalability and Flexibility:** Capacity to handle growing data volumes with on-premise or cloud deployment options.



## Customer Stories:

### How Oakland County Prosecutor's Secured Parents' Convictions in Mass Shooting

"Instead of having to open up seven phones and try to match them up... Cellebrite Pathfinder allows us to quickly do that. It was amazing."

*David Williams, Oakland County Chief Assistant Prosecuting Attorney*



### How the Montgomery County Sheriff's Office Took a Biker Gang Off the Streets

"There's no way they could have physically done any of that leg work with individual UFDRs. So much data, so little time is what I called it."

*Billy Ballard, Detective, Digital Evidence Examiner*





## About Cellebrite

Cellebrite's (Nasdaq: CLBT) mission is to enable its customers to protect and save lives, accelerate justice and preserve privacy in communities around the world. We are a global leader in Digital Investigative solutions for the public and private sectors, empowering organizations in mastering the complexities of legally sanctioned digital investigations by streamlining intelligence processes. Trusted by thousands of leading agencies and companies worldwide, Cellebrite's Digital Investigation platform and solutions transform how customers collect, review, analyze and manage data in legally sanctioned investigations. To learn more visit us at [www.cellebrite.com](http://www.cellebrite.com), <https://investors.cellebrite.com>, or follow us on Twitter at @Cellebrite.

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