

9-1-1 IQ

Amplifying the role of PSTs augmented by smart technology

January 2020



The Premise

Problem Definition



- Today's PSAP is too dependent on outdated stagnant guide cards and scripts (regardless if the guide cards have been automated using a forms-based app like ProQA. It's as if the PST is not expected to "think". This crisis is only going to grow worse.
- The success or failure of a crisis call may depend on a random call sampling by floor managers to isolate/escalate a critical situation.
- A larger broader array of critical information available to maximize PST quality, resolution, and caller safety is vastly underutilized within the 9-1-1 call center.
- Recorded 9-1-1 calls are trapped in proprietary call-recording archive technology. All 240 million of them annually. 31 million more through 2-1-1.
- PSTs are expecting technology paradigms similar to their own daily personal experiences, not systems and processes designed before they were born.

Industry Trending Towards Citizen Personalization



- Insights utilized for critical decision making are supplied less by traditional business system sources to something larger and more compelling – the “social entirety”.
- These insights are being influenced by social influencers and service delivery beneficiaries. (Waze)
 - This leads to a higher degree of performance and result accuracy presuming the system learns from the results, either positive or negative
- Citizens are more empowered than ever before, increasing the pressure on 9-1-1 service delivery, accuracy, timeliness, and quality expectations, yet at the same time, these citizens are well-positioned to help influence outcomes through their own sourcing. (Boston street mapping).
- Strategic Planning is critical to a successful transformation!

Market Opportunity



Nationwide 9-1-1 Centers

- 6,100 primary & secondary PSAPS
- 21,283 EMS stations in the US

Nationwide 211 Centers

- 200+ including United Ways

Nationwide 311 and Info Centers

- 250+ 311 operation centers in cities across US

Other Hotlines

- Suicide
- Child Safety
- Mental Illness
- Gun Violence

The PSAP Makeover

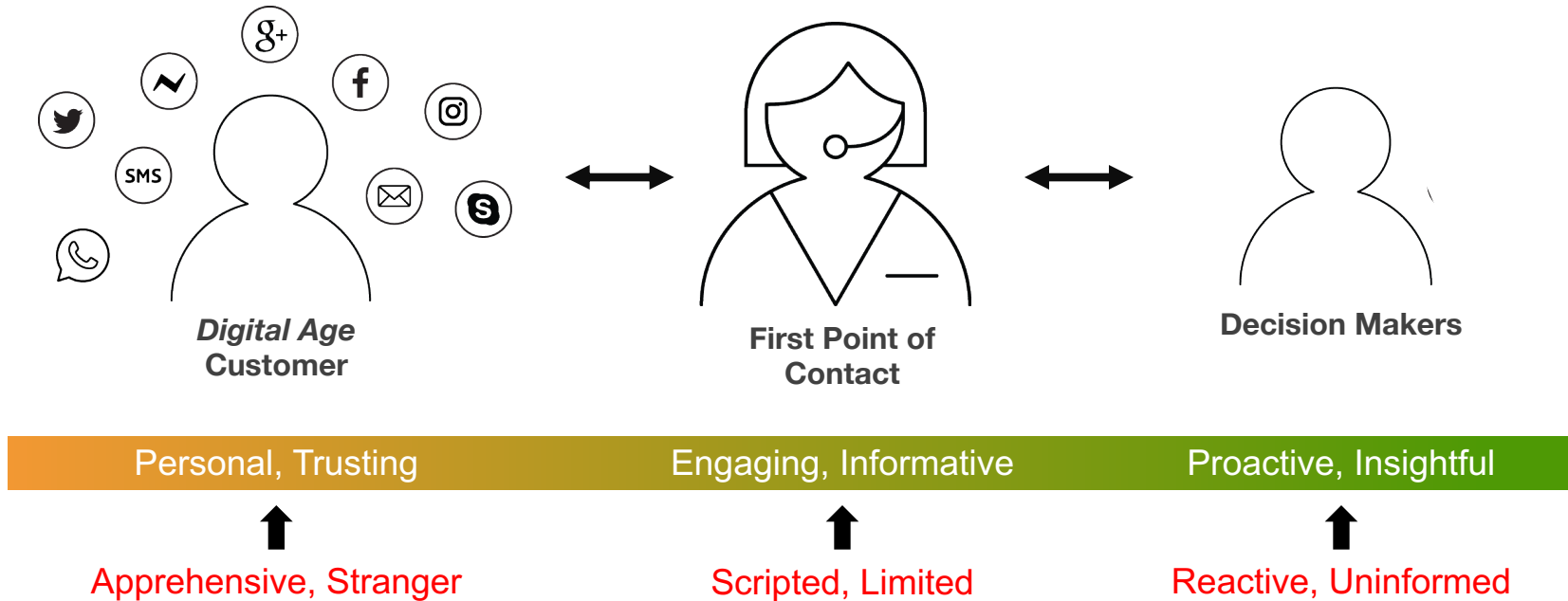
What is the Next Generation PSAP

Transforming the Role of Participants



- Shift to personalized customer experience (proactive vs reactive)
- Match customer communication method diversity (multi-channel support)
- Recognize call agent as critical liaison between customer satisfaction and business insights
- Improve call agent experience, performance, and job satisfaction
 - Develop new call agent assessments based on more than traditional, standardized KPI measurements
 - Utilize critical new insights like behavior analytics to anticipate risk, reduce attrition, improve citizen outcomes

Transform ALL participant roles and experiences



Is this really all that unique?



- Many of the leading retail call centers you and I use today already utilize machine learning, behavioral “buying” cues and social sentiments to maximize their profits.
- Natural Language Processing is already progressing towards next generation Natural Language Understanding. Imagine that an AI now creates language (i.e. writes a white paper on subject matter for which it has been trained).
- Consumers, especially those under the age of 35, expect government to provide a more personalized experience as social democracy continues to challenge social privacy. Is a “digital personalized ledger” a future possibility?
- It’s only a matter of time before scripting moves from automated entry/response systems to something even less emotional, thoughtless and automated.
- We must act now to reestablish the importance of the PST and amplify their value within a 9-1-1 call exchange.

Who or what Industry organizations will this disrupt?



- APCO is losing traction as PSAPs consider alternatives to traditional guide cards. Many PSAPs looking for enhancing the role of the PST while not relying on static, linear guide cards that create frustration and limit human behavioral interaction.
- Priority Dispatch Corp took steps towards automating PST function (ProQA, Aqua) and enforcing International Academies of Emergency Dispatch's protocols.
- State 911 PST Certifications
- Call recordings are stored in proprietary technology (by recording/telco manufacturers) making it very difficult for PSAPs to utilize rich insights within those recordings to enhance QA, QI, while further mitigating risk of lost life
- CAD manufactures are just beginning to explore their own POV in this segment of next-gen 911

The Vocabulary

How much information are we missing?

9-1-1 Call scripts have reached their limit; they are no more useful than a citizen filling out a form and requesting for help. In fact, the latter is likely processed faster by computers for real-time decision making!



Unleash data's potential

By the year 2020, about **1.7 MB** of new information will be **created every second, for every human being** on the planet.

Some factors in how we use information.



Semantic
Meaning

Personal
Experience

Context and
Influences

Where did this happen?

How did she react? (verbal, emotional, visual clues)

What facts are missing?

How are { Smart Cognitive Learning AI } systems different?



UNDERSTAND

Cognitive systems understand imagery, language and other unstructured data similar to humans.

REASON

They can reason, grasp underlying concepts, form hypotheses, and infer and extract ideas.

LEARN

With each data point, interaction and outcome, they develop and sharpen expertise - they never stop learning.

INTERACT

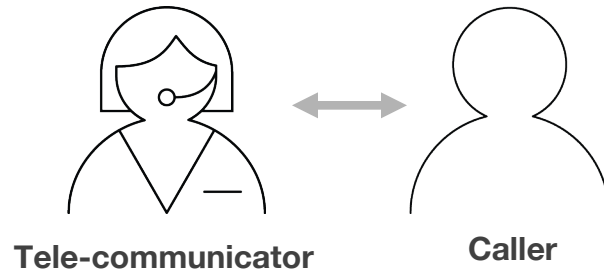
With abilities to see, talk and hear, cognitive systems interact with humans in a natural way.

These systems **amplify** and **augment** human cognition.

The Solution

911 • IQ

911•IQ represents a next generation Quality Improvement and Assurance software service for the PSAP. The software package utilizes a trained Artificial Intelligence, an advanced PST interface, and emphasizes collection/utilization of a diverse array of data sources to comprehensively benefit the PST, the caller, and the overall outcome of a 9-1-1 crisis call.

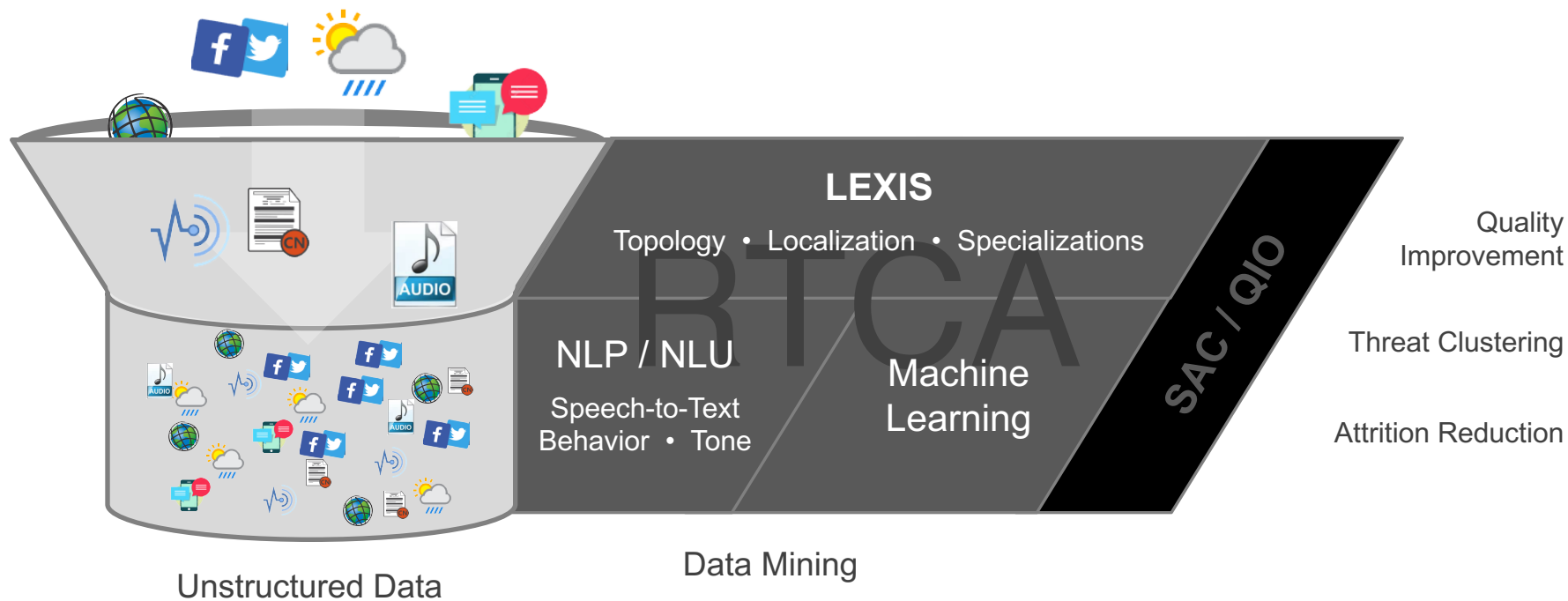


911 • IQ Software Components



- Real-Time Cognition Advisor (RTCA)
 - Real-time trained Artificial Intelligence engine
 - Natural Language Processing Tools (i.e. speech-to-text, tonal analysis)
 - Configurable topology “Lexis” localized to the PSAP for maximized AI performance
- Situation Analyst (“PST”) Console (SAC)
 - Enhanced PST interface utilized to aid the PST follow interactive protocols while utilizing real-time cues to reduce victim stress, especially when victim personalized data is available to PST
 - Captures critical insights during call to maintain call disposition before, during, and after responder dispatch
- Quality Improvement Optimizer (QIO)
 - Interactive tool utilized by PSAP quality advisors to review and assess particular moments during PST-caller experience promoting protocol, visual cues, and participant behaviors during call

911 • IQ Architecture



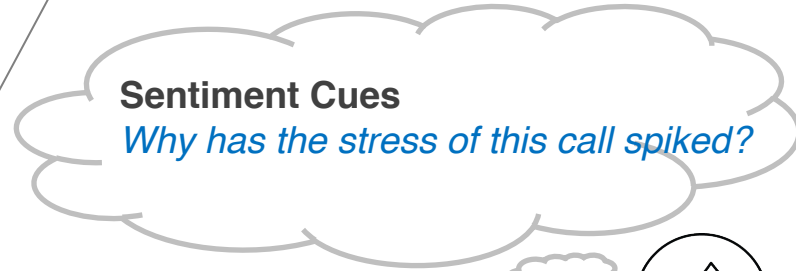
911 • IQ PSAP Impact



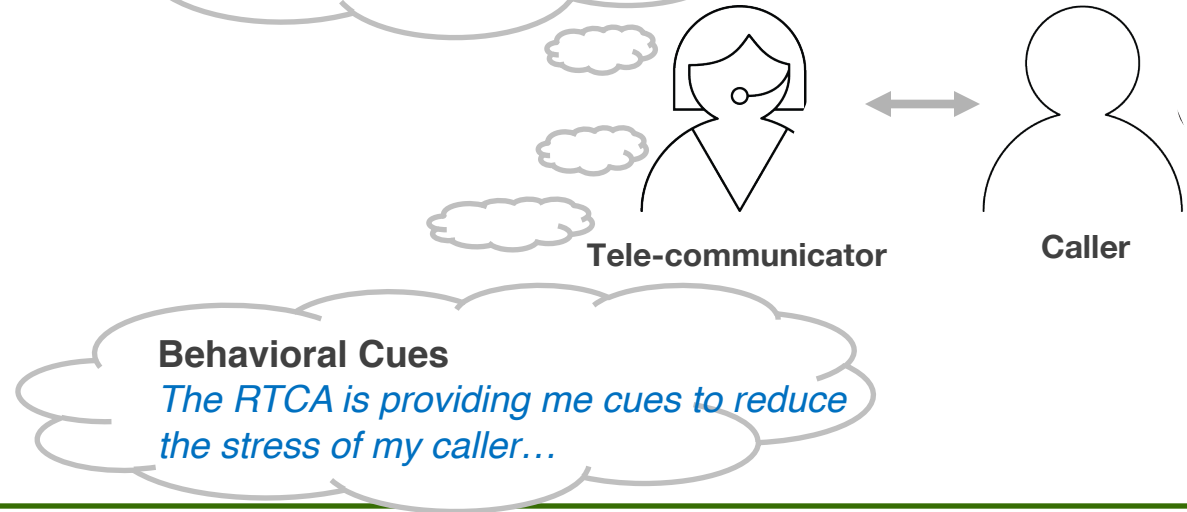
- **Continuous Quality Improvement**
Audio recordings and CAD records become a wealth of knowledge. The overall “Smart System” continuously learns from each decision, every outcome, and every event.
- **Strengthen training program, reduce attrition and improve job satisfaction**
Emotion and tonal elements are used to evaluate how words and phrases impact the call, caller and PST.
- **Enhance 9-1-1 effectiveness**
Solution augments decision making providing the data analysis to ensure governance and service delivery while transforming PSTs into true situation analysts, armed with their own innate relationship skills, and augmented by a real-time cognition advisor (the AI).
- **Increase public safety**
By combining call data with other reliable information and non-traditional sources you have the means to modernize threat analytics into current and usable information.

Re-humanizing the role of the PST

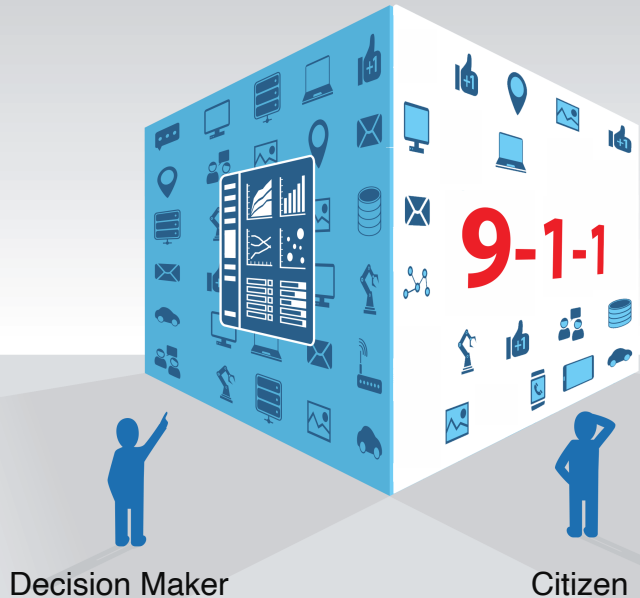
Active call escalation
Real-time alert triggers
as conditions are met



Enhanced training
PST and first-line
review processes
transformed



Prepared for Curated Citizen Data Governance



- As governments and citizen move towards curated citizen health data exchanges, the PSAP is now adequately positioned to harness the opportunity to provide personalized service.
- Citizen experiences one system, not many, and is gladly unconcerned with government or system structure
- Decision makers are proactively informed by accurate, pertinent information, while not expected to know where and how to find answers



Nick Intintolo
Managing Partner

South Lake Group, LLC
(407) 795-2200
nick.intintolo@southlakegroup.com