

Presentation on voice biometrics – to Gartner

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Basics

- Organization name: Kaizen Secure Voiz; offices in India/US and emerging locations at Canada or Hague NL
- Product: Voice authentication via app or IVRS or other input devices, alternative to iris/facial recognition/fingerprint biometrics.
- US patent details of KSV can be found at : <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnethtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=10,706,857&OS=10,706,857&RS=10,706,857>

Kaizen Technologies Inc USA

- Kaizen Technologies Inc is HQ at Edison, NJ, USA
- Kaizen was incorporated in the year 1995
- Kaizen has active interests in IT services, product development, IT staffing healthcare staffing and IT training services. Kaizen has offices in US and India
- Kaizen Tech is part of Forbes council, NJ tech Council, TIE and has won grants from US Govt for skill dev, training
- Kaizen SECURE Voiz is a subsidiary of Kaizen Tech and focuses on multi channel customer engagement [IVRS], voice biometrics [voice authentication, speech to text] product as own IPR. Software product dev and sales across the globe

GTM for Kaizen Secure Voiz

Partners

- **SI:** HCL EMEA, Wipro India, Inspira, CMS, Paramount UAE
- **OEM:** RAMCO HRMS, Singular Key authentication, Reverie Language Tech, Gnani.ai, AWS Connect contact centre
- **Cloud partner:** AWS, Google cloud and Azure
- **Influencers:** IDRBT [*RBI institution in Hyd*], Hague business agency, World Startup factory NL, Forbes council, NJ TIE, TIE Bangalore, NJ tech Council, IIT - Bangalore
- **Key verticals:** BFSI, healthcare, telecom, contact centre solutions & govt

AWS cloud based capabilities

- AWS connect based, serverless architecture, ready- to- deploy, comprehensive contact centre solutions with Kaizen IPR in voice auth and IVRS.
- **Unified Contact centre features:** Voice authentication overlay, speech to text, automation with OBD/IBD, predictive dialer, call patching, voice logger, basic hit screen, call flow, voice bots, chat bots, Automatic Speech Recognition.
- **Readily available** tolled, toll-free dial in numbers for your new contact centre on AWS in 65 countries
- **Low latency, highest compression** for serving customers and employees in 3G/4G/broadband/low bandwidth areas with dependable voice clarity

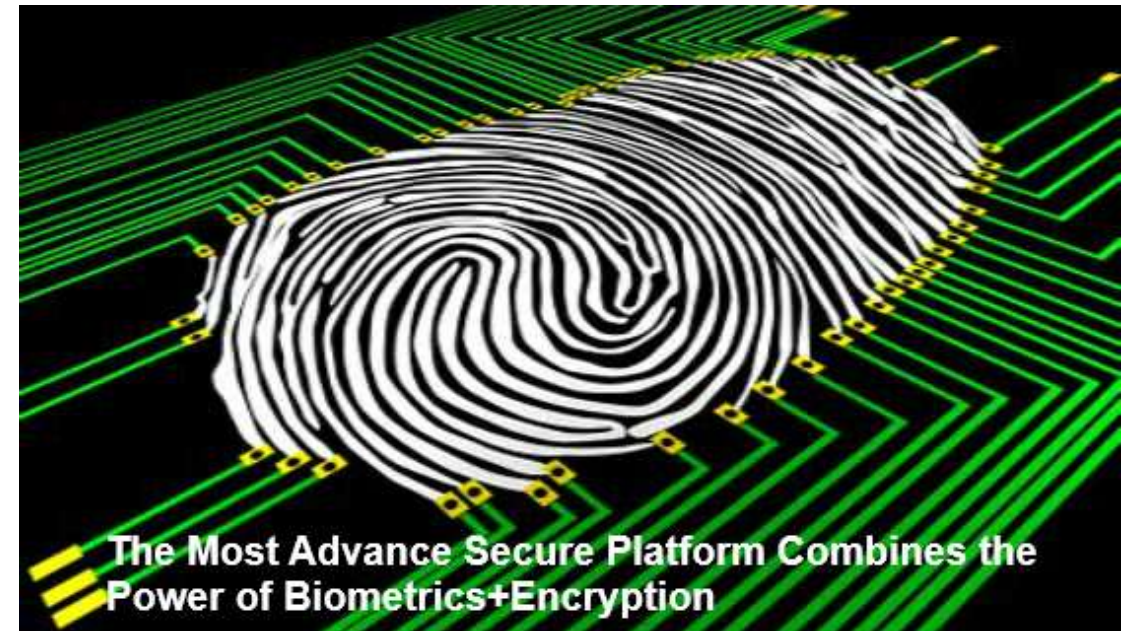


The classic 3-point safety structure

- **What you are?**
 - Biometrics like iris, face, voice that are always available with you
- **What you have?**
 - QR code on phone, hardware token, dynamic VPN login codes,
- **What you know?**
 - Passwords, PIN, OTP

Few words in favor of fusion

- Multimodal authentication is better
- Heterogeneous mix with redundancy, bankers/users having the options to deploy randomly a basket of tools
- Continuous detection and appropriate gateways of security policy is needed
 - Types of transactions, needing different and automatic mix of
 - Various stages of transactions



Transformation across functions

Customer experience : Provide delight through secure authentication, instant authentication and resolution of complaints

Post COVID: Touchless biometrics for “contact less” attendance marking

Fraud prevention:

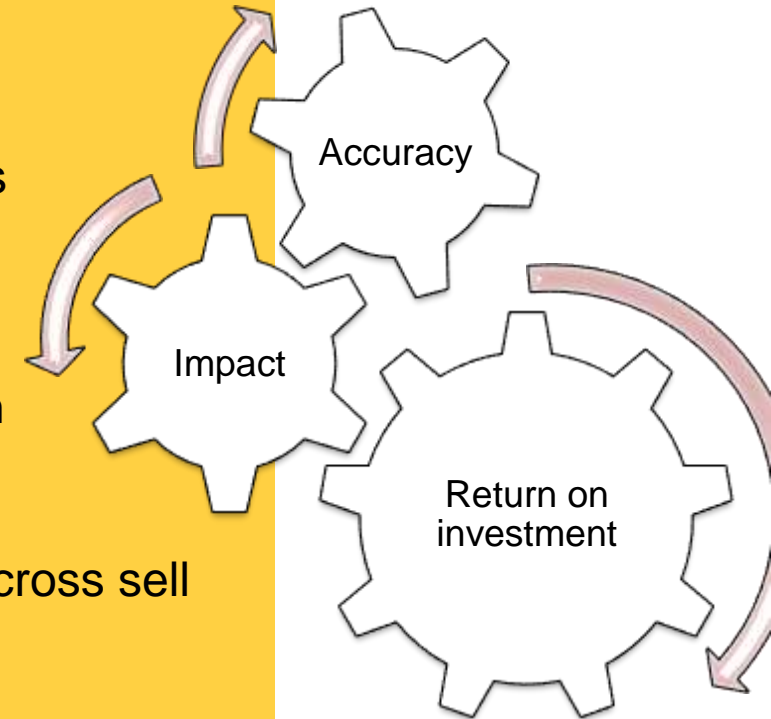
- Create voice prints of fraudsters, or match against library of known fraudsters
- Supports audit trails for maker checker, approver workflow in LOS
- Voice based credentials check for SSO, WFH [thru SAML auth]

Password reset: employee and customer password reset, done safely and with compliance to ISO 27001 std, GDPR compliant

Relationship management: best retention plan for high net worth customers, cross sell insurance/FD/MF/others, nominee voiceprint

Healthcare: VIP/High value patient registration, EMR access to select few employees, tracking of floor wise employees, web access for records through MFA

Proof of life using monthly phone based voice authentication for pension payout



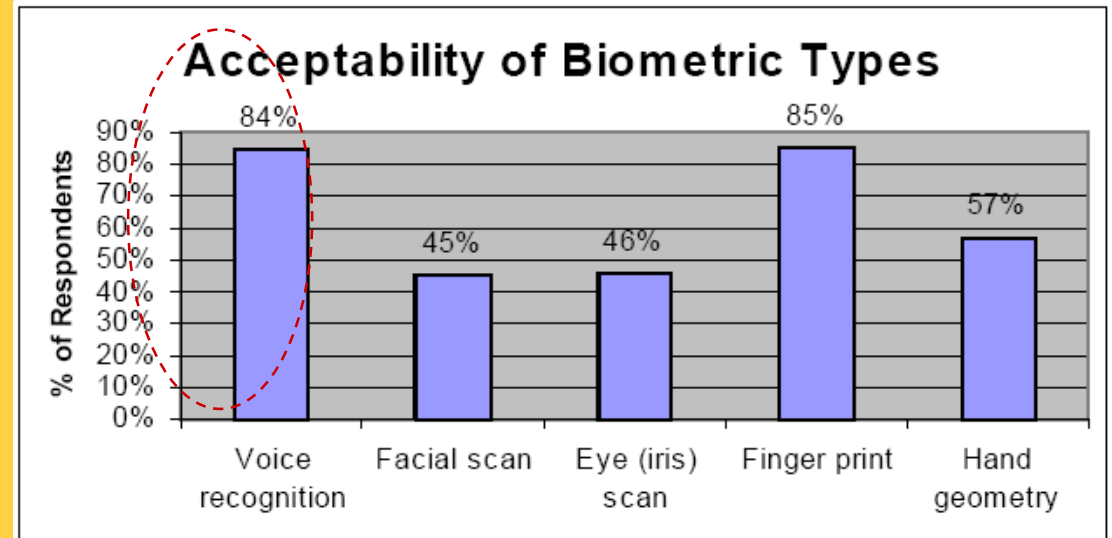
Voice Biometrics

What is a **voiceprint**?

It's not a *recording*, but a digitized set of harmonic features of your vocal tract.

Two stages: **enrolment** [one-time for 35 secs] and **authentication** [<20 secs]

- High accuracy
 - *Comparable to iris scans & fingerprints.*
- Low cost implementation
 - *Leverage IVR investment*
- Non-invasive
 - *Just "talk"*
- Easy to integrate with IVR apps
 - *Supports both phone or POS use*
- Can be utilized across channels
 - *Live-agent, IVR, Web and Mobile*



What's unique in a voice?

- Relatively stable characteristics
 - Vocal tract length
 - Vocal tract shape
 - Vocal cord length (pitch)
 - Gender (breathiness)
 - Nasal cavity size and shape
 - Speaking rate and prosody
 - Language, dialect, and accent
- Transient characteristics
 - Health
 - Emotional state
 - Environment



Voice Biometrics – our unique strengths

Speak in any language and use any text as a cue. Our biometric engine is independent and shall consider the logical parameters of human voice



Voice Biometrics – our unique strengths

- Market validated software product with own IPR, patents
- Available in both models: SAAS, pay per usage on AWS, Google cloud and perennial on-premise license models
- Compliance to GDPR, ISO, EIDAS norms
- Alliances with voice to text tools on Google platform. Integrated with solutions from other vendors
- Agnostic to database, platform and channels [*types of sound inputs or handsets*]. Works across channels and platforms
- Anti-spoofing – detects mimicry and pre-recorded voice

Voice Biometrics – new needs

- WFH: security for new needs of “Work from home” scenarios
- SSO: emerging needs to add biometric layer for virtual desktop infra, across many applications
- MFA: multi factor authentication
- “no touch” or contact less biometrics for post COVID world
- Carbon footprint is neutral



Case studies – voice bio



These are in production stage and paying customers

- **Lebara UK**: Multi country implementation of IVRS, consolidation of obsolete old gen IVRS and voice biometrics for customer authentication
- **MeritTrac**: India's largest pure play assessment company uses SpeechTrac to catch proxy candidates on behalf of their clients. Voice prints are captured, matched against all levels of interviews for BPO talent/corporate/govt.banks
- **SRI Inc USA** – security guards and staffing company. Work station based authentication of guards at sensitive installation points. IVRS integration with Ramco HRMS
- Regional rural banks in India are testing this on test bed provided by IDRBT for customer recognition and payment transactions. Paid POCs



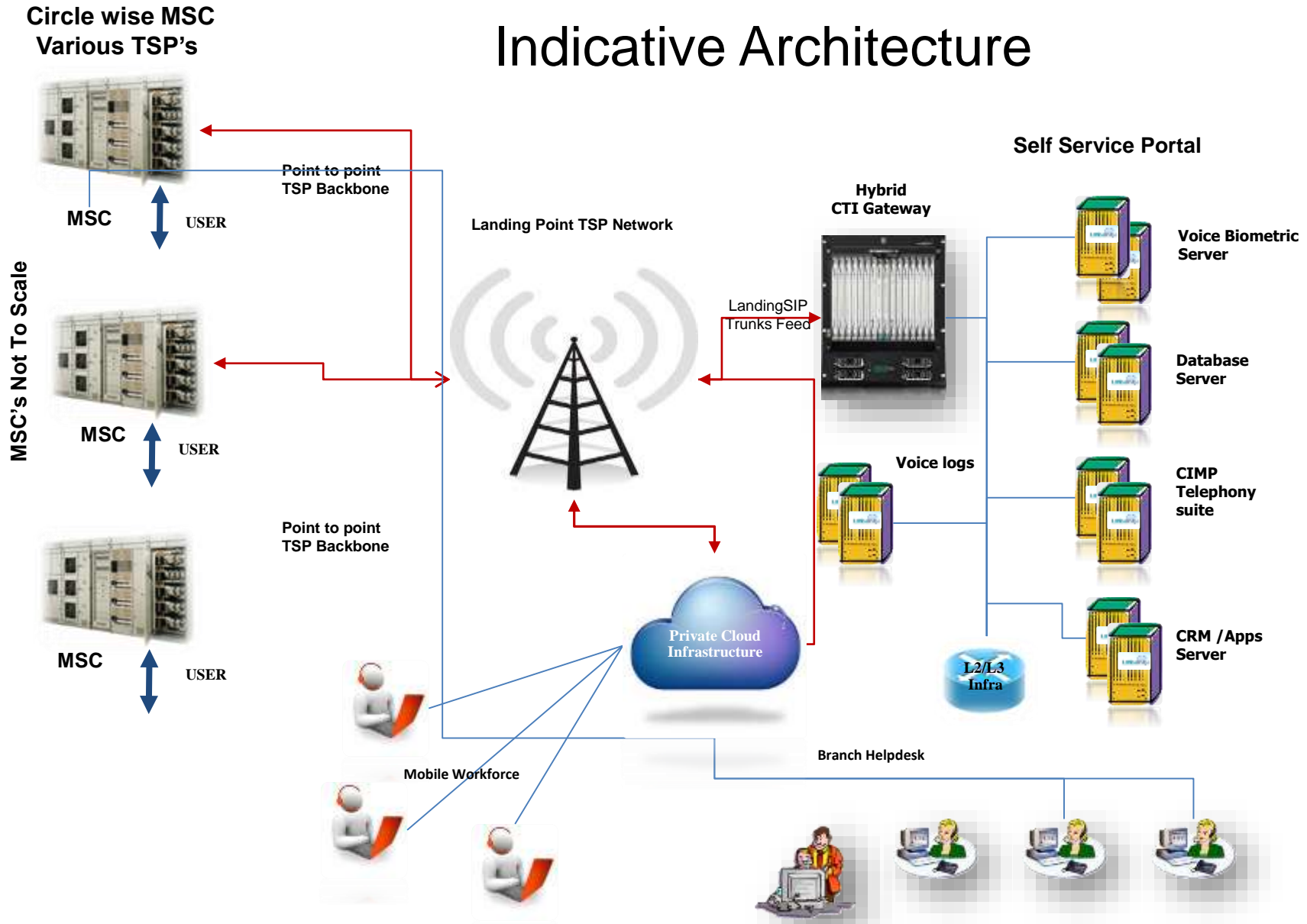
Apprehensions, Common objections



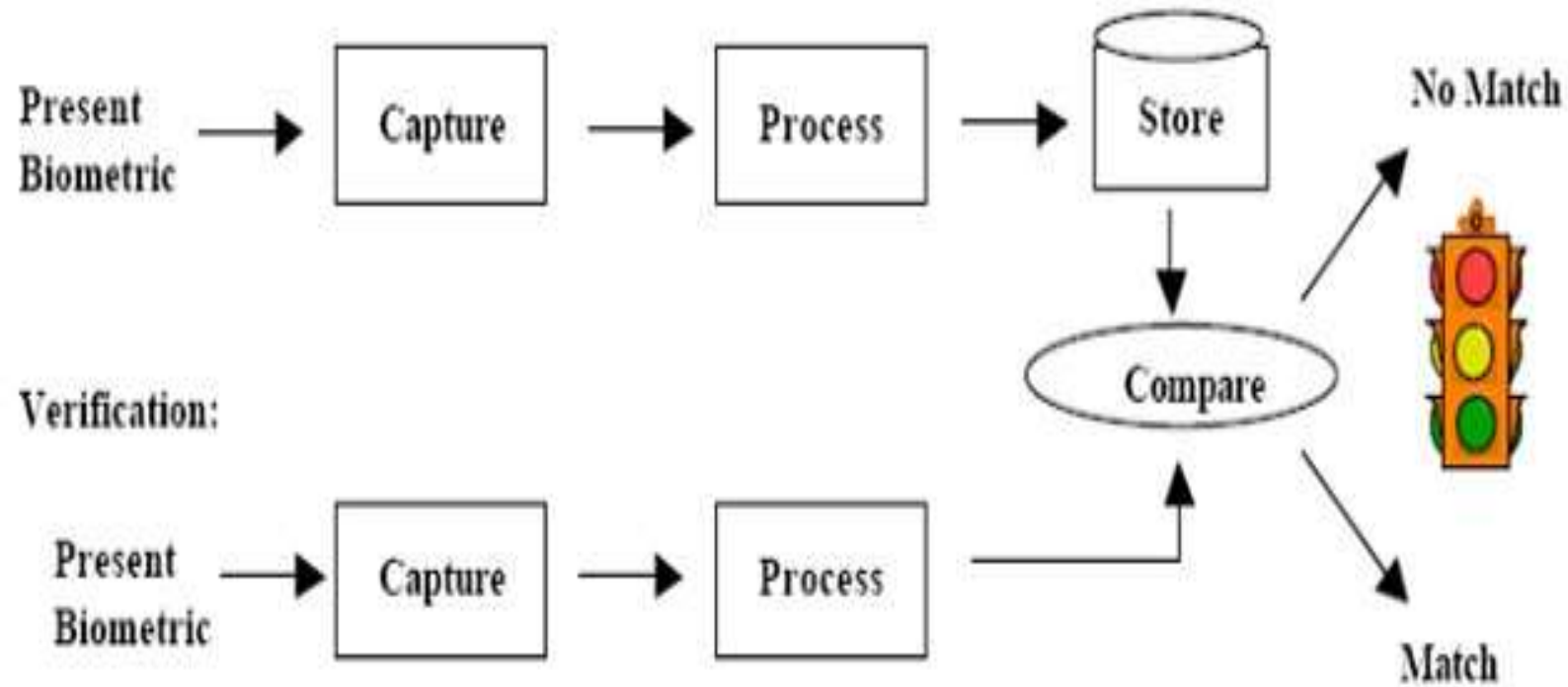
- **Approvals** IIIT Bangalore works with us on research and can validate our technology. We comply to GDPR norms and design elements as prescribed by ISO 19794 - part 13
- **Anti-spoofing:** The system can defeat mimicry attempts, pre-recorded voice and attempts to do reverse engineering [copying audio files]. All these have been tried in a real time POC
- **Noise** is the biggest enemy for voice recognition system
- False acceptance and false rejection ratio can be brought down to almost zero. Implementation cycle needs time and efforts. This is a mathematical model that needs sufficient time to improve

Technology details

Indicative Architecture



Enrollment:



Graphic representation of the two phases – Enrolment and Authentication

Use cases specific to banks, telecom
and other industries

Applications of voice biometrics in banks



- **Fraudster Detection in Contact Centres**
 - We can build voiceprint using a passive source of recording and alert the ‘fraudster’s call’ to agent on-line or after the call to stop the process
 - Prevention of frauds through MFA, using voice authentication as part of MFA
- **Biometric log-in to network – treasury app**
 - Instead of fixed password, which can be shared, the voiceprint based additional security can protect the data and n/w from hazards of Phishing, Trojan etc.
 - Use it for loan origination, ATM based transactions, authenticating vendors in ATM management, treasury payments, CBS and SYSCONTECH payment hub
- **Telephonic Interviews verification**
 - Proxies are common. This can be prevented by capturing the voice print of the candidate and compared when the person reports for interview or job
- **Password re-set** without violation of GDPR and other compliances

Applications of voice biometrics in banks -2



- **Pensions payment**
 - Provide easy phone based, 100% accurate authentication for pensioner/retired persons. Replace expensive physical visits to banks. Save money by preventing wrong pension credits to deceased pensioners.
- **Time and attendance system**
 - Use a combination of voice, face or both with fingerprint devices. Ensure capture of real time attendance of field force or verification agents or employees. Use geo-tagging app to automatically register date/time stamp with latitude-longitude on Google maps
- **Remote verification of callers (instead of PIN)**
 - Only Biometric tool that does not require any special device or tool to verify / authenticate a caller without PINs.
 - Deploy it in IVRS/contact centre/app, fast validation of callers, saves money on contact centre agents time/contract billing

Use case in other industries for voice authentication led solution

vertical	Phase in customer lifecycle	Current issues	how do we add value?	Geo specific inputs for this use case
Telecom	On-boarding	TAT is 24-48 hours for SIM card activation due to address verification, customer antecedents verification	voice enrolment of new customer at the stage of CAF filling up at service point, leads to matching his profile faster. Verification call can be done in few mins from another team in telco, to the partially activated SIM. avoid need for pre-activated SIM to plug revenue leakages	EU and US - elderly users are more in numbers, this as a convenience in COVID/normal times, to assist easy adoption of CAF based workflows
	Interaction	contact centre or mobile apps need verification through OTP, security questions before resolving the query	10-secs lead time for customer verification, ease of use in telco mobile app through voice authentication	Global challenge

Use case in other industries for voice authentication led solution

Insurance	On-boarding	insurance companies task themselves in faster issuance of policy document - a legal document - that comes to customer with "free look-in period" - customer can reject the policy	prevent mismatch, easy completion of health check-up data for specific policies, tie data from application, verification, health check-up, agent documentation if any and other factors	US, Indian insurance industry needs this
	retention	proof of life for govt mandated pay-outs or pvt sector management of superannuation		this is for EU region only as of now, as they have private sector insurance providers paying annuity.
Pharma	Clinical trials	Use voice based apps to authenticate, collect info from human volunteers. Forms are usually not filled by volunteers	Quicker, easier than writing or filling up forms by thousands of human volunteers in phase 2 or phase 3 trials of new drugs/vaccine	Every country regulator, FDA and HIPAA norms to be adhered to
Health-care	On-boarding of patients	patients may not remember their regd HIS /EMR ID, regd phone number if they have changed their SIM/city. Retrieval of patient records, previous surgery/diagnostic reports is crucial	use voice as another factor, link to a meta data and connect this to HIS/EMR via restful API. Allow any patient to walk in to any branch/unit of this chain of hospital and retrieve records	US healthcare payers and providers need remote authentication to tie up the insurance claims process. Indian large hospitals have shown interest in this

Use case in other industries for voice authentication led solution

<p>Horizontal use cases</p>	<p>These are universally relevant for many industries</p>	<ol style="list-style-type: none"> 1. Contact centre automation using voice based authentication 2. Voice based time and attendance system for field/office based staff 3. Proof of life for pensioners – currently annual, paper or finger print based authentication 4. Work from home – validate employees on a video/audio call 	<ol style="list-style-type: none"> 1. Voice based quick authentication saving costs and efforts in customer call centre 2. Voice as a biometrics layer to prove working hours, integrated to HRSM/payroll 3. Voice bio increases ease of use, prevents fake pensioner data and allows frequent auth 4. Single sign on /SSO needs real time biometric verification 	<p>1 and 2 are being globally being used by security agencies, manufacturing industry, electronics, not for profit organizations, govt or public sector etc. proof of life is emerging as a very strong use case in EU. SSO/WFH is still nascent in design and working</p>
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Thanks for your time