ARTICLE

TECHNOLOGY THE DISRUPTOR

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USE OF ARTIFICIAL INTELLIGENCE IN EMPOWERING THE CALL HANDLER WITHIN A CONTROL ROOM ENVIRONMENT

The proliferation of Artificial Intelligence (AI) in everyday life is being driven by the exponential increase in computational power, availability of big data and developments in Neural Networks.

The increasing technological maturity is leading to the acceptance of AI as a "Co-Pilot"; complementing and enhancing human capabilities to levels previously considered beyond the realms of possibility and driving transformational change in environments which have historically been reticent to innovation, such as Emergency Service control rooms.

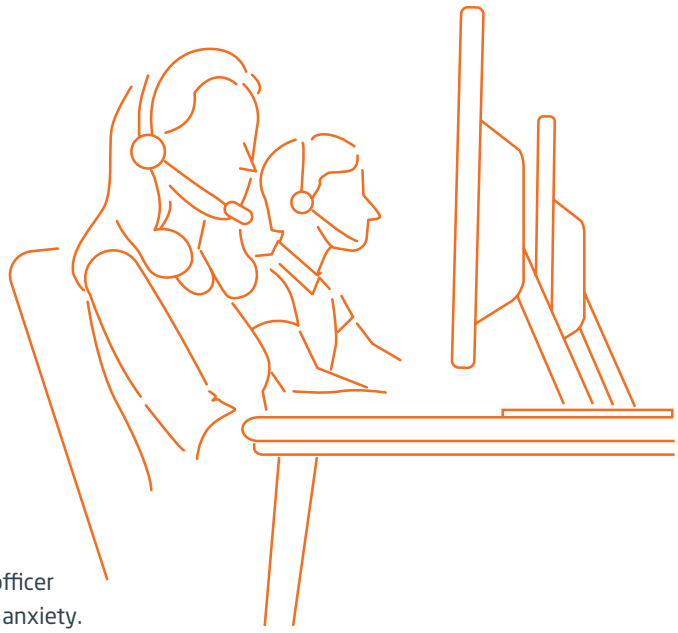
An incredibly stressful, but daily occurrence

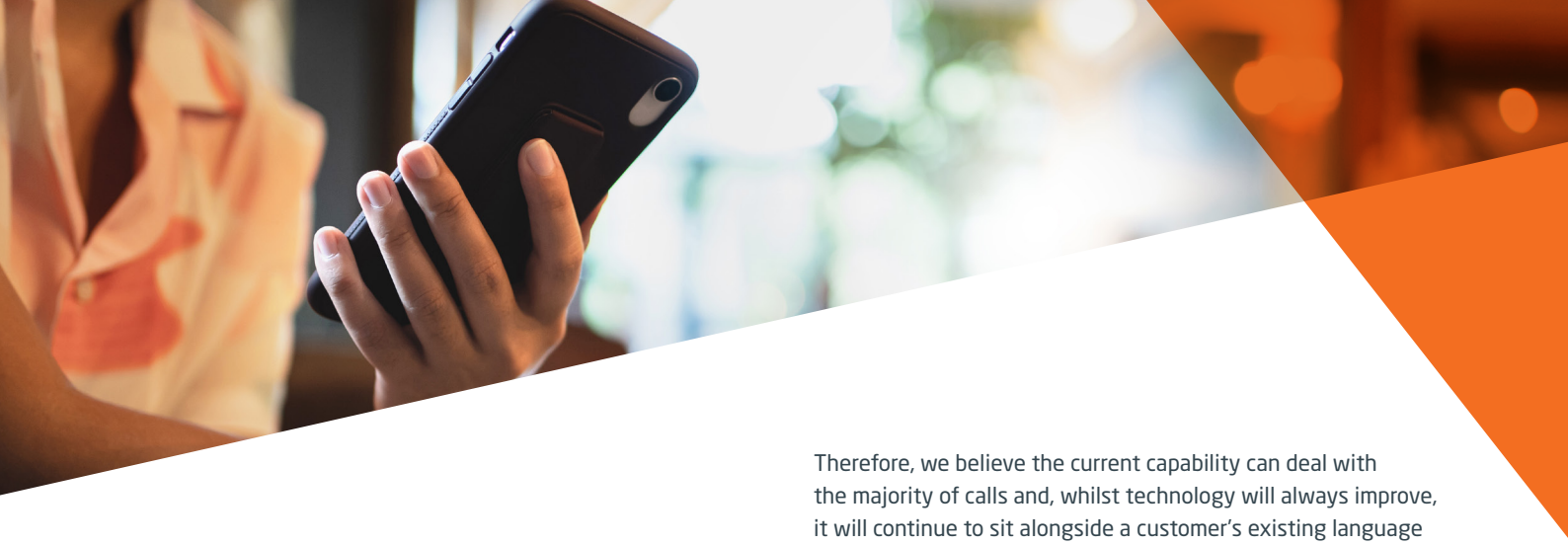
Picture a scenario where a call handler takes a 999 call and is met by a distressed voice in a foreign language. The natural reaction would be to ask the caller if they speak English or to confirm the language they are speaking. However, they continue to speak in their native language or speak broken English which cannot be understood. This lack of understanding on both sides creates a distressing and highly charged situation.

The call handler is in a perilous situation, it's difficult to act as they have no situational awareness nor can they complete a THRIVE assessment (Threat, Harm, Risk, Investigation, Vulnerability, Engagement) in the normal way. They are reliant on their language provider to identify the language and find a suitable translator, but this can take upwards of 20 minutes or more. Meanwhile, the caller has no idea what is going on, has their cry for help been understood, is an officer coming, when are they coming, the uncertainty further increasing their anxiety.

> "For a typical Metropolitan police force in the UK this can occur more than 150 times a month."

Every time this happens it generates stress and anxiety; for the citizen who cannot get the help they need fast enough and for the call handler who is ill-equipped to deal with the situation.





What can we do with tools, available now, to empower the call handler to better deal with the situation?

By harnessing the ability of AI, we have started on the journey to building a service which has the potential to deliver the capabilities the call handler needs; instant language recognition, immediate incident awareness and the ability to verbally communicate back to the caller in their native language in real time. Calls can be automatically analysed, and the spoken language identified in real time for those which are non-English.

Once identified the spoken language can be immediately translated providing the call taker with contextual awareness of the incident which they can then use to decide how best to act. Finally, they can communicate with the caller, again with immediate translation, to let them know they are being understood and help is on its way, having the effect of calming the situation.

Too good to be true?

Based on emerging technology the list of supported languages will almost certainly not be comparable to those provided by existing language providers, and even though we have conducted sensitivity analysis on language recognition, real life is far too nuanced to consider all permutations.

Given that technology is still evolving, how useful can the service be? The Pareto principle (80% of consequences come from 20% of causes) applies to most aspects of life and this appears no different. Usually, an emergency service's top 20 languages will represent 80% of their non-English calls.

Therefore, we believe the current capability can deal with the majority of calls and, whilst technology will always improve, it will continue to sit alongside a customer's existing language service rather than replacing it.

For the more straightforward scenarios involving fully supported common languages, a call to a language provider may no longer be needed but there may be some scenarios for example when dialect matters, when a human translator may be preferred.

The many nuances of speech in an emergency call, advancements in machine learning and the detection of emotion will result in continuous improvements in both language recognition and translation over time with respect to speeds, accuracy and language coverage.

What's the potential?

The potential for future growth is phenomenal. There are already use cases in local councils and central government where such technology can enhance both customer service and experience when dealing with non-English speakers. The combination of accuracy and cost savings will be the catalyst for major adoption of such services across previously unchartered territories and apply to both mission critical and business critical communications.

In the demanding environment of a control room, where every second can be vital, having the ability to instantly understand a caller regardless of their spoken language will be a game-changer. It is our goal to bring this capability to the control room and provide the call handler comfort in knowing they have a solution by their side which will allow them to handle a call in the same way irrespective of the language the person at the other end is speaking.

> "Does slurred speech, or speech whilst in pain or when distressed impact the performance of recognising a language and to what extent?"
>
> The answers to questions like this are still relatively unknown.

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