West Yorkshire Police adopt VORB to enhance efficiencies and digitally transform its services.

The Project Overview

Keen to be at the leading edge of technology and driving innovation into the region, West Yorkshire Police wanted to explore the potential of using Microsoft Artificial Intelligence and the Bot Framework to drive efficiencies for operational officers.

risual worked closely with the force to develop an application known as VORB that can handle live and immediate requests for operational officers whilst out in the field through their mobile Android devices using voice and speech to text features together with natural language processing

WEST YORKSHIRE POLICE

risual

The Project

West Yorkshire Police is the territorial police force responsible for policing West Yorkshire in England. It is the fourth largest force in England and Wales by number of officers, with 5,671 officers. With the citizens at the heart of the organisation, the police force is always looking to innovate and provide a better service.

The police force has many processes and regulations which must be followed by each officer and employee. However, a vast amount of these processes are very manual and extremely time consuming – which is not beneficial to officers when they are out in the field during real time incidents. Operational officers must call back into the control centre or return to their base to get valuable information to assist them during an incident, often resulting in delays to get the required information sent back.

West Yorkshire Police were using these traditional methods, to even begin looking into a highly important incident. The police force wanted to tackle these outdated systems and processes to begin providing a better service to the officers, district and citizens.
risual and West Yorkshire Police engaged to understand what the force could achieve using advanced Artificial Intelligence and BOT technologies from Microsoft. A brain-storming workshop was hosted to identify the police forces goals, business requirements and their expected outcomes.

The Project Cont'd

The two organisations worked closely together to build a scope of work for an initial proof of concept that would address two key scenarios.
The main objective that West Yorkshire Police wanted to see from the solution was that it would rapidly enable the operational police to move away from the manual processes and systems, resulting in increased efficiencies across the organisation.

risual built a solution on the VORB framework which would run on handheld mobile devices providing instant and real time knowledgeable information to those out in the field working on live incidents. The application has voice services which will increase the speed in which it takes to get from point A to point B in the original manual processes. The Police Force will be able to move away from having to use desktops, laptops, telephone and email processes to raise cases to get the information they need.

Scenario 1: License Plate

One of the main scenarios West Yorkshire Police wished to address was the need to request license plate data using conversational Artificial Intelligence. Originally, the police force were collecting the information when out in the field and were relaying this back to the control centre via phone calls or emails for the officers to then manually run a check on these license plates. Again, a time-consuming process which is not valuable or beneficial to the police force who are actively working during an incident.

The VORB application overcomes this problem immediately. VORB now stores all information in Azure for security and capacity reasons. This enables the police force to run licence plate information via voice control or image recognition. Simply, opening the app and reading the license plate aloud will enable the application in real time to run the data on that vehicle, display all the related vehicle information and the current registered address of the vehicle owner. This process can be completed using voice controls and photographs. VORB also has a one touch driving mode making it safe to use when in a moving vehicle.

Scenario 2: Domestic Abuse

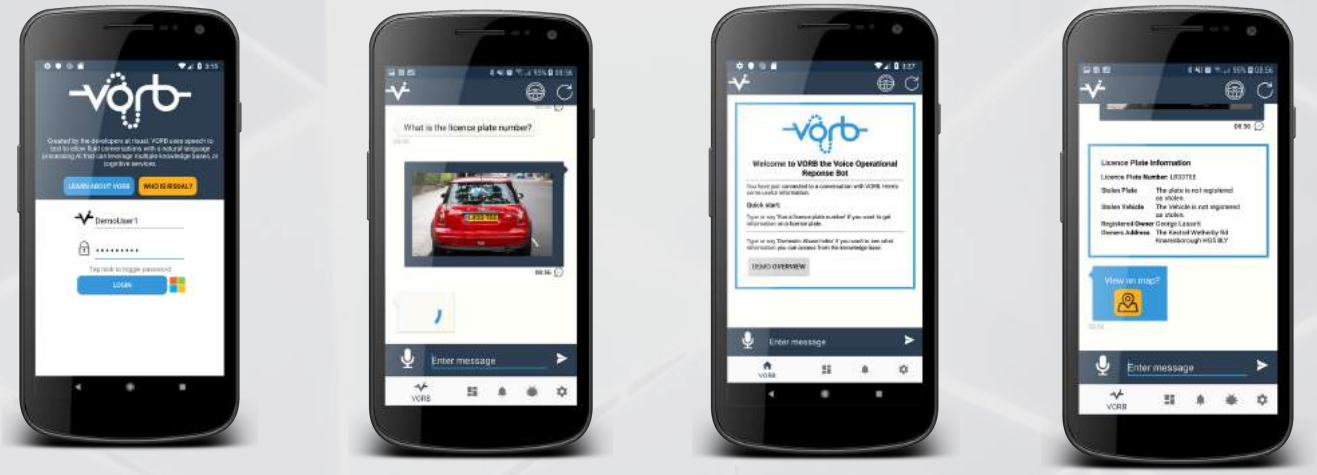
Like scenario 1, West Yorkshire Police wanted to allow operational staff to access knowledge repositories easily when not in the office. The force were looking for a real time solution which allows for increased productivity and efficiency when in the field and of course saves time.

West Yorkshire Police deal with a lot of domestic abuse cases, which were originally being raised through headquarters and then the information being forwarded to the police officer via email or phone call when working in the field which simply isn't effective.

The VORB application can now be used to overcome these issues. Using text or voice commands to prompt the app on an individual, a situation or an area of domestic abuse to return rich content. This allows access to images, meaningful information, links and actions immediately when working in the field. These responses could relate to operational processes, definitions of domestic abuse, or information relevant to a situation that's encountered during the process of the job.

The key benefits of this application to West Yorkshire Police are a sizeable increase in effectiveness across the force where these scenarios would normally involve significant time to get the required information. The manual time-consuming processes will be replaced by modern natural language technology to provide real-time information and transition to a proactive facilitation and surfacing of relevant information to those who need it, when they need it.

THIS IS VORB.



VORB, or Voice Operational Response Bot, is a hardware enabled speech to text natural language processing Bot designed to aid operational needs. risual developers built and leveraged existing Microsoft technologies to provide these services.

VORB is essentially a custom framework built on top of Microsoft's Bot Framework that provides a body of core services as standard; such as speech to text transcription, image text recognition, and natural language processing. These are then augmented by adding in 'scenarios' which are custom built processes that provide additional functionality to the user and leverage the existing functionality of VORB.

Custom built 'scenarios can utilise Microsoft cognitive services such as sentiment analytics, image processing, natural language processing and conversational flows in order to achieve the business requirements in a way that is intuitive, functional and more importantly fluid.

The app can be integrated into various 'channels' such as Microsoft Teams or Skype. For West Yorkshire Police a custom-built Android client, designed to make the most out of VORB, was provided to allow use in the field on Android devices. Using the custom Android client allows VORB to provide a rich natively driven experience. VORB uses speech to text technology at a hardware level, leveraging native performance.

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