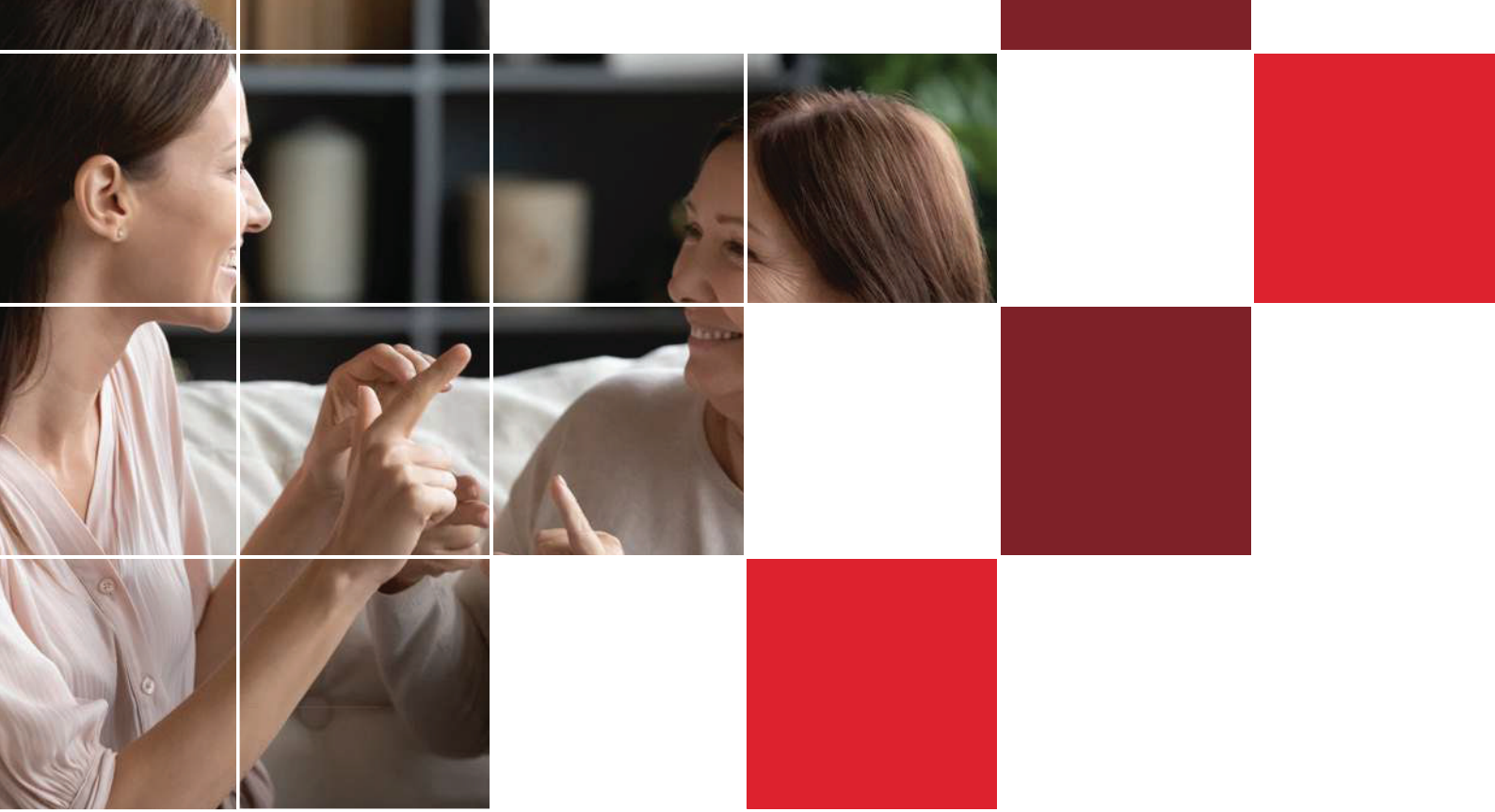


Native VRS Applications



Introduction

Assistive technologies like VRS (Video Relay Service) enable the deaf community to communicate like never before. Before this, deaf persons could only communicate over voice telephone through typed text, which was rather slow and indirect. With the advent of VRS, a deaf, hard of hearing, or speech impaired person that uses sign language can make and receive telephone calls through a communications assistant who interprets the message in real-time and relays it back and forth between the callers.

By bringing direct communication to the deaf community, VRS has continued to change lives ever since. It brought in a positive impact and well-being as well as opened doors to opportunities for persons with hearing disabilities by enabling them to better connect with others.

Our client was the country's first-ever national internet-based VRS for the deaf community. They made this possible through its free VRS app which customers can download and register to make and receive calls. However, the wrapper application they had for desktops proved buggy, which caused it to occasionally crash, become incompatible with the software versions, and severely limited its capabilities in the first place. They were in dire need of an app that is both stable and reliable to use for its customers at any time of the day.



The Client

The client is a not-for-profit telecommunications services company that enables Deaf, hard of hearing, or speech-impaired individuals that use ASL (American Sign Language) or LSQ (Langue des signes québécoise) to make and receive telephone calls using the internet and mobile-based technologies. Each connected caller is aided by a professional sign language interpreter who gives real-time interpretation during calls. Hearing-impaired people relying on sign language can register at the portal for free to make and receive calls.

Their Challenge

The client's VRS application connects registered deaf or hard of hearing persons to a sign language interpreter who interprets and relays the call in real-time between the callers in ASL or LSQ. They had a similar wrapper app that worked for desktops and laptops, which allowed users to connect from their computers. This however was known to contain several bugs that affected its performance and caused the application to crash occasionally.

As a result, they were unable to factor in an app that is both stable and reliable for its registered users to log in and make calls anytime they needed.





Fingent's Approach

The client came up with the idea for a native app for Windows and Mac that allows deaf and hearing-impaired persons to connect to VRS easily. After going through a detailed analysis of the problems that the client faced and the requirements that were laid out, Fingent went ahead to create a robust application compatible for both platforms that helps a registered user make and receive calls, as well as perform a whole range of other functions.

Once the client agreed on the proposal, Fingent then went ahead with developing the application customized exactly as they wanted it to be. The result was a native Windows and Mac app that enabled deaf callers to connect to VRS quickly and easily.

The Solution

Fingent created a native Windows and Mac application consisting of several modules that allowed deaf users to register and login and, make and receive calls, manage their call logs, contacts, businesses, and even support emergency calls to national hotlines.





Features of the Application



Login and Registration

Customers can register for the application and they will be assigned with a VRS number. If they already have an account, they can log in.



Call

Customers can view and manage their call logs from this module.



Contacts

Customers can view and manage their contacts from this module.



Businesses

Customers can dial-in numbers that they want to and make a call from this module.



Dialer

Customers can send and receive voice mails from this module.



VideoMail

Customers can make 911 calls from the application.



911 Call

The customer can make 911 calls from the application.

Technology Stack

IDE	Visual Studio
Programing Language	C#.NET
Database/ Local Storage	SQLite/JSON
Framework	UWP , .Net 4.7.2 (MVVM)
Version Control	On-Premise Git repository
Design Tools	Blend
Target Operating System	Windows 10 1809

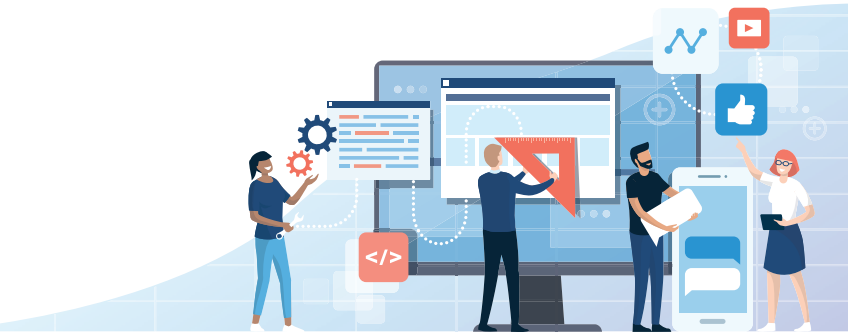
**Windows
App**

IDE	XCode
Programing Language	Swift
Database/ Local Storage	SQLite/JSON
Framework	MVP
Version Control	On-Premise Git repository
Design Tools	Sketch
Target Operating System	High Sierra 10.13, Mojave 10.14

Mac App

Implementation Challenges

While conceiving the app's development process, the development team ran into a few challenges that they successfully overcame.



Challenge #1 - Building a native application running on Windows and Mac was an entirely new experience for the team. Since the technology was new, the team had to quickly acquaint with it first.

Challenge #2 - It was quite challenging for the team to properly coordinate and sort all the APIs and SIP stack for use in the app as they were implemented by a company based in France



Solution's Impact

The solution helped the client to deliver a more robust and stable application for its registered users enlisting VRS services. The extended capabilities and features within the application were a boon for deaf persons, as it enabled them to make and receive calls without any difficulties. The application also allowed registered hearing impaired users to manage all their contacts and businesses through different modules, which makes retrieval easy when needed. Overall, the solution made a clear impact by helping the deaf community to communicate effectively and thus empowering them to become active participants in society.



About Fingent

We are a Global IT company providing strategic IT business solutions and services for complex business problems, in multiple industry sectors including retail, healthcare, finance, education, and more. Our technology and industry expertise enables us to deliver cutting-edge internet technologies and scalable, secure, and easy-to-use web applications that work across multiple devices. We believe that the judicious use of technology, together with a good design can reduce complexity, connect individuals, and provide valuable insights, all of which ultimately help businesses succeed.



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