

Project CORvus – Accessible Kit for Android

There is a lot of children which are thanks to visual impairment forced to study in special schools far from parents and the phone is only one connection with their homes. The phone is also in many situations main aid at work for the blind, but also a contact with the world for those, who are at home because of their impairment. Grandparents are connecting with grandchildren, but the phone is also a first help in critical situations for them. Accessible keypad phones were replaced by smartphones which forms a new barrier for the blind. There is an estimation that there are 75 000 people in Slovakia, 16 million people in EU, 285 million people in the world with visual impairment. We believe, that it is important for them to be able to communicate with the world and feel safe, confident and worthy thanks to modern technologies. We know how to reach this.

Solution is the CORvus (innovation of project idea)

The primary aim of Corvus set of applications, which we developed in sheltered workshop of Stopka n. o., is to make touch phones with Android OS effectively accessible for people with visual impairment. We are also visually impaired and we feel in everyday life, that there are still more and more obstacles produced by architects, web designers and application developers... in our independent life. These barriers are sometimes produced intentionally, because visual aspects are more important than functionality, sometimes unintentionally, when they don't know how to make webs, interfaces... more accessible. This is the reason why we feel, that group of people with visual impairment is still marginalized when we think about accessibility, in spite of the fact, that there is a lot of protecting legislation.

The last perfectly accessible phone with OS Symbian and keypad was produced in 2012. The modern phones are equipped with touch displays without a relief components which helps blind people to use the phone. There are some phones with buttons which were developed for elderly people, but these devices are technically insufficient to be able to use them with speech output. The producers of smartphones provided some software which can read the contents of the screen under the finger, but the environment of these phones is very complex, there is a lot of different objects on the screen and screens are rapidly changing which is too complicated to use for many blind people. Approximately 80% of blind people in Slovakia and other countries are not able to use these modern phones. The partial solution of this problem is the fact, that there are phones produced as compensational aids specially for the blind, but we unfortunately know about only three these devices and they are too expensive, with limited functionality, old, without updates.

We are aware that each blind person is an individuality. One prefers a functionality, other likes a nice design, many blind people do not want to use „special“ devices, because they want to use the same applications and possibilities as sighted, others are looking for a simplicity, they want only to call and they are not ready to pay 800€ for it. So, we decided to develop a software, which can be installed to standard phone chosen by the user, not a special hardware. The part of our solution is a screen reader which allows users to use many applications produced by other developers. The innovativeness of our project lies in a fact, that blind users can thanks to Corvus use standard phones and applications with comfort and effectiveness.

CORvus – From the blind for the blind (innovation in access to target group)

As we said, project Corvus is realized by sheltered workshop of Stopka n.o., where we employ visually impaired people. We primarily provided services related to education of intact population,

but after we found that our employers will not be able to work independently – they have to connect with clients, arrange the meetings, or realization of particular event, we started to think about this problem.

All members of Corvus team which manages development, testing and distribution of our product except one sighted assistant are blind and partially sighted which is our main benefit, because we know (thanks to our experiences) properly define our needs and requirements and how to fulfill them.

E.g. our programmer is Peter Lecký, a blind absolvent of faculty of mathematics, physics and informatics at Comenius university in Bratislava, where he also worked few years and provided course about accessibility of web and applications. We have also social worker and absolvents of special education in the team. So, the Corvus is on one side our work, which is great when we think about reduced possibilities to find a job in liptov region and on other side, it returns back to us and other people with visual impairment a possibility to communicate using modern phones. The possibility to communicate is also very important for those who lost seeing to be able to include themselves back to the society. They received 80% of information through eyes, but without seeing they have to communicate. They can use phone to connect with the family, call taxi, call for help when they are lost in the streets, talk with doctor, order the food from hypermarket. There are other important benefits for target group of COrvus. Our product tries to utilize smartphones as much as possible and thanks to their versatility tries to be useful aid at home, at work, or on the way (can be used to determine brightness of clothing which we want to wash, helps to recognize objects, makes navigational applications for the blind accessible, identifies light in a room and so on). So, smartphone with Corvus pushes blind out from isolation and increases their chances to find a job, social life, status and full-value life. All the benefits and importance to continue with the development is also supported by the union of blind and partially sighted people in Slovakia.

COrvus – how we create it (innovation in realization process)

The base of Corvus is special talking environment. Operation in this environment is very simple and fast also without seeing, because it is not important where you touch the display, but which gesture do you use. Another part of Corvus – corvus screen reader - lets users to use standard android applications. Thanks to integration of special environment and the screen reader, COrvus is a unique tool of mobile communication for people with visual impairment, but also for seniors with worse seeing, for dyslectics or people with motoric diseases. They can use the simple and effective environment to call, work with SMS and e-mail, with web, GPS, they can identify objects, do sporting, do sound recordings, listen books, write notes, read text documents, use calculator, work with files, train their hearing and imagination through games and use many other practical functions.

Besides the comments from team of visually impaired beta testers, we also receive ideas and comments from real visually impaired users, which means, that Corvus is not only a project of few visually impaired enthusiasts, but it also respects the requirements and needs of group of blind. Comments from them was for example a motivation for us to implement an application sport, to track values motivating people to achieve better results (times, distance, speed, heartbeat...), we actually work on library application, which will directly connect corvus with special libraries providing audio books for the blind. There are some special devices, which were used by blind people to sign the objects with packaging where they cannot properly identify what is inside. E.g. they used a kind of relatively expensive tag to sign the bottle with compote and they used a special pen to read the tag and find what is inside the bottle. They asked about a possibility to use phone for this and to be able to produce own, possibly cheaper tags. So, we have actually QR code reader in COrvus. Our

users can use their printers to create tags and they are not required to use any special device for identification, smartphone is enough.

We also collaborate with professionals from different specializations. We use external translators, graphic designer, lawyer, but also consultations with rehabilitation workers, managers...

The development of this kind of special software is rather expensive, so we are trying to find more sources to finance it. Important part of financing is covered by government fees and fundraising. We also count with financial participation from end users, they can receive a financial support from the government social programs in some countries. Because of relatively small target group, it is very important for us to spread our software to more countries, provide it to more users and so make it durable and sustainable. We are nowadays looking for investor to do this.

CORvus – to the fore (innovation in perception by the public)

Besides the union of blind and partially sighted in Slovakia and similar organizations in abroad, our distributors in Sr, Cz and Pl and office of work, social thinks and family in Ružomberok, we cooperate also with regional companies and self - employers. Cooperation with Impact HUB in Bratislava is also very important for us. We took the first place in technology for good category of their startup incubator in November 2016. We also received success at the end of 2016 in most famous Slovak startup competition Startup awards, as one of three finalists in society category. These events opened for us new possibilities to get in touch with prospective partners, but we also received more attention from local and national televisions, radio and print media. We medialize particular functions of CORvus in relation with real users, which informs intact people about the possibilities of the project, but also about abilities and skills of the target group in nontraditional way. We also received a chance to negotiate with mobile network providers about a possibility to provide Corvus as a national service, discuss with companies which wants to make their electronic services more accessible for the blind and partially sighted through CORvus.

Epilogue

Blind people in Sk, Cz and pl are nowadays finding that Corvus can successfully cower their needs related to mobile communication and to many other areas. Children with visual impairment living in dormitories of special schools can call with their parents, employees are not limited by the phone in their works, people who are at home are feeling less isolated, it respects requirements of young people but also need of simplicity expected by elderly people. We believe, that we will be able to propagate Corvus to other countries, nearer to new users to help them and make their communication with the world simpler and participation in competitions like this can help us to achieve it.

Please look the video in English at

http://shortcuts.corvuskit.com/short_video_for_donors.html

To understand better what Corvus brings to the target group.