«ICO – 2017»

Dear Investors, this is not an ordinary project from the ICO perspective. You have got used to see ***ICO*** *as something mythical, which is not supported by anything, just like the cryptocurrency as a whole.* ***SNB token*** *is a currency, which will allow us developing an unrivaled social network* ***(Network for the Blind)*** *for blind and partially sighted people and a* ***WGStick*** *device to be used for the Internet communication. Due to the* ***WGStick*** *development the token stock price will be growing.*

SNB token holders will receive 45% dividends from the Company profit.

The social network and device are a product for a community accounting for over ***39 000 000*** *persons/users, and it is growing every day.*
Blindness is something one cannot be protected from.

Project Summary

SNB - Network for the Blind is a blockchain network for the data processing and quick messaging (My page, messages, news, people search, friends, music, audio books, e-mail, etc.). The social network is based on the **WGStick** device, which allows the blind and partially sighted people communicating with each other on the principle of the well-known social networks all over the world. (My page, messages, news, people search, friends, music, audio books, etc.)

WGStick is a device similar to a tablet without the monitor screen. It has a Braille magnetic keyboard. Ordinary magnets serve as buttons. If there is no information on **WGStick**, the magnets are attracted to one another by themselves. When the user is refreshing his/her page, **WGStick** receives an encrypted signal from the server processed by the device on Android. The **WGStick** panel displays the elements of the last page in the social network **SNB - Network for the Blind** similar to Twitter and Facebook. The Braille characters are used to display the message. At the moment of receiving the information, the message is generated by the change of magnetic polarity.

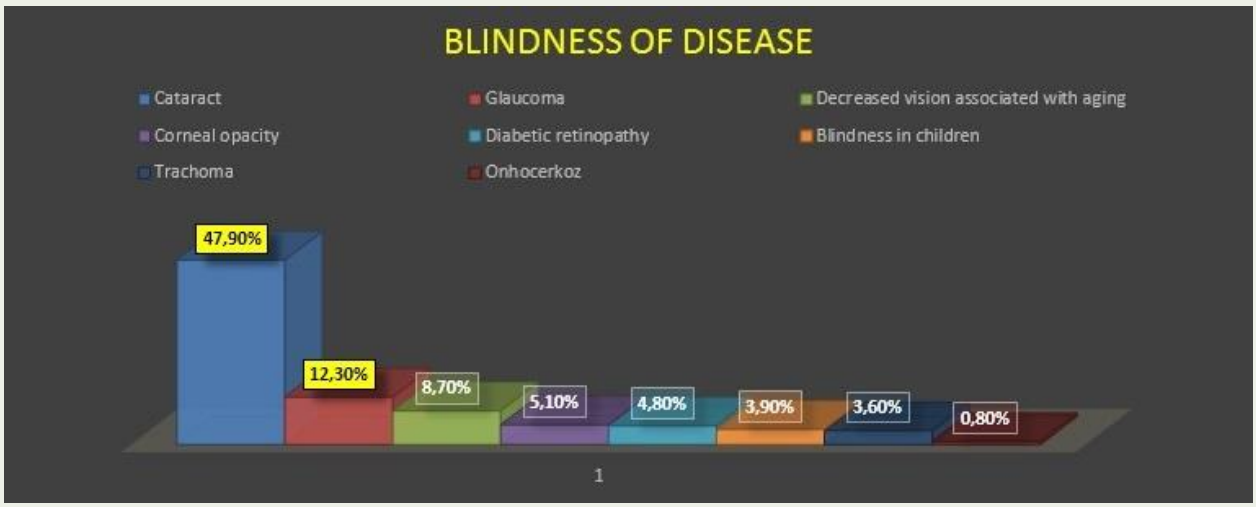
The social network pages are switched between on the same principle. The user him/herself can ask to update/receive information on the device. After sending information to the user, the 'tab magnets', which have received the information, will be 'active'. They will be active until the user reads the information received on **WGStick**. Only after the user's forced action the information will be reset and sent to the archive or the reads.

This WGStick device is at the design stage, an active prototyping phase will follow the sale of SNB tokens. For the detailed description of the SNB - Network for the Blind project development stages, please, see the Roadmap.

You are kindly requested to take part in such an important social project.

Market Description, Challenges, Devices, and Programs

According to the World Health Organization, the following are among the frequent causes of blindness:



- Cataract (47.9 %)
- Glaucoma (12.3 %)
- Decreased vision associated with aging (8.7 %)
- Corneal opacity (5.1 %)
- Diabetic retinopathy (4.8 %)
- Blindness in children (specifically caused by the Vitamin A deficit, cataract, and retinopathy of prematurity (RP)) (3.9 %)
- Trachoma (3.6 %)
- Onhocerkoz (0.8 %)

- Causes associated with pregnancy
- Traumas
- Genetic deficits
- Intoxication
- Forms and intensity of blindness
- Watches with a special face

Among others, the blindness can be caused by the traumatic eye damages and infections (such as blennorrhea, syphilis, and others). Blindness associated with aging and caused by uncontrolled diabetes are becoming more and more frequent all over the world. On the other hand, the medical and sanitary actions result in the decrease of blindness caused by the infections.

Developing Countries

— Blindness is much more frequent in the developing countries of the world than in the developed ones. According to the WHO, 90% of all blind people live in the developing countries. Among them cataract is the cause of 65% (22 million cases). Glaucoma results in blindness in 6 million cases a year, while onhocerkoz is responsible for about 1 million cases of blindness in human beings all over the world.

— The number of individuals who have become blind due to trachoma has reduced drastically over the last 10 years from 6.0 million to 1.3 million cases a year, thus making it rank seventh in the list of blindness causes all over the world. Xerophthalmia affects 5 million children every

year; 0.5 million have their cornea damaged, and a half of them become blind. Today, corneal scarring due to any causes ranks fourth in the list of significant blindness causes in the world.
— People in the developing countries have the vision disorders as a result of the conditions or diseases, which could have been healed or prevented, much more often than those living in the developed countries. Although visual deterioration is prevailing among the people over 60 in all regions, children in poor communities are more likely to suffer from the diseases leading to blindness than their well-to-do peers.
In the developing countries, where people have a shorter life expectancy, most frequently blindness is caused by cataract and diseases affected by the waterborne invaders, though both cataract and these parasitic diseases can be effectively treated.

Correlation between the poverty and treatable vision disorders is more obvious in the regional comparisons. Most vision disorders in adults in the North America and West Europe are associated with the age related macular degeneration and diabetic retinopathy.

The blind are totally blind or partially sighted people. They can be congenitally blind or become blind as a result of traumas and diseases. In case of blindness an individual becomes and is recognized to be a disabled person. Blind people know their way around using their sense of hearing and touch, special devices, sighted persons, and guide dogs.

Blind people use the Braille symbols for reading. There are special libraries for the blind, which store Braille and audio books on different media.

Helping the Blind in the Environment Perception

Developers all over the world are developing different devices to help blind and partially sighted people to orient and perceive the environment.

- Dimpled paving slabs on bus stops
- Traffic lights with acoustic signals
- Relief street paving
- Barriers
- Braille duplication of letterings
- Special help services
- In some touristy places surrounding models are created in a small scale for the blind people to familiarize themselves with the surrounding architecture using their sense of touch
- Guide dogs

Computerized Electronic Devices

Today, audio books are an interesting alternative to the printed books, which allows listening (by sections, sometimes with the possibility to make a pause) to the stagings and audio performances using a digital audio player. There are websites, where audio books are created by the volunteers for free distribution.
In addition to the audio books specially recorded by the reader, special voice programs for the speech generator-based reading from the screen represent a practical utility for the blind.
Blind people can edit texts on a PC using an ordinary or special Braille keyboard and a Braille display.
Various devices are being developed, such as the Tactile Vision project – models of the visual substitution devices – vision substitutions, a ‘new patented method of signal coding and transfer’.

To be able to use a computer the blind usually use special Braille and voice data input and output. Besides, special tactile electromechanical panels are used to output the graphic information in a tactual form.
There are specially developed Linux distributives for the blind — Oralux, Adriane Knoppix. Also, there is a web-technology WAI-ARIA, which allows the blind and partially sighted people using the Internet.

Bionic Eye

Bionic Eye is an artificial vision system used to restore vision. An implant (retina prosthesis) is placed into the eye with the damaged retina replenishing the retina with the remaining undamaged neurons.
The technology differs in a video camera mounted in a special pair of glasses and sending information to a belt-worn video processing unit. The processing unit converts the picture into the electrical impulses and sends them to the special transmitter also mounted in the pair of glasses. Then the transmitter sends a wireless signal to a microchip implanted in the eye and a photosensor (electrode panel) implanted in the patient's retina.

The photosensor electrodes stimulate the remaining healthy optic nerves of the retina sending electrical video signals to the brain through the optic nerves.
There are new methods of sight recovery to the blind using a video camera and electrodes implanted in the brain.

Due to the high cost of the guide dogs training, recently electronic guides have appeared, such as Electrosonar, a device for the blind. After detection of an obstacle Electrosonar produces an acoustical or vibration signal with different duration (the signal duration depends on the distance to the obstacle). Turning the device in different directions gives a clear picture of the surrounding obstacles, such as border stones, steps, and walls. A technology, which would allow the blind driving a car, is under development.

Currently, Chicago scientists are testing a new device Argus II, which will help the blind to see. The device consists of an implant to be placed in the retina and a special sophisticated pair of glasses. The glasses pass the image via a video processing unit, which in turn sends instructions to the implant. These messages stimulate the retina to send impulses to the brain via the optic nerve. Thus the individual can see object contours and light contrasts. For the moment such studies are being held in 13 places in the USA.

Electronic Devices

Braille Display

Braille display illustration (fragment)
The Braille display is an output device designed to display the text information in the form of 6-dot symbols of the Braille alphabet. Braille displays make it possible for blind and partially sighted people to use modern computers.
About Display
Typically the display shows 40 or 80 characters at a time. There are portable models with less characters displayed.
The Braille display is a device with moving parts, which requires daily physical loads. Therefore a Braille display costs much more than a visual display — prices (in 2012) start at 5 thousand US dollars per unit.

Since 2000 a new rotating wheel Braille display is under development. In this technology the Braille characters are displayed on a rotating surface, which allows reading the text at a specific speed without touching the characters with a finger. Presumably displays based on such technology will be cheaper than traditional ones.
An alternative to the Braille display is more accessible screen reading programs on the basis of the speech synthesizer. However, only the Braille display provides an easy work with the text, including editing.
Braille displays are connected to the computer via USB or Bluetooth interface. In total there are a bit more than 10 manufacturers in the world.

Braille Keyboard

Also, there are PDAs with a Braille keyboard and display, for example, BrailleNote PK.
In computing, input/output is the communication between an information processing system, such as a computer, and the outside world, possibly a human or another information processing system. Inputs are the signals or data received by the system and outputs are the signals or data sent from it. The term can also be used as part of an action; to "perform Input/Output" is to perform an input or output operation. Input/Output devices are the pieces of hardware used by a human (or other system) to communicate with a computer. For instance, a keyboard or computer mouse is an input device for a computer, while monitors and printers are output devices. Devices for communication between computers, such as modems and network cards, typically perform both input and output operations.

Computers designed for the vision impaired people have a number of additional devices. They are required to simplify the process of communication between the PC and a human. Among them talking computers, Braille printers, and displays are worth mentioning. Let’s discuss their models and operational characteristics.

Talking Computers

People with disabilities use speech synthesizers for a full-fledged work on the computer.
They differ in their variety. There are both paid and free options, varieties: jaws, Nida, Cobra, Windows screen reader.
Talking computers give partially sighted people a chance to use a computer at the same level as other people do. They allow them using the Internet, e-mail, Skype, create text documents, spreadsheets, listen to the music and audio books, etc.

Braille Printers

This device (also called oppressor) is designed to print ordinary and Braille documents. It is used to print text files and graphic images in the form of embossed dot symbols.

Also, it is used to print an ordinary document in parallel with Braille document.

Jaws Screen Reader

Jaws screen reader. This program simplifies the computer work for the blind and partially sighted people. Jaws allows exposing to sound all characters on the screen with different voices. It can be used not only to read interesting information displayed on the screen, but also communicate and play games. This program has a demo version, which can be tried for free for 30 minutes.

ClaroSoftware

ClaroSoftware product is designed for the vision impaired people.
LookOut is a program for blind people. It exposes to sound all the information displayed on the screen at the moment. A keyboard is used for the program management.
Magnus is a program designed for the partially sighted people. Its main functional feature is a lens for multiple zooming of the screen objects.
SpeakOut. People with sight disabilities use this product to hear the chunk of information from the monitor, at which the mouse cursor is pointing.

Cobra Screen Reader

Cobra simplifies the work with Windows 7, Vista or Windows XP for blind and partially sighted users. Cobra combines all standard functions of an advanced user-centric screen reader.

Webwizard

This application working together with MS Internet Explorer is a web-page (like in a customary mode), which can be used to perform different actions in the Internet (make enquiries, search interesting information, switching from source to source, etc.).

Luwrain Operating System

After loading this operating system allows vision impaired people working on a personal computer.

Audio Glasses

Today one can see using his/her ears: SSD glasses (sensory substitution device) developed by the scientists from the Hebrew University in Jerusalem will help a blind to identify what is going on around him/her by a special set of sounds. The embedded small video camera is connected to a smart phone or computer, and a special program converts the visual information into audio signals.

Ultrasound White Cane

The designer Minhye Kim created a concept of the Supersonic Stick on the Wrist for Blind People. Briefly, it is an ultrasound white cane, though looking unusual. A tiny digital system is placed on the wrist as a bracelet. Being fixed on the front of the wrist, this smart “device” alerts the user with a sound and vibration. Pity it’s just an idea waiting for its turn for realization.

Guide Shoes

You don’t like “seeing” with hears and hands? Well, then let’s talk about feet! Czech developers have created special shoes having studied the bat’s hunting. However, instead of acoustic waves they decided to use infrared waves: the device emitting them is embedded in the shoe sole. These waves reflect from the obstacles on the way and are caught by a special sensor. If the owner needs be more careful, the shoes will alert him/her with a sensible vibration.

Supermarket Guide

The concept of this useful wrist device has been developed by the designer Dinard José da Mata Filho – it will help the blind to do shopping. The gadget can recognize unique barcodes of the

goods and read aloud the product information: price, best before date, weight, model, manufacturer, etc. Comments of this little assistant can be heard via wireless headphones.

Mobile Phone

DrawBraille is a phone concept developed by the designer Shikun Sun irreplaceable for the vision impaired people. The point is that the interface and input keys are made in the Braille script. On the other hand, this idea looks somewhat outmoded in the context of the next invention.

iPad for the Blind

Designers Johan Ollashas and Kikki Tham Sterner created a concept of the special photosensitive film iSense, which is placed onto the iPad and, after detecting the light level in different parts of the screen, becomes more or less embossed depending on the light intensity. Thus, it will be possible to read the Braille script and simple visual information even in the Internet. Today, iSense remains just an idea, but it makes up 50% of the result, doesn't it?

Cars for the Blind

Authors of an unordinary project Virginia Tech Blind Driver Challenge are students of the Virginia Engineering School (under the auspices of the US National Federation of the Blind). There are standard principles of driving a car: steering wheel, gas and brake pedals. The driver also needs to wear a special waistcoat and gloves, which will allow him/her receiving the data about the speed or degree of the impending turn by means of vibrations.

Cybernetic Eye

Extremely desperate people, who have lost their sight due to a trauma and wish to get it back by all means, will be able to become real "Terminators" soon. Australian scientists are working on creation of a "bionic eye", which first test is scheduled for the end of this month. This innovation will not strike the eye – it would be enough for the blind to put a special pair of glasses on. The secret is that due to the embedded video camera they will practically substitute his/her retina. The pocket processing unit will convert the data received from the surroundings into the electronic impulse and send them directly to a microchip implanted in the brain. The impulses will be sent from the chip via thin electrodes penetrating the visual cortex of the brain. Stimulation of the latter results in occurrence of visual sensations. Thus, a "cyborg man" will get a black-and-white vision with a small resolution of the image. If the developers had equipped the video camera with a recording function, then it would have been possible to revise "special moments" of the day done or share them with the relatives.

For those, whose vision problems are rather connected with the changes in the visual analyzers (in the elderly age), another group of scientists from Australia is developing a retina implant, which will be embedded directly into the eye. If the next year testing succeeds, the era of thick eyeglasses can be officially considered as over.

All the above devices are combined by the principle of world perception by the blind and partially sighted people. Certainly, most of the developed devices are simply indispensable to life. Important things: All devices developed as of today cost a lot of money (Everything's relative, of course), but there is no product with a mass domination in the market. All devices are for one user. Based on the above devices it can be concluded that today it is obvious that a social network will be highly demanded. Social network is something that would allow this group of people getting with each other, creating interest groups, learning, meeting, viewing the news, and sharing information.

WGstik is a device being a page in the social network (personal account). WGstik will work on a tablet principle (Braille keyboard, zone for information reading, main tabs of the social network). The principle of operation of the device is based on the magnets, which have special positioning on the flat surface of the device, being designed so that this device reminds a page in the social network. Due to the ease of operation WGstik will not exceed the cost of a mobile phone or ordinary device.

The device principle is unique and simple. It's like an entrance door working on a magnet. It opens when a signal is received, no signal – the door is closed. WGstik has the same principle. There are magnets on the device, which are either attracted to each other or, due to the change of polarity and presence of the incoming information, the magnets change the polarity and become relief creating a Braille message.