

# Memorandum Penny AB

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# Table of content

History of Penny Technology in Time		3
1.	Memorandum Summary	4
2.	Distribution Territory and Jurisdiction at Dispute	6
3.	Risks	9
4.	The Founder and the Product	10
5.	Terms and Assignment	12
6.	The Product	17
7.	Product Design	20
8.	Competitors	22
9.	The Company	27
10	. Customers & Market	39



### History of Penny technology in time



The first Mockup is built based on Erik Lundströms studies at KTH oyal Institute of Technology.



2005



he first Prototype of the CBS ommand Buttons Sensor is built ased on Erik Lundströms ideas of a facial mouse.

2006



2007





2008

The first complete designed system presented to the market at the international conference ETRE in Stockholm.

BM10 is released to the market

2009





2010

Work started for the new product series BM20 that will replace BM10. A complete form factor for the frame, optics and electronics.

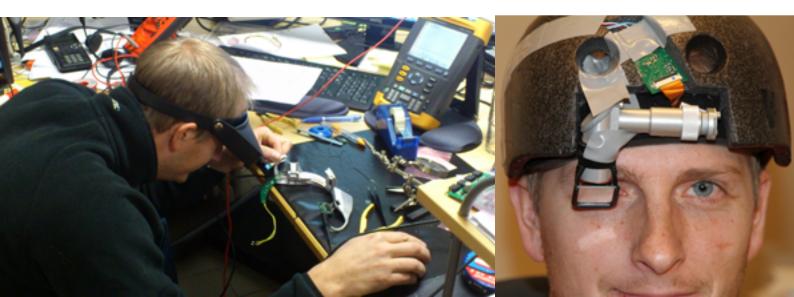
# 2011

BM20 is previewed for the first time during the Innovative Sweden Exhibition at Stanford



2012

The final design of the BM20 is created. Years of hard work and we can finally present the first production ready sysem.



# 1. Memorandum Summary

# 1.1 About this Summary

The summary that follows on memorandum, offer and the Company, shall be considered as an introduction.

The summary does not necessary contain all information for an investment decision, hence each investment decision shall be based on the investment memorandum as a whole. If this summary is misleading, erraneous or discrepant with reference to other parts of the memorandum, civil law liability can only be imposed to the board, who has constituted the summary.

# 1.2 The memorandum

This memorandum has been constituted by the board of Penny AB, who is responsible for the content as a whole. The memorandum has been constituted with support of exception from prospectus liability according to the Financial Instruments Trading Act (1991:980), 2 ch 4 §.

The board of Penny AB affirms that all reasonable precautions have been taken to ensure that the information in this memorandum, as far as they are aware, conforms with actual circumstances and that nothing has been excluded that would affect its meaning.

Statements about the future of the company are based on current market conditions, plans and estimates, as well as estimates of general factors in the surrounding world. Even if the board acknowledge that the statements are well worked out in detail, the reader should be aware of they are, as all future estimations, based on assumptions. Such estimations are by definition unsure.

The board does not take any economical responsibility whatsoever for an investment based on this memorandum. Actual development, coincidences and financial progress can substantially deviate from the expectations, even though the board consider the future information being based on reasonable considerations. An investment in Penny AB is to be seen as a high risk placement. The offer in this memorandum does not address persons whose participation assume further prospect, record or other measures than those following Swedish law. The memorandum must not be distributed in any country, where the distribution or the offer require measures according to the former sentence or in conflict with rules in such country.

The new shares or other financial instruments have not been registred according to United States Securities Act of 1933 ("Securities act") according to its current meaning, neither according to similar laws in any single state in the United States of America, Canada, Japan or Australia. Hence, the new shares must not be offered to the market or be sold in the United States of America, Canada, Japan or Australia, or to persons with its domicile there or on behalf of such persons without the exception of registration requirements.

Any subscription of shares in conflict with the aforementioned may be considered as invalid. For this memorandum Swedish law applies. Any dispute with respect to the memorandum content or thereto related legal relationships shall be settled in Swedish court exclusively.

The development of C Wear Interactive Glasses began in January 2006 and the first proof of concept prototype was released for beta testing in January 2009. The first manufactured systems is planned to be released during first quarter 2014. It was developed to significantly improve the way today's use of information in a mobile environment for users with the need of Augmented Reality data without the ability to use hands or users having their hands occupied.

With the rapid growth of mobile computers, laptops, mobile phones, tablets and other similar systems, the product offers tremendous advantages to professional users, as well as handicapped (disabled) and in the close by future also the consumer market for the everyday use of mobile systems.

# 1.3 High end developer

Penny has moved the last four years to be positioned as a high-end hardware developer.

Penny enables users to see graphics on top of the reality in a mobile environment, control the mouse functionality by head movements and mouse commands by pressing the jaw together. The use of the latest Augmented Reality technology combined with Penny's product C Wear Interactive Glasses has given Penny a sole position. No other company has been able to combine all this technology hardware Penny have put a great effort to evolve and been able to present a system as complete as Penny's.

# 1.4 Sales Strategy

The sales strategy is divided into three different phases:

The first phase is to attract professional users only and for whom the product will be packaged and sold by Penny's own sales department or by Penny's agents i.e. The Penny Advisor Mr Marshall Ferrin, West Virginia, USA.

The second phase is a semi Professional and Consumer focusing on retail markets where mobile computer devices and mobile phones are sold, by agents to specific market groups and by retailers and online via the Penny company website. The system can also be sold via targeted direct mail campaigns.

The third and final phase is Penny's setting up cooperative agreements with the world leading mobile phone developers and manufacturers, where Penny will license the technology as a "Penny Technology Inside" PTI program. The third phase will accelerate the sales to a global worldwide consumer market.

# 1.5 Markets

The potential market for the Penny Interactive Glasses is very promising. Penny is competing in four market segments: Industrial Solutions, Healthcare, Government and Entertainment. Entertainment is the Penny conusmer market and we have divided it in three segments: Portable multimedia and media players, Smart Phones and Game Consoles. The aim is towards a market share of one promille of these markets in year 2015. A total of 950.000 units with a price of 250 Euros will give Penny sales of 230 million Euros year 2015.

Our financial projection for Year 1 is a net loss after taxes of  $\notin$  367,000. Year 2 is projected at a net loss after taxes of  $\notin$  915,000. Year 3 is projected at a net profit after taxes of  $\notin$  810,000.

# 1.6 Management Team

The Management Team members have strong backgrounds in both computer hardware and software development.

In September 2012 the new CEO could start at Penny after a few months recruiting process. The founder and previous CEO started his new mission as the company CTO and Marketing Director.

The new CEO was the former Managing Director of Sandvik Powdermet AB. Previous offices as CEO of ABB Industry School, CEO of Vitec Fastighetssystem AB, CEO of Vitec Invision AB, CEO of Deva Invision AB, Eyescream @home AB.

The CTO was the professional front end designer of software and Internet solutions that advanced to be the Marketing Manager at Eyescream Business Automation in Sweden and later also the Design Manager at Broadcast Control & Communication

The President of Penny is a serial entrepreneur with companies in USA and in Singapore and have a long background in software development.

### 1.6.1 Nearby Hiring Process

We are aware that to be able to have a agressive marketing and sales within the four market segments we do need to improve the number of employed in Penny. First of all Penny will hire a Sales Manager and team with specific knowledge of the selected markets.

# 2. Distribution Territory and Jurisdiction at Dispute

According to 1 ch 7 § in the New Companies Act, a private limited company or a shareholder in such company may not distribute financial instruments which the company has issued through advertising.

A private limited company (or a shareholder in such company), may also not in any other way distribute stocks by offering more than 200 persons to subscribe and acquire such stocks. This does not apply if the offer is directed exclusively to a group where the members in advance have subscribed for such offer, as long as the number of offered blocks does not exceed 200. In other words, a private company may distribute a new shares offer to an unlimited group of non-qualified investors, who in advance have filed their interest for subscription at a financial advisor for non-public offers. In this case, a non-qualified investor preferentially refer to a private person.

This memorandum have constituted by the board of Penny AB for information purpose, concerning the present private placement. By receiving this memorandum and other information which may be at hand for the present private placement, the recipient accepts that

1. the information is confidential and that

2. the recipient must not without special permission from Penny AB, duplicate or distribute this information to any other extent than necessary for an investment decision.

This memorandum is not a prospect and has not been registred by the Swedish Financial Supervisory Authority or any other authority.

### For questions, please contact:

Peter Ovrin, CEO, phone: +46-70-388 87 54, e-mail peter.ovrin@penny.se.

# 2.1 Offer of investment directed to specific investors

This is an investment offer which caters to a group of investors for a maximum of 200 persons / companies.

The value of the company is now 14,140,000 SEK (pre money). The value is based on the production of a total of six prototypes in various stages of the company. The production of a digital 20-series. Software development and design of the product for the market introduction. Minimum investment is 1,000 shares.

# 2.2 Abbreviations

In this memorandum, Penny AB will be referred to as "Penny AB" or "the Company".

# 2.3 About the Company

Penny AB, Org.no. 556234-0223, is a Swedish company located in Västerås, County of Västmanland.

The company office is located at Linslagargränd 5, SE-721 29 Västerås. The legislation for the Company is Swedish law and the legal entity is regulated by the Swedish Company Act (2005:551).

### 2.3.1 Board of Directors, Management Team and Accountant

*Board of Directors:* Staffan Anger (Chairman), Göran Karlsson, Sture Leandersson, Erik Lundström, Jan-Erik Lundström and Mariann Lundström (permanent members).

Chief Executive Officer: Peter Ovrin. Chief Technology Officer: Erik Lundström President: Jan-Erik Lundström

Accountant: Desirée Nyhlén Wittberg, KPMG AB, Västerås.

*Advisory Board:* Per Vannesjö (Amymone AB), Farley Duvall (Whitebull Summits, Bacelona, Spain), Marshall Ferrin (USAID, West Virginia, USA)

# 2.4 Company Introduction

Penny AB started the Interactive Glasses business in spring 2005 and the actual development of the glasses one year later. Erik Lundström decided to start the company based on the positive results from a private research initiative since 2000.

The Compay has developed the ideas from Erik Lundström into a unique product, which already had patents pending in 2005. Today, the Company has patents in Europe, China and USA.

**Initially, Penny AB's unique interactive glasses** will be offered to professional users within industry, authorities and health care, prior to planning a more vast introduction to the consumer market.

In addition, Penny AB also has the intention to offer the glasses to disabled people through legitimate channels. As an alternative, disabled people may be able to rent the glasses in order to utilize the product as early as possible.

Penny AB has the intention to initiate sales in the European market, and thereafter expanding the sales to other parts of the world.

Cooperation has been initiated with professional software developers and Penny AB is planning to create a pool for them, where Penny AB's customers can make inquiries. In this way, the relations with both the customers and software developers can be strengthening. In the long run, the plan is to build a broader platform for "apps" on the Internet, similar to iTunes or Android Market, where anyone can create apps for the glasses.

# 2.5 About the offer

In June 2013, the board of Penny AB decided to carry out a new issue of shares series B as a private placement.

The price per share is 2,50 SEK. Subscription is done in blocks of 4,000 shares at 10,000 SEK each. The total offer is maximized to 500 blocks, corresponding to at the most 2,000,000 shares series B. In total, the new issue of shares will be 5,000,000 SEK at full capital stock subscription. For a complete presentation of the offer, please refer to the text regarding subscription for shares and sections on terms and directives in this memorandum.

The new shares (series B) will have the same rights as the former. Series A entails ten (10) votes per share, and series B one (1) vote per share. Current shareholders will have preferential right to the new shares.

Subscription Period: August 15, 2013 to September 30, 2013. Subscription Stock Price: 2,50 SEK per share (series B). Subscription per Block: Minimum 4.000 B-shares. Price per block: 10.000 SEK. Number of blocks: 500 blocks. Settlement Date: According to instructions in the Subscription Note

New shares volume: Maximum 5.000.000 SEK.

## 2.6 Purpose with the offer

The purpose with the new issue of shares is to raise capital for initiating a serial production and supplying the market with C Wear Interactive Glasses BM20.

We have minimised the number of components that need to be manufactured. In addition, we have introduced items that enables a quick and simple adjustment with respect to variations in peoples head sizes. Should the new issue of shares not be subscribed to the major part, the project time for these development activities will be prolonged.

# 2.7 Forecasts

This memorandum contains certain statements, estimates and forecasts regarding expected future results in Penny AB. Also, the market for the products and services are discussed.

Statements, estimates and forecasts reflect different assumptions on future results that have been made by the company management. These assumptions may not necessary turn out to be correct.

# 2.8 Liability Assurance

This information memorandum has been constituted by the board of Penny AB with respect to new issue of shares.

The board of Penny AB affirms that all reasonable precautions have been taken to ensure that the information in this memorandum, as far as they are aware, conforms with actual circumstances and that nothing has been excluded that would affect its meaning.

The information in this memorandum is selective and does not claim to comprise all information needed for an investor. In this memorandum different descriptions and evaluations are made regarding the business for Penny AB. The descriptions have been made based on external factors as well as Penny AB's own evaluations. Such evaluations are associated with uncertainty. No guarantees will be put forward that the goals/expectations described in this memorandum will occur.

The Board

# 3. Risks

Investment in stock shares is a risk-taking activity. In addition, a number of issues beyond the control of the Company may affect results and financial position. Hence, potential investors should consider the mentioned risk factors as well as additional information in this memorandum prior to decide on subscription of stock shares in Penny AB. Risks and possibilities are discussed in more detail below.

An investment in the Class B Units is subject to a high degree of risk and is suitable only for sophisticated investors that fully understand that risk and are prepared to bear that risk for an indefinite period of time and are able to withstand a total loss of their investment.

The investment considerations and risk factors described below summarize some of the material risks inherent in the offering of the Class B Units. These Investment Considerations and Risk Factors are not presented in any particular order of significance. Prospective investors should carefully consider the following factors, among others, in making their investment decision. Forward-Looking Statements

The documents and materials provided by the Company in connection with the sale and issuance of the Class B Units, including, but not limited to, the Company's business plan and projections, contain certain forward-looking statements that involve risks and uncertainties.

These statements relate to the Company's future plans, objectives, expectations, forecasts and inventions, and the assumptions underlying or relating to any of these statements. These statements may be identified by the use of the words such as "expects," "anticipates," "intends," "estimates," "believes," "projects" and "plans" and similar expressions.

The Company's actual results could differ materially from those discussed in these statements. Factors that could contribute to such differences include, but are not limited to, those discussed in these Investment Considerations and Risk Factors.

The board does not take any economical responsibility whatsoever for an investment based on this memorandum. Actual development, coincidences and financial progress can substantially deviate from the expectations, even though the board consider the future information being based on reasonable considerations. An investment in Penny AB is to be seen as a high risk placement.

# 4. The Founder and the Product



I'm Erik Lundström and being the founder of Penny AB, I'm pleased to present a product that fills the gap of personal head mounted information viewers, that in the same time enables hands free interactivity; Interactive Glasses.

Today, after many years of hard work, Penny have a product ready for production, with unthought-of possibilities for solving a broad range of problems. We are prepared for introducing the innovation C Wear Interactive Glasses to the international market.

By a coincidence, I started the innovation work seventeen years ago, when I met a young girl. Her life had been overthrown when she tragically broke her neck in a diving accident. My meeting with her affected me deeply, so I decided to invent a tool that could help her and others in the same situation to an independent and dynamic life.

Initially, the innovation work focused entirely on disabled peoples' problem with using a computer or a telephone, controlling their Permobiles, respirators, elevators, house alarm system and other technical equipment in the household.

My and Penny's motto has always been to develop systems based on the most demanding users. If we assure that we meet the requirements from that group, it will facilitate the development of products for a broader market. Over time, new markets have emerged and the mobile boost has radically increased the number of potential users for C Wear Interactive Glasses.

My personal journey has been most worthwhile, at the same time being filled with obstacles to solve, both technical and financial. As responsible for the Penny technology and products, innovation is a major part of my daily work. I am also managing others towards our corporate goals.

In 2008, when we presented our first version of C Wear Interactive Glasses, we received both national and international attention. It was a victory for me and Penny when we refuted those who had said that it would not be possible to produce such a product. We managed to solve the user problems and show a picture over the reality, connect to a Pocket PC and control it with the system sensors.

However, an important detail was missing. It was not possible to show the picture in the direct line of sight, which forced us to develop a new innovative optics solution. During spring 2009, the new version was produced and the same year we signed an agreement with our first customer on test development including their own product.

With this"proof of concept" as a functioning technology, we commenced the development of the current system in 2010. It has been almost three year's intense work, miniaturizing optics and electronics, and increasing the product performance. The design is now more appealing for a wider range of users, and it enables more degrees of freedom in physical adjustments than earlier versions. In total, twelve persons with specialized competences have been involved in the new platform development. Penny has succeeded in creating a group of people and partner companies that are as passionate as us and we owe thanks to all parties for their grand efforts.

With the new technology, we can present a product that clearly distinguishes from our competitors. Our product appeals both to professional users and consumers. The interest for C Wear Interactive Glasses has increased continuously, something that encourages us to take the development all the way to production. Our customer target groups are within industry, health care and authorities all around the world. Penny has also been invited to a number of international research projects, where our technology applies.

Having all the international patents approved, we have been acknowledged with our produce uniqueness. This encourages us to initiate broader sales activities in Europe, China and USA.

Vaesteras, Sweden in August 2013

Erik Lundström Founder of Penny AB

# 5. Terms and Assignment

All terms and assignment for the new issue of shares can be found in the Subscription Note.

# 5.1 New Shares Volume

The new shares volume is 5.000.000 SEK allocated on 2.000.000 shares (series B).

# 5.2 Subscription Stock Price

The subscription has been determined to 2,50 SEK per B-share. Courtage will not be charged.

# 5.3 Subscription Blocks

Subscription is done in blocks of 4.000 B-shares.

# 5.4 Price per Block

The price per block is 10.000 SEK.

Trustee Account: Notification of assigned shares and trustee account information will be provided through a Contract Note (see Subscription Note).

# 5.5 Subscription Period

Subscription of stock shares in Penny AB is open from August 15, 2013 to September 15, 2013. The board decides the assignment of shares. The assignment can be less than subscribed or not be forthcoming. The board reserves the right to close the issue of shares at full subscription, as well as extending the subscription period.

# 5.6 Notification

Notification of subscription is fully legally binding and is done using the Subscription Note, which is enclosed to this memorandum.

Subscription is not completed until the Subscription Note has been received by the Company and full payment has been carried out. Subscription is not valid without full payment.

### The notification shall be mailed to:

Penny AB PO Box 1178 SE-721 29 Västerås Sweden Or by e-mail to: info@penny.se

Only one Subscription Note per person/legal entity will be considered. Incomplete and/ or erroneously filled out Subscription Note is not valid and may be disregarded. No amendments or corrections must be done in the printed text. In case a person or legal entity sends two Subscription Notes, the first note that is received by the Company will be considered as valid. In addition, the Subscription Note authorizes the Company to execute and file the subscription at the Swedish Companies Registration Office.

# 5.7 Assignment

Assignment is done regularly during the subscription period after received Subscription Note and distribution of Contract Note.

Hence, the new issue of share may be completed before the last date of the subscription period. In case of oversubscription, the parties who have made the payment will be assigned prior to those who only have sent the notification.

# 5.8 Payment

Full down payment for subscribed shares shall be made within five (5) bank days according to instructions on the Subscription Note and Contract Note.

If payment is not made within the stipulated time period, the stock shares may be assigned to other party. Subscription is not considered as fulfilled until both the Subscription Note has been sent and full down payment has been made according to instructions.

# 5.9 Stock shares – Stock Register

Stock shares in Penny AB is denominated in Swedish Crowns and is constituted according to Swedish law, regulated by the Swedish Company Act (2005:551) and may be subject for trade at Swedish stock market place.

The Stock Register is filed electronically at the Company. After payment and filing of the new issue of shares at the Swedish Companies Registration Office, the new shareholder will be registered at the Swedish Companies Registration Office (Subscription List).

# 5.10 Voting Rights

The new shares (series B) in Penny AB will have the same rights as the former. Series A entails ten (10) votes per share, and series B one (1) vote per share.

# 5.11 Qualifications for Pursuance of the Offer

The offer is conditioned by that no circumstances emerge, which can lead to considering the point in time for carrying out the offer as ineligible.

Such circumstances can be e g economical, financial or political, and relate to circumstances both in Sweden and abroad, as well as the board of Penny AB consider the interest for the offer to not be sufficient. Hence, the offer can be recalled completely or partially. In such case, a notification will be published as soon as possible on the Company website.

# Innovations

Most mobile technology today demands us to look into a opaque screen. Even if we interact with the outside world it places us within a bubble.



# & Products

# The problem and the Solution

Man was created with only one head, two arms and two legs **But today's work environment puts new demands on human** capabilities. The ability to switch between a major work task and a secondary work task is increasingly the case.

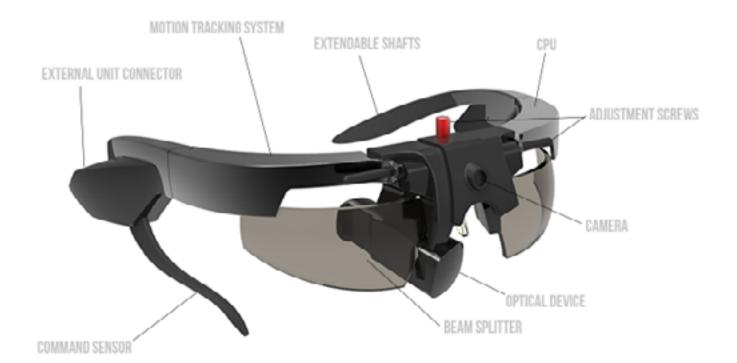


## **The Problem**

As this secondary task often is some sort of computerized data processing, controlling or monitoring, one often dreams of an extra pair of hands...

## **The Solution**

The solution is called the C Wear Interactive Glasses which is three innovations in one. This enables users to control a Smart Phone without the use of their hands.



C Wear Interactive Glasses do have a great deal of functionality and features other than most comptetitors. Its not only designed to be a cool geek product but actually also usefull for a greater market of users. When not using them, fold them as a normal pair of glasses and put them in your pocket.

# 6. The Product

C Wear Interactive Glasses applies Augmented Reality technology.

The glasses project the screen from an external unit with its own display atop of the reality, in front of the users' eyes. It is possible to navigate in the projected screen by head movements and then select dynamical objects by a sensor that is aligned to the cheek muscle.

A camera is placed in the front of the glasses, which enables the user to collect information from the direct surroundings. Then, the information can be processed in the external unit, thereby generating new graphical information that can be shown on the projected screen.

A user of the C Wear Interactive Glasses will sense the screen graphics as a part of the direct surroundings. The glasses can provide the user with information, support a work task or enhance important information not possible for the naked eye to register.

The product enables the user to navigate in the graphical picture and make selections without using the hands. In situations where work tasks require the use of hands, Penny obviously has a solution to that problem.

# 6.1 Detailed Description

C Wear Interactive Glasses are built on a solid technical framework, which will be valid for a number of forthcoming product generations. The framework consists of different subsystems, which through an electronics platform enables the glasses to communicate with the external unit.

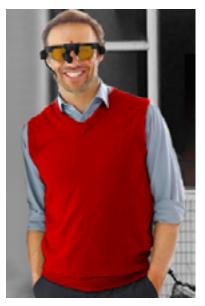
Each subsystem is developed separately, and has undergone a number of revisions and versions during the past years. By having the development based on the framework, it is possible to change different subsystems without affecting the complete technical platform.

### The different subsystems are:

- 1. SES Spider Embedded System
- 2. PDS Projection Display System
- 3. MTS Motion Tracking System
- 4. CBS Command Button System
- 5. MCS Measure Camera System

### 6.1.1 The Framework of C Wear

Can easily be compared to what the car industry or Mobile Phone Industry has in system. You first develop a base from which you can construct several different models.

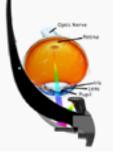


The User

The C Wear Interactive Glasses create a working environment where the user will have their hands free for their primary working task.

Their focus, working environment, user experience and effectiveness will improve significantly.

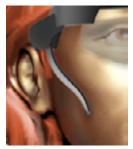
It's of great importance that the augmented image is place in direct line of sight so the user will perceive the graphics as natural parts of their environment.



Projection in PDS



**Motion Tracking** 



Click Sensor



Camera System

# 6.2 Description Subsystems

### 6.2.1 SES Spider Embedded System

This is the core in the glasses. The SES is the electronics platform to which the other subsystems are connected. At the present, the electronics platform is adapted to communicate with a PC and will shortly be extended for mobile phone communication. This enhancement and modification of the SES will not affect the design and solution for the other subsystems.

### 6.2.2 PDS Projection Display System

The PDS picks up the video signal from an display and forward it to our micro display of the type Organic Light Emitted Diod (OLED). Through our own-developed optics solution and a specially designed projection unit, we can generate a substantially magnified picture with high field of view. The performance outreach the majority of Penny's competitors regarding picture angle and performance. The Field of View in PDS is 47 degrees diagonally and the resolution is 873 x 500 pixels.

### 6.2.3 MTS Motion Tracking System

The MTS allows the user to navigate in the user interface of the projected screen. We use advanced 3D MEMS gyros, which measure the head movement along three axis. An own-developed algorithm processes the data that is generated by the head movements, thereby providing the necessities for navigation.

### 6.2.4 CBS Command Button System

This subsystem is one of the initial ideas for the complete innovation: To make selections with help of the facial muscle. The user only has to press the jaw for making a selection. The CBS is a soft sensor working similar as a wire strain sensor, but with specific characteristics through our own algorithm. The difference from a zero position to a fully expanded position, is measured for generating a selection. Since the sensor is soft and adapts to different users' anatomy (facial width), the zero point can vary. At the same time, the value that is determined for the tension for generating the click is always constant.

### 6.2.5 MCS Measure Camera System

This subsystem consists of a camera that is used for collecting information in the surroundings. Together with pattern recognition, this is a powerful tool for implementing new graphics in the projected screen in front of the user. The information can be e g assembly instructions or the term for a specific component. If the externa device is equiped with a GPS or a compass, the camera may be used for navigation in the direct surroundings.

# 6.3 Product Strategy

C Wear Interactive Glasses have since the beginning been planned around three different system families, each meeting different target groups.

The three families are named: Basic, Extended and Professional.

"Basic" is the most rudimentary product, and can in a future well be a product for a wider consumer market. "Extended" incorporate more advanced technology, for both professional users and consumers. Finally, "Professional" will be designed for professional users with high performance requirements.

All three families will use the framework for the product, but with certain variations of the SES Spider Embedded System.

# 6.4 Differences in Families

### 6.4.1 Basic

"Basic" has a simplified version of the SES Spider Embedded System, where the glasses must be connected to an external unit in order to work.

### 6.4.2 Extended

"Extended" has a more powerful version of the SES Spider Embedded System with an own processor. The functions are similar to a Smart Phone with all the features of a modern mobile phone.

### 6.4.3 Professional

"Professional" is more of a complete mobile computer, where the SES Spider Embedded System has an advanced PC processor. We are evaluating processors from different manufacturers and this area develops rapidly. "Professional" can also use all functions as in the "Extended" regarding radio and network access.

# 6.5 Basic Family Current & Planned Versions

# Time to market - 12 months **BM20**

The current version is labelled Basic Mechanical 2.0 (BM20).

The BM10 was introduced in 2009. "Mechanical" refers to the mechanical sensors that is used for navigation and selection. As mentioned above, the current version supports mainly the use with a PC.

### **B20**

The B20 is the same equipment as above, but without sensors for navigation and selection.

Hence, B20 is in principle a screen display, where the user must use other tools for navigation and "clicking".

# Time to market -18 months B25 and BM25

The next major development step for BM20 will be to introduce a wireless communication system between the glasses and the external unit.

For that purpose, we are currently studying and comparing different systems. There is an option for this solution between implementing Miracast or Direct Widi. This new technolgoy will enable Penny to introduce a B25 and BM25 version

# Time to market - 24 months B30, BM30 and B35, BM35

Penny has initiated the work on developing a mobile phone connection for the "Basic" family.

An implication is that the SES Spider Embedded System will be redesigned to such extent that it will get a new version label. This version will be offered both as wire connected and wireless, and as a simplified version for screen display.

# 7. Product Design

One of the major problems designing a product such as C Wear Interactive Glasses and all similar systems using projecting optics and display systems is that the you have to take in consideration the anatomy of the eye and the physics of the actual optics used.

When we in 2010 decided on the start of the development of the BM20 system we worked hard to define what values we could accept regarding the eye relief in the optical device and the minimum exit pupil to use. These two values are of greatest importance to the user to be able to se the whole image with the full amount of the projected field of view. If you do not take these things in consideration designing the product only a few percentage of the users can get the full use of the product.



# 7.1 Size Adjustments

Our solution to this problem was to create a adjustable spectacle frame so the optics can be positioned correctl to all type of users regardless of their width of the face, distance between the eyes and hight between the nose and the center of the pupil.

WIDTH ADJUSTMENT SCREW



In the front of above the eyepieces there are two width adjustment screws that makes it possible for a user to adjust the width between 18-20 mm and the height adjustment screw can do an adjustment of +- 4mm.





Goggle Strap

# 7.3 Modular boxes

The design of the spectacle frame is based upon modules which are expendable.

The electronic boxes on the shafts may be either added or removed to create two complete different models (with or without mechanics). The system without the boxes may be the Penny low end, low cost version while the system with the boxes a high end, high cost products.



C Wear with side box



C Wear without side box





# 7.2 Changable Shafts

The spectacle frame also consist of a feature to exchange the different end of the shafts so it fit the users condition while using the product. You can either use the standard pre bended sport ends or a more traditional eyewear end of the shaft or thirdly use a strap as the ones most commonly used in ski goggles. ofcourse the shafts of the spectacle frame can be folded.



Sport Shaft (Standard)



Vuzix M100



Docomo AR Walker



Sony Telepathy One



Google Glass

# 8. Competitors

The market has more or less exploded since Google announced their forthcoming product Google Glass in April 2012. Now suddenly it seems obviously that companies understand that Augmented Reality combined with different types of eyewear's is the future of IT-technology.

Today Penny does have a lot more competitors on the whole market than we had when we started our development. Most of the competitors seem to be convinced that the technology and the path associated with prism based projection chosen by Google is the right one.

At Penny we don't share that opinion, Penny did try out a similar technology the first couple of years but due to all our ongoing user tests and our directed customer surveys we have been given an input that it does not meet up the user requirements. To meet up the requirements of professional users you need to be able to create a image that is see through and is placed in direct line of sight. When using prism based projection there is no possibility to achieve neither of those two.

# 8.1 Technology from Vuzix

### Introduction

When Penny follow the competitors there is only Vuzix today that we do see have products that could be in direct competition to Pennys. Vuzix has been on the market as long as Penny and they have already done the misstakes that others not been in the field of developing this kind of technology tend to do.

Vuzix can present several different kind of systems based on different technologies toward almost similar markets as Penny have defined. What vuzix not have as Penny do have on all the products planned is interactivity tools.

Over the years it has been good to know that customers of Vuzix that are not as satisfied with products of Vuzix tend to contact us at Penny.

# 8.2 Comparison Penny and Google

### Introduction

What one must understand is that Google was under no circumstances first with this technology, there have been several other companies that have tried out that path before them.

One should also know that Google Glass need a external phone to work.

The actual technology Google is using for the glass piece itself (the prism) is patented by David Kessler, Kessler Optics & Photonics Solutions Ltd, NY, USA, By partial reflection at beam splitting or combining surface superimposing visual information on observer`s field of view including curved reflector

### 8.2.1 Difference in optical solutions

When looking at the patent from Mr Kessler and the optical prism based technology from Google one can easily see that they met up with the same kind of problems at Google that Penny met four years ago and what made us to take the descision not to go for the prism solution.

The Prism is completely unprotected from incoming light and makes it troublesome to use the glasses in direct sunlight even if you put a darker area on the prism as Google have done. As the prism it self dont have any optical adjustments its hard to bend the light travelling through the optics which in the end give you a poor field of view (maximum of 25 degrees of a total of 160 degrees in the eye.

Penny have choosen to dvide the optical unit in two parts to be able to work around the incoming light problem as well be able to bend the light beam to accellerate the field of View to almost the double of what Google can achive with their technology. Penny have 47 degrees field of view.

## 8.2.2 Difference in Display

Google have selected a LCOS (Liquid Crystal on Silicon) display while Penny have selected a OLED (Organic Light Emitted Diod) display.

The big difference in these systems is that LCOS demand a backlight to emit the screen while OLED screen do not.

Every pixel in the OLED display contains of small diods that are emitted to present the graphics while the LCOS utilizes a silicon chip as a substrate and utilizes a standard CMOS process to form pixel cell matrices, integrated drivers, and other electronic devices on the silicon chip. The result of this comparison is that every screen showed in the Google glass will show the complete frame while the screen showed in Pennys C Wear only show the actual graphics.

- The resolution of Glass is: 640 x 360 pixels.
- The resoultion of C Wear is: 873 x 500 pixels.

### 8.2.3 Difference in control

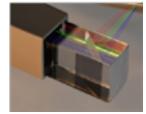
Google have applied functionality of whiping on the side to do commands and they have implemented voice commands to activate functions on the screen.

Both these are subjects Penny have tested 2006 and decide not to go for . Using voice commands work fine in a lab but is terrible in a street as it get disturbed by all noises. Penny is going for a hands free and silent control of the glasses so it can be used even though its demanded to be completely silent.

Read what the magazine Forbes thinks about Google Glass: http://www.forbes.com/sites/eliseackerman/2013/05/22/google-glass-whatsnot-to-like-quite-a-lot-actually/



Figure 13 from Mr Kesslers patent



Solution for Glass, same solution



Solution for C Wear, beams are expanding

### Glass FOV

C Wear FOV

Comparison Field of View Glass and C Wear





# The (

Research & Development Management

# Smpany

# The Mission

"All people that have their eye sight intact, regardless of physical capacity, work task, work environment or computer platform shall be able to use our interactive glasses"



## Vision

Penny will be the world's leading company in interactive hands-free solutions for mobile computers.

# **Business Idea**

Penny helps people to communicate with computers and systems without the use of their hands by interactive innovative solutions using frontend technology.



Penny is a member of Västerås Science Park that is situated in the historic industry area of Sweden's once largest copper industry in Vasteras, Sweden.

# 9. The Company

# 9.1 Concept

Penny AB has produced a top-notch and international awarded product that fills a gap for users that have a need to have their hands free while using a mobile computer or a mobile phone.

Mobile hardware are almost looking the same today as it has been since the introduction of the first car phones and the computer it doesn't come close to encompassing the features that C Wear Interactive Glasses does. Our hardware will not only allow the user to have its hands free for the more important major task, but will also project and show additional data in a transparent information layer in front of the user on top of their reality. The C Wear Interactive Glasses along with advanced Augmented Reality software will give the user a new intuitive and full featured desktop component adapted to the particular users working situation and work task. The market for Penny Interactive Glasses is growing quickly and appears to have great potential for future growth as well.

**C Wear Interactive Glasses** will be customized to specific targeted market segments. This customization will make it possible for Penny to sell professional system to specific targeted customers at a higher rate than the standard packages. Penny has an active ongoing R&D and are working on new technologies for the more and more demanding market and have already new innovative technologies ready for the patent proces

# 9.2 Vision

Penny will be the world's leading company in interactive hands-free solutions for mobile computers.

# 9.3 Mission

All people that have their sight intact, regardless of physical capacity, work task, work environment or computer platform will be able to use the Penny Interactive Glasses.

# 9.4 Business Idea

Penny helps people to communicate with computers and systems without the use of their hands by interactive innovative solutions using front-end technology.



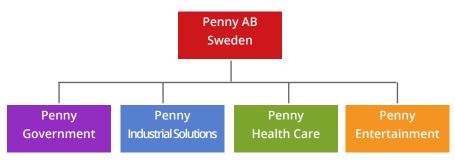
Have your hands Occupeid?

Penny helps people to communicate with computers and systems without the use of their hands by interactive innovative solutions using front-end technology.

# 9.5 Long Term Company Strategy

Penny AB is today segmented into four different market segments to be able to have a focused sales and marketing.

The four segments are Industrial Solutions, Government, Healthcare and Entertainment. As the company grows Penny do have defined a strategy where these market segments will be diversified into their own companies within a group with Penny AB on top. In the future we are open there might be Penny corporations registered on different locations in Europe, North America and Asia to set up a more profitable approach to the different markets. As for now one of the members of the Penny Advisory Board, Mr Marshall Ferrin has accepted to be the Penny representative for the North American Market.



### 9.6.1 Penny AB

Penny AB will continue be the research and development corporation within the group and it will be the owner of Pennys patents and its other intellectual properties.

### 9.6.2 Penny Government

Penny Government will focus its business toward comapanies, organisations and governments selling systems assigned toward the civil and military defense. All systems sold in Penny Government will have a proposition of special designes usefull for users with demands on hight quality products. Customers may have support from Penny AB and the PSDN for special design of softwares for government use.

### 9.6.3 Penny Industrial Solutions

# Penny Industrial Solutions will focus its business toward comapanies, organisations within the industry.

Companies where there is a defined use for a technology that can assist the users to keep their hands free for a major work task i.e. assembly, field service, simulation and learning etc. All systems sold in Penny Industrial Solutions will have a proposition of support from Penny and the PSDN for special design of softwares for industrial use.

### 9.6.4 Penny Health Care

Penny Health Care will focus its business toward three separate segments: Hospitals, Eldery Care and Disabled.

Systems will be sold directly toward the defined segments but also to system developers selling their own systems and aperature toward the segments. To reach out to the disabled segment Penny will target government as well as private comapanies already selling systems toward the disabled market. As for all other segments Penny will provide the opportunity of support and development of Softwares from PSDN.

### 9.6.5 Penny Entertainment

Penny Entertainment will have a diviersified sturcture in comparison to the other corporations in the Penny Group. As this company has as it primary market to sell to the consumers this corporation in the Group will adress partmers willing to start manufacture the C Wear Interactive Glasses on License.

Penny Entertainment will work in close cooperation with media providers for computer games, video, music, training equipment and other sources of media that might be of interest for the future consumer user. New developments of systems will be done by Penny AB.

Penny Entertainment will also set up an open "App Store" with a Software Developer Network avialable for everyone applying to download API's and SDK's to start program softwares for C Wear and the consumer market. The App Store may follow the same principles used by already existing stores for Microssoft, I-OS and Android.

in the same style and manner as existing comparison to will focus its business toward three separate segments: Hospitals, Eldery Care and Disabled. Systems will be sold directly toward the defined segments but also to system developers selling their own systems and aperature toward the segments. To reach out to the disabled segment Penny will target government as well as private comapanies already selling systems toward the disabled market. As for all other segments Penny will provide the opportunity of support and development of Softwares from PSDN.

# 9.6 Organization

Penny is in a phase of building its organization. Although the company so far has been structured as a networked based company with partners delivering most of the development of the system and products, Penny have had all functionalities within the company.

Until now Penny have managed using a slimmed team working close to a certain amount of partners with specialized skills withing the field of product developent.

We are aware that to be able to have a agressive marketing and sales within the four market segments we do need to improve the number of employed in Penny. We also know that we will need our own developers within the company. All these matters will be taken care of as we go, everything has to be funded by our own sales before we can start hiring more people.

### 9.6.1 Building a strong team

On a short term base of eighteen months there are two positions that has to be filled first a direct sales position that will work with the sales toward the Industrial solution market in Europe.

The second position is to hire a PhD student withing the field of computer Science and Robotics. The student will be responsible for the development of the systems to be used in our now ongoing four year European Funded project runned by Fraunhofer Institute in Germany.

Later a technical project leader will be hired to assist the Penny CTO, Erik Lundström within all ongoing development projects. That person should have a engineer degree in electronics and computer science.

### 9.6.2 An international strategy

As Penny is planning for a international strategy regarding sales in different continents and regions within the separate markets we are planning for a setup of own sales personell and agents.

First we will work on finding an agent based in Germany and then later look at one other country in Europe. For Asia, Penny are aiming to set up a office in Singapore to cover the four market segments and for USA, Penny will most probably set up a office in West Virginia close to Washington DC.

# 9.7 Management

### **Chief Executive Ofiicer**

Peter Ovrin



Experienced CEO with 12 years knowledge of leading large corporations as well as SME. Mr. Ovrin has worked in the industrial sector as well as eduction and in the IT sector. Has experience from running an own corporation from start up to Exit. MBA from the Stockholm School of Economics. Chairman of Swedish Federation of Business Owners. Mälardalen.

### **Chief Technology Officer**

Erik Lundström



The founder of Penny and innovator of C Wear Interactive Glasses<sup>™</sup>. Has the patent with Penny as owner. Hes role in the company is to focus on product development and manufacturing. Has a background within Brand & Marketing Manager and software User Interfaces. Diploma in Production Management from University of Stockholm and also courses in Computer Science at the Royal Institute of Technology in Stockholm, Sweden.

### **Board of Directors**

### Staffan Anger, Chairman of the board



During the past 25 years held senior positions, nationally and internationally. Long experience and extensive network of contacts from the industry's top layer is of great benefit for Penny to sales or business relationships around the world. Since 2006 Member of Parliament which also led to significant side effects for Penny.

### Jan-Erik Lundström, Board member



An experienced serial entrepreneur in the IT, electronics and management since 1984. His knowledge to run a corporation with nearly 100 employees and long experience in international business expansion is a major benefit for Penny. The research background in auroral research and director and inventor at ABB is a strong source of information for Penny.

### Sture Leandersson, Board member



Have excellent knowledge of Penny's production adjustment. Co-owner and business developer in Råbe Tooling gives Penny a good channel to the manufacture of tools. Mr Leandersson currently works as Senior Advisor to the nuclear industry after having sold the company Råbe Industrikonsult to Rejlers.

### Mariann Lundström, Board member



During the last 18 years being an entrepreneur with her husband being the CFO. Still CFO forhire in several companies. Has a extensive experience in finance and built up a solid knowledge that is of great importance for Penny's financial management, currently with Penny's bookkeeping and accounting.

### Göran Karlsson, Board member



Mr Karlsson is the founder of Kvistberga Produkter AB. A company specialized in sales of wheelchair ramps for disabled people. During 25 years he built a strong brand on a world wide market. Mr Karlsson strengthen the Penny competence of product management for disabled people.

### Erik Lundström, Board member

See presenation above

# 9.8 Advisory Board

During the different phases of the development of Penny we have had people with the best possible know how attending our Advisory Board. We are now pleased to have a for Penny most sophisticated international Advisory Board that fulfill the needs for Penny as we are now ready to enter the interantional market. The advisors on the advisory board are invited to join all Penny board meetings and work closely to the management and the Board rd of directors

### Advisor

### Per Vannesjö, Amymone Venture Capital



is founder and CEO of Amymone Venture Capital and Amymone AB and has extensive experience as a business angel. The company currently has 6 subsidiaries which in 2009 had a combined turnover of 78 MEUR with 500 employees. Mr Vannesjö supports Penny in questions regarding the company's business development and fundraising.

### Advisor

### Farley Duvall, Whitebull Summits



is founder and CEO of Whitebull We are here to help companies succeed. Built upon the extensive knowledge and network of our founders and advisers, and in the spirit of the "wily beast" that we believe lives inside all successful businesses we offer you a community, bringing together the best and the brightest – Europe's top technology and media leaders, entrepreneurs, innovators, investors, and visionaries.

### Advisor

### Marshall Ferrin, USAID



Deputy Director, Assist and advise management of AISA to develop and expand the operations and growth attract international and domestic business to establish and locate business units in Afghanistan. Develop "soft landings" for domestic and export production in secure,

# 9.9 Business Partners

During Pennys whole existance Penny have focused on strong partnerships and have managed to create a strong force even though there is non employed in the technolgy area besides the CTO. Penny have had its hardware developer network ongoing since 2006 and it contains of a total of six companies.

### The three different partner groups:

- 1. Hardware development & manufacturing partners
- 2. Software developers
- 3. Business and Sales partners

### 9.9.1 Developer Networks

At Penny we managed to reduce our costs by setting up a professional developer network for our hardware developers. By the use of strong partners (all with signed agreements) Penny have been able to focus on the essential development of the products.

All technologies developed by Pennys parterns for Penny is also owned by Penny. We aim to continue use partners and strengthen our relationship even further with all the partners. Penny do have in the plans to create its own development department with engineers in the field of all specialites we have to cover so our intentional research and development company structure can be kept.

### 9.9.2 Penny Hardware Developer Network

The Penny Hardware Developer Network (PHDN) has been running since 2006 and contains of seven companies based in Sweden.

Besides that each partner have the ability to hire their own sub developers to be able to succeed in their development toward Penny. In the Hardware Developer Network the partners is paid due to agreements set between them and Penny.

To be able to conduct the PHDN Penny have set up a community and a virtual workspace using cloud softwares on Internet and private social networks where all the existing projects are presented and where all companies within the network report to Penny. We also use a Cloud based software developed by the Swedish company Futureyes for the project management and documentation.

To be able to join the PHDN the companies have to sign a NDA agreement as well as a partnership agreement.

### PARTNERS IN PHDN

- Solarit AB
- Motion Control AB
- David Larsson Design
- Råbe Tooling
- Optronic
- Digital Mechanics

### 9.9.3 Penny Software Developer Network

During 2013 Penny have been planning to set up a software developer network similar to the PHDN, the Penny Software Developer Network (PSDN). As we are in discussions with companies in our different market segments there is more or less a standard that we are asked if we can provide them with the knowledge and a inhouse department that will write the software needed for them to get started.

As Penny have decided not to become a software developer we have decided we must set up a network where we invite professional software developers to partners. In the first step of the PSDN we will only invite a few companies to join and as we grow and the market for Augmented Reality products grow we will invite more companies.

At Penny we will provide the developers with all the API's needed to develop toward the C Wear Interactive Glasses and we will also provide the developers with a SDK to be used with the software language they choose to use when writing the softwares.

The By the use of all these softwares we get the partners closer to us as well as we let all our partners to get to know eachother.

To be able to work as one unit, still with partners with specialized know how and ability to develop the systems needed for the C Wear Interactive Glasses As more and more customers are asking Penny if we can assist with the writing of softwares, Penny have decided to start a Software Developer Network as well.

The goal is to get the first partners to join the software developer network in the last six months of 2013. The software developers must understand the development of mobile technologies and if they have previous experience in the writing of Augmented Reality solutions they have an advantage in getting the jobs from the Penny customers.

The software developer network will differ in its nature from the already existing hardware developer network be based on a cloud service on Internet where Penny will share the business cases and place their request for quotation directly into Software Developer Network. from the customers to the members of the network. Penny will only take a trade commission of a few percentage for every deal that are made between Penny's customers and the developers in the network, after that thecustomer of Penny and the partner in the network are free to make their deal by themselves.

Because Penny being a network based company business partners are essential for the company to develop different technologies as well as manufacture the systems. Penny are using partners with different focus and do now started to create its own software developer pool with professional developers of software both for the PC market as well as for the mobile industry.

**Finally, Penny also has a partner program for the forthcoming sales** within the four different market segments. Penny will not be able to set up a sales department and sales divisions for the whole company and have therefore started this approach.

### **PSDN PARTNERS**

- HIQ AB
- Vion Labs
- Screen Interaction
- Skövde University
- Mälardalen University

### 9.9.4 Business and Sales Partners

Since the start of Penny we have worked hard on connecting strong companies to be a part of our Business and Sales Partners. These companies have signed NDA agreements with Penny and are showing a serious interest to become strong sales partners of the C Wear Interactive Glasses.

As Penny is planning to sign partnership agreements with several companies that already have an own manufacturing of products for the computer and mobile phone industry we are inviting several companies to partner up with Penny.

These business partners are essential for the company to be able to reach out for special segments of the market as well when its time for Penny to start adress a consumer market. We are aiming to invite companies that are willing to license the Penny technology and start manufacture the C Wear Interactive Glasses under their own brand and sell it to a world wide market.

Companies that are showing a interest of becoming a manufacurer of the Penny products are:

- Intel
- Samsung Electronics
- Thomson Broadband
- Texas Instruments
- DELL OEM

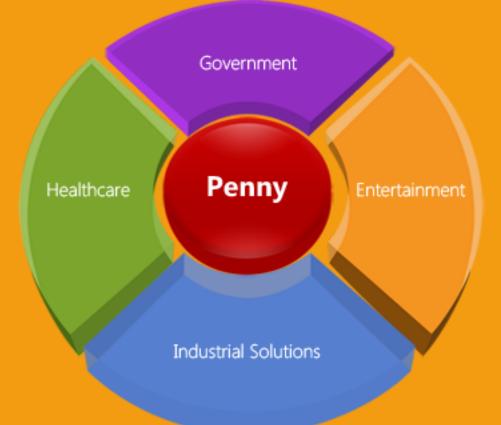
### PARTNER PIPELINE

### • Intel

- Samsung Electronics
- Thomson Broadband
- Texas Instruments
- DELL OEM

# Customers

Penny focuses its Marketing and Sales toward four different market segment. This way of dividing the markets is essential to Penny as we need to be able to focus on specific areas, otherwise the aim will get to big.



# s & Market

# Anyone, Anytime, Anywhere "All people that have their eye sight intact, regardless of physical capacity, work task, work environment or computer plat-

"All people that have their eye sight intact, regardless of physical capacity, work task, work environment or computer platform shall be able to use our interactive glasses"



# **Four Market Segments**

Penny will be the world's leading company in interactive hands-free solutions for mobile computers.

# **World Wide Market**

Penny helps people to communicate with computers and systems without the use of their hands by interactive innovative solutions using frontend technology.



Being selected one of Swedens 20 hottest innovations in 2011 have taken Penny on a grand exhibition world tour founded by the Swedish state. Here visitors can try out C Wear and Augmented Reality.

# 10. Customer & Market

# 10.1 Market

The potential market for the C Wear Interactive Glasses is very promising. Penny is competing in four market segments: Industrial Solutions, Healthcare, Government and Entertainment.

# 10.2 Market and Sales Strategy

As mentioned i Innovation & Product chapter Penny have a well defined strategy for the products and when it will be presented to the market. As we compete with the normal mobile phone market we calculate our sales figures in that sector.

# 10.2.1 Market Analysis

At the end of 2012, there were 6.8 billion mobile subscriptions, estimates The International Telecommunication Union (February 2013).

That is equivalent to 96 percent of the world population (7.1 billion according to the ITU). And is a huge increase from 6.0 billion mobile subscribers in 2011 and 5.4 billion in 2010. Portio Research – in the excellent free Mobile Factbook 2013 predicts that mobile subscribers worldwide will reach 7.0 billion by the end of 2013, 7.5 billion by the end of 2014 and 8.5 billion by the end of 2016. If the C Wear Interactive Glasses can sell systems valued to a promille of these facts the amount will be enormous.

As Penny is heading for the wireless systems of the Basic Family and later on the complete mobile phone version in the Extended Family we will not only compete in the mobile phone and tablet sector but also be a in the "gadget" sector for the actual sales of mobile phones.

# **10.2.2 Industrial Solutions**

This segments contains of mainly manufacturing companies around the world and Penny aim our sales toward the manufacturing itself and also for service and repair.

# 10.2.3 Government

This segment contains civil and military defense. The civil defense is Police including secret service and customs, fire departments and rescue service.

# 10.2.4 Healthcare

This segment contains hospitals, special surgery, eldery care and care for disabled people. As Penny got a increasing interest from companies want to combine our technology with their own specialized in support systems to all segments mentioned above we are setting up partnerships to these companies.

# 10.2.5 Entertainment

This segment is the Penny consumer market and this is divided into Portable multimedia and media players, Smart Phones and Game Consoles and contains systems defined for consumer use. The aim is towards a market share of one promille of these markets in year 2016. A total of 850.000 units with a price of 250 Euros will give Penny sales of 212,5 million Euros year 2016.

# **10.3 Product Sales Strategy**

C Wear Interactive Glasses have since the beginning been planned the sales of the systems around the three different product famillies and their respective product versions, each meeting different target groups and target markets. The three families are named: Basic, Extended and Professional.

"Basic" is the most rudimentary product, and can in a future will be a product for a wider consumer market. "Extended" incorporate more advanced technology, for both professional users and consumers. Finally, "Professional" will be designed for professional users with high performance requirements.

### 10.3.1 Basic Family Sales Strategy

First of all Penny focus its sales and market around the Basic Family. It will be ready for market in the beginning of 2014 and will on this stage be marketed toward B2B customers in Europe only. The first series produced of the system in the Basic Family will be short as we are most certain that the result from the initial sales will give Penny a to do list of changes before adresseing a larger world wide business to business market.

As new versions of the Basic family is released we will start our projection of the older versions toward a consumer market as well. This gives Penny time to reflect on the market reaction to the products from Penny and it also give Penny time to get all the legal document to be able to sell to a consumer market. The prices of the older versions of the systems will be dropped to suit the consumer market.

# 10.3.2 Extended Family Sales Strategy

When the Extended Family will be ready for the market Penny will have a greater sales team in place in company and together with agents and retailers Penny can start sales in Europe, Asia and North America from start. The system will be adressed to B2B customers as well as the Entertainment market from start.

Our aim is to continue our discussions with mobile phone developers trying to set up agreements letting those to sell the Extended Family under their own brand with their own product design. This strategy will create the possibility for Penny to continue focus on the B2B market sales as the mobile phone developers adress the consumer market.

# 10.3.3 Professional Family Sales Strategy

When the Professional Family will be ready for the market the Basic will no more be adressed to B2B customers. The Extended Family will be continously sold to B2B customers as a mid technology solution. By this hour Penny will focus its own sales to B2B while the Entertainment market will be done by Partners of Penny.

By this hour Penny will have been divided into a group of several companies with offices on several continents. Each market segment will be its own company focusing on their specific market world wide. Penny AB will continue work with legal matters, IP and development of new products and new concepts.

### **Differences in Families**

### Basic

"Basic" has a simplified version where the glasses must be connected to an external unit in order to work.

### Extended

"Extended" has a more powerful version with an own processor. The functions are similiar to a Smart Phone with all the features of a modern mobile phone.

### Professional

"Professional" is more of a complete mobile computer, with a PC processor. "Professional" can also use all functions as in the "Extended" regarding radio and network access.

# 10.4 Time to market?

### 10.4.1 Time to market - 12 months в20, вм20

The current version is labelled Basic Mechanical 2.0 (BM20). The BM10 was introduced in 2009. "Mechanical" refers to the mechanical sensors that is used for navigation and selection. As mentioned above, the current version supports mainly the use with a PC.

The B20 is the same equipment as BM20, but without sensors for navigation and selection. Hence, B20 is in principle a screen display, where the user must use other tools for navigation and "clicking".

# 10.4.2 Time to market - 18 months

### B25, BM25

The next major development step for BM20 will be to introduce a wireless communication system between the glasses and the external unit. For that purpose, we are currently studying and comparing different systems. There is an option for this solution between implementing Miracast or Direct Widi. This new technology will enable Penny to introduce a B25 and BM25 version.

## 10.4.3 Time to market - 24 months

### B30, BM30 and BM35

Penny has initiated the work on developing a mobile phone connection for the "Basic" family. An implication is that the SES Spider Embedded System will be redesigned to such extent that it will get a new version label. This version will be offered both as wire connected and wireless, and as a simplified version for screen display.

### 10.4.4 Time to market - 36 months **E10**, **EM10**

The Extended product will be a actual Mobile phone with allt the components a users expect from a mobile phone. It will only be avialable as a wireless system and will be bases on the electronics normally used for development of mobile phones. Different versions of the Extended version will ofcourse be avialable i.e. with or without GPS, Compass. This system will have its in built microphone and earpiece. The price will be almost the same as a professional Smart phone.

# 10.4.5 Time to market - 48 months

### P10, PM10

The Product Extended product will be a B2B system only and it will be a replacement for all types of computers used by professional users in their line of work. The capacity of processor and graphics will meet up the high demands users have from a computer and it will have all the mobility features as the Extended Family has. The price of the Professional version will be in the same area as a Laptop computer.

# 10.5 Five year Roadmap Market and Sales Strategy

### 10.5.1 How to read this Road Map

This Road map should be read as our predictions to how to adress our products to the market. As Penny is a company focusing on new innovations and products there will most certainly be more versions avialable to the market in each Family. Penny also has ongoing plans for a subset for each of the Family going under the name Optical. In Optical all the mechanical sensors used in the systems will be replaced with new smaller sensors. These systems will be sold under the name BO, EO and PO.



Pre sales of the BM20 system and the prototypes made of this product.

### **MARKET SEGMENTS**

The market segments adressed for the sales has been Industrial Solutions and Government i.e. ABB, Atlas Copco, Volvo, Fiat, Saab, FOI and EDA .

Penny also attracted interest from several research organizations: Robotdalen, Mälardalen University, Skövde University, Fraunhofer Institute

### **REGIONAL MARKETS**

In this phase sales is adressed to the European market even if there have been some interest from other continents to buy our products or start cooperations. We do not say no to the invitiations that might be of interest in a near future.

2013

2014

### PRODUCT B25, BM25, B30, BM30

Sales of the systems toward the B2B customers. Now the wreless systems have been introduce.

### **MARKET SEGMENTS**

Now more agressive sales starts toward Industrial Solutions and Government. There will also be initial sales toward the Healthcare segment. The research projects continues and we will market the products toward government support for disabled people.

### **REGIONAL MARKETS**

The regional markets will increase during 2014 with some sales toward customers in Asia and Norht America. Especially those that has been adressed during our presales phases in 2012-2013.

Sales will also be done using electronical channels.

### → PRODUCT B25, BM25, B30, BM30, B35, BM35

Sales toward both B2B and consumer markets as we now how both wired and wireless technologies.

### **MARKET SEGMENTS**

Now all B2B market segments are included. The Entertainment market will be included in the sales strategy and will be done by Penny and partners to Penny.

### **REGIONAL MARKETS**

The sales is adressed to a world wide market in 2015 as Penny now have a larger sales force employed. Penny continues it work on setting up agreements with regional representants and agents.

By this time Penny will sell the systems in stores around the world as well on Internet.



### PRODUCT E10, EM10

Introducing the Extended Family as a complement to the previous Basic Family

### **MARKET SEGMENTS**

The Basic Family will continously be sold to B2B and Consumer market segments in tradional sales as well over Internet.

Initially the Extended Familly will be adressed for the sales to all B2B market segements and will be sold mainly in classical head to head sales.

### **REGIONAL MARKETS**

The Extended Family will be available in Europe, some countries in Asia and in North America. The rest of the systems will be sold only by partners and by using Internet and will be available on a world wide market.

### PRODUCT P10, PM10

Introducing the Professional Family as a system for professional users.

### **MARKET SEGMENTS**

Both the Basic Family will be sold to all Pennys markets using traditional sales and Internet channels. The Professional Systems will be sold in traditional sales from Penny and its partners to B2B customers only.

### **REGIONAL MARKETS**

Now both Basic and Extended is available on a world wide market and will be sold by Pennys partners and by mobile phone developers using their own brands and packaging. The Professional Family will be sold world wide to customers by traditional sales by Penny and its partners.

### > PRODUCT ALL AVIALBLE

Now with all avialable planned Famillies on the market new versions will be developed and sold.

### **MARKET SEGMENTS**

The Professional family will continue to be adressed to professional users but will be available to consumer markets as well togehter with all other existing products. The Professional Family will continue to follow the price model being used for the PC Market.

### **REGIONAL MARKETS**

Now all Pennys products will be avialable to a world wide market using partners, mobile phone developers and other possible partners.

2016

2017



# 10.6 System examples for the markets

# 10.6.1 Softwares to create a Augmented Reality

During the years Penny have met numerous of companies with ideas on how to use the C Wear Interactive Glasses in their own line of work. The possibillites are as many as there is companies open to adapt the technology into their own busienss. To be abe to give you an understanding of how users can use C Wear Interactive Glasses for their own work we have designed some screens for you to study.



### 10.6.2 Use of C Wear Interactive Glasses

The Graphics "floats" on reality; In Assembly, which can be used for several work task when information have to be available while still having full control of the reality. It could be as in the examplebelow, a map. It could also be directions for mounting of a motor.

### **Examples of Mixed Reality Systems**

One of the most common systems used to present usability for a Augmented Reality or a mixed reality system is the use of a navigations and maps. The big idfference of using a mixed reality system in the C-Wear Interactive Glasses than in a Smart Phone or a tablet is that the graphics will show up as objects related to the direction the user turns her head. As the graphics is allways there you will get the feel that graphics are a natural part of a enhanced reality.

On the opposite page you see more examples on how to use C Wear Interactive Glasses in the different market segments of Penny.

### **System Presentation**

1. Projecting Display Solution

Mixed Reality graphics both for indoors and outdoors use.

 Head Tracking Solution Navigate in the user interface uing the 3D MEMS gyro.
Click Command Sensor Perform mouse click commands using the muscle tension sensor.
Connection to external unit.



The Police could use face recognition for protection.



Soldiers could send real time graphic messages (communication between units) and see eachothers positions.



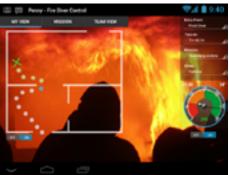
Perfect for Lean Production for assembly, getting information about an object or help as a mounting instruction.



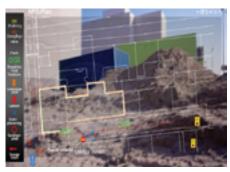
Good to connect to a training equipment and body sensors to keep track on your pulse, breathing and capacity.



A rescue team could perform first aid while simultaneously monitoring important levels and data from the patient.



Firefighters connecting the glasses to a infrared camera receiving thermal information and how they moved in the fire



As a construction worker planning where to place cranes, elevators and storages at a site



Playing Golf? Why not use a advanced GPS systems to see how a previous round at a golf course went and how to improve. Try to beat yourself each round.



European Patent



**Chineese Patent** 



USA Patent

# **10.7 Intellectual Property of Penny**

### **10.7.1 Patents and Brands**

Penny works hard to protect its intellectual properties and have today patents for its technology in Europe, China and USA.

The company Brand logotype Penny is a Registered Trade Mark at the European office OHIM Office for Hamonization in the International Market, Trademarks and Design.



# **10.8 Market Footprint**

Every since Penny started its business it has been targeted by Swedish and international Media and several articles in printed press and digital media have been published along with radio interviews and television interviews. Here are a few of these.



# 10.9 Prices & Awards

During the years in business Penny has won and been nominated for numerous national and international prices and awards. At Penny we are very proud for each one of these as we havent applied for any of the awards or nomintaions given to us. Penny has been contacted, knowing that the company being nominated and that we are invited to finals and even in some cases being selected the Winners.

# 10.9.1 Nominations

### European Business Award- Best European Technology Innovation, 2011



remarkable Penny was nominated to the European Business Award second year in a row.

### European Business Award- Best European Technology Innovation, 2010



Penny was nominated to the European Business Award in the category Best European Technology Innovation of the year 2009

### Swedish Mobile Awards - Best Innovation, 2009



Guldmobilen a important award in the Swedish Arena

# Diamond Award - Most innovative Swedish IT company, 2009



Diamond Awards is voted by people in the Swedish IT community, Penny came on 2nd position.



### Västerås Town - Innovator of the year, 2009

To be noticed in the town we are situated feels little extra even though we got interantional awards.

# 10.9.2 Received Awards

### Sweden's 20 hottest Innovations, 2011



The latest award given to Penny was from Swedish Intsititute, a public agency department with a commitment to promote Sweden and Swedish issues globally.

### Red Herring 100 Europe Award, 2009



Year 2009, the company became a Red Herring Europe100 winner in 2009. The award signifies that Penny is considered to be among the 100 most promising Tech Companies in Europe.

### Sime Awards - Rising Stars of the North, 2009



Rising Stars of the North lists the 160 most promising Multimedia companies in Scandinavia.

Multimedia.

### ISA - Red Herring Scolarship, 2008



About twenty young start up companies was given this Scolarship to be able to enter the ETRE Conference in Stockholm and to present the company to the worlds most important IT Executives.

# US Department of the Army - Candidate program of the year, 2007



Most promising Swedish innovation rated by the US Department of the Army. This enlisted Penny as one of the companies the

### Västerås Science Park - Kick Start Company of the year, 2005



A Business Plan competition that Penny won. The judges were from Västerås Science Park and Linköping University.

# 10.10 Customers

During 2013 Penny got its first orders of the C Wear Interactive Glasses BM20 from the market segments Government and the Industrial Solutions. This is a break-through for us and we now see as we get the markets trust we do have a technolgy and products that do fulfill the users needs.

### 10.10.1 Government

### FOI & European Defense Agency

FOI is one of Europe's leading research institutes in the areas of defence and security. Penny got an order of two systems for a research project funded by European Defense Agency (EDA). Penny will provide the research consortium the glasses, the order value is a total of  $\notin$  33.000

The goal of the consortium is to develop the modern soldier systems Penny have been studied with several other government in previous stages and we are hoping for a fruitfull development of these systems for the European Defense Agency.

### **BAE Systems Hägglunds**

Already in 2008 Penny did sell systems to BAE Systems Hägglunds for testing in their new tanks. The system did undergo months of testing for the new platform. As BAE Systems Hägglunds did not receive the orders expected on their own new tanks they did place the ongoing projects with Penny on hold. Discussions are still of interest to implement the C Wear Interactive Glasses as a feature in their existing tanks.

### 10.10.2 Industrial Solutions

### **Fraunhofer Institute**

Penny will take part in a four year fully funded research project led by the Fraunhofer InstituteThe aim is to develop a haptic controlled Augmented Reality system to program Industrial Robots.

In this project Penny have the support of Robotdalen, Mälardalen Univesity and Chalmers. The project will start during 2013 and be ongoing for 4 years.

### **Skövde University**

Skövde University has asked for one system from Penny for the development of softwares to the common customer Volvo Cars. The system will be used to develop a software for Pattern recognition to be used at the manufacturing line at Volvo.

# **10.11 Customer Pipeline**

As Penny has adressed all its market segments to create a interest for the C Wear Interactive Glasses we are now able to present a long list of companies and organisations that awaits us to be able to deliver the first units of the BM20 system.

# 10.11.1 Government

- SAAB Soldier Systems
- US Department of the Army
- US Special Operations Command
- US Department of Defense
- BAE Systems
- Singapore Ministry of Defense
- Singapore Air Force
- DSO

# 10.11.2 Industrial Solutions

- ABB Ventyx
- ABB Corporate Research
- Atlas Copco Tools
- Flir Systems AB
- Volvo Group
- Volvo Cars

# 10.11.3 Health Care

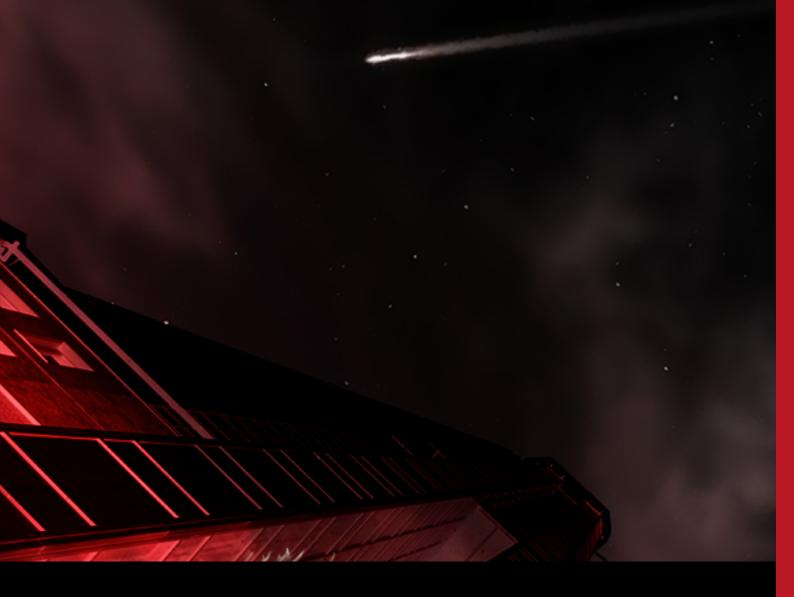
- University of California
- Singhealth Pte
- Region Skåne
- Electrolux AB
- InterSpiro
- Nova Medtech

# 10.11.4 Entertainment

- Orange Labs France Telecom
- SVT Sveriges Television
- Sundsvall University
- Logitech AS
- Treveda

# 10.11.5 Mobile Phone Companies

- Samsung Ltd
- LG Electronics
- NTT Docomo
- SingTel





Penny AB Linslagargränd 5 Västerås Science Park PO-Box 1178 SE-721 29 Vasteras Sweden