

BUSINESS PLAN
LH COMMUNICATIONS OY

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1 ABSTRACT

1.1 Company

- Name: LH Communications Oy.
- Managing director: Lasse Halttunen, M.Sc. 2011, (Telecommunications) B.Sc. 1980 .
- Line of business: Development of products in electronic field, production, sales and marketing, management and utilisation of patents and purchase and sale of bonds
- Business idea: The idea of the company is to design and produce suitable accessories for mobile telephones of small and middle size companies as well as private persons on which they can transfer by using local short range radio communication photos, videos and sound to tv.
- Area of operation: Finland, the rest part of Europe and USA.
- Founded: Founded in 2005. Lasse Halttunen is the biggest owner of the company.

1.2 Revenue

Estimation of the revenue (Finland, Europe, USA) in the first year is 1,9 million €, second year 53,6 million €, third year 123,7 million €.

We have negotiated with a company which is an embedded systems design house named Espotel who will take care of technical and all designs for manufacturer. Those detailed informations included all specifications for manufacture our Ape TV will cost about 150 000- 250 000 €.

Espotel is founded in 1986, Espotel is Scandinavia's leading provider of R&D services for embedded systems development. They are providing professional research and development services and ODM products, they apply and participate in the development of the latest technology. Together with their partner network they offer a full range of services in the design of embedded systems.

They have six offices in Finland - Espoo, Kuopio, Oulu, Jyväskylä, Tampere and Vaasa together with one in Wroclaw, Poland. With continuous growth and profitability they are at the leading edge of new technology.

Espotel will make first an arrangement which will take 3-4 weeks where they will concentrate and focus to all our demands and claims and items. Then they will make all definitions and specifications for the complete solution. That will include all needed software and hardware components for perfect solution. Perfect solution will include Windows and Android specifications which are the most important operating systems others are iOS, Symbian and RIM. Then it will take about 1-2 months to make first working prototype of our Ape TV. After that they will make all technical and all appearance designs for manufacturer. Those detailed informations included all specifications to manufacture our Ape TV. That will take 3-5 months.

We can start our production by using subcontractor. We have an agreement of confidentiality and a letter of intent for the manufacture of the product with a company named Elektro Hill. They can produce our Ape TV very fast approximately 100 000 pieces a week.

We have negotiated with many retailers and they are willing to sell our Ape TV after they have seen and tested our newest prototype and if it will carry out all their expectations.

We do need for the first year 300 000 € (incl. the development of products and the expansion of marketing and sales of LH Communications Oy in Finland).

We have developed very many years the product according to our patent which Lasse Halttunen made already in the year 2000. The title of this patent is "A method of transferring data of screen and voice of a mobile phone to a normal analog television receiver with an adapter". The Finnish patent application FI2002598 has been accorded a date of filing 27.11.2000 and has been granted as Finnish patent number FI 110046. We have patent in USA US6947067.

You can transfer with the product named "Ape TV" from the mobile phone photos, videos, Internet pages, Youtube etc. to your tv wireless via Bluetooth. This is so called streaming media device. Our product's name was earlier SIBBE (Serial Interface Bridge for Bluetooth Equipment). We have cooperated with very many directions for example KEKSINTÖSÄÄTIÖ, VTT, TEKES, FINPRO, Lappeenrannan Teknillinen Yliopisto and with many small companies. There is not any company in the world which have the same patents. We have examined different kind of high technology products and their success in the world. We got the same conclusion with professors that it is not enough to be first in the market with a new product but the technology and market should be mature for the success of the

new product. Now people have taken with camera phones very many photos which mean that mass market is waiting for us. Moreover the new versions of Bluetooth with 24 Mbit/s gives us many times faster speed than before. That means that you can see immediately the screen of your phones on tv-screen.

1.3 Description of the business area

The company operate in an area where the main components are mobile phones and their features to transfer information wireless to tv. On this area operates also the biggest manufactures of mobile phones and as well the manufactures of tv-sets in the world. At the moment there are in place the newest versions of Bluetooth 3.0 and 4.0 which can transfer 24 Mbits/s. You can transfer photos for example with this speed to the tv and you can see immediately those pictures on tv-screen. You can also connect for example Youtube on your big TV screen. This means on the hand that newest version can transfer many times faster photos and videos like any streaming media than the older versions. People have taken all around the world photos by using their camera phones and the need of watching those pictures in a larger way and to show them to friends is larger than before. It means that mass market is here already. Very popular way to use streaming media devices is to watch Youtube or Facebook on your own TV.

There are at the moment for example Apple tv, Google Chromecast and Amazon Fire TV which do ape the mobile phones screen and sound on tv. That is the reason why we announced a new name for our product. New name is Ape TV.

1.4 Enlargement of the company

The meaning of the company is to start our own production and to product as well as market those products which are according to our patents all over the world.

Product development has started strongly in time from camera phones and nowadays they are selling more than 1 billion camera phones&smart phones in a year. It is easy to take photos with camera phones or load Youtube and watch them very conveniently sitting on your couch or divan. They speak in very many examination about couch potato in this category.

Another remarkable element to creation of the product development was increased reading of e-mails with mobile phone. If the user of e-mail system has very long messages or if he/she has got a problem to read very small text ([nearsightedness](#)) (as most Finns will get), it is much more convenient to read those messages on large tv when you have come back from your work than read the long message from the small mobile phone.

Next phase to increase the usage of this kind product will be web browsing. It is much more easier to read big Internet pages on large tv screen. In addition to that there will be laptop users who want to watch tv-program from certain web service. They can transfer those tv-programs to tv-screen by using Bluetooth&wifi.

It might be difficult to read text from the mobile phone because the screen is so small if you compare for example to tv. Tomorrow we are watching more and more pictures, videos and streaming media like Youtube. We are also playing games, enjoying pictures from last holiday and we examine more Internet pages – and the screen of mobile phone seems more and more smaller.

The newest usage come from USA where publishers of newspaper have started to bring into the market of electronic newspaper. When people use to read newspapers in electric form they can [undoubtedly](#) appreciate to read their newspaper from a large tv.

Our company has solved many years ago the problem of small screen of mobile phone. We developed an accessory which you can use to transfer pictures to tv. So you can watch you pictures as big as your tv screen is. You can connect your accessory to SCART-connector of your tv or HDMI or cabel connection and after that your tv is always ready to receive pictures from your mobile phone. The basic demand for your mobile phone is Bluetooth&wifi feature which is nowadays so common that you can find it almost in every mobile phone. You don't need any wires between phone and tv. Normally you can transfer your photos by pressing a button of your mobile phone and you can do this even from 10 meters.

All big mobile manufacturer developed Bluetooth&wifi technology together. With this technology you can transfer information wireless. Now you can always connect Youtube with your mobile phone to your television if you have Ape TV connected into your TV-set. The new versions of Bluetooth 3.0 and 4.0 will automatically connect WLAN with the Bluetooth.

The core of Bluetooth 3.0 and 4.0 operates with 802.11 PAL (Protocol Adaptation Layer), in other words 802.11 WLAN –connection.

When transferring a lot of data the system will use automatically WLAN connection, so called wifi. You can benefit professional the possibility of augmentation of the screen of mobile phone to tv for example in video conference or in text messages, which include documentation, graphics, figures and voice as well.

People in different age use the augmentation of the picture for various needs: children to games, young people to Internet and music, videos, parents to check the position of their children, grand parents to watching holiday greetings from their [beneficiaries](#) with video communication. And of course Youtube and Facebook.

Nearsightedness of the people is growing all the time when people get older and older. This kind of service give them comfort use of mobile information in common messages and usage. You can use also the improvement of the audio signal when you adjust from tv control panel the loudness and the timbre of the music.

Next picture from APE TV invention's product presentation shows us the basic idea of the use.

PHOTOS TO Ape TV

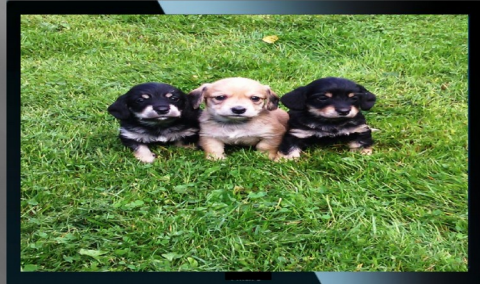
MMS

•With MMS-mobile phone you can receive and send photos

•Now it is easy to watch them together with your family on the TV-screen, when you have Bluetooth&wifi in your mobile phone and Ape TV connected in your TV



Bluetooth&wifi



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Picture 1. APE TV invention's presentation.

1.5 Product and service

APE TV is patented wireless solution for watching Camera Phone photos, videos and streaming media like from Youtube or Facebook on TV.

The customer products of LH Communications Oy are following:

Normal product, which shows the image in the same resolution as it is on the screen of mobile phones.

The luxury product includes many extra features.

We have designed very many other products as well but it is too early to describe those.

Product information:

- Camera phones: 3,3 billion in the world
Your options to watch your pictures are:
- Camera phone up to 3 inch – 1 person
- Laptop up to 17 inch – perhaps 3 persons
- TV up to 60 inch – all your friends

- Over 100 000 000 potential users in 2013
- APE TV is based on the patent " Method of transferring data of screen and voice from a mobile phone to a television".

The off-line use of camera phones:

Professionals	e-mail	50 %
Children	games	50–70 %
Youngsters	films, music videos	30–60 %
Parents	photos, videos	20–50 %
Grand parents	photos, videos	85 %

Mobile phone does not have any connection to the chargeable countrywide network in off-line use.

The use of products:

- You can watch everything on tv which you have on your mobile phone it means that your tv can ape your mobile phone
- You can watch for example from Internet into your Laptop downloaded program on different kind of tv which can be plasma, lcd or old fashioned normal tv with APE TV and Bluetooth&wifi
- You can also watch from Internet web pages downloaded into your 3G phone and which include a lot of information on your big tv screen
- You can streaming media from Youtube and Facebook

Youngsters:

- Girls and boys can visit each other places and play Internet games by using tv with mobile phone and APE TV
- Everyone can load those games from Internet with their own mobile phone and show them to everyone's tv with APE TV connected on it.
- You can transfer videostream with UMTS phones to tv with APE TV
- APE TV can be connected all the time on tv
- Newest versions of Bluetooth 3.0 and 4.0 can transfer many times faster than old one 1.0

- Transfer speed of the versions 3.0 and 4.0 is 24 Mbit/s

1.6 Processes of production

We have studied in Lappeenranta University of Technology processes of production and have used also those processes in a real work. We have made decision to use following processes in our company:

- Enterprise Resource Planning, [ERP](#)
- Product Lifecycle Management, [PLM](#)
- Product Data Management, [PDM](#)
- Supply Chain Management, [SCM](#)
- Customer Relationship Management, [CRM](#)
- Human Resource Management, [HRM](#)
- Computer Aided Design, CAD

1.7 Target

- First target is to start production and marketing
- Production may come from subcontractor at the beginning
- The final target is to make own factory for production
- Market is already existing
- We have good plans for distribution network
- We have competence and ready to get recruitment after demand

2 Market situation and trend

2.1 Trends of the business area

The forecast of this business area is telling us unbelievable progress of the market. First of all your tv can ape everything from your mobile phone like streaming media from Youtube and Facebook. Secondly people in all around the world have taken very much photos by using camera phones. At the

moment we have reached in the world the high penetration of photos of camera phones which means that every system which give you better possibility to see those photos are coming to be very popular. We have on the company also other patents which substantiate watching of photos of camera phones on tv.

Our patent which is intended in to the USA market is the patent of reading newspaper by using mobile phone increase also the demand of the market and watching tv programs on tv by loading them into the mobile phone or laptop.

On the other hand the technology of mobile phones is given us much better solution to watch almost all kind of moving figures on tv by using the newest versions of Bluetooth 3.0 and 4.0. Almost all big manufactures have announced camera phones and smart phones which are using Bluetooth 3.0 and 4.0.

2.2 Demand and customers

The estimate of sales of this product:

In Finland 0,8 million pieces

In USA 50 million pieces

In Europe 35 million pieces

The estimation of the production costs of this product is very low.

The price of the product: 100 €

The primary customers of the company will be mainly in Finland the sale chains of the big country wide companies like supermarkets, R-kiosks, retailers and video rental companies. The end users will be private persons and companies.

2.3 Competition and SWOT

We see now for example competitors like Apple tv, Google Chromecast and Amazon which are using bluetooth&wifi. Google Chromecast is the newest competitor.

Table 1. SWOT-analysis of LH Communications OY

<p>Strengths:</p> <ul style="list-style-type: none"> • world wide market • protection of patents • innovative company 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • lack of investment • lack of employees
<p>Opportunities:</p> <ul style="list-style-type: none"> • increasing markets • people start to use photo transferring • newest versions of mobile phones 	<p>Threats:</p> <ul style="list-style-type: none"> • reaction of competitors

2.3.1 Strengths:

- Of all phones in the world, 77% are cameraphones which is 3.3 Billion mobile phone handsets
- Note that all cameraphones will have a color screen as well.
- And how are they used? You might be surprised to find that the world has already 2.1 Billion active users of MMS picture messaging. That is 65% of the total installed base of cameraphones.
- MMS is 50% bigger in the number of users than email is on the internet. The only data service bigger than MMS is SMS (which has now 4.2 Billion users worldwide or 81% of all mobile phone subscribers).

(Communities dominate brands)

Camera&Smart Phones has been sold over 1 billion pieces in 2013.(Strategy Analytics). On the other hand they say that there are Bluetooth&wifi feature in more than 90 % of mobile phones. These information combined to the fact that there have been camera phones on the market almost 10 years and people have started to take photos with camera phones tell us on the own way that the market of this is huges. Nokia has told us very many years already that they will take the market of cameras. Camera phone is always with you and it is so easy to take a photo. In addition there are about 3 billion tv sets which means that we see the combination of tv and mobile phone very strong. APE TV is working with all kinds of tv sets like normal tv sets and also with those new Internet tv sets.

LH Communications Oy does have already many patents. Those protect our economy and procedure. We have also new innovative patents and there are as well many applications of patents. We have 26 ideas for new patents.

2.3.2 Weaknesses:

At the moment the lack of investment is the most striking weakness of the company to start all procedures. One possibility to solve this problem is to sale some patents.

Another weakness which LH Communications Oy does have is the huge market and the various information which the company will need in the future. It is easy to imaging all additional details which the whole staff should get.

2.3.3 Opportunities:

Globally increasing mobile phone markets will create growing opportunities to company's products. In addition to that the new applications of the company increase the opportunities to use mobile phones.

Next picture (Picture 2. Video-application) shows us one of the newest app, where a person seeks very interest movie from Internet and load it into laptop or mobile phone and transfer that movie to large tv for better watching by using a wireless short range connection, such as Bluetooth&wifi, to a TV accessory.

This kind of behave to transfer photos or videos is nowadays very popular for example 3 billion people all over the world have used MMS. That means that they can also send photos and videos etc. to their tv via Bluetooth&wifi. APE TV gives the opportunity to make this. Basically it has been common knowledge long time that you can send photos wireless to your TV in theory. But now we have a patent we made 10 years ago and a product APE TV which gives this with the Bluetooth&wifi and fully comprehensive market. Peoples in different countries have taken many photos and videos with mobile phones. Market is for example in U.S. almost 300 million TV-sets.

We tested this product many years ago with a research institute and we made market research 2008-2009 in Far East.

We have all the time the possibility to sell our US patent 6,947,067. The time is the best I can imagine for this patent. Many mobile manufacturers announced last years their new mobile phones with the Bluetooth 3.0 or 4.0 which means that the transfer speed is 24 Mbits/s. When you send a picture from your mobile phone to tv it appears immediately. People have taken a lot of photos and now really starting to transfer photos to tv. The market is ready for that and now the technology (Bluetooth 3.0/4.0) is also ready for that. Of course you can use also Bluetooth 2.0 and 1.0 but they are slower than 3.0 and 4.0.

Main manufactures announced different phones with Bluetooth 4.0 chip like Android phones from Samsung, LG, Motorola, HTC, SonyEricsson and Nokia's new phones.

Stats:

There were 114.5 million TV homes with 2-3 sets in the U.S. in 2009. Nielsen's Television Audience Report.

That means that in the U.S. there are almost 300 millions of television sets. Some company can sell more than 50 million accessory for tv's. We have got many offers to sell this US-patent.

TV MOVIES FROM MOBILE WITH Ape TV

•TV MOVIES FROM INTERNET LIKE MTV3'S KATSOMO YOU ARE WATCHING WITH YOUR LAPTOP or MOBILE PHONE go with Ape TV and Bluetooth&wifi also to your own big plasma or lcd-TV

Bluetooth&wifi

Picture 2. Video application

In picture 3. (Newspaper application) we can see a certain new novelty among applications. In that picture a person orders a newspaper and transfer it to tv for reading.



Picture 3. Newspaper application

2.3.4 Threats:

We do have direct competitors which are international companies like Nokia, Apple, Google, Sony Ericsson and Samsung. They have made some applications without any patents. It means that those companies are ready to take risks because they are so big. We have to watch them closely and anticipate all negative effects beforehand.

Too big targets cause from the beginning of production and marketing also threats.

3 Estimation of risks

All reports of the company's financial and business trends are based on the information which the management of company has. There might be very many risks included in those reports and also remarkable items which could cause significant variation to profit, operation and achievements.

This business area might have in the future different estimations than nobody can see now for example lack of components. Everything could happen.