

- 1. Discuss the e-commerce benefits that Skype brings to eBay as an integrated communication tool and secondly as a stand-alone business model.**

## **Introduction**

Until a few months ago, eBay was the world's largest Internet pure company. Valued at \$55 billion that was roughly three times the size of Amazon. Then came Google's floatation and rapid expansion of products and services that has rocketed Google's value to over \$80 billion. With Google's Paypal rival product "Google Wallet" gearing up for release, it is time to react and grow the eBay brand and expand the customer (and potential customer) base.

To this end, the purchase of the Voice Over Internet Protocol (VOIP) Company Skype represents a wealth of opportunity for eBay Inc. Not only is VOIP the "Next big thing", but its here and already in use by a huge worldwide community. The threat posed by VOIP is so great that it has regular and time-honoured telecomm companies the world over seriously worried. However, one man's problem is another man's opportunity. Web based companies are quick to jump onto this VOIP bandwagon; Yahoo have released an update of their Instant Messenger tool to include a "Free Calls" feature, Google have just launched "Google Talk" and instant messenger and VOIP communication tool and with Microsoft recently purchasing "Telco", expect a VOIP component in MSN Messenger in the not too distant future.

These new VOIP offerings pale in comparison to the granddaddy of them all: "Skype". The acquisition of Skype by eBay represents opportunities in two areas for eBay: As an integrated communication tool and as a stand-alone business.

## **Skype as an Integrated Communication Tool**

eBay's function is as an e-business facilitator, allowing registered users to buy and sell items from each other. As with any form of business or buying and selling, communication between the interested parties is fundamental to the business process itself. Currently all communication derived out of eBay transactions is through e-mail, with eBay's servers sending roughly 5 million e-mails per day. But now we (the worldwide internet users) have access to VOIP services, so why not just the buyer's and seller's talk to each other? They are both sitting at computers connected to the Internet and both in an eBay environment, so it makes sense to facilitate their communication. In fact a lot of customers are already providing their contact numbers on particular auctions, most notably the Motors and Business Industrial sections, where people are less likely to buy expensive items on the strength of a single Internet item description. So, the concept of VOIP has potential advantages to eBay, but Why Skype? What benefits will Skype bring eBay?

## **Better Customer Experience**

The key to returning customers is how easy you make the transactions. Keep it simple and straightforward. Make it easy for the customers to buy and sell their items. However, sometimes more information is required. Sometimes to call about a particular item will make (or break) the deal.

## **Expanded Global Community**

eBay currently has approximately 15 million worldwide registered users. Skype currently has 44.1 million and growing at the rate of 150,000 per day. A small

technical change will allow registered Skype users to use the Skype identities as eBay logon's and will give them a faster route into the eBay marketplace. In the worst case scenario, where all registered Skype users already have eBay accounts, that's still almost 30 million new registered eBay users.

### A more connected eBay Community

If eBay users were more connected to each other, they would get to know each other better. So, when a customer needs an item they will think to check with the *people* that they know, not just the website. Also, if someone is unsure whether or not to place a bid for an item, but then sees an icon indicating that the seller is currently connected to Skype, with one-click the potential buyer can query an item and perhaps then they will have the confidence to place a bid on the item. Quite often the item will be so small it wouldn't be worth the bother in making a standard (international) phone call on the item. The same goes for post-sales queries.

### Increased Buyer confidence

Online fraud is the main deterrent to e-commerce. People are always sceptical of entering into online transactions and even less happy in using their credit cards online. eBay's acquisition of PayPal has somewhat appeased some of the issues with these issues, but the fear now is whether or not the person that you are conducting business with is reputable. You can never put a human face on the person that you are doing business with through online transactions, but being able to talk to the person you are doing business with would somewhat help.

For Example, if I was looking to buy some expensive collectables from eBay and I found two very similar items for sale, to help distinguish between these items, a phone call could be used. If one seller was able to speak fluidly about his item and one could not recall many details or seem too interested, then the choice becomes easier. Also, if the phone is answered with "Hello, Dublin Collectable's, Jim Speaking", then this will also inspire confidence.

### Faster and more efficient Auctions

eBay use is erratic and not continuous. Typical users will log on, search for an item, find what they are interested in, place a bid then log off. When a notification e-mail that they have been outbid on an item has been received, this will trigger a repeat to the process. With an integrated Skype system, the Instant Messenger features in the Skype tool can be leveraged to instantly inform the user of an outbid, and provide a way for them to re-bid through one click, instead of a web-page load, logon and bid process. This will also remove the time restrictions imposed by e-mail, thus allowing buyers to spend more time buying and sellers more time to sell.

### New eBay markets

With the Skype tool, there are potential new markets that have opened up to eBay:

#### 1) Sale of Services.

If somebody does not have an item to sell, but rather a service that can be provided over the phone, this could be sold on eBay. For example, people offering Astrology readings or consultancy/tutorials on software development. This is currently the business model of the [www.Kasamba.com](http://www.Kasamba.com) website.

## 2) Digital content sale

Users can sell their Music or Software or Digital Art, or anything that can be delivered digitally through eBay. Once the item has been purchased, the item can be instantly delivered to the buyer through the Skype tool's file transmission feature.

These services could be advertised sold through eBay, paid for through PayPal and facilitated by Skype.

## **Skype as a Stand-Alone Business**

VOIP is a major innovation, the latest and one of the greatest of the Internet era. Current worldwide usage of VOIP is at 42 billion minutes (2004) and with over 44 million registered Skype users exponential projections for the future are not unrealistic. British Telecom (BT) are one of the few worldwide telecomm companies to recognise the opportunity of VOIP and are currently in the process of converting all their exchange's to VOIP.

The Internet is changing, gone are the days of the Chat room, the days of the blog are here. With the "Skype me" option in the Skype tool, you can indicate that you are open to communication from people; this could well be the next big revolution in Internet communications. Instead of random people saying hello over ICQ, they will be ringing each other on Skype. Or "Skyping" each other as it has become known. Much in the same way that to look up anything on the internet is known as Googling, calling someone through the Internet has become known as Skyping.

Skype is already a successful company, with huge potential for expansion. With a good brand name backing up the company and financial investment the company will continue to grow at its already incredible rate. In what ways can Skype grow and become (more) profitable?

## **Expansion of "Skype In" and "Skype Out"**

To make a PC-to-PC call using Skype is completely free. How Skype make their money is by charging for calls that are not PC-to-PC. That is, people using Skype from the PC's to call out to regular telephones and mobile phones ("Skype Out") and people setting up telephone numbers that connect to their Skype account so that they can receive calls from regular phones ("Skype In").

Using Skype Out you can call anywhere in the world at a fraction of the regular cost, but still at a profitable rate to Skype, as they have very little dedicated telecommunication hardware. The Skype In function costs €10 per month for a dedicated phone number, but is only available in 9 countries. To continue making serious money, the Skype In function needs to be released out of BETA mode and made available globally.

## **Customisation**

The ancillary businesses that have grown up around the mobile phone market in recent years could also be applied to Skype. Custom Avatars and Ring tones could potentially be sold for a small amount. Custom Skins (ala. Winamp) could also be sold for the Skype application. Admittedly, this is a small potential market.

### PC Games integration

Online gaming is huge, with literally millions of people playing at any one time. So many online games, especially First-Person Shooters (FPS) have team gaming modes, with a Typed communication mechanism. Recently some newer games (e.g. SOCOM) have included a headset for online play and team communication. If PC games were to include a Skype interface, then players would register with new Skype accounts and then be potential new users. Other services (e.g. Phone Support) could be offered and charged for via Skype.

### Integration into existing software

Other software that currently has no built-in communication mechanisms will probably look to VOIP for means of customer support in the future. So, while companies like Oracle would probably just buy up a small company with VOIP technology. Other companies of smaller size will integrate an existing tool (step in Skype) for their needs. This will also open up the potential for corporate Skype accounts.

### Electronic device integration

Skype enabled devices have begun to appear lately. Most interestingly, “Linksys” have just launched the CIT200, which is a cordless Skype phone. The phone uses your PC as a base station and you are free to walk around your house as you would with a normal phone.

Coming next will be Skype enabled mobile phones. Much in the same way that BT has a mobile that functions as a line-line when you are in or near your house, a Skype enabled phone that does this is in development.

With these and any future Skype enabled electronic devices, Skype will have to be paid royalties per unit produced.

### Conclusion

Skype is an industry-leading tool with a huge existing user base and enormous earning potential. eBay’s reputation as a reputable and world leading online e-commerce organisation will grow the service into a seriously profitable business. And if even a small percentage of Skype users become regular “eBayer’s” then all the better.

## **2. Outside of eBay, Skype has additional applications e.g. Outlook Toolbar. Describe these applications and their functionality.**

Skype has a number of additional applications that back up and integrate into its main application. These products integrate Skype into a users environment so Skype is always available. These products include: Skype Web Toolbar, Skype Email Toolbar and Skype Zones.

### **Skype Web Toolbar**

The Skype Web toolbar integrates Skype functionality with your web browser. It will recognise phone numbers in web pages and give a one-click option to place a call via Skype to that number. It's a small simple plug-in available for Mozilla Firefox and Microsoft Internet Explorer.

### **Skype Email Toolbar**

The Skype Email toolbar integrates Skype functionality with your email client. It uses the contacts in your address book, monitors when they are online and provides instant calling facilities. Also, similar to the Skype Web Toolbar, phone numbers that are contained in emails can be called with one click. And instant message conversations can be initiated directly from emails.

### **Skype Zones**

Skype Zones is an application that gives access to Skype through "Skype-Friendly" wireless Internet hot spots. It is used to detect available nearby wireless networks, distinguish between them for their signal strength and then determine which ones are available to Skype (i.e. Which ones do not have the Skype ports blocked by their firewalls).

These additional Skype tools are all geared around one thing: promoting the use of Skype. They aim to keep users using Skype as often as possible and to promote the notion that whenever you are communicating through a web-enabled device, that Skype is what you should be using.

### 3. Discuss the Architecture that Skype uses and its key benefits.

#### Internet Architecture's

Internet Applications use a variety of different architecture's depending on their needs. The most common are as follows:

- *Client Server* – The standard way that web pages and other content is delivered, from a centralised server to a client that is requesting information from that server
- *Clustered Client Server* – A farm of servers replaces the server and each client request is process by a different server (sharing the load), unbeknownst to the client.
- *Peer to Peer* – Also known as P2P. Traditionally used by File Sharer's to (sometimes illegally) share files from PC to PC. Applications built on P2Ptechnology also allow for multiple simultaneous connections, to obtain the pieces of the same file from multiple sources.
- *Bittorrent* – Bittorrent differs form traditional P2P in that it offloads file tracking from your PC to a centralised tracker and employs a tit-for-tat share ratio system, to ensure everybody is sharing fairly.

The classic architecture used by telephone networks requires for a fixed line to be established from one phone to another, and once the line is in place, communication can commence.

#### Skype's Architecture

The Architecture the Skype uses is called "A supernode Peer-to-peer architecture". Put simply this is a modification on the class Peer-to-Peer system, in that you connect to you nearest Supernode and use that to connect to all peers and announce your availability. Any node with a public IP address, having sufficient CPU, memory and network bandwidth is a candidate to become a super node. Once your connection has been established, the Skype tool looks for other (nearby) supernodes, so as to arrange fail-over in case the supernode you are connected to, goes down.

This is the exact same "tried and tested" architecture that was used so successfully in the "Kazaa" and "Kazaa lite" P2P file sharing programs. This is hardly surprising as the same people who were responsible for Kazaa founded Skype: Niklas Zennstrom and Janus Friis.

Any connected PC can become a supernode, even without its owner's knowledge. Sometimes a supernode could be heavily used as a communication relay between two Skype users, in cases where the two users are both behind firewalls and cannot connect directly to eachother.

So, Skype relies on P2P technology, no Skype calls are made through centralised Skype servers are there are no "Critical Nodes" in the network. It is the world's first decentralised telephony network.

Skype used sound compression codecs to compress the transmitted data to a typical bandwidth usage of between 3 and 19 Kilobytes per second. 2KB/sec is required in uplink and downlink to ensure call quality.

## **Benefits**

First of all it's cheap, very cheap. Unlike every other classic telephony company the world over, Skype has no need to lay cable's and phone lines all around its customers (and potential customers) houses.

It's extremely scalable and reliable. With a classic system, if a phone line breaks near someone's house, then communication will be down until that line is fixed, but if a line is broken in a P2P system, the system just finds another route instantly, sometimes with minimal packet loss, but other times reconnection is required.

Skype is also extremely clever. In cases where two communicating users are protected by firewalls and cannot make a direct connection to eachother; the system will route the communication through a supernode to establish communication.

Skype does not continuously broadcast noise in the same way that the classic phone system's do. So no silence or "white noise" is sent. Any data that is sent is compressed and encrypted

## **Resources**

eBay Website

<http://www.eBay.com/>

Skype Website

<http://www.Skype.com/>

Skype Guide for Network Administrators

<http://www.skype.com/security/guide-for-network-admins.pdf>

An Analysis of the Skype Peer-to-Peer Internet Telephony Protocol

<http://mnet.cs.nthu.edu.tw/paper/Chance/041125.pdf#>

Skype Security Evaluation

<http://www.skype.com/security/files/2005-031%20security%20evaluation.pdf>

Skype users website

<http://www.SkypeJournal.com/>

Manu Sharma's Blog

<http://orangehues.com/blog/>