

# Results of a User Survey for the GeeXboX Project

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# 1 Introduction

Within the Season of Usability program I am studying, with the help of Celeste Paul and Benjamin Zores, the GeeXboX project in order to improve its overall usability by providing design instructions for the future user interface. After defining user personas and making a hierarchical task analysis, we decided that we needed a user survey in order to get in touch with our users. The developers also needed data about the users' machines, and this survey posed itself as a natural occasion to gather them — results that are pertinent to only this point of view are not, however, discussed in this report.

## 1.1 Methodology

We wanted to keep the questionnaire short and simple, so that we could achieve a good completion rate, and without taking too much of the users' time. Ideally the questionnaire should take less than 10 minutes to complete — after this time users will begin to feel bored.

This goal has been achieved satisfactorily, as the survey engine reports that the average completion time is 6 minutes and 34 seconds.

In order to maintain consistency and to provide the users with a clean interface, the questionnaire itself was broken into four sections, to be consulted in order. In each section questions are ordered from the easiest going on to the hardest.

The first section does not contain any question at all. It contains instead the following text:

Dear user,  
 thank you for deciding to answer this questionnaire and for your involvement with GeeXboX.

We currently are in the process to restructure GeeXboX in order to render it more "usable": that is, we want you to be able to use GeeXboX more easily, quickly and with more satisfaction and enjoyment.

We need to get to know you better if we want to reach this goal, and so comes this questionnaire.

You can leave out as many questions as you wish, but please answer the following questions truthfully, since there are no "right" or "wrong" answers; in exchange for that, we will provide you with a GeeXboX that will be tailored right around you.

Thank you, the GeeXboX team

The rationale behind it is to provide the user with an explanation of what we are doing and why we need his or her help, trying to make him or her feel at the centre of our attention. We then proceed to briefly explain how the questionnaire is to be answered, leaving the greatest freedom to our users; lastly, we thank for the help and promise something in change for it.

The second section is titled “About you”: there we collect information about the user’s gender, age, geographical position and computer skills.

The third section is titled “About how you enjoy GeeXboX”: here we collect a lot of information about the user experience. We ask about the frequency of use, the environment where GeeXboX is used (for example, bedroom, living-room, etc.), the controllers, favourite and missing features, and medium that GeeXboX is being run from.

The fourth and last section is titled “About your computer”. Here we ask as first thing the age of the computer that the user runs GeeXboX on; after that we inquire more technical details, like the amount of RAM installed, the manufacturer and model of audio and video card, the details about the network connection, if available. While this information surely has some interest from an usability study point of view, the related questions were added mainly because of request from the developers team, who needed to know what hardware to concentrate their support efforts upon.

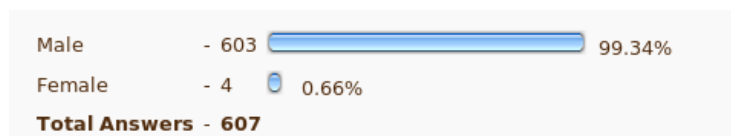
The survey was advertised on the GeeXboX project web site: a post was added on the day the survey opened and another one communicated its end. This was in the “News” section of the site, i.e. the section where the developers inform the user community at large of any reached (or approaching) milestone and interesting happening regarding the project

The users were allowed to answer the survey between 22nd February 2007 and 4th March 2007. No particular mechanism was implemented to enforce that each user could answer the survey no more than once, as we retain this risk to be negligible.

## 2 The results

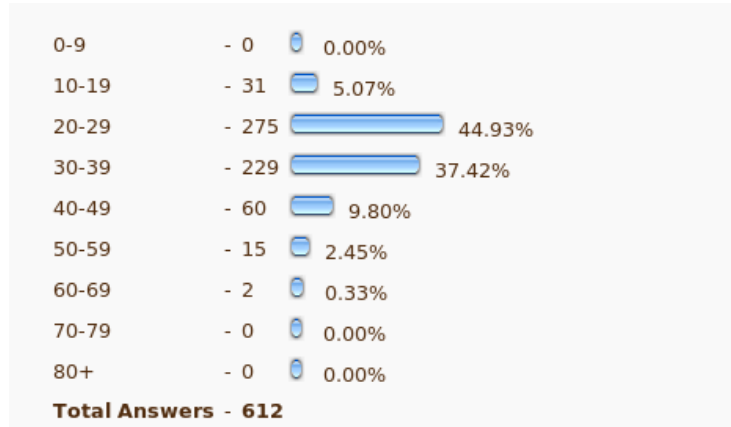
### 2.1 About you

#### 2.1.1 Are you male or female?



The great majority of the sample answers to be male. This departs significantly from the users pictured in the user personas; in the further analysis of the survey responses, it should be kept in mind that these come mainly from the perspective of one of our personas, namely John (see personas at <http://trac.geebox.org/trac.cgi/wiki/userResearch>), as it becomes evident by analysing also the answers to the following questions.

### 2.1.2 How old are you?



More than 81% of the sample is aged between 20 and 39. This, too, is a sign that our survey is focused on a particular persona.

### 2.1.3 Which country are you from?

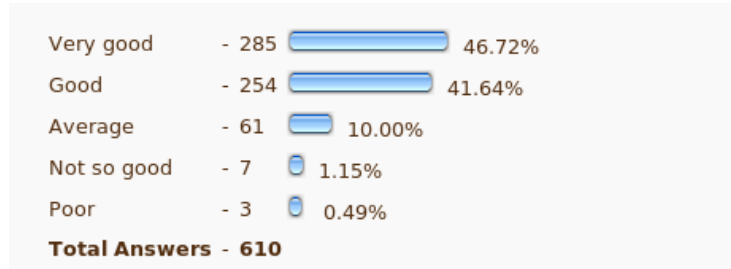
We received 595 answers to this question.

The following table summarizes the results for countries that have more than 10 users in the sample:

Country	# of Users	% of Users
France	230	38.6 %
USA	46	7.7 %
Italy	35	5.9 %
Canada	23	3.9 %
Spain	21	3.5 %
Germany	20	3.4 %
No Answer	19	3.2 %
China	16	2.7 %
Poland	15	2.5 %
United Kingdom	14	2.4 %
Sweden	14	2.4 %
Belgium	13	2.2 %
Finland	12	2.0 %
Australia	11	1.8 %

The overwhelming majority of French users is not surprising if it is taken into account that GeeXboX is a project based in France, that has many French developers and, as consequence that is mostly known in France.

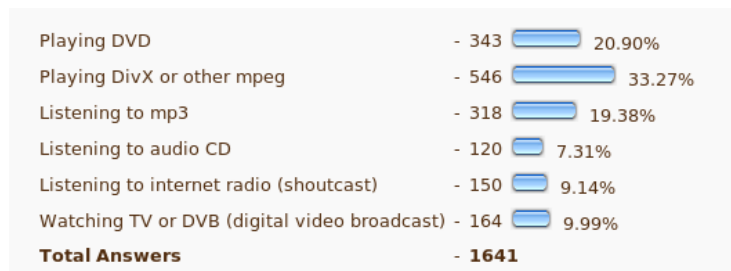
### 2.1.4 How would you describe your computer skills?



GeeXboX is aimed to be an easy-to-use linux distribution with media centre features, but so far most of our users state that they are good or very good at computers. We need to keep this in mind, as their usability suggestions will probably be biased in this sense: we can expect them to require features useful mostly to the experts and to prefer feature-rich interfaces over simplicity.

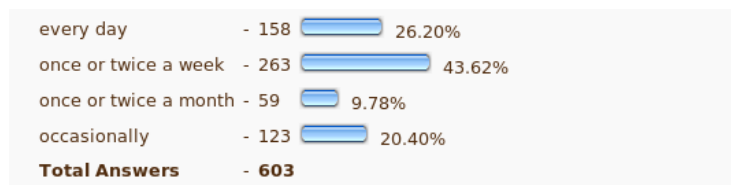
## 2.2 About how you enjoy GeeXboX

### 2.2.1 Which of these features of GeeXboX have you used in the last 10 days?



Playing videos and listening to mp3 are the most used features: this are the priorities we should work on.

### 2.2.2 How often do you use GeeXboX to watch movies?



This was included as a quick and simple measure of whether the people who are answering the survey are frequent users of GeeXboX, or just people who have tried it once or twice.

From the collected data, we can conclude that there is a set of users that use GeeXboX quite often.

### 2.2.3 Where do you usually enjoy your GeeXboX?

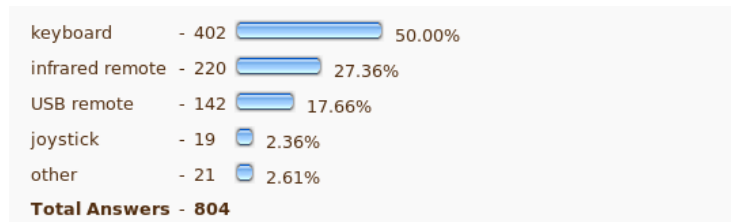


This question was added in order to get to know in which places the GeeXboX is most frequently used: some environments are more noisy than others and could place a cognitive burden upon the user. Anyway, the majority of our users enjoys GeeXboX either in their livingroom or bedroom, so it seems we don't have to worry about that, since these are not environments posing cognitive stress upon the users.

### 2.2.4 If you chose "Other" to the previous question, where do you use GeeXBoX?

Most frequently given answers are: in a home-theatre room, and in a car.

### 2.2.5 What controllers do you use with GeXboX?

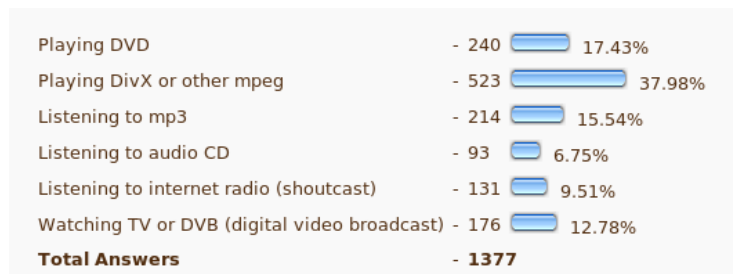


The available controllers is a crucial factor for GeeXboX. We need to support a big variety of controllers with very different features. Half of the users answer that they use a keyboard (which effectively allows us to relax a bit the usability issue with the respect of a controller) and more than 90% use either a keyboard or a remote of some kind. This suggests that a good idea would be to design the interaction to be based on a limited number of buttons to accommodate the remote users (cfr. Apple's remote), adding keyboard accelerators for expert users that use this device.

### 2.2.6 If you chose "Other" to the previous question, which controller do you use?

Most of the users who answered this question still stated that they use a remote of some kind. Some interesting trivia is that one user has "telnet with a remote touchscreen" in his configuration.

### 2.2.7 Which features of GeeXboX do you like the most?



### 2.2.8 What features do you think GeeXboX is currently missing?

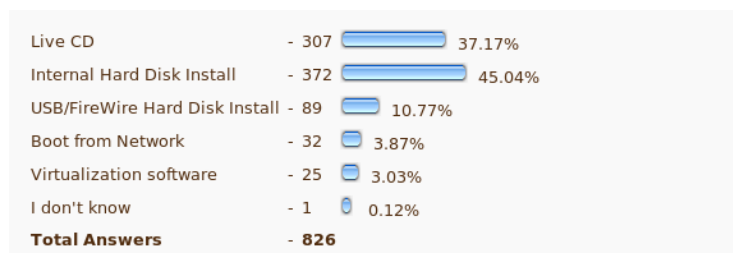
B. Zores made an interesting analysis of the responses to this question, categorising them; such analysis was then posted on the developers' mailing list. With respect to usability issues, it is very interesting to note that, from the discussion that sparked from Zores' post, it turned out that some of the so-called missing features were, in fact, already provided by GeeXboX.

In particular, the developers identified the following as features requested but already implemented:

- Capability to load external subtitle file.
- Support for AAC/3GP/.dvr-ms (the latter from WinMCE) files. Those are supported since a long time, but the corresponding file extension was not in our list of supported extensions
- Graphic regulation of brightness/contrast/gamma. Already supported, but only with chips supported by a vidix driver.
- Shuffle/Random audio playback. This feature exists in mplayer, but not at run time

It is my opinion that these should be our priority for the GUI redesign as well.

### 2.2.9 From what media do you run GeeXboX?



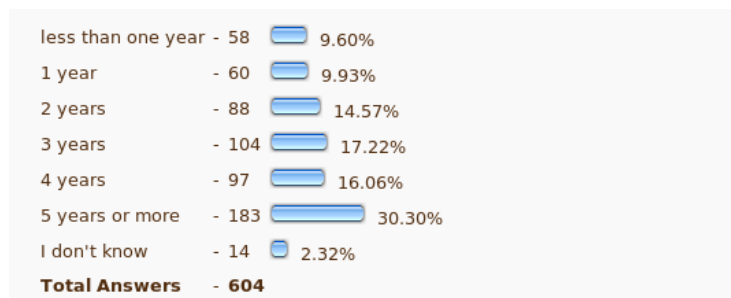
HD installs usually pose no particular usability problems, since they are the most traditional way to run a linux distribution; we should notice, on the other hand, that a consistent share of our users actually runs GeeXboX from a live CD: therefore, we should pay special care so that GeeXboX runs smoothly and without excessive delay from this medium as well.

### 2.2.10 If you answered that you use some virtualization software, which one do you use?

The greatest majority of users that use some virtualization software are running VMWare. QEmu and VirtualBox are also represented.

## 2.3 About your computer

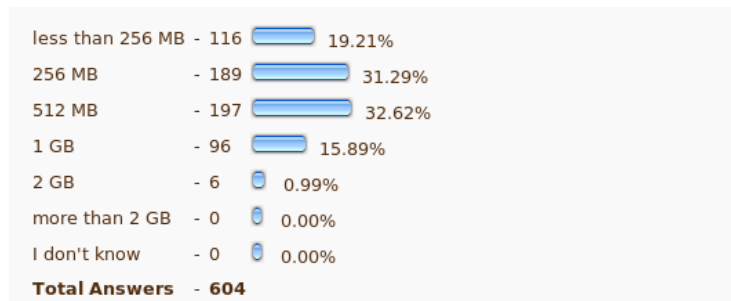
### 2.3.1 How old is the computer you usually run GeeXboX on?



From the answers to this question we can see that many users own an old computer: we must assure that GeeXboX is working and responsive even on old hardware.

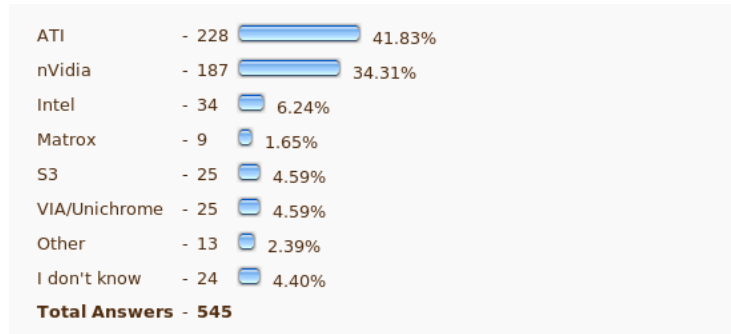
It should be noted that the results can also be interpreted meaning that more than 50 % of the users have a computer that has no more than 3 years.

### 2.3.2 How much RAM does this computer have?



See the comment to the previous comment.

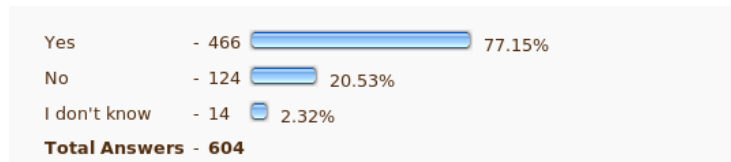
### 2.3.3 What kind of processor does this computer have? What is the manufacturer of the video card that is in your computer? What model of video card does this computer have?



We omit reporting and analysing in detail the answers to these question because they are of little interest with respect to usability issues; please consult the appendix if you are interested to access the full data.

Anyway, with respect to these answers, B. Zores points out that they show that 40% of users have Intel or nVidia card, for which GeeXboX actually doesn't provide hardware video acceleration (overlay capabilities) and which cuts down computer's decoding speed by a factor of 2. This could then represent a performance issue.

### 2.3.4 Does this card have a TV-output?

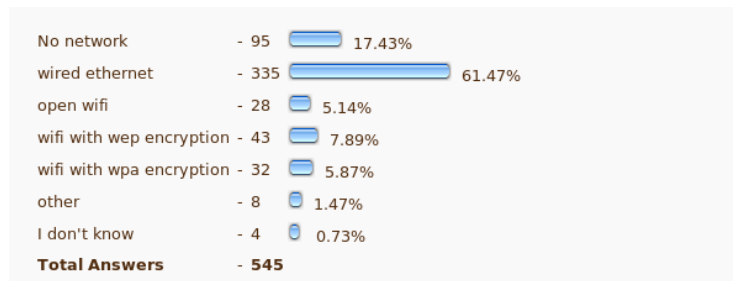


Most of our users own a video-card with a TV-output. It could be assumed (it would have been better if we had explicitly asked, though) that sooner or later they will want to use it, therefore the design of GeeXboX user interface must accommodate for the typically lower resolution of a TV set compared to a computer monitor.

### 2.3.5 What kind of audio card does this computer have?

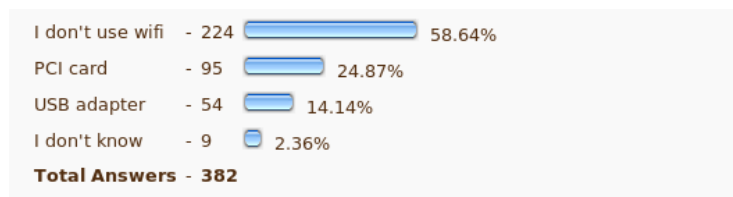
Most of the users are using the audio circuitry which comes integrated with their motherboard, yet a good number of them owns a dedicated audio board — of these a significant share (about 40 users) own a 5.1 audio system, and therefore will be expecting a superior experience.

### 2.3.6 Is the computer you use with GeeXboX connected to a network? How?



More than 80% of our users have networked their GeeXboX. This means that we have to give them an easy, intuitive and safe way to search and play content from the network. Many of these features are already supported by the software, like, for instance, browsing SMB shares and accessing Shoutcast streams.

### 2.3.7 If you use wifi, what kind of adapter do you use?



Comment omitted because of the lack of interest for the usability analysis.

## 3 Conclusions

Unfortunately the sample set of the users who responded to the survey is not representative of all the user personas we had developed. For instance, suffice it to say that:

- more of the 99% of the sample is male;
- more than 81% of the sample is aged between 20 and 39;
- more than 87% of the sample states that their computer skills are good or very good.

We had foreseen this before deploying the survey, since technically skilled people are much more likely to notice (and respond to) an internet-based survey which is advertised on the project GeeXboX's homepage.

Because of this reason, all the results arising from the survey must be interpreted with a bit of grain of salt in mind, especially with respect to future design decision in the sense of adding new features. We need to remember that not all of our intended users are like this sample, and that people in the sample have a greater technical expertise than our user base in general. Nonetheless, it is also true that so far the the people most involved with Open Source Software

are male and technically experienced, therefore the bias of our survey is not too strong.

Anyway, it is rather clear that the usability re-engineering should:

- concentrate on the DVD/DivX/MP3 playing features, as these are the most used ones
- not need to worry about the external environment (i.e. the place where the computer is physically located)
- take care of the fact that many people use a limited controller (i.e. a remote), giving them a practical and efficient way to interact
- measure whether the responsiveness of the system when run from a CD is adequate, and in case it is not take appropriate actions
- keep in mind that many users have an old (3+ years) computer
- keep in mind that many users have the option of connecting their computer to a television set
- keep in mind that most user's GeeXboX is networked, thus providing usable ways to exploit this resource.
- provide usable and evident access to the "hidden" features (cfr. section 2.2.8)

As a final remark, it should be noted that we received many more responses than we would have ever imagined (more than 600). This is a pleasant surprise telling us that we have the blessing of a big, active, cooperating users base. This is an important resource that we could use again in the future, not necessarily only by user surveys.

## **A Access to full data**

The complete data gathered by this survey can be downloaded in CSV (comma separated value) format from the wiki page <http://trac.geebox.org/trac.cgi/wiki/userSurvey>