T37 - Bug Free Software by Tommy Chuang

What are the issues associated with this subject
In today's moneymaking society in which results are the main focus of every business, it is not uncommon to find programmers rushing to meet deadlines. In their rush, programmers often tend to overlook bugs or errors in their work. This leads to the question of whether having software released faster with more bugs is better than having software released more slowly, but with fewer bugs.

Who are the stakeholders?
What are the major advantages and disadvantages for the stakeholders
The stakeholders in this issue are major software companies such as Microsoft. If they continue to release software that is full of bugs instead of testing it to make sure that it is perfect or at least near perfect, other software vendors will eventually create new software that contains fewer bugs and has better functions. People will start to turn to the more bug free software and use it instead. This has already been shown with Internet Explorer and the release of Mozilla Firefox. Internet Explorer was infamous for its security issues, and Firefox promised a better, more secure internet browser. As a result, many decided to switch from Internet Explorer to Firefox. However, there are always people who decide to remain loyal, and this is clear when one notices the astounding number of people who have stayed loyal to the Windows operating system, despite its many security issues.

What areas of impact does it affect
The issue of bug-free software does not only affect general office software such as Internet Explorer. Bugs have also overflowed into the gaming world. With the release of every new game, companies often fail to find and fix bugs. These bugs can range from certain game functions not working to game balance issues that ruin the gaming experience for certain players. One example of this is in the popular online game World of Warcraft, where many players have cancelled their accounts due to the company's lack of response to bugs in the game.

What solutions can overcome the problem
A solution to this problem is introducing more effective beta testing programs for programs that are nearing release. This will help to remove bugs while the software is still in beta, thus allowing for a better product to be sold on the launch date. This solution is currently being practiced by many companies. However, communication between beta testers and software developers is sometimes weak, and this can lead to situations where the beta testing is able to root out major bugs, but leaves some minor issues untouched.

Another solution would be to have some effective and easy means of communication between users and companies, such as an online forum, so that issues with software can be addressed and fixed without difficulty. However, this form of communication would have to be directly between consumers and software developers. Companies using this method now often use "go-betweens" or "middle-men", who take suggestions from consumers and deliver them to the developers. The disadvantage of such a process is that information is often lost in the transfer. The hired "go-betweens" may also not be fully qualified for such a job, and may instead treat the consumer base rudely rather than addressing the problems at hand.
Probably one of the best solutions would be for software companies not to be so quick to announce release dates for software or put strain on their programmers. With less strain, programmers would be able to spend more time and care on their work and come up with better software.

Most software companies already have some sort of solution in place. Gaming companies regularly release new patches to help fix bugs and balance issues. Microsoft has Windows Update to mend security or other issues that may arise through the use of its operating system and software.

Who is responsible
The people responsible in this situation are the software companies. All too often, consumers are charged for software that appears fine but in truth has many bugs that sometimes leave the system open to attacks from viruses or hackers. An example of this is the I Love You virus, which exploited a security loophole in the Windows operating system and caused millions of computers worldwide to become infected. In part, consumers are also responsible for the software companies' negligence because they do not act to try and prevent bug free software.

The issue of bugs in software has plagued the technological community for generations. Perhaps it is time that software developers began to take their programming more seriously, and be less quick to announce deadlines.

T38 - Software piracy by Ken Moyer

Software Piracy means the unauthorized use or reproduction of copyrighted patented material. Software piracy is by law illegal. But it is debatable. Some people think its okay and some people don't. There are a number of social issues about software piracy.

A lot of people commit software piracy. A lot of these people are aware of it, but they are able to persuade themselves into doing it. This is because they don't have such a high morale. They don't feel any guilt about committing such a crime. This is partly the society's fault. It is proven that the environment people are raised in helps create the characteristics of the people. If people can persuade themselves into doing something bad, then the society has a problem. Society should teach their children to have a good morale by creating a nice environment that will make a good example. The social issue is that why doesn't the society try better to make more ethical people to decrease software piracy.

There are also a group of people who commit software piracy who have difficulties distinguishing between freeware, shareware and commercial software. This means that the society is not clear about these distinctions. I am sure a lot of educated people also do not know the difference. The society in my opinion is not putting in enough effort into this. The society should put in more effort to try and distinguish these freeware, shareware and commercial software.

Most students don't have the money to buy new software. If it is illegal to make copies, then most students will not be able to afford the new software, or even the old software. This is a problem, especially to university students, because students are not able to obtain a lot of these software. The social issue is why the society doesn't put in more effort to try and distribute software to the students. I am sure that the quality of education will increase if students have better tools. Better education, in the long run, will make society better off.

Software budgeting is often inadequate for the consumers. A lot of companies buy low quantities of software even if the employees need it. So, the employees steal the software, and then delete it when there done with it. If companies spent more money on software, then there will be less stealing.

Software are constantly updated. Most software has at least on update every month. After the upgrade, the older software are not worth a lot. Some people believe that it is okay to steal old software because it doesn't have much or any value to it. This is a very debatable issue, but I believe that if it is illegal to steal new software, then it would be illegal to steal old software.

There is a difference between theft and software piracy. In theft a good is lost by someone. But, in software piracy there are no products that are actually gone. Therefore, some people believe that software piracy is not an act of stealing. But information is being copied. A lot of people also believe that the producer of software should be making a profit for sharing their software. This a very debatable issue.

Some people believe that software should not be priced unless the consumer is making a profit from it. For example, if a person uses a software to make profit, then the producer of that software should get a piece of that profit. But, if the person was using the software for educational purposes, then the producer should have the morale to share his/her software for free.

As information and computer technology develop more, software piracy will become a bigger issue when it already is a big enough issue. The society should understand the importance of this issue and should think of a solution. In the long run it will make the society better off.

T39 - ITGS: Interfaces adapted for the disabled by Dwarkesh Iyengar

With the introduction of Graphical User Interfaces (GUIs) and the advances of input/output technologies, there has been a shift of perspective, from user interface programming tools to environments for designing interaction. Many developments and implementation support is needed to facilitate user interfaces for different user groups with diverse requirements and abilities.

The concept of User Interfaces for All has been proposed as a tool to efficiently and effectively address the numerous and diverse problems related to the accessibility of interactive applications in different contexts of use. Currently, there are no development tools to practically support the construction of User Interfaces for all.

A distinction that needs to be made is the emphasis on adaptability as opposed to adaptivity. This is due to the compelling need to consider adaptations during the early design phases as otherwise no accessibility of the user interface by the target user group can be ensured. Consider for instance an adaptive user interface which can adapt certain dialogue characteristics, based on assumptions about the users drawn at run-time. Such a facility is not useful in the context of disabled user groups, because it takes no account of the fundamental problem of accessibility.

In other words, if no interaction can take place, due to some disability, no assumptions can be drawn and therefore no adaptation can be practically supported. Consequently, adaptation is concerned with both initiating and sustaining interaction. In this sense, adaptability is a pre-requisite for adaptivity, and needs to be addressed explicitly.

T40 - Language independence of GUIs, making computers accessible to a very wide range of users, including those with special needs, and very small children by Raymon

We need language everywhere in our daily life. Most of the time this is not a problem – It's not like you need to be tri-lingual to read a book or read a manual. Besides, to not use language and still get the point across, you need symbols or colors, and this is still a language. It would definitely be nice if there was only one language in the world, as well as only one currency, one unit system (We almost have this one, except for the United States), and one of each of all the other formats and standards.

Some of the other things may be possible, but language is hopeless. It is simply too big of a thing, too hard to teach and spread. People have attempted to make such languages, (see Esperanto: http://en.wikipedia.org/wiki/Esperanto) and although these languages sound very useful on paper, few people go to the trouble to learn them, and they are not taught widely.

However, I digress. On books and similar applications, language is required; this is not so when using computers. Anybody who has used a computer must have noticed that the interface has no full sentences and few words. This is intentional, so that the interface does not become cluttered with words everywhere in such a fashion that one cannot understand which button to press. Any words or sentences directly on the interfaces are only for explanation.

The more words there are, the more trouble it is to translate the bugger into another language and the more time it takes to use since you have to read all the text - Bad language can make a button seem like it does something else if you don't real the whole description ("Close this window" and "Cancel and Close the program")! Thus, people have moved away from words.

Are there still too many words on the interface though? Task bars and option windows must be translated and read, and all but the simplest of programs are unusable to small children and foreigners who cannot read what is written on the screen. And yet, too many proprietary icons are even worse; it is a serious chore for the user to do anything, even if they canread the language!

Does that little star-shaped paper icon with a pencil on it mean "special paper effects", "automatic paper cutting", or "build star shaped building with a pencil - shaped tactical missile"? You cannot tell unless you slide your mouse over it to get the little help ticker - if it's a cheap program, you might not even get the help ticker! And this does not help children use the program either.

What we really need is a set of standard icons, colors, and better help than tickers. There are already a few icons that are pretty much standard; the opening paper file is load, the floppy disk is save, the flying envelope is send as email, and the ugly printer is print. If there could be more standardized icons, then the learning curve for moving between different programs is much reduced.

To solve the language barrier and to make certain button's functions immediately apparent to foreigner and child alike, colors must be used. Instead of "Yes", a green button with a check; for "No", a red button with a X; for "Options", a yellow button with a wrench; and for "Help", a blue button with a question mark. Such a conversion of the most used buttons in computers today would make cross-language use of a program much easier and would probably result in less looking for buttons.

Many gestures are common throughout the world today – nodding your head, shaking it, tilting your head, and a little twisting of the hand and such. If such gestures could be utilized in using a computer, it would have a profound impact on office life. The guy in the opposing cubicle would be nodding his head , the guy beside you shaking his, and the guy across the hall smashing his monitor in to get his message across.

It would be another step in actually communicating to your computer, and a child could easy do it intuitively, as well as a Frenchman on an English computer. A simple form of international sign language involving the head as well as the hands would seem to be quite easy to create and immediate to learn and would greatly expand this possibility of gesturing to your computer. It may even be a start on that international communication language discussed earlier.

T41 - Use of password protection to prevent unauthorized access by Andrew

Password protection and privacy protection

First off, a password is a form of secret authentication data to allow access to a resource. Passwords are kept secret from people who are not allowed access. People who want to access the resource are tested if they know the password or not and are granted access accordingly.

How did this technology emerge

In ancient times, passwords were used to only allow people who knew the password in to a certain location. Guardsmen would stand outside the entrance to the place and ask for the password and that would allow the person access if he knew the password or not allow him access. Nowadays, passwords are used to protect personal information or a resource of information. Passwords are frequently used to access emails, databases, or even certain files.

Who are the stakeholders

What are the advantages and disadvantages for those stake holders?

The stakeholders are the people who know the password to the information they are protecting. The advantages for the stakeholders are that they can protect the information they do not want released to anybody else. There seem to be no disadvantages to the stakeholders of password users other than just remembering the password and typing it in to access the information they seek.

Despite the name of the passwords it is not necessarily just a single word or it might not be a word at all. Passwords are made to be personal and so that no one else could know what it is unless you told them. ATM's instead of using a password use a passcode called a PIN number which is a four digit number that protects the credit card users credit inside the credit. Passwords are generally short enough to be memorized. Passwords also can contain letters as well as numbers making it even harder to get through.

Information with passwords are generally thought of having more value and people would attempt to get through the password to gain access to the information that is being protected by the password.

Once a password is placed, it is thankfully replaceable by the user. A user might want to change his or her password because the user might think or know that his or her password has been found out and wants to change the password on a precautionary measure. Some systems of computers forces users to change their password frequently in order to make a password that has been found out by an unwanted person unusable.

T42 - Globalization of software by Roger Maue

1. What are the issues associated with this subject

The globalization of software is quickly becoming a major component in today's society especially since its growth is closely associated with technology especially in information, business, and work etc. It helps to contribute to the economy there are such things as the gaining of wealth such as the US and China where in China it generates new revenue and creates high-value jobs. Whereas in the US, it achieves better financial performance as a result of cost savings as it is investing increased profits in growing business opportunities as a result of the globalization of software.

2. How did this technology emerge

The globalization of software emerged as a result of the information technology coming up as a major global field, the evolution of work business processes, education and national policies. The rapid shift to a global software-systems-services industry in which it is a reality has been mainly driven by advances and changes in the four major areas of technology ex: (the availability of low-cost, high bandwidth telecommunications), work processes ex: (digitalization of work), business models ex: (rise of companies that help firms offshore their work), and other drivers ex: (lowering of national trade barriers).

3. Who are the stakeholders

It is usually the companies mainly who are major contributors of bringing or globalizing software(s) in order to gain profit by expanding its branches overseas to cheaper production location. Or it can be a country's government with its intentions mainly for improving/contributing to their economy by receiving the globalization of software to update the civil servants with knowledge of it. But it is also mostly upon individuals who acquire the knowledge and are educating others new to it so they are the stakeholders for they are responsible for educating those learning under this person(s).

4. What are the advantages and disadvantages for those stake holders?

The globalization of software has its advantages for its stakeholders can such as government can be the increase in work load of civil servants increasing work production so the government benefits to for putting workers involved in the globalization of software to gain knowledge from it and other countries would try to follow too and be involved so it will help to globalize software. In terms of more profitable alternates would be the companies trying to help production by educating their workers by putting them in workshops not only for the benefit the worker but also for the company too. But the disadvantages could be that the said of due to the other jobs lost as a result of people become knowledgeable of the software(s) learnt in the workshops etc. There will be other setbacks such as certain businesses losing out to the competition provided by the companies with some sort of influence or exposure to the globalization of software.

5. What solutions can overcome the problem

First of all it takes time to learn how to use the software or its basics before any true learning of it can be undertaken thus a education system on learning about the software(s) must be thought at an earlier age so later on it will be easier for these certain people to learn new things at a much faster rate and more applications of software(s). Then there is also the adaptation of software(s) through out an entire system instead of just one part of the system. Other companies that are not gaining anything from the effects of the globalization of software can be helped by trying to integrate the software system in any sort of way to at least try to make them gain something out off it too. Maybe other beneficial solutions can be created to help them instead of letting them lose out instead of competing in any market.

6. What areas of impact does it affect

The globalization of software is a major contributor to many areas since it does affect a lot of areas in today's society. The education system depends on it to for things as one of the primary means for both developed and developing countries so their workforce can compete globally for jobs. Thus the workforce of a nation will be effective if its workers are better educated with it so they are compatible and able to deliver. There are also areas such as banks (bank records, transaction volumes) and medical field (voluminous medical records) and other areas where software programs are key to its functioning or performance.

7. Evaluate the impact locally and globally.

There is a impact both locally and globally for ex: if a certain highly skilled worker(s) in a area such as IT are asked to work for a certain company overseas then they will leave their own countries and look for a better job elsewhere so the country may suffer this loss of an important brain power which it could have used so locally the effect is that the smart worker IT worker will not be there to help develop the country's IT system or areas involved but then globally the company will benefit and also in the process the country where the company is based at.

8. What are the ethical issues

The ethical issues are just that the globalization of software may be a advantage or bonus for some societies but certain societies do not easily accept such issues and may not necessarily agree or follow the thinking behind the reason of the globalization of software or simply prefer their own old systems over it. Whatever it may be it is fair to state that there isn't much ethical issue with globalizing software for it benefits almost everyone involved in it.

9. Who is responsible

The responsibility of on for globalizing software may not necessary be a company but could also be individuals who learn about it and may start creating programs and software and use it as means to profit off it such as creating illegal copies of the original to sell. By selling throughout around locally and globally will spread software but in an unethical way.

10. Who is accountable

The ones who will be held accountable for globalizing software as mentioned above are companies, government, individuals etc. as they look for means to gain profit, educational purposes, or as part of a job in educating people about it. Unless something illegal is carried out then it is through these sources of knowledge that the culprit was able to perform or do what he did.

11. What laws apply

There are certain laws that persecute the culprit(s) depending on what they did and the level of damages they caused. If the damage committed was a serious such as using a software program to hack and steal credit card pin numbers, identities, personal information, and other illegal offences then it is punishable through organizations such as the International Computing Code of Conduct or other bodies of certified organizations where culprits can be brought to justice.

12. Are there alternative decisions

Other alternate decisions could be training or educating of software(s) through certain levels where knowledge of should be restrained where it could lead to the possibility of creating harmful software(s). Also companies should try to look at the advantages and disadvantages of certain locations where their impact might have if they try to invest there. Proper control and monitoring of software being taught or used globally in workshops or by educational purposes.

13. What are the consequences of these decisions

It is almost impossible to keep perfect record of what's happening at all the world's workshops or educational sites and to an extent the exact material that's being taught there. These days the knowledge of creating software(s) is common in terms of the knowledge about is growing as more people get knowledge of it and to track down the culprits is difficult especially the many techniques used to hide or remain anonymous.

Knowledge of technology

In order to study and evaluate the social and ethical issues involved in the use of software, the student must have an understanding of related technological concepts. These may include:

T43 - Key terms by Ronald and Wilanth

Software (application), shareware, public domain, freeware, commercial software, integrated software, user manual, registration card, serial number, warranty, copyright, licence (multi-user, single user, site licence), compression/decompression, back-up, back door (trapdoor), upload/download, wizard, template by Wilanth James and Ronald Chu

Software (application)

A software is any written coded commands that tell a computer what tasks to perform. Microsoft Word, Adobe Photoshop, and Photo Deluxe are all software applications.

Shareware

Shareware is a computer software developed for the public domain, which can be used or copied without infringing copyright. Programmers typically get paid a small one time fee from users who find the software useful.

Public domain

Public domain is any material that is not copyrighted or anything that is not copyrightable

Freeware

Freeware is any software that is available for free for personal use.

Commercial software

Commercial software that is sold for commercial purposes.

Integrated software

Integrated software is a group of applications designed to work together and share data easily.

User manual

A user manual is a document for novice users that explains how to use or operate something, such as a software program. Usually organized topically or by task.

Serial number

A manufacturer's identification number consisting of three alpha characters plus a six-digit numeric code. The first alpha character is 'X' followed by a two-character dealer code. A serial number appears as XDDnnnnnn, where nnnnnn is a unique number allocated by the dealer.

Warranty

There are two general types of warrantees: One is provided by the manufacturer of a product such as roofing material or an appliance. The second is a warrantee for the labor. For example, a roofing contract may include a 30 year material warrantee and a 5 year labor warrantee. Many (but not all) new homes come with a one-year warranty. Any major issues found during the first year should be communicated the builder at once. Small items can be saved up and presented to the builder in a letter on the 11 month anniversary of the closing. This gives the builder one month to make the necessary corrections.

Copyright

A copyright a set of special and exclusive rights regulating the use of a particular use of an idea or information. In a way, it is a “right to copy” certain things. Most of the time, these rights are have an expiration date. The symbol for copyright is © (Unicode U+00A9). A copyright are in books, internet websites, and any other sources of information provided by others. It is a type of “intellectual” property. To use information from a website or book that has a copyright is called plagiarizing; unless you source the site or book then it is not.

License (multi user, single user, site license)

To license means to give permission. A license is the document that proves that permission. A multi-user license is a license that is granted to many different people. A single user license is granted to a single person or user. A site license is a software license often required by software makers to use software with any kind of commercial charge. For example, a site license may be purchased by operators of a video game center, after buying a certain game. The license gives them the right to install many copies on their computers.

Compression/Decompression

Compression (also known as data compression or source coding) is the process of encoding information using fewer and less complicated "bits" in terms of computer science and information technology. One popular example of compression that many computer users are familiar with is the ZIP file format, which, as well as providing compression, acts as an archiver, which is a program that stores many files in a single output file. Decompression is just the act of reversing compression.

Back-up

In terms of information technology, back-up refers to the copying of data so that these extra copies may be restored after that data may have been lost. The main reasons people use a back-up are for two reasons: to restore a computer back to a safe state after a crash down and loss of data (also known as disaster recovery); and to restore small numbers of files after they have been accidentally deleted. Back-ups are the last defense against data loss since it is less efficient and convenient to use, unlike archives and fault-tolerant systems.

Back door (trapdoor)

Again, in terms of information technology, back door is a method of bypassing normal authentication or securing remote access to a computer, while not getting caught. Back door may take the form of an installed program on your computer or may be a modification to a legitimate program.

Upload/Download

Uploading and downloading are terms with similar meanings that are used to describe the transfer of data (electronic) between computers or other electronic systems. To download something is to receive data from a remote system, such as a website, and put it on your computer's hard disk. To upload is to load a file that is already on your computer.

Wizard

A wizard (also known as a druid) is a computer program that leads the user by giving step by step instructions to do a task. The most commonly used wizard was the Internet Connection Wizard. The wizard guides the user by creating a connection to the internet.

Template

There are many meanings for a template in the areas of information technology. First of all, template metaprogramming is a programming technique used by a compiler to generate temporary source code. In computer programming, templates are a feature of the C++ programming language that allow codes to be written without consideration of the data type with which it will eventually be used. A template (file format) is any of various standardized file types used by computer software as a pre-formatted example on which to base other documents or files.

T44 - GUI, command-line interface, voice recognition by Oliver Chan

Graphical User Interface (more commonly known as GUI):

Graphical User Interfaces, or GUIs (pronounced gooeys by some) is the user interface for the interaction with a computer that generally involves the inclusion of images and graphics along with text to display information to a user. The most popular operating systems in the market include Windows and Mac OS, both of which are graphical user interfaces.

Graphics user interfaces have changed the way we look at computers and it make it much more user-friendly than past computers.

Command Line Interface

Command Line Interface (CLI) is the interaction with a computer where both the input and the output are text. Generally, most users will never have to use the Command Line Interface when interacting with computers; however there is a minority that still utilize the CLI for specific tasks.

Graphical User Interface vs. Command Line Interface

There is a debate as to which interface is considered better. Although the Graphical User Interface is usually considered as superior to the Command Line Interface, there are quite a few arguments for the use of CLI.

Arguments *FOR* Graphical User Interfaces:

- Easy to learn
- Efficient use of monitor 'real-estate' (Displays information effectively)
- Presents all functions and commands in easy menus and toolbars, as opposed to having to memorize text commands in CLIs

Arguments *FOR* Command Line Interfaces:

- CLIs are much more resource efficient; uses less RAM
- Steeper learning curve for knowing commands, but once learned can lead to increased efficiency
- Repetitive tasks can be achieved using simple loops and scripts, where a GUI doing the same task would involve endless clicking and dragging (Click the button at this part of the screen, click this menu option, click this tab, etc.)

It is usually safe to say that GUIs are best for simple tasks, but when it comes to repetitive and/or complex tasks, a CLI is better suited for the job. It's for this reason that most operating systems that use a Graphical User Interface generally include some sort of Command Line Interface, for example the Command Line Interfaces in Microsoft Windows and Apple Mac OS are respectively known as the Command Prompt and Terminal.

Voice Recognition

A new form of data input is through voice. The computer converts a sound signal and translates it back into doing some sort of command. The technology is still a work in progress, yet the technology can already be seen in some programs, such as Microsoft Office and the Opera web browser.

The main flaw in voice recognition lies in the process of converting the "sound signal" into the desired command. Generally, users are required to 'voice train' their voice recognition software, by reading passages of text so the computer can recognize how you pronounce words and phrases. This is problematic as voice training takes time, and requires lots of voice training to retain an accurate measure of your speech.

Another flaw in current speech recognition technology is that would have to be done in a quiet environment, as background noise would distort the received 'sound signal' and lead to executing the wrong commands.

Although it is still a work in progress, voice recognition has high potential of becoming a primary input method for computers. The efficiency increase of using computers would be very high. For example saying "System Properties" is much faster than having to use your mouse to move the pointer to Start, then Control Panel, then click the System Properties icon.

Social and Ethical Issues

The issues associated with interfaces in essence are next to nothing, but these interfaces are the tools in which unethical conduct such as piracy and hacking are carried out with. As we continually simplify the interaction with computers, we would also be simplifying the process of piracy and hacking, thus attracting more people to carry out such unethical acts. In other words, security is a trade off of simplicity, where no solution really exists, besides the conventional security measures we take when using computers (firewalls, antivirus software, etc.)