FREEDOM AS A HUMAN VALUE: WHY FUTURE DESIGNS OF SOCIAL MEDIA PURPOSEFULLY OUGHT TO INCLUDE THIS IDEAL.

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Abstract

In this research report I examine the current approaches to the design of technology against the development of the Golden Shield project, as undertaken by the Chinese government. The Golden Shield technology is designed to control all forms of electronic communication, including social media technologies.

I argue that the current approaches to the design of technology are inadequate. There is a need to include moral values as a consideration in the design of social media technologies, specifically when human well-being is impacted. I offer the capabilities approach as a solution that the designers of technology ought to consider as an option when designing technology as this approach defines conditions for human well-being.

I define informational freedom as a capability. Excluding informational freedom in the design of social media technology leads to the user of the technology suffering harm as they are unable to fulfill the capability of informational freedom.

Declaration

I declare that this research report is my own unaided work. It is submitted for the degree of Master of Arts, Applied Ethics for Professionals, in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination in any other university.

Michael Graeme Backeberg

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Table of contents

1 Introduction

In this paper I shall defend the argument that future designs of social media technology should purposefully include the fundamental moral value of free-speech as a human value that is always and purposefully embedded into social media technology. Designers of social media technologies are morally obliged to ensure that they do not cause harm to an autonomous agent by limiting the free exchange of information which is an essential component of human capabilities and for a person to be able to live a life of well-being. Any social media technology that facilitates the suppression of free-speech should not be created as this will limit the ability of a person to live a full flourishing life. Designers of technology are morally obliged to ensure that technology which can be used by a person to express themselves freely does not limit a person's capability to live a life of well-being, and by failing to ensure that free-speech is attainable by a person they have committed harm to that person and accordingly a moral wrong. My use of the Golden Shield project, a Chinese government initiative aimed at limiting the free flow of information via various information technology (IT) platforms in China, is the background against which I will argue that the suppression of free-speech is a limitation on living a life of well-being in the twenty-first century.

People around the globe use social media sites such as YouTube, Facebook, Twitter and internet blogs to disperse news, communicate and share thoughts and feelings. The process of expression and communication is embodied in the ideas of free-speech, freedom of association and freedom of expression.[1] With more than a quarter of the world's population now connected to the internet,[2] the way Information and Communication Technology (ICT) is used in support of the ideals of liberty across the globe has a profound effect on our lives, and this makes the role of the designer increasingly more relevant as one of the key role-players in the design of ICT's, and fundamental to the role of a morally

[1] John Sullins, "Rights And Computer Ethics", *The Cambridge Handbook Of Information And Computer Ethics* (Cambridge University Press, 2010), Ch3, pages 116 - 132

[2] "Internet World Stats", viewed 13 August 2011, Available at *http://www.internetworldstats.com/stats.htm*

relevant design for new ICT platforms. It is crucial that the role of the designer is not under-estimated in the development of these ideals. The inclusion of a moral value in the design of the technology artifact prior to the creation of the technology artifact means that the nature of technology may change from a design perspective.

To support my position that when designing social media technologies, certain human values ought to be included in the design requires me to establish that there are moral value laden outcomes when we use technology and that, contrary to the current thinking in science and technology studies, some values ought to be included. A technology artifact is seen from a design perspective in two ways. Design is viewed as totally morally neutral or the design of the technology should be inclusive of as many stakeholders as possible. Considering many different parties in the design process reduces possible influences, prejudices and biases of the designers specifically, and essentially leads to neutrality in the design of the technology. This paper argues against both of these positions of neutrality by arguing that the inclusion of the fundamental value of informational freedom outweighs all other considerations in the design of technology, specifically for social media platforms, which makes the role of the designer influential in the role they play in the development of technology. A designer is morally obligated to perform a morally right action, even if this is contrary to their contractual obligations.

2 Social media technologies and the impact of the Golden Shield project

a. The context of social media technologies

Social media technologies fall within the category of ICT known as “computer mediated communication.” This means a technology that can facilitate the process of the sharing of information electronically from one person to another person or, to groups of people. Generally, social media

technologies cover a broad range of technology usage, including email, short message services, web blogs, chat rooms, web collaboration (such as Facebook), web sharing and instant chat technologies, video publishing (such as YouTube), posted photographs (such as Flikr) and general communication technologies that facilitate this (such as search engines, secure networks and technologies that utilise these services). Practical examples may help clarify the meaning. Facebook is a well-known social media platform where text, videos and photographs are posted by a user of the technology. Blackberry Messenger service allows people to text messages, post photographs and perform other functions quickly and easily with each other without making a phone call. This information is shared instantly with multiple people and groups. Each of these examples highlights the speed at which information can be shared and dispersed, so both are good examples for political and social organisation, and the dissemination of political information rapidly without intervention of governments, provided the governments do not control the means to limit the distribution of information. In this paper I will use the Chinese government's Golden Shield project, designed to limit access to the internet and related communication technologies and to control content in terms of information sharing between people who use the social media technologies, as the background for my argument.

b. The Golden Shield project

There are three points I need to make about the Golden Shield project before providing further details about the initiative. Firstly, I am using this example as a reference to the general use of the limitation of informational freedom and accordingly suppression of free-speech. This project is specifically important as it enjoys widespread coverage by media and has been the subject of much political debate. Although I am referring to the Golden Shield as a specific example, it must be noted that this project is only one of many underway where politics influence the development and role of technology in limiting access to information. Recently other governments have documented initiatives

to limit informational freedom that have enjoyed coverage in the press, such as the impact of the Iranian government continually blocking various social media access (called the "National Internet")[3], the ruling party controlling religious and political informational freedom in Uzebekistan[4] and the limitation of political expression by blocking news web sites, internet blogs and political expression through electronic means in Myanmar[5]. It is important to not only think of these policies as applying to states that we may consider to be politically outcast in a Western sense of human rights abuses; Western democratic countries are also looking to control the content and distribution of information via social media platforms. The British government is investigating the role of Blackberry in the political organisation of the youth during the riots of 2011 in the UK[6], the State of California in the United States (US) has proposed legislation to allow the local government to turn-off access to social media technologies at their discretion due to the role they played in political organisation for protests in San Francisco against police brutality[7] and the South African government wants to establish a committee to limit the privacy of some social media technologies[8] under the auspices of crime prevention. The use of the Golden Shield project is only a mechanism to ground my argument. Secondly, although this project is unique, from a technology approach, the impact on society, culture and specifically the individual are not only questions of practical use but are also moral questions that require further investigation. Thirdly, it is not particularly relevant to my argument whether the technology is ultimately workable, as my argument is not designed to address this technology device only. Rather I seek to address the impact of all future technology artifacts that may impact the individual well-being of a person where informational freedom and free-speech are among the considered aspects that make a life worth living.

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[3] Elizabeth Flock, "Iran begins blocking access to Gmail, other site", *Washington Post* - 9 February 2012 edition Viewed 26/02/2012. (http://www.washingtonpost.com/blogs/blogpost/post/iran-begins-blocking-access-to-gmail-other-sites/2012/02/09/gIQAlZ0i1Q_blog.html)
[4] News Bureau, "Dozens Of Websites In Uzbekistan Suffer Access Problems", *Radio Free Europe Radio Liberty* - 12 August 2011 edition Viewed 26/02/2012. (http://www.rferl.org/content/dozens_of_websites_in_uzbekistan_experience_access_problems/24295316.html)
[5] Aung Hla Tun, "Myanmar lifts bans on foreign news websites", *Reuters* - 15 September 2011 edition Viewed 26/02/2012. (http://www.reuters.com/article/2011/09/15/us-myanmar-media-idUSTRE78E2QJ20110915)
[6] Margaret Rock, "Twitter, Facebook, RIM Meet with U.K. Officials Over London Riots", *Mobiledia.com* - 23 August 2011 edition Viewed 23/08/2011. (http://www.mobiledia.com/news/104110.html)
[7] Will Kane and Carolyn Copeland, "No BART protests; more debate on wireless shutdown", *San Francisco Chronicle* - 17 August 2011 edition Viewed 23/08/2011. (http://articles.sfgate.com/2011-08-17/bay-area/29895325_1_wireless-service-bart-police-civic-center-station)
[8] Duncan McLeod, "South Africa: Gov't May Demand Access to BBM Records", *All Africa* - 5 September 2011 edition Viewed 05/09/2011. (http://allafrica.com/stories/201109051760.html)

The Golden Shield project was initiated after various political commentators critical of China's ruling party were successfully publishing human rights abuses that the Chinese government was committing through Western media groups. This was highlighted in 2005 when the Chinese activist, Shi Toa,[9] was arrested by the Chinese government. Shi Toa, a journalist, was sending articles to Western newspapers via email. His commentary was critical of the Chinese government's actions and policies specifically related to political suppression of the individual. The Chinese government was able to identify Shi Tao by getting the email history from the ICT firms, which resulted in his arrest, conviction and imprisonment. The Chinese government realised that targeting the hosts that disseminate electronic information was easier to deal with than targeting media outlets or specific technology firms based outside of the China. Focusing on the process of limiting information entering or leaving China would allow the government to modify or suppress the content of the information and to track political dissidents without involving third party states who may support ideals of free expression and free-speech. The Chinese government feels there is a threat to the Chinese society and political organization within China and is attempting to control ICT companies, not only with various laws, but also with the use of technology. The objective of the Golden Shield project is to track all forms of communication across various social media platforms, and then to either prevent access to the platforms or to prevent dissemination of information that may be politically damaging. This will allow censorship of information by means of an electronic device that can scan and monitor all communication, either during the request for information phase or in the delivery of the information. In addition, the source of this information can be tracked rapidly (without requiring access to the internet servers of host ICT firms) which will allow for the identification of the possible requestor, recipient or intermediary. Control of all open communication between people who work outside of their local network will rest entirely with the Chinese government. The effect of this process is that the Chinese government can limit and control the flow of information and free-speech that is

[9] See Sullins, p117.

communicated electronically internally in China, and they can decide what content should enter the Chinese network for distribution.

3 The designers of technology

In context of this paper, the term “designer” refers to a person or a group of people who make decisions about the design, construction and implementation of a technology. Common practice is to have a team of people who will usually be made up of a range of experts that bring different skills to the design of a technology. With the design of any technology artifact there are many different role-players. These include the sponsor of the project, the analysts, the engineers, the users, the people that manufacture the artifact and the people who promote or sell the artifact. Sometimes these are represented as a single person but usually they are more than one person. These may sometimes be inclusive of as many groups of different stakeholders as can be included and sometimes these may be limited to a small group of influential people, political parties or financial backers or a corporation, who define the requirements of the design. The designers of technology artifacts are often employed by large ICT companies and if not, and should they develop a new technology artifact, they will either be merged into a large ICT company or transform into a large ICT company themselves. The term “designer” refers to all of these and I use it interchangeably to mean a range from a single person up to a multitude of people.

a. Economic considerations for the designers of ICT

One of the consequences of the impact of technology on society is that there is an opportunity for economic and commercial gain from the development and sale of technology. The incentives to build better and new innovative technologies are ideals of all economies in the world. Many of the decisions made about technology, its design, purpose and use are driven through motives of

economics, profit and aesthetic appeal. The value derived is measured in terms of these specific elements and can ultimately be linked back to the base objective of maximizing utility. Utility is measured by the total value of the possible profit versus the total value of the possible loss that may be the final outcome of the choices made. Essentially the more economic value, the better the decision to pursue the design. This has resulted in the development of a formal profession for ICT and the emergence of professional guidelines for people who work within this industry.

b. Current professional standards of conduct as considerations for the designers of ICT

The emergence of ICT as a specific professional field means that technology and technology design is an industry of its own. This has led to guidelines and principles of behavior that define ethical behavior for ICT professionals. These principles are reflected in the processes of design, such as designing professionally, eliminating malicious software code, protecting user identity and so forth. In addition, the emergence of ICT specific courses at university level in terms of the science and technology studies has shaped the views that many ICT professionals carry with them into their professional careers. For an ICT design to be considered ethical requires that it meets the standards of a professional body of knowledge that defines a framework within which the professional ICT designers build technology artifacts. A suitable ethical approach is accordingly to ensure that harm is not suffered by the client or the end-user in the use of the artifact itself, as opposed to the end function that the technology will be used for in the future. The designer's specific ethical obligation is to ensure that the user of the technology should suffer no harm through the use of the technology artifact.

This definition of harm is very narrow. Harm is not assessed against the effect the technology has on society but rather through the use and function of the technology by the user of the technology. As an example, if the designer purposefully inserts a software virus into the technology artifact, the user of

the technology artifact would suffer harm due to the software virus. The principle purpose of the technology is not of consideration to the designer. This creates the basis of design that can still be considered to be done in a professional manner meeting standards of various professional bodies. It does not matter if a designer is building a web site that exploits women or children or distributes pornographic material – this is not the concern of the designer. The designer is obligated to ensure that they minimize the specific harm that the user may experience (by not inserting a computer virus into the software) and thereby increase the good the user can derive through use of the artifact.

Adherence to these principles is widely considered a right design in terms of ethical behavior by the ICT professional. This approach fails to recognise the possible outcome that the artifact may have as its primary, central purpose in the first instance. The normative concern of the possible consequence that the artifact may have on a person's life are not the considerations of the designer as these are viewed as the considerations of politicians and law-makers.

c. A different perspective

I believe a designer ought to be responsible for approaching the design with a sense of values that are important. Value needs to be seen as more than economic or functional value and ought to include values of moral concern. The idea that the value of technology for the designers of technology is driven specifically by an economic or aesthetic proposition fails to include a moral evaluation of what the consequence of use may bring about. Minimizing harm by adhering to a specific code of conduct that dictates the behavior of the designer is a measure that falls short of the mark of an ethical design approach. An ethically right approach for a designer ought to consider more than execution of the task in a professional manner and should include a broader assessment of moral concern beyond the creation of the technology artifact itself.

4 The meaning of “value”

a. The types of “value”

Central to my argument is that there are different kinds of human “value”. However I am not interested in all values but specifically moral values and how these ought to be included into the design approach for social media technologies. To make a “value” judgment requires a definition of what the type of value it is that is being considered. To who or to what is the value particularly significant. In this paper, I am referring specifically to a human value, anthropocentric in nature. I am not discounting the value of the environment or other things in the world of stakeholders that warrant consideration; they are valuable in their own right. Here, the value consideration is human as the nature of social media technologies are particularly valuable to humans. Social media technologies may impact the environment such as cellular towers, but in this paper the focus is on the impact of social media and how it influences human life.

Human values in relation to technology include those as specified by Norbert Wiener, the pioneer in the field of human values and computer ethics, when he argues for “protecting and advancing central human values, such as life, health, security, happiness, freedom, knowledge, resources, power and opportunity”.[10] These human values include economic values, aesthetic values and moral values. I am not disregarding economic values as important for a person to attain a full and meaningful life, and I do not want to detract from the importance of other values in defining the relevance for a person to live a life full of opportunity and with access to resources. However the nature of human well-being in this paper is assessed in terms of moral values and not economic values. So the human values defined in this paper refer specifically to moral values.

[10] Bynum, Terrell, "Computer and Information Ethics", *The Stanford Encyclopedia of Philosophy (Spring 2011 Edition)*, Edward N. Zalta (ed.), AVAILABLE AT <http://plato.stanford.edu/archives/spr2011/entries/ethics-computer/>. p12

b. Technology and moral "value"

The word "value" itself has philosophical meaning. "Value" is defined as good; attainment of a value or finding something valuable is good. The positive impact of technology on a person is to help bring about something better for a person, a good; technology is instrumental in playing this role when it is used by a person. Instrumental value is "the value that something has in virtue of being a means to an end",[11] and instrumental values "lead causally to intrinsic values".[12] Technology can accordingly influence a person's life in a positive way or a negative way. Technology may facilitate or inhibit something which is considered intrinsically valuable for a person. A person then derives value from technology through the positive consequences of use. These interactions with technology are the considerations that are valuable to a person and how they influence a person's life is, or ought to be, of concern for designers.[13]

To merely state that technology is instrumentally valuable to a person is insufficient as a causal link between the instrumental function of technology and the moral values that it may influence. This causal link needs to be established. The idea that technology can have a particular moral impact is relatively new in the field of computer ethics and is encompassed in the concept of "embedded values". Philip Brey writes, "The embedded values approach holds that computer systems and software are not neutral and that it is possible to identify tendencies in them to promote or demote particular moral values and norms."[14] This is not attributing a form of moral agency to the computer systems themselves but does recognise that there are morally relevant consequences important to people through either the design or the actual use of the technology. This means that technology has a value that is significant to the designers, the users and other stakeholders generally. Specific to my

[11] Zimmerman, Michael J., "Intrinsic vs. Extrinsic Value", *The Stanford Encyclopedia of Philosophy (Winter 2010 Edition)*, Edward N. Zalta (ed.), AVAILABLE AT <http://plato.stanford.edu/archives/win2010/entries/value-intrinsic-extrinsic/>. p12

[12] Schroeder, Mark, "Value Theory", *The Stanford Encyclopedia of Philosophy* (Summer 2012 Edition), Edward N. Zalta (ed.), forthcoming AVAILABLE AT <http://plato.stanford.edu/archives/sum2012/entries/value-theory/>. p9

[13] Philip Brey, "Values In Technology and Disclosive Computer Ethics", *The Cambridge Handbook Of Information And Computer Ethics* (Cambridge University Press, 2010,Ch.3 pages 41 - 58), p46.

[14] Brey, p42.

argument is that technology brings about an outcome that has a moral impact and this is evident either through the consequence of use or in the design of the technology.

Technology influences peoples' lives in many different ways. Technology is valuable for a person as it can improve human life through time savings, money savings or experiences such as pleasure, a reduction in work or the ability to generate income. This raises problems; some technologies may be chosen by a user, other technologies direct a person into a specific choice and other technology artifacts require the person to accept the use of the technology to meet base human needs regardless of a personal choice the person may have made. As an example, buying a multi-media player to replace a compact disk player is not an essential choice to live a better life. However, trying to find a job in a modern society will almost certainly require access to a telephone, and this dictates the need for this technology. Technology may accordingly dictate behavior of a person, such as using a telephone to communicate. The person can choose not to work and ignore the telephone or may be fortunate and stumble upon meaningful employment without working with a telephone. But this would almost certainly be rare. The outcome for a person who does not have access to a telephone, when it is essential to finding employment, makes the accessibility to the telephone valuable for that person. Regardless of whether the person wants a telephone or not, the telephone is valuable for that person to derive a good outcome, that of getting employment. This does not make the ownership or use of the telephone a normative question, but rather whether having access to the telephone is good for the person. The answer here is most likely 'yes' as it is instrumental in increasing the possibility that the person may find employment. The value from having access to a telephone causally relates to the type of values that are important to the person; finding employment.

The idea that technology has embedded moral values is contrary to the thinking of some designers of technology. Their argument is that technology is neutral, specifically to consequence of use and is

referred to as the "neutrality thesis".[15] It is this claim that I aim to disprove. The benefit for designers to argue against technology as morally influential, is that justification for technology projects can then be defined in pure economic terms and this creates a model for defense of their actions when the consequences of use are morally wrong. As an example, the Golden Shield project involves many role-players in the development of the technology. Principal among them is Cisco, a US based ICT firm which has been contracted to build the device. Cisco has undertaken the work and has continually defended their involvement in the project in many different ways. In 2006, the US held a Congressional hearing looking into the role of ICT firms in the development of internet technologies to build the Great Wall of China (the first version of the Golden Shield project). Cisco defended its development of the internet hardware device (a router). Mark Chambers, the Cisco executive testifying before the hearing in February 2006, argued that Cisco does not make moral value judgements;[16] the defining principle of technology is making it work efficiently. In addition, he argued that the possible use of the technology for good or evil purposes is defined by the user and not the designer of the technology. Moral or ethical considerations are accordingly not relevant to Cisco as technology has no specific ethical considerations and is morally neutral especially in the early phases of technology innovation. Guidance is required from the government where a corporation is required to consider value-laden outcomes of moral significance.[17] Robert Reich (a former Labour Secretary) supported this position and stated: "There's no American foreign policy that dictates at all what Google or Yahoo! or any of them ought to be doing. And therefore, we can't expect these companies to do it out of their own generosity … Google doesn't have a corporate conscience."[18] Recently, the executives of Google have argued that the roles of the ICT firms is to work towards improving technology and that there is an obligation on the engineer or designer to ensure that the user is

[15] Ibid. p43.
[16] Kirsten E. Martin, "Internet Technologies in China: Insights on the Morally Important Influence of Managers", *Journal of Business Ethics* – 2008, volume 83: p489 – 501. p491
[17] ibid, p492
[18] ibid, p492

protected from harm (such as IT viruses). But the responsibility to guarantee civil liberties does not lie with the designer or the engineer.[19]

To understand what is valuable to all of us is relevant to understanding the effect that technology generally, and social media technology specifically has on our lives. Should there be no value, then the concept of embedding a moral value in technology is moot.

c. The realisation of "value" for the individual

Apart from technology leading to a possible improvement in a person's life, the actual value is only derived if it can be realised. Without the realisation of value, the instrumental purpose of the technology fails. This means that technology in any specific form is valuable at the time of its use. Technology can only be valuable to a person if it has some impact on their life as a whole or has a specific value to an individual when they need it. The realisation of value for the individual is linked to the place and the time the technology may be used by them. Imagine being stranded on a desert island and stumbling upon a mechanical device. The device does not work as it requires power of which there is none. The device subsequently has no particular use to you as the value of the technology is unrealisable. It is less useful than almost everything else on the island. You value the source of water, the tree which bears fruit for you to eat or the shelter you have erected from palm fronds as essential. The device at this point cannot be considered influential as the potential value of the device is unrealisable in your life and can be discarded. For the technology to be valuable it has to instrumentally influence the circumstances that the individual finds themself in, which the device in this example fails to do.

[19] "Internet access isn't a human right, says Google VP", *ZDNet* - 9 January 2012 edition Viewed 09/01/2012. (http://www.zdnet.com/blog/google/internet-access-isnt-a-human-right-says-google-vp/3534)

d. The “value” of social media technologies

Social media technology, on the other hand, is instrumentally valuable to us now as it is current and used extensively by many different people all over the world all of the time. Social media as a tool allows people to communicate with each other, arrange social engagements and express views of political agreement or political dissent. It is this sharing of information in a simple and rapid way that makes social media important in the free expression of many different things for people who use them. Social media technologies facilitate the free-flow of information between different people all over the world and it is this informational freedom, which is one of the consequences of use of the technology, that is valuable to us. Limiting this instrumental value of social media technologies will render the technology as useless (as the device on the island example) for people who rely on social media technologies for the free-flow of information.

e. The possible threat of “disvalue” with technology

“Disvalue” is the opposite of value. It is something that is harmful, bad, evil or possibly an injustice. For the citizens of China, the Golden Shield project has the very real possibility of limiting their ability to express themselves freely. This would be harmful to the individuals who use the social media technology in China.

Even if this is not true, and the Golden Shield project is considered good for the citizens of China, the potential harm to other individuals emerge where the context of design shifts. Should the device created for a specific market such as the device to limit informational freedom by the Chinese government, shift into a different context, such as another country, culture or society, or is defined at a time for use by others in the future who have no input into the design, does not mean that the

device will also be good for the individuals in these contexts. The danger is that the influence of this device may become broader than the immediate specific context for which the device is designed.

If the device is subsequently used and adopted by other societies the moral consideration and ethical impact on that society has not been considered in the initial design and the follow-on effects from the use of the technology are not considered. The sense of what is valuable to this society or people is not considered as relevant to the designer. The harm lies specifically in the fact that where the technology actually leads to the loss of something valuable to a society that has now adopted the technology, the harm may be transferred to this society unintentionally. The impact of the technology may be damaging more than the designer could possibly have foreseen. Anticipating possible negative consequences ought to be relevant to the design and the designer of the technology. The designer should work towards a valuable outcome that is generally defined as good for humans.

So there are two distinct problems. Firstly, the possible disvalue that the device brings to the specific individual who may be intentionally be impacted by the technology, such as the citizens of China, and secondly, when the context of technology shifts as it is adopted by another group of users who have not been considered in the design. This means that the designer ought to consider the direct effect that the device, that is being developed for the Golden Shield project, has on the citizens of China and then ought to widen the scope of ethical concerns to include those beyond one country, society or culture and understand the possible consequences that the design may bring about should the context of use change.

f. The role of the designer

An ethical framework for design standards of technology needs to be universal and span across different contexts, be these geographic or cultural or socially based, to ensure that it applies to all

individuals. What does this mean? In the context of the Golden Shield project, the device impacts the citizens of China but the device has the very real probability of finding a way into use by other governments. How are the moral impacts on the citizens of this third-party state assessed? The impact is considerable if the technology is adopted by another society. Yet the impact on the individual has not been included in the design as the citizens of the third-party state are not considered. The designer needs to work within an ethical framework of design that is considerate of the under-represented (such as woman in a male-dominated society), and those not represented (such as the caste or tribal system in some societies), limits the influence of the politically powerful (such as governments who suppress their own population), and is considerate of what it means to be an individual living in a diverse world. It is essential that the adoption of design criteria extends beyond the narrow confines of standards of professionalism only, and also enhances what is valuable to humans. Central to this is a moral value of what it means to live a full and meaningful life and what is necessary to do so.

The designer needs to work to meet the criteria of the well-being of all people, the citizens of China and those that may be impacted should the context of use shift, as an intrinsically valuable concept. Technology can assist in ensuring that this is attainable. The design of the technology should be valuable in that it creates a way for a person to improve their well-being. Technology should not lessen a person's well-being and as a minimum technology ought not to impair the opportunity for a person to experience a life of well-being. Designers ought to strive for a technology artifact that is good for a person to experience well-being.

5 The importance of human well-being

Human well-being applies to all people, and it represents the essence of a life worth living and allows a sense of what is good for all people. Human well-being is not discriminatory and does not have a

particular political choice. Human well-being is a type of intrinsic value; good in itself. Intrinsic values are important in themselves without being connected to any other thing. "The intrinsic value of something is said to be the value that that thing has 'in itself,' or 'for its own sake,' or 'as such,' or 'in its own right.'"[20] The intrinsic value of human well-being is not tied to our religious beliefs, our political choices, where we live, when we live or the economics we practice. These things may influence human well-being, but to have lived a life where a person's well-being is maximised, not only applies to a specific individual, but transcends social, political and geographic borders. Human well-being is just good on its own. Ultimately human well-being is good for a person.[21] A person's life ought to be good and positive and everything that impacts a life ought to be good in terms of improving a person's life. All people ought to be given the opportunity to live a life where their well-being is neither diminished nor imposed on and I think this is uncontroversial.

To just state that well-being is good and can make someone better off is insufficient of an account of what well-being is. Some clarity of the elements of what constitutes well-being is required. In this paper I am using the specific meaning of well-being as defined in what has been called "the capabilities approach".

a. The value of human well-being and the capabilities approach

The capabilities approach as a theory of human well-being was initially developed by the economist Amartya Sen.[22] Sen's capabilities approach deals with the problem of measuring a standard of living for an individual, and how the traditional economic measure of Gross National Product (GNP) as reported in the United Development Reports of the early 1990's[23] fails to assess what this means.

[20] Zimmerman, p1
[21] Crisp, Roger, "Well-Being", *The Stanford Encyclopedia of Philosophy (Winter 2008 Edition)*, Edward N. Zalta (ed.), AVAILABLE AT <http://plato.stanford.edu/archives/win2008/entries/well-being/>. p1.
[22] Martha Nussbaum, "Capabilities As Fundamental Entitlements: Sen And Social Justice", *Feminist Economics* – 2003, volume 9 : p33-59. p33 -34. Amartya Sen, "The Standard Of Living", *The Tanner Lectures On Human Values* - 1987: pages 1 – 49. p45 – p46.
[23] Martha Nussbaum, "Capabilities and Social Justice", *International Studies Review* – 2002, volume 4 : pages 123 – 135. p125 - 126

Simply explained, the traditional economic measure would determine if a country's GNP is growing and divide this by what the estimated population census count is; if this number is rising per person per annum then the standard of living in the country is said to be advancing. This is a measure defined by utility that is aimed at the growth of a country's economic prosperity and this has been the core focus of economic development programmes. The personal development of the individual and their standard of living was not measured in a specific way other than through economic averages. Sen writes, "Everything, it may appear, counts in the GNP. The question, of course, is everything in what space? Commodities, yes; functionings and living conditions, possibly not at all."[24]

Sen argues that GNP has failed to deal with people's preferences or life choices and the alternatives available to them in living a satisfying life. Additionally, societies differ and experiences of one society to the next can be vastly different. As an example, in one society the experience of gender discrimination will be defined by men as the political and economic power lies in the hands of men and not women. Women may exhibit greater "adaptive preferences" and are less likely to be able to move away from this society norm. Women in this instance, have little understanding of alternative preference to choose from. Yet, the society may reflect a level of opulence that is widely regarded as high. "Countries with high GNP per capita can nevertheless have astonishingly low achievements in the quality of life, with the bulk of the population being subject to premature mortality, escapable morbidity, overwhelmingly illiteracy and so on."[25] The result is that GNP as a measure of growth of society has failed to deal with these specific human issues.[26] For a society to advance, measures had to move beyond economic factors and to a model of broader preferences including and recognising entitlements that can be free of any specific "adaptive preferences".[27] Underlying Sen's approach is a measurement based on capabilities. The capabilities approach has developed into a multi-disciplinary

[24] Sen, "The Standard Of Living", p45.
[25] Amartya Sen, "Development As Capability Expansion", *Journal of Development Planning* - 1989 volume 19: pages 41 – 58, p42.
[26] For a detailed review see Sen, "Standard Of Living", pages p45 – 48 and Sen, "Development As Capability Expansion", pages 41 – 43.
[27] Nussbaum, "Capabilities As Fundamental Entitlements: Sen And Social Justice", p34

approach and has been developed further by scholars in many different academic fields and specifically, in philosophy, by Martha Nussbaum.

The capability approach, as a theory of well-being focuses on the structures that ought to be in place for a person to live well. The capability is not the actual experience of well-being itself but rather the mechanism to be in place for the person to attain well-being. "Capability reflects a person's freedom to choose between different ways of living."[28] The capability approach is about providing an opportunity to a person to allow them to exercise a choice in making a decision that makes their own life better. As an example, if a earning an income will allow a person to live a better life, then finding meaningful employment would help the person in earning the income. Should the person require an education to achieve the goal of getting meaningful employment, then the capability the person requires is one of education which may lead to them ultimately earning an income and accordingly experience well-being.

There is a clear distinction in the capabilities approach between functions and capabilities.[29] The importance of functions is that they make living a life of well-being valuable. A function consists of 'beings and doings'. A function of being is a result of being in a specific state; as an example, there are positive "beings", like being educated and being well-fed, and also negative "beings", like being illiterate or being ill. A "doing" function is a specific outcome from the physical act of doing something, such as caring for an elderly person or going to work. To be human requires a person to be in a state of being and to be able to undertake an act of doing. The difference between a capability and a function, is that a capability creates the opportunity for a person to realise a function or a range of functions. Sen puts it succinctly when he states: "A functioning is an achievement, whereas a capability is the ability to achieve"[30].

[28] Sen, "Development As Capability Expansion", p42.
[29] Robeyns, Ingrid, "The Capability Approach", *The Stanford Encyclopedia of Philosophy (Summer 2011 Edition)*, Edward N. Zalta (ed.), AVAILABLE AT <http://plato.stanford.edu/archives/sum2011/entries/capability-approach/>. p4.
[30] Sen, "The Standard Of Living", p48.

The capability approach also distinguishes means and an end.[31] The end, in terms of the capability approach, is the capability itself, and not the subsequent function. Ingrid Robeyns puts it this way: "According to the capability approach, the ends of well-being, justice and development should be conceptualized in terms of people's capabilities to function; that is, their effective opportunities to undertake the actions and activities that they want to engage in, and be whom they want to be."[32] As an example, having a capability to get an education is an end in itself not the person actually having an education (although this is also an end in itself). The mechanism that ensures that the capability can be fulfilled is the means to fulfillment of the capability. So having free education available or a decent schooling system as examples, are the means to fulfilling the education capability. A capability is only valuable as an end, if it can be realized and to do this, the means of realizing the capability become important.

A capability creates the way a person can be or what they can do such as providing them with opportunities to live a meaningful life. A capability does not force a person to do something but is rather the opportunity to do something. Should a person not pursue the opportunity available to them then this is not through the lack of an opportunity but rather through a personal choice they make. Using education as an example, schools are important as a valid means if education is a capability that leads to well-being. Presenting education as a worthwhile capability where it is important to well-being and then not providing people with the means to partake in education will make the capability unrealisable. To realize the education capability will require access to schools, the materials to educate people and sufficient teachers. The means are instrumental in a person attaining a capability and if available there is no reason why the capability cannot be realised. The more possible ways a person can gain access to education the more likely the capability of education can be fulfilled. If the person remains uneducated then this is not through the lack of opportunity available

[31] Robeyns, "The Capability Approach", p7.
[32] Ingrid Robeyns, "The Capability Approach: a theoretical survey", *Journal of Human Development* - 2005 volume 6: pages 93 – 114. p95.

to the person to get an education but rather through their own doing. There may be conflicting choices a person has to make to determine which function they wish to fulfill (such as having to either care for the elderly or get employment), but the role of the capability approach is not to specify which choice is preferential but to rather allow the person to make their own preferential choice and to be able to complete the choice once they have made it.

b. Informational freedom and the capabilities approach

In terms of what will make a life worth living and better for a person, I propose that a capability of informational freedom contributes to well-being. For the capability of informational freedom to be realised requires access to information and sharing of information to improve the well-being of a person. There are many aspects to informational freedom and included in these are free-speech, freedom of expression and the ability to access the words and expressions of others. I will address each of these and how they contribute to the capability of informational freedom by providing a person with the means of becoming informed. Being informed allows a person to live a life of self-reflection by reviewing the choices they have made in the past and those they may make in the future. Informational freedom creates an opportunity for a person to become informed even if they are illiterate by relying on verbal communication, and will give people an opportunity to express happiness or dissatisfaction with the circumstances which they may find themselves in.

Free-speech contributes to informational freedom by allowing people to express ideas and thoughts which are creative, reflect the society within which they live and to raise views on the political situation of the country they live in. Speaking out freely against the government without fear of political influence allows a person to change the circumstances they may find themselves in. Allowing a person to communicate in a social and personal dialogue without being able to express political

views which may dissent from the current government is not fulfilling the requirement of a allowing a person the ability to assess if they are living a good life.

The freedom of expression allows people to share ideas, comment on the society around them and highlight issues that impact their well-being through many different mediums, such as artistic works. The ability to read is not a necessary component to experience informational freedom. Ideas can be expressed through photographs, sound recordings and video clips. Expressing thoughts through different mediums create many ways for people to communicate across traditional boundaries of race, class, caste or religious delimitations. The ability to express ourselves and hold opinions requires that we have the opportunity to not only express ourselves in writing but also through artistic works and methods of expression. Sharing ideas and thoughts through varied medium is a component of informational freedom that allows us to understand our differences and engage with each other constructively.

The capability of informational freedom is not only about having the opportunity to speak out and express our-self but also the opportunity to listen to the ideas of others, reading where possible and learning about the life strangers. The opportunity to receive information from others, allows us to make a comparison with our own lives and determine if the life we are living is the one we want.

It is difficult to be able to determine whether the place you live is the right place for you if you do not understand all that is around you. You cannot make that decision without being informed. Reviewing the position we find ourselves in and the choices we have made is fundamental to reaching a level of determination that allows us to assess whether we need to change our personal belief system or physically move elsewhere if we disagree with the principles imposed upon us by the current geographic place in which we find ourselves. We all live in a society governed by rules and laws and politics. We are governed, often by people we do not know, by laws we may not agree with and living

in a way or under conditions we may be forced to subscribe to. Having the choice to live where we do is fundamental to a full meaningful life, to accept where we live today or to change where that may be. Choosing to change our own circumstances is an ideal we should all want to have. The reality is that many people in the world find themselves tied to a place and subjected to extreme poverty, ill treatment at the hands of bureaucrats, or unscrupulous business practices with no means to escape the inevitability of their circumstance. How would you thrive in an environment as a member of a social group governed by rules and laws of a society that is not cognisant of you as a person? We are all individuals in society and we should all have the opportunity to know what it is that controls our life. If you were poor and illiterate then the ability to listen and learn from those around you is possibly more important than any other form of communication. Limiting a person's ability to gain access to conversations, to read a newspaper, to watch a news story, to listen to a public speaker, to watch a video clip or for them to verbally express how they feel cannot help them live a meaningful life made up of choices. These are some of the things that contribute to informational freedom so the very opposite of this is required.

We must all have the mechanism to ask the questions why we live the way we do, what we want to change and to know what it is that defines how we live. It is essential to determining whether the life we have chosen is better or worse, if our well-being is improving or diminishing. To answer these questions and to reach a level of understanding that allows us to make assessments that can change our choices requires knowledge and this is core to the meaning of the capability of informational freedom.

There is support for the capability of informational freedom to be gained from Martha Nussbaum. The concept of informational freedom does appear in her list of basic capabilities referred to as the "Central Human Capabilities".[33] The list has been chosen to deal with the life of an individual which

[33] Nussbaum, "Capabilities As Fundamental Entitlements: Sen And Social Justice", p40

has "a conception of the dignity of the human being"[34] as the central premise, and this Nussbaum argues, means "each person is treated as an end, and none as a mere adjunct or means to the ends of others."[35]

An important point about a list of capabilities needs to be noted. The capabilities approach is flexible and not definitive. Having a list is not the essence of the capabilities approach. Sen does not define a list for specific capabilities and he does not endorse any specific list either. Nussbaum, however, has developed a list that she feels advances her contention that if a person can live a life with a conception of dignity, then the person ought to be able to meet the requirements of human well-being. Her list promotes this ideal. My point is that Nussbaum recognises the role of informational freedom in promoting the concept of dignity and this has been expressly recognised in some of her "Central Human Capabilities". Nussbaum's list of "Central Human Capabilities" has ten specified capabilities. These are: Life; Bodily Health; Bodily Integrity; Senses, Imagination and Thought; Emotions; Practical Reason; Affiliation; Other Species; Play; and Control Over One's Environment.[36] In this list three can specifically be connected to the idea of information freedom. They are Senses, Imagination and Thought, secondly Affiliation and finally Control Over One's Environment.

Nussbaum recognises informational freedom in three distinct ways. Informational freedom is important as it allows a person to think for themselves. This leads a person to develop their ideas, thoughts and reason and to be creative in a human way. Creative expression can be artistic works such as sculpture or music, poetry, books, or through the expression of ideas, be these religious or political. A person should be able to freely express themselves and should have the means to do this. Nussbaum in her list of Senses, Imagination and Thought writes: "Being able to use one's mind in ways

[34] ibid
[35] Ibid, p39.
[36] For the full list of "Central Human Capabilities" see Nussbaum, "Capabilities As Fundamental Entitlements: Sen And Social Justice", p41 - 42

protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise."[37] For this to be effective the person must be given the necessary capability to experience this through literacy and other basic educational training.

One of the aspects of being human is our social nature. Nussbaum recognises that people are distinctly social and the ability of people to be involved in social interactions, in whatever form allows them to gather in social settings in many different ways. This would include the real world gatherings and the gatherings through social media in digital forms. These social gatherings are an important part of what make humans social. At the social gatherings people share ideas and express their feelings and often unhappiness with the circumstances they find themselves in. They can organize themselves in different ways and often this will include political organisation. Nussbaum, in defining her capability of Affiliation, argues that this type of social interaction warrants protection: "Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech."[38]

Nussbaum identifies the ability of a person to make their own political choices as a specific element in her list of capabilities. She defines it as, "Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free-speech and association."[39] Creating an environment where a person can make their own political choices is important to living a meaningful life of dignity and key to this is the ability for a person to express themselves freely. This requires protection of free-speech for a person to be involved in political discourse to allow them to determine the type of government they would want to live under.

[37] Ibid, p41.
[38] Ibid, p41 and p42.
[39] Ibid, p42.

So, informational freedom is important for ensuring that Nussbaum's capabilities can be attained. I am proposing more than this though. Informational freedom is more than ensuring other capabilities can be attained and is sufficiently important to be a capability on its own. Creating the means for people to have informational freedom is important in the assessment of human well-being.

c. Informational freedom and social media

As a technology, social media represents a digital form of physical interactions people have on a day-to-day basis. It is regularly used in non-verbal communication by people across different religious, political and social backgrounds to express themselves and share ideas. It is a modern instrument of social collaboration and information sharing. Social media has become one of the current tools for people to communicate and enable the process of free-speech, freedom of expression and accessibility to the thoughts and ideas of others. Many people share a major portion of their daily communication on a social media platform such as Facebook or YouTube. The growth of internet distributed information through web sites and blogs has led to the creation of technology devices to deliver digital content, such as iPads and new words such as "Google", that define our on-line behaviour.

Ideally, as many means as possible should be made available to a person to fulfill the end result of the informational freedom capability. The more means available to people will ensure that people can become informed and to share knowledge amongst one another. Social media platforms, as an emerging technology with the explicit purpose of sharing information, has an important role to play as one of the instrumental means for information sharing to be attainable.

So when the Chinese government is building a device that has the objective of limiting informational freedom, the ability to attain this capability is diminished. The Chinese government is imposing a

limitation on the ability of their own citizens to achieve a full and flourishing life and is limiting their well-being. Add to this, the possible spread of the device to other countries and the issue is compounded further with a real threat to the well-being of non-Chinese citizens being ever present. In a world of ever growing electronic communication, this is a real threat to human well-being.

If informational freedom is a human value that is worthwhile having, it also has to be realizable. Not including informational freedom in social media technologies would seem to make the purpose of social media technologies pointless in themselves as they cease to become a means to a valuable end.

6 The role of designer and new ethical considerations

In an ideal world, a government would set-up a legislative framework that promoted, enhanced and protected the capabilities essential for well-being. The ideal is for a government to commit to a guarantee of ensuring the individual can attain well-being, but some governments fail to do this. The obligation to promote human well-being cannot be the government's alone. Rather every person has an obligation to at least ensure we do not diminish another person's well-being. This is a minimal duty and one that can be fulfilled not only by an action but also by inaction. It is not prescriptive in that the duty is to require your friend or neighbour to do something positive to improve your well-being, although this would be welcome. It is rather a duty to ensure that we don't limit or inhibit another person's possibility of experiencing well-being. If a person or entity ultimately performs an act that may limit a person's possibility of attaining well-being then they have failed to meet the minimum standard of a negative duty not to interfere.

For a corporate entity to shift the obligation to the government and to argue they have no moral duty, as with the arguments put forward for the Golden Shield project by the American ICT firms, as justification for the development of technology which inhibits well-being, seems to miss the mark.

The requirement for them is to refrain from building the device as it impacts human well-being negatively. This requirement is effectively to do nothing! Not building a device that can limit well-being is all that is required as a standard of what it means to commit a morally worthy act. The moral obligation remains that of Cisco, the ICT company and not that of the US government.

Defining an approach to design that supports the idea of well-being as an ideal requires a shift to a new way of approaching design, and thinking about the normative aspect of accepted design behaviour on the part of the designer. The capabilities approach provides the designer with the tools necessary to recognise what is relevant to the inclusion of human capabilities in a technology artifact and to ensure that the effects on well-being is a consideration in the overall design of the technology. By doing this, the designer ensures that a person is not limited in attaining a full flourishing and meaningful life. Having this as a starting point creates a different perspective for the designer and formalises an important role the designer has in promoting the human value of well-being.

By embracing the idea of well-being as a moral value that ought to be one of the objectives of design, the designer can use the normative framework that the capabilities approach provides and set out guidelines that can be included in the design process. With the application of the capabilities approach to the design principles of technology artifacts, the designers ought to commence the process of design by considering the following question: 'Will the technology artifact ensure that the capabilities of the person who uses the technology artifact are not inhibited?'

The designer has three possible outcomes to this question; 'yes' the person's capabilities or well-being will improve, or it will leave the person in the same position as they are now or 'no', the person will lose some of the control over a capability or some ability to attain well-being. If the answer is 'no' to this question, then the designer must reconsider the design of the technology artifact and adapt it to ensure that as a minimum, the person who is going to be impacted negatively through the use of the

technology artifact, will be no worse off than they were before the technology artifact is implemented for use. In my assessment I have argued that this is a negative duty, so there is not an onus on the designer to actually improve the well-being of the person who uses the technology, but rather to ensure that they do not inhibit a person's well-being. Either a person's well-being is improved or at worse will not be limited. This allows the designer to continue with the design of the technology artifact.

In the instances where human well-being is already impaired, either through the political system or with the use of an existing old technology, the designer still has a duty to ensure that they do not inhibit human well-being in the design of the newly proposed technology. Where a new technology is being designed and should the new technology inhibit human well-being by limiting the opportunity for the person to fulfil a capability, then the designer ought not to include that aspect of design in the technology which brings about the impairment to a person's well-being. The outcome of the design in this instance would be that a person's well-being would be improved as the obstacle to the prevention of them attaining well-being would be removed. This is not requiring the designer to improve human well-being but is a happy consequence of the designer not doing anything to impair human well-being.

Applying this principle to the Golden Shield project would invalidate the actions of the designer as morally unworthy. The Chinese government has failed to be the custodian of informational freedom, which contributes to the overall well-being of a person. However, human well-being is the concern of all us, including designers of technology. The designer of the technology ought to build a technology artifact that does not inhibit well-being as a human value. The aspect of well-being that is impacted with the technology designed for the Golden Shield project is the limitation on the opportunity for the citizens of China to fulfil the capability of informational freedom. The designer of the technology has failed to ensure that they do not limit informational freedom and they are accordingly inhibiting human well-being. By not doing this the designer has performed a morally unworthy act and has not

met their obligations to ensure that they do not impact on the human well-being of any user of the technology that they have designed.

7 Objections

There are three objections that need to be dealt with.

The first objection to my argument, is that there are no moral outcomes from technology that can be included in the design of the technology. The value outcomes from the use of technology are either economic values or aesthetic values, or both, and as such there are no moral values that can be embedded into the technology. Concepts such as morality and ethics are not imparted into technology. This is a factual claim, and if true, invalidates my entire argument as I am arguing specifically that technology has moral value outcomes.

The second objection is called the "neutrality thesis". The neutrality thesis holds that technology is used in such diverse ways that the outcomes from technology lead to multiple consequences of use. The effect of this argument is that to embed a specific moral outcome, such as informational freedom into a social media technology, fails to address all the possible consequences of use for the users of the technology. This leads to some form of disvalue to the users of technology. Technology is accordingly neutral in respect of the consequences of use and rather the moral consequences that result from the use should be assessed with each instance of use of the technology artifact. Once again if this is true, then my argument to promote human well-being as a moral value worth considering in the design of social media technologies, by promoting the idea that informational freedom as valuable, fails.

The third objection, is a moral claim which allows that technology has moral value laden outcomes that designers of technology can influence but that the designers of technology should not include any specific moral value, preference or bias unless these are agreed to through consensus of a broader community of stakeholders. The inclusion of any kind of bias in the technology artefact, is bad as this creates disvalue to some or all of the possible users of the technology. The issue here is that if a designer injects a specific moral value into the design of the technology, the designer has failed to recognise the interests of all stakeholders who may not agree with the moral value that is included. This is a type of bias. The process of eliminating bias from the design is to consult the broad community of stakeholders and ensure that the right values are included in the technology that the stakeholders will want. My argument is that some values, that of human well-being and specifically informational freedom in social media technologies, do not warrant broad consideration of all stakeholders. Further, even if the inclusion of some moral values work against the interests of some stakeholders, they ought to be included in all designs as a specific preference, regardless of these interests. I am specifically proposing a standard of design for social media technologies that includes a preference to ensure that informational freedom is not limited, as an embedded value into the social media technology, to advance the capabilities of the individual, regardless of any other interests stakeholders may have.

a. Overcoming the objection that technology has no moral outcomes worth consideration in the design of the technology.

The idea that technology has no moral outcomes worth consideration in the design of technology is supported in the theory of "technological determinism". R. Pannabecker in discussing technological determinism and the impact on science and technology studies notes the following: "Determinism holds that everything is caused (determined) by a sequence of previous conditions and events, operating with regularity and, in principle, predictability. In its most extreme form, technological

determinism maintains that materials and physical laws are such that technology is determined to develop in a particular way or pattern."[40] Technological determinists define technology as dictating the way we live; technology influences our politics, our society, our culture and economic decisions we make.

For technological determinists who support the 'hard' form of technology determinism, there is no moral value as an outcome from technology that ought to be considered in the design of technology. The 'soft' form of technology determinism recognises that technology can bring about moral consequences but they also deny that there are any moral considerations that ought to be included in the design of the technology artifact. "Accounts labelled 'technological determinism' range from positive descriptions of an inevitable or autonomous technological order based on certain laws, to claims that technology is the dominant factor in social change but that its influence derives from the cultural meaning or importance given to it by people."[41]

A technological determinist holds that technology cannot include considerations of moral concern. Change in society is driven by technology and not moral norms.[42] Technology can hold no moral values as the same piece of technology may be used to attain the exact opposite outcome. Technology is in this sense neutral[43]. As an example, technology can allow the free flow of information, extending a human moral value such as free-speech, or it may be used to limit free-speech. When we pick up a telephone to make a phone call, all the telephone is doing is acting as a device for communication. We may make a phone call to commit a crime, or to ask for help, or to place an order, or as a part of our work responsibilities. The telephone does not influence what we say, how we say or to whom we say it. The telephone remains the same and is nothing more than an enabler, a tool. The value the

[40] John R. Pannabecker, "Technological Impacts and Determinism in Technology Education: Alternate Metaphors from Social Constructivism", *Journal Of Technology Education* – 1991 volume 3: pages 1-11. p3

[41] Bruce Bimber, "Karl Marx And The Three Faces Of Technological Determinism"*, Social Studies Of Science* - 1990 volume 20: pages.pages 333 – 351. p333 - 334

[42] Alison Adam, "Personal Value And Computer Ethics", *The Cambridge Handbook Of Information And Computer Ethics* (Cambridge University Press, 2010, Ch.9 pages 149 – 162), p 151.

[43] Michele H. Jackson and Paul M. Leonardi, "Technological determinism and discursive closure in organizational mergers", *Journal of Organizational Change Management* – 2004 volume 17 : pages 615 - 631, p626. The term they use is "Neutralisation".

technology brings to our lives is one of efficiency and convenience and nothing more. The moral impact of the technology is not due to technology but rather due to the way we perceive how the technology is used after the technology is already in use in society. We attribute moral values to the use of technology or we look for embedded moral values in the technology retrospectively. All moral values are purely the projection of our own sense of morality that technology brings about through the use of the technology. We justify the use of technology on a moral level through our need to rationalise why society has changed and to attribute this to our own belief systems and moral values as we do not to acknowledge societal changes as being driven by that of a technology artifact.

Technological determinists argue that to inject some form of moral attribute into the design of the technology becomes pointless. As humans we continue to consider that social progression is important to improving our lives. Technology has a key role to play in achieving social progression. For this reason we continually strive to look for improvement in technology and it is this evolution of technology that is inevitable. The inevitable aspect of technology comes from our need to raise our standard of living and to see a progression in the way the society operates. We perceive a better standard of living as a sign that we are progressing as a society. Technology brings about improvements in society by creating efficiency and increasing levels of productivity. Accordingly, no matter what sort of embedded value the designer wants to inject into the technology artifact, the technology artifact will evolve in a pre-determined way driven by the need for progress, improving efficiencies and raising productivity all the time. Trying to then promote informational freedom in a social media platform would be pointless as the inevitable progression of technology will either accept this as a feature of social media technologies or be rejected from the technology platform. The dependent factor will be whether the inclusion of informational freedom increases efficiency or productivity. It is not a choice we can make as to what moral values we may wish to embed into the technology, as the inevitable evolution of technology to accelerate efficiency in our lives will determine whether moral values are included or not.

The specific issues set-out by technology determinists raise problems for my argument. Firstly, I think that it is not realistic to argue that technology artifacts fail to present some form of moral outcome from their use. The consequences that occur from the use of technology must be considered as these impact on human life and human well-being. It is possible to determine the impact on human well-being simply by assessing the purpose of the technology. This cannot be ignored. As an example, when Topf and Sons built the crematoriums at Auschwitz they did so with the use, intent and understanding of the purpose of the crematorium.[44] It seems illogical to argue that the effect on human life was not a relevant concern in the construction of the crematorium. To argue that the only concern for the designer is in the efficiency of the technology seems flawed. This is an extreme example but helps to show the distortion of isolating technology without concern for outcomes from the use of the technology and how this impacts on human well-being. I think that considered human values for designers cannot only be assessed as economic or functional but should include moral values too. In terms of the Golden Shield project, this specific aspect needs consideration. It is improbable that the designers of the technological device to limit informational freedom can claim they are unaware of the impact of this on the individual who will be affected by the device, either directly or indirectly. The designer must understand that the purpose and the use of the technology device is to suppress informational freedom, and to then argue that this is not their concern, and only the economic value of the device is their priority, is unfortunately, the same regrettable approach adopted by Topf and Sons.

Secondly, technology is not created in a void. Technological determinism views technology in a progressive and linear fashion, documenting the success of technology based on the final outcome of use of the technology. If the technology advances society by improving efficiency then the use is successful. However, progress and striving for improvements of standards of living are not measured

[44] "Auschwitz: Technique and Operation of the Gas Chamber", *holocaust-history.org* - 1998 edition Viewed 04/03/2012. (http://www.holocaust-history.org/auschwitz/pressac/technique-and-operation/pressac0093.shtml)

exclusively in economic goals. A part of the progress of improving the standards of living and ensuring we progress as a society is also evidenced through the ideals such as gender equality, the protection of children and employment equity as examples. These types of interests define what it means to have the capability to live a flourishing life by not being abused or having an equal opportunity to live a full and meaningful life. So, as a society we already recognise some moral norms that we regard as valuable and as important in advancing society. This does not only apply in relation to the way we live, but to specific aspects of technology. Technology design and development is already tempered by values of what we regard as right and wrong in society. It is unrealistic to think that should a designer build a website that will sell child pornography only, such an action would be done with the acceptance by society in general. As a society we expect moral norms that are valuable to us to be considered by designers of technology. Technology should not breach these moral norms, such as child abuse. We already recognise that there are consequences of use that are morally important and that can be considered as relevant in the design, before technology is built. The design of the technology artifact is then changed to take these consequences into consideration. If this is true, then we are not projecting our moral perceptions post-implementation of the technology artifact, but are doing so during the conceptualization of the design for the technology artifact before it is created.

Thirdly, designers of technology artifacts already consider human well-being in aspects of design. Safety devices in motor vehicles, such as seat-belts and air bags, are designed to protect the occupants of the vehicles from harm in the event of an accident. Designers already recognise that some aspects of design are not driven by principles of efficiency or economic motives of profit. As designers already consider human well-being in some design, it is evident that consequences of use from the technology are clearly included in the thought processes of designers. There is already realization that the 'hard' form of technological determinism is not a justified basis for ignoring a technology design that excludes human values.

My conclusion is that there are already guidelines for designers of technology that consider moral values and that we have expectations that designers of technology will not breach these moral norms we hold as valuable. In addition, I think we abhor the idea of a technology such as that of the Topf and Son crematorium and this must be from our understanding of what is valuable to us, our own well-being as humans. I don't think we consider technology artifacts to be morally irrelevant any longer. As we recognise the moral impact that technology has on our lives, we expect designers of technology to also be conscious of this. There are moral outcomes from the use of technology that can be considered before technology is created and during the design of technology. In my view the objection fails.

b. Overcoming the neutrality thesis.

The neutrality thesis holds that technology is neutral in terms of inherent consequences. The focus of ethics from the perspective of the neutrality thesis, should be on the consequences of use and not of the technology artifact itself as the technology artifact can hold no inherent consequences. Philip Brey notes the following on the implication of the neutrality thesis, "It would follow that ethics should not pay much attention to technology artifacts themselves, because they in themselves do not 'do' anything."[45] This would mean that the process of ensuring that the technology artifact should bring about a specific moral consequence cannot be the responsibility of the designer of the artifact. Brey's example of a hammer which can be used to "hammer nails, but also break objects, to kill someone, to flatten dough, to keep a pile of paper in place or to conduct electricity"[46] highlights how the consequences of use can vary greatly from one use to the next making it difficult to define a specific consequence of use that is applicable to a hammer. The challenged posed by the neutrality thesis is how do designers assess all the possible consequences use? This is very difficult to do.

[45] Brey, p44
[46] Brey, p43

Making an assessment of the built-in moral consequences that social media may bring about is not a straight-forward assessment. The consequences of child pornography on the internet, or the political organisation of a coup-d'etat and the role of instant messaging in this, or sharing everyday thoughts with friends on Facebook, each have clear and distinct consequences of use, assessed in different ways from one another. According to the neutrality thesis, the process of promoting a specific embedded value such as that of informational freedom in a social media technology artifact would be a fool's errand, on the part of the designer, as there are a myriad of consequence of use that should considered. The number of uses may be too vast to consider and would make the design ultimately unworkable.

The proponents of the neutrality thesis recognise that there are moral consequences from the use of technology and that these consequences should rather be assessed with each specific instance of use of the technology artifact. I am supporting the argument that there are moral consequences from the use of the technology artifact, however to assess the consequence of use each time a technology artifact is used is a stringent expectation from the user of the technology each time they interact with the technology.[47] Often consequences of use are recurring and can be shown to occur repeatedly in a consistent way so assessing the consequences each time a technology artifact is used seems to be onerous on the users of the technology. A social media technology will regularly have a similar outcomes through the use of the technology. When a person posts a message on a blog, writes an SMS or shares photos, they tend to do so in the same repeatable way that they have done previously. There are features which are common to social media technologies that can be recognised as central to the way social media is used. Things like sharing information, writing messages or blogs, posting photographs, or uploading video clips, resubmitting news to friends and learning from what others say and do, are common to most of the social media platforms. Each time the social media platform is used, it will probably be used for one of these functions. The outcome from the use of the social

[47] Brey,p44

media technology is expected and understood by the users of the social media technology which helps identify the core functions and purpose of the social media technology. There is no particular need to assess how the consequence of use varies each time the social media technology is used when the core functions of the social media technology can be identified. Philip Brey summarises this position as follows, "Built-in consequences are therefore never absolute but always relative to a set of typical uses and contexts of use, outside of which the consequences may not occur."[48]

Understanding that there are core, common functions for the technology means that there is an expectation of a minimum effect the technology can have on our lives. There are then already some moral consequences that we can determine from the repeated use of the technology. As these moral consequences become evident to the designer of the technology, the inclusion of embedded values into the design of the technology artifact is easier to do.

To import an embedded value that promotes a specific moral value, such as informational freedom, in social media technologies may promote a specific outcome of use that improves a value for the users of the social media technology. This is only true if the central purpose of social media technologies is related to the embedded value that is being promoted. It would be pointless to promote a moral value that the social media platform would be unable to influence such as access to clean water. One of the core features of social media technologies is expressly for the purpose of distribution of information, such as blogging, distributing news, sending text messages or sharing photographs. Sharing information is considered core to social media technologies. To promote an embedded value that does not prevent informational freedom would improve the core purpose of what social media technologies are meant to do. For this reason it is not necessary to assess the consequence of use each time the social media platform is used. Rather, a process of moving away from an assessment of consequence of use to one of embedded values is possible, as these can now be promoted in the

[48] Brey, p45

design of technology. An embedded value that promotes informational freedom is easy to attribute to social media technologies and can be considered in the design of the social media technologies.

For these reasons, the 'hard' claim that the neutrality thesis holds that consequences can only be assessed with each use of the technology artifact need not be made. Embedded values can then be included in the technology artifact. Informational freedom as a value worth protecting in social media technologies ought to be considered in the design of the social media technology by the designers of the technology.

c. Overcoming the objection of a morally neutral design, free from bias and inclusive of as many stakeholders as possible.

It is now widely recognised that some technology artifacts bring about moral consequences. As an example, a computer game which presupposes that the characters are all men and that these characters can destroy virtual worlds with weapons and that men dominate communities defines the role as man being the dominant gender and has a negative image of the role that women play in society. Young boys may believe that the virtual reality is a manifestation of real life. A bias that favours men could lead to harmful consequence for women in society. How these consequences manifest themselves is the concern for supporters of a bias free technology design approach.

Bias in technological design is perceived as bad. Bias brings about negative effects to the users of the technology in many ways. Bias can further the interests of a specific stakeholder, or may lead to the exclusion of some interest group or stakeholders or bias may influence a group of stakeholders in a beneficial way by excluding the interests of others. The ideal approach to the design of social media technology would be to nullify bias in the design. This ensures that the users of the technology artifact are not subjected to a specific influence they have not agreed to.

The main focus of current approaches to technology design is to nullify the influence of bias in the design of the technology artifact and to rather focus a technology design that is more considerate of values. The move to a design approach free of bias and representative of values relevant to all affected users is achieved through the process of gathering the requirements for the design of the technology. This is effectively done by identifying the stakeholders in the design and then ensuring that their requirements for the use of the technology are included in the main design prior to the actual design occurring. This will ensure that the values included in the design are representative of all the stakeholders and not necessarily one specific interest group and this should eliminate the intentional or unintentional inclusion of bias.

The effect of the bias a designer may specifically embedded directly into the technology referred to as the 'embodied theory'[49]. Michael Zimmer summarises it as follows, "While we often think our technologies are shaped only by concern for efficiency or other technical considerations, the embodied theory suggests that, in fact, many technologies are designed as a reflection of the biases of their inventors."[50] The bias is often a result of either intentional preexisting bias that the designer may wish to embedded into the technology or it may be done unintentionally without the designer even being aware of it happening. When Robert Moses, the New York city-planner built an overpass highway to long-island that prevented buses from travelling on it, he had effectively excluded minority communities from getting to the beach as this was the main mode of transport for minorities in the mid-twentieth century. There is a strong feeling that this design is a result of Moses's prejudices towards minority communities.[51] However, if Moses had taken all stake-holders into consideration then the possibility that minorities would excluded from the enjoyment of the beach is less likely.

[49] Michael Zimmer, "Media Ecology and Value Sensitive Design: A Combined Approach to Understanding the Biases of Media Technology", *Proceedings of the Media Ecology Association* - 2005 volume 6 : pages 1 -15. p2.
[50] Ibid.
[51] Brey, p49.

The trend in technology design practice to one of values is seen as crucial to the elimination of bias.[52] Values manifest themselves in different ways and ensuring that the right values are considered has resulted in the development of further ethical frameworks for design. Batya Friedman argues there are "key values that lie at the intersection of computer technology and human lives" [53]. These values are often reflected through various features of the designers of ICT. Ideally these should be manifested in a way that takes all stakeholders into consideration, even those not represented.[54] The definition of a stakeholder is broad, including, represented and unrepresented users, the environment, legal organisations, general society and so on. The impact of considering all stakeholders in the design of technology is to recognise that technology is not neutral but that technology artifacts have built-in consequences that drive behavior, such as requiring access to a telephone to look for a job. In addition, the human values imparted into technology artifacts can have moral consequences that should be noted such as the way technology affects privacy, social justice, freedom and so on. When human values with moral consequences are recognised as influencing technology, then the need to extend the design framework to include more stakeholders in the design process, reduces the chances that a bias the designer may hold becomes an embedded value in the technology artifact.

My first challenge to this argument is to ask, would this approach to technology design promote informational freedom as a value worth consideration in the design of the technology device for the Golden Shield project? I don't believe it would. If all the stakeholders defined that informational freedom was a value not worth considering, then informational freedom would not be included in the design. This may seem unlikely if the average Chinese citizen is taken into consideration, I cannot foresee them agreeing to the loss of informational freedom. However, assuming they did agree to the

[52] For different approaches and views on the move to values in design see: Batya Friedman, Peter H. Kahn Jr. and Alan Borning, "Value Sensitive Design: Theory and Methods", *faculty.washington.edu* – 2001 pages 1 -14. Trevor J. Pinch and Wiebe E.Bijker, "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other", *Social Studies of Science* - 1984 volume 14: pages 399 – 441. Peter-Paul Verbeek, "Materializing Morality: Design Ethics and Technological Mediation", *Science, Technology, & Human Values* - 2006 volume 31: pages 361 – 380.

[53] Friedman, Kahn Jr. and Borning, p1

[54] This is a term used in the concept of Value Sensitive Design. See Zimmer and Friedman for explanation of the terms.

loss of informational freedom in the design of the device, then informational freedom would not be a value included in the design of the Golden Shield. The Golden Shield project would have effectively met the requirements of this design approach aimed at nullifying bias as all the stakeholders had voluntarily been taken into consideration. This seems like an outcome that is wrong.

My argument is proposing the injection of a specific human value into the design of a technology artifact. This may seem like a type of bias because I am not looking for consideration of a broad group of stakeholders but am rather proposing that promotion of informational freedom as a value that should always be considered as an embedded value in social media technologies.

To support my argument, assume that it is feasible to consider every stakeholder in a society. Imagine a scenario of a society dominated by men and where women specifically believe they are inferior to men. To include men and women in the design equally would probably have the net result that the interest of men would be promoted over those of women. This is already recognised as a type of bias in academic circles. "Such theorists argue that technologies are constructed through a process of strategic negotiation between different social groups, each often pursuing its own specific interests."[55] The bias built into technology is not the bias of the designer but rather that of a specific interest group. The dominant stakeholder in my example is that of men. The approach of eliminating bias in design is to consider all the stakeholders equally. How would this happen when women already consider themselves inferior and may not understand what the implication is or where they already take the lead from the men in the society? I cannot see that an approach that nullifies bias by recognising a broad group of stakeholders will bring about a better outcome for women in the case where men dominate a culture or society. This is different from the example where the stakeholders, knowingly and voluntarily understand the consequences of use. Women in my example may think they understand the consequences of their decision but how could they when they live in a culture

[55] Zimmer, p2. He refers to this as the 'exogenous theory'.

where women are considered inferior?

Extending this further a similar situation emerges when cultural diversity is considered. Including all stakeholders who may be affected through the use of the technology probably works well where the society is progressive and the citizens are well informed. The particular approach that aims to nullify bias by including as many stakeholders, does not work well in societies where there are many small groups of different cultures in a society with great cultural diversity. The problem is that the design process for the technology may be considered right according to this approach by considering more stakeholders in the process. What happens should one of the groups want to promote their historic cultural values that may lead to the suppression of informational freedom for some members within that cultural group? This can be justified on either the basis of protection of their specific culture or on the basis that all stakeholders have been considered in the design. This just seems wrong. The exclusion of bias itself is not the issue. Where the bias may lead to a good moral outcome, the issue is not with bias but rather with the stakeholder demands. Everyone should have the ability to live a full and flourishing life regardless of cultural norms. Should informational freedom be a value worth promoting as it leads to an improvement in human well-being, then the interest of a specific stakeholder cannot be considered over that of another. Any design approach that can lead to the suppression of informational freedom for one group based on cultural norms has a flaw in the approach.

The second issue I have with this approach is that of recognising a broad community of stakeholders as the way to nullify bias. In reality this fails to recognise the role of the powerful stakeholders. The powerful and politically influential have a greater say. Langdon Winner, an influential commentator and expert in the field sums it up like this: “As a student of politics examining this approach, I am struck by the ways in which it echoes the conceptual and theoretical commitments of theories of political pluralism and of bureaucratic politics.”, and then he goes on to put the challenges as, “Who

says what are relevant social groups and social interests? What about groups that have no voice but that, nevertheless, will be affected by the results of technological change? What of groups that have been suppressed or deliberately excluded? How does one account for potentially important choices that never surface as matters for debate and choice?"[56] Not only do the powerful stakeholders control the means to create the technology, but also dictate who the other considered stakeholders should be in the design process.

So when considering that a bias neutral approach to the design is preferred, it is unrealistic to think that all stakeholders would enjoy representation and if they did, it would probably be unequal representation. With the Golden Shield project, the Chinese government is the dominant stakeholder in the project. The terms of design, the funding and the use are all controlled by them. It is unlikely, that even if the general Chinese population was considered in the design, a neutral, bias free design would emerge. It would be a far better approach to accept that a design laden with a specific bias, such as not inhibiting informational freedom as a clear guideline, will lead to a better outcome for all the stakeholders, except for the Chinese government possibly.

My third specific challenge to this approach is to ask how designers are to include every finite consideration into the design? It is not practical nor economically viable for every stakeholder and every person to be represented. If the group of stakeholders is too narrow then the designer can never be sure that they have sufficient representation and if it is too broad, nothing gets done or no consensus can be reached. Rather, recognising that some values, regardless if they may be seen as a bias, are too important to be ignored can solve this issue. To include a preference such as not inhibiting informational freedom as a specific bias, in social media technologies, ensures that as a minimum every person who interacts directly or indirectly with the technology will not be impacted. This can be done without extensive consultations, takes unrepresented stakeholders into

[56] Langdon Winner, "Upon Opening the Black Box and Finding It Empty: Social Constructivism and the Philosophy of Technology", *Science, Technology, & Human Values* - 1993 volume 18: pages 362 – 378. p369

consideration and is economically affordable for any designer to do.

Finally, some things are good just because they are good. Things can be intrinsically valuable on their own for no other reason than just being good, such as well-being. It is not a cultural based consideration of whether it is considered a bias or whether it is seen as a value, it is just right to have it included all the time as it advances something that is just good. If it is seen as bias, as it leads to disvalue to one specific interest group such as that of the Chinese government in the Golden Shield project, but it is intrinsically good then it ought to be included in the design, regardless of the consideration of that stakeholder. With social media technologies it is this type of good derived from informational freedom that leads to a better life and what it means to be human, to flourish and to live a meaningful life.

8 Conclusion

Technology is influential in the day-to-day lives of almost every person on the planet and as more and newer technologies emerge, the need for everyone to be concerned about the impact of technology on their lives and well-being should be front of mind.

Today, at the start of the twenty-first century, social media technology is the emerging technology of our time. As a new technology, the principles of design and how we influence what happens can impact other emerging technologies and those technologies of the future. By its nature social media technology advances the ideal of informational freedom. Informational freedom as a value has much promise for the promotion of a better life for all people and it is this type of value that technology should instrumentally bring to everyone who is affected by it.

The task of the modern designer cannot be defined to only produce a technology that brings revenue to a corporation, an economic advantage and an increase in productivity. The designers of a technology need to be aware of the moral consequences of the technology that they present to the human race. These moral outcomes can have a profound effect on the lives of many people in positive and negative ways.

Designers face a difficult and unenviable task. How can every person be consulted in each design step? How can the technology be designed, within an extended time-frame, when innovation is often the key to success for a new technology at an affordable price? It is not the role of the designer alone to make these choices but rather a responsibility lies with all of us. To this end, setting up a standard set of principles and guidelines for the standards of design that are generic enough to be useful is required. Working within a normative framework that promotes human well-being such as the capabilities approach simplifies this process for the designer. Ensuring that the values that are instrumental in promoting human well-being are not inhibited presents a good starting point for any considered design approach. We need to build new technologies which are good for everyone and advance this ideal. Informational freedom as an embedded value in social media platforms is a good example of the way this approach can be beneficial to everyone.

The Golden Shield project, as sponsored by the Chinese government is a limitation on informational freedom. I have argued that this project is morally flawed. To live a meaningful life the process of acquiring information and the distribution of information in the social context of a modern society is important. Informational freedom includes concepts such as free-speech, free expression and social interaction and is a capability that is good for the attainment of well-being. Informational freedom is a human value that is realisable; the nature of social media technology platforms is to allow the individual to access and distribute information and furthers the objective of informational freedom. Social media technologies are among the means for a person to gain access to meeting the capability

of informational freedom. In addition, as technology progresses and new generations of people use more technology social media will possibly play a larger role in the distribution of information in the future. The development of the technology by the Chinese for the Golden Shield project is designed to prevent this distribution and access to information. Limiting someone's informational freedom detracts from a person's ability to attain an informed view of their life, and detracts from their ability to reach a full and meaningful life. Any technology device designed around social media technology, in terms of the capability of informational freedom, as a minimum ought to not limit the ability of a person to fulfil this capability.

The projects that are currently underway by the governments of Iran, Myanmar, Uzbekistan and the Chinese Golden Shield project all impinge on well-being, and the designer of the technology that does this, has failed to recognise that moral values are important in the design process and has failed to meet the standards of an ethically right design in ensuring that well-being is not inhibited. As the context of social media technologies can enable the attainment of informational freedom, the embedded value of free-speech ought to be included in the future designs of social media technologies and this is what the designers of the Golden Shield project should be doing.

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