

The social shaping of technology sociology essay



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\n[[toc title="Table of Contents"](#)]\n

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1. [2. 0 Technological Determinism](#) \n \t
2. [3. 0 Social Shaping of Technology](#) \n \t
3. [4. 0 Methodology](#) \n

\n[/toc]\n \n

The import of social and technological interaction has been a subject of controversies over the year with two sides having different view of it. Technological determinists believe that technology determines the trend in social changes and history (Chandler, 2000). But the view of Social constructivists is different in the sense that they believe the social norms dictate technology both in design and usage (Trevor, 2010). This paper will try to look into each believe using a personal experience with time technology in relation to user role. Section 2. 0 will shed light into believes of technological determinist using media Technology Determinism and Techno-evolution while section 3. 0 will dwell on the Social shaping of technology using the Actor Network Theory (ANT) and Social Construction of technology theory (SCOT). Also, section 4. 0 will explain what methodology that was used in accessing both theories while section 5. 0 will show the findings in relation to both theories. The last section, section 6. 0 will draw conclusion on what this paper believed in respect of the two theories.

2. 0 Technological Determinism

The term Technological determinism was first used by an American called Thorstein Veblen in 1920s who believed that technology determines social

change (Chandler, 2000). Technological determinism tends to believe that society is shaped by its most dominant technological innovation. Theories associated to Technological determinisms are Media technological determinism, Technological primacy, Technological imperative, Universalism and Techno-evolutionism (Chandler, 2000). This idea is based in two forms which are soft and hard determinism. The soft claims that technology determines social change but not absolute while the hard determinism claims that the force of technology is so big that it is autonomous (Joseph, 2004). Both ideas are based on cause which is technology and effect which is impact of it on the social norm.

Also, this view tends to explain technology in linear developmental stages without taking into consideration other adjoining factors. Technological determinist views social change as a dependant of technology. For example many determinists believe that communication technology determines the direction in which the society behaviour moves towards. Marshall McLuhan (1976) believed media deprive people of their private identity. He further describes this when he was criticizing that the media has negatively affected the life of people worldwide. He gave an example of a research conducted in Germany and UK where some people were paid not to watch television for some time. He said the result the agency discovered was reduction in drug addicted people.

Techno-evolutionism believes most world history is named after technological innovation. Examples of this are Machine age, age of automation, atomic age, industrial revolution, space age, communication age and so on (Chandler, 2000). This idea tends to focus on technological

progress from generation to generation by the western world. Masse Bloomfield (1995) in his book “Automated Society” predicted that in the near future everybody will have what they want without physical effort. This he said would have serious impact on man’s social system. Also Jeremy Rifkin (1995) in his book “End of Work” reiterated that men will be substituted by machine. All these ideas are based on human over reliance in getting everything done with technology without thinking of the consequence it will have on them.

3.0 Social Shaping of Technology

The social constructivists believe that it is the society that shape technology. This theory based its own idea on different concept like the Empirical Programme of Relativism (EPOR), Actor Network Theory (ANT), Social Construction of technology (SCOT), Gender Studies (Consumption Junction) and many others. Also Social Constructivists believe users of technology determine the design and usability of it (Trevor, 2010). This paper will explain what is meant by two of the aforementioned concepts which are ANT and SCOT with examples.

ANT is a concept derived by Latour and Calon and it sees technology as a kind of battle between the users and the Script embedded in technology (Trevor, 2010). The theory deals with technology inform of network of actors on it (Trevor, 2010). He further describes it as a kind of “program” that is done on the assumption of user behaviour but users overcome this by “anti-program” (Trevor, 2010). An example of this is sit belt where the programm is if it is not worn then beep but user group not convenient with it i. e. Pregnant woman will fight this back by selling a dummy to the program

(Anti-program) thereby plugging the sit belt in its socket to stop the beep (Trevor, 2010). This way the user is controlling the technology.

SCOT on the other part is an approach developed by both Trevor Pinch and Wiebe Bijker. It based its approach to research on Relevant Social Group, Interpretative Flexibility, Closure, influence of wider culture, Technological frame work and users as agents of technological change (Trevor, 2010).

Bijeker (1997) argues using the evolution of Velocifere to Safety bicycle based on different user activity, that social group can change technology.

Also Trevor (2010) argues that technology can be used for another purpose that is different from its original function. He gave an example of a car lifted up to power a washing machine. In another research work on Moog Synthesizer Trevor (2010) was able to proof that even invention is collaboration between inventor and the anticipated user. Social constructivist ideas points to Users as determinant of technology

4. 0 Methodology

The methodology used is based on ‘ Relevant Social Group’ approach by checking on users of time machine. The users include both male and female students in my class and watching of passerby students to see how they check time or whether they even have wrist watch at all. I also ask some questions from female students like what says your time to notice how it is been checked.

Also the technological effect on landscape is also considered using the site sightseeing observation along Clyde River and industrial evolution society using the visit to New Lanark.

The justification behind using the above approach is that it allows the researcher to use and relation with the current technology and society to bring out comparative analysis on the issue. Also the opinion will be neutral since deduction is from a different user without inclination into any of the theory of technology and society relationship.

5. 0 Findings and implications

In getting the real life picture of the two argument, this section will try to analyze its finding using the analysis gotten from the sight seen along Clyde bank, visit to New Lanark and engagement with the time technology. History will play a major tool of analysis in illustrating the aforementioned.

5. 01 River Clyde

Working along the Clyde River one will see a vivid notification of a once booming economic area of Scotland with traces of ship oil still floating on the river. The area has now been converted to recreational center due to the effect of world war two. In order to get the feel of this change this paper will start with a brief history of the River Clyde.

Years ago river Clyde is an haven for port activities with ship engineers locating their presence due to ship activities going on in the area.

Technology play role in transforming the port to a trade hub. This was done by development of technology on steam engine and dredging of river clyde to open avenue for large ship. The dredging allowed large vessel to sail into Broomielaw instead of stopping at port outside the city (Clyde water front heritage). However, this activity was affected after the Second World War

due to intense bombing of the Clyde side. Based on the shift towards tourism the Clyde river area has been turned to a relaxation area with side attractions like the Titan crane, BBC Scotland, Digital media quarter etc.

All this shows how technology can transform the landscape of a place which in turn changes the social way of doing things. Conversely, the changes are based on process in terms of the need by people. For example the idea behind the change is due to the need for improvement on sugar and tobacco trading by the people while technology also by dredging and construction of bridge change the landscape and ways of doing things.

5. 0. 2 Visit to New Lanark

The New Lanark visit shows how the industrial revolution age (Technological Determinist way of depicting era) changes the non active environment to a busy one. This transforms the landscape and increase social presence in the area.

History of New Lanark started with David Dale and his partner (Inventor), Richard Arkwright coming to the area. Both agreed in inventing in the area due to the availability of water fall to provide power for the proposed cotton mill. The idea is based on the feasibility of cotton production during the industrial revolution. Population of increased to 2, 500 by the time the cotton industry started in 1786 (New Lanark Trust). Also the way the people uses power changed with the advent of transistor radio and pressing iron with villagers tapping power (ANT idea of Anti-programming). Although the power was supplied free to villager but it was later changed when the villagers were connected to the National grid due to increase in usage (Undiscovered

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Scotland). The clock tells the time to wake up and get prepared for work and also when the power is to be switched off and on. The whole story changed when the activities at the mill reduced and market declined. The population of villagers also decline with people moving out of New Lanark. New Lanark has now been rebuilt as a tourist center with influx of more than 50, 000 tourists visiting the village per annum.

The above history also shows the relationship between technology and society. Some of the workshop visit really shows how technology controls workers. An example of this is the spinning machine which moves up and down at the same workers move to work in resonance with the machine. The noise of the machine is also there, although workers may not like it but due to the power of their employer and their own aim of earning their sustenance they have no option. The emigration of people from New Lanark also shows how technology can change society.

5. 0. 3 Engagement with time technology

Engagement with time technology through history of time measurement, and the struggle of getting accurate time in human endeavour shed more light into relationship between technology and society. Time measurement is one of fundamental to human existence. Barbara (2006) argues that our relation with time makes us human. This shows how important measuring of accurate time is important to human existence. This section will try to relate events with time and show how various usage has integrate technology as part of our ecosystem.

The history of time dated back to our existence with needs for time as sensational night and day. Need to know time of birth and death also highlights an important phase in the history of time. Thompson (1967, p. 58) stated that “ Cross River natives were reported as saying “ the man died in less than the time in which maize is not yet completely roasted” (Cross River is a state in Nigeria) . It is noted in history of time that most nations in one way or the other use different means of measuring time. Most especially, they seems to concentrate more on use of celestial bodies like the sun, moon and different planet to measure months, season and years.

Because of the variation in night and day, necessity to divide the day into hours emerged. This was solved by a mathematician Hipparchus using his shadow to do theoretical math, he proposed 24 hours (Anon, 2011). At the same time the Greek has invented the mechanical water clock to measure time. This was the era of mechanical transformation from Natural mode of measurement. Suddenly knowing the hour of the day prompted research by the Greeks into minutes by measuring the angle the sun in different city at the same hour and comparing data (Anon, 2011). This enables them to reason not only shape of the earth but the size of it as well (Anon, 2011).

After solving the hour, finding time in different part of the world brings about the next problem of solving the mystery behind time. The scientists then were able to mark the latitude but longitude was a different ball game. In order to be able to measure accurate longitude you need to know the precise amount of time you wonder east or west and getting it was problematic (Anon, 2011). Problems that initiated research into longitude is the frequent lost of direction by ship on sea which most lead to it been perished (Anon, <https://assignbuster.com/the-social-shaping-of-technology-sociology-essay/>

2011). This prompted the British parliament in 1700 to offer cash reward to whoever can solve the problem (Anon, 2011). The problem was solved in 1730 by an English man named John Harrison who made the world first wine up clock power by spring (Anon, 2011).

The emergence of information age led to crave for most accurate time. Other instances that led to request for better time includes the temperature problem of the old watch, time dilation effect, need for greasing of the mechanical watches, measurement of data throughput, time measurement in space etc. the first that emerged was quartz which has the ability to measure time accurately at 1 second error in 270 years (Anon, 2011). The second entrant was Atomic clock which so far is the most accurate in term of measuring time. The fuel-like component in the Atomic clock can either be Cesium or Hydrogen maser (Vickie, 2012). An example of atomic watch usage is the General Position System (GPS) where concurrently three different satellites communicate with one another using their time to synchronize one another. The time must be very accurate to transform the position of an object using it. Now it is very hard to see user like in the olden days using landmark to locate addresses, they rather use Google map or its equivalent to find their way around cities.

Also my diary on usage of time machine shows that we use each machine in response to network effect of a dominant technology. The network effect theory talks about advantages user of technology gain from many network users of the same technology (Michael and Carl, 1985). Most people use wrist watch for show of status recently, while others like ladies uses it as ornament. For example, in my class we have six girls only two wears wrist

watch consistently and when I ask for time from them they checked their phone not the wrist watch. I also ask the remaining girls they said why bordered when they are with their phone almost everywhere. The eight men in my class don't wear wrist watch for the same reason but they accepted to wear it when going for party. Further engagement with this led me to watch most of the student passing by to see whether they wear wrist watch but discovered that most men are not wearing it but some ladies wear it. I also notice that most of the student are always looking down with their hand on their smart phones smiling intermittently and looking up slightly so as not to bump on other road users. Furthermore, some students have their hand in their side pocket with ear phone in their ear but this time they look up. This shows the extent to what extent technology can change the way we socialize. My view on this is that most people use their phone to check their time since they prefer to have every need in one place. They can use the phone to call, receive call, play mp3, chart, set alarm, check time, find their way etc. The usage depends on the user group view on what they want from the technology irrespective of the original function or design.

5. 0. 4 Implications

The implication of allowing technology to do what is meant for human instead of enhancing how human do things will have negative impact on the society. This was explained by Butler (1872) when he stated that “ Reflect upon the extraordinary advance which machines have made during the last few hundred years, and note how slowly the animal and vegetable kingdoms are advancing”. This means that technology development while helping the manufacturers of it to generate more revenue reduces human

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professionalism and at the same time have effect on the environment in terms of environmental pollution. One wonders what will happen if technological machine like time stopped working without having any alternatives like natural way of calculating time. Virtually everything stops when time stops. So this kind of important necessity should not be left in the hand of technology. In manufacturing technology there is need for consideration to be taken into its effect on the society and how such change can be managed.

Also, some technologies destroy the ones they met in market thereby making other users to be out of the system. Schumpeter explained this as destructive innovation (Tim, 2010, p.). Apart from user loosing the out-of-market technology, user might also have challenge in knowing how to use the new technology.

6. 0 Conclusion

In conclusion, drawing from the above sections, it can be deduced that flows go both ways with technology having impact on social change and society have impact on technology irrespective of the idea behind Technological determinism and Social Constructivism. Both depend on each other but measure should be taken in reducing the excess of technological innovation to conform to the social safety of the society. Managers of technology in organization need to take technology as a supplement to human effort not has a supplement to the human itself. Also involvement of the frontline staff in technological implementation is paramount to management of change.