TECHNOLOGICAL OVERBURDEN, TECHNOLOGY SOLUTIONS AND ROLE OF POSITIVE PSYCHOLOGY AND TECHNOLOGY - THE PATH FORWARD

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Abstract

The question of technological overburden is posed as a challenge in our personal as well as professional lives and well-being. Cases of increasing technostress, techno anxiety, techno-complexity and so on are prevalent across-sectors and need to be examined at a macroscopic to an individual scale. The response of the technological realm to the problem has been through the development of user-friendly counter-mobile applications. Although the same may not be relied upon as a comprehensive solution, such applications shall be used as on a decreasing time-scale format. The role of positive psychology and positive technology must be combined to address the issue of technology addiction with the help of revamping the product development side, large scale sector-specific research has to be undertaken to determine the individual and collective technology over burden and design solutions as well as imbibe organisational interventions in the arena. On the marketing side, the revenue generation model for the product has to be re-imagined from an altruistic perspective with the help of for-profits not involved in software products or the applications have to partner effectively with like-minded CSRs.

Keywords: technology, technostress, applications, positive psychology, positive technology Introduction

Introduction

The era in which we are passing through is witness to fast-paced changes, modifications and innovations in the technological domain. What makes this age most unique compared to other eras of technological progress with their distinguished characteristics is the usage of information and communication technologies (ICTs) to disseminate the knowledge in the technological domain to all it's users. Now every new advance in the realm of technology takes little or no time to reach as a knowledge set for the users. One need not be "tech-savvy" to get their facts right and the question of access to such knowledge hubs have been particularly ensured by social media.

The goal of today's technological advancement seems to be partly towards finding ways to ensure that users spend as much time as possible utilising the technologies. The use of ICTs need not be viewed as limited to social media or entertainment and the stereotyped addiction by youngsters. They have become indispensable for individuals at a professional level for

various communications, networking as well as timely responses to needs of business and development. Over the years, we have become accustomed to devoting a considerable part of our daily lives by incorporating the devices we are plugged into. This has caused issues such as technostress, techno-anxiety, techno-addiction and techno strain in a considerable number of people world-wide [Brivio et.al,2018]. The above issues can be caused by a range of factors such as techno-invasion, techno-overload, techno-complexity, techno-insecurity, and techno- uncertainty [Brivio et.al,2018]. Each of the determining factors have a differential impact on the user ranging from a dropping work-life balance to issues related to mental health and well-being.

Technology to tackle technology addiction

Mobile Applications available to reduce smartphone usage and addiction			
APP NAME	AVAILABLE	FREE(F)/ PAID(P)	FUNCTIONALITY
AppDetox	Android	F	App Lock
Flipd	Android & IOS	F	Hides distractive apps
QualityTime	Android	F	Quality analysis of smartphone usage
Forest:Sta y focussed	Android & IOS	F	Plant a tree and stay away from phone
Yukan	Android & IOS	F	Select your own offline time
Channel	IOS	F	Turn off distracting settings and features from the apps you use
Offtime	Android & IOS	P	Monitor phone usage with time outs
ClearLock	Android	P	Hides distractive apps

Figure 1: Source : https://www.geckoandfly.com/, https://www.inc.com/

Interestingly, the issues relating to technology overburden are being sought to be solved by the technological domain itself. Mobile applications such as AppDetox, Flipd, Moment and so on have been mostly made available for both android and IOS mobile users (Gecko & Fly, 2021). Many of these apps are freely downloadable on your device while few have to be paid for usage. Each of the applications have been designed to work in ways that curb the usage of mobile devices, such as by placing app lockers in other applications, by sending reminder notifications to reduce your usage, setting challenges and full-lockers for distracting applications such as games or social media and setting your own goals to reduce usage (Gecko & Fly, 2021). Some apps even link one's offline time to your contribution to social causes and thereby motivating the user to stay away from the device as much as possible

to increase one's impact on society. All the above are thought to motivate individuals to turn away from their devices, unwind and restore productivity, interact physically with people and view the world individually as possible by unplugging.

As visible in table 1, the ideas and inputs provided by the mobile applications are innovative and user-friendly. However, adding another application to the list of applications one already uses in itself seems cumbersome and adding on to technostress. Hiding unwanted applications appears to be unnecessary when one shall simply delete the same. Rather than increasing one's already burdened profile of technology addiction by adding on to the anxiety one may develop by an additional counter application for most items of a person's device, it is important to intervene through the path of psychology and self-realisation in countering the issue. This does not mean that the application developers were totally flawed by thinking about this innovation in the technical domain. What seems necessary is that individuals who associate with issues caused by the over-burden of technology need to plan out their technology detox by employing a decremental usage of technology strategy. This can be done by initially using the detox applications which could initiate the user's self-reliance in technology control and ultimately leading to not requiring the very same applications which helped them in the long run. The role of positive psychology and positive technology is another domain that can compliment users' efforts to bring down technology addiction.

Product Development of counter-technology applications

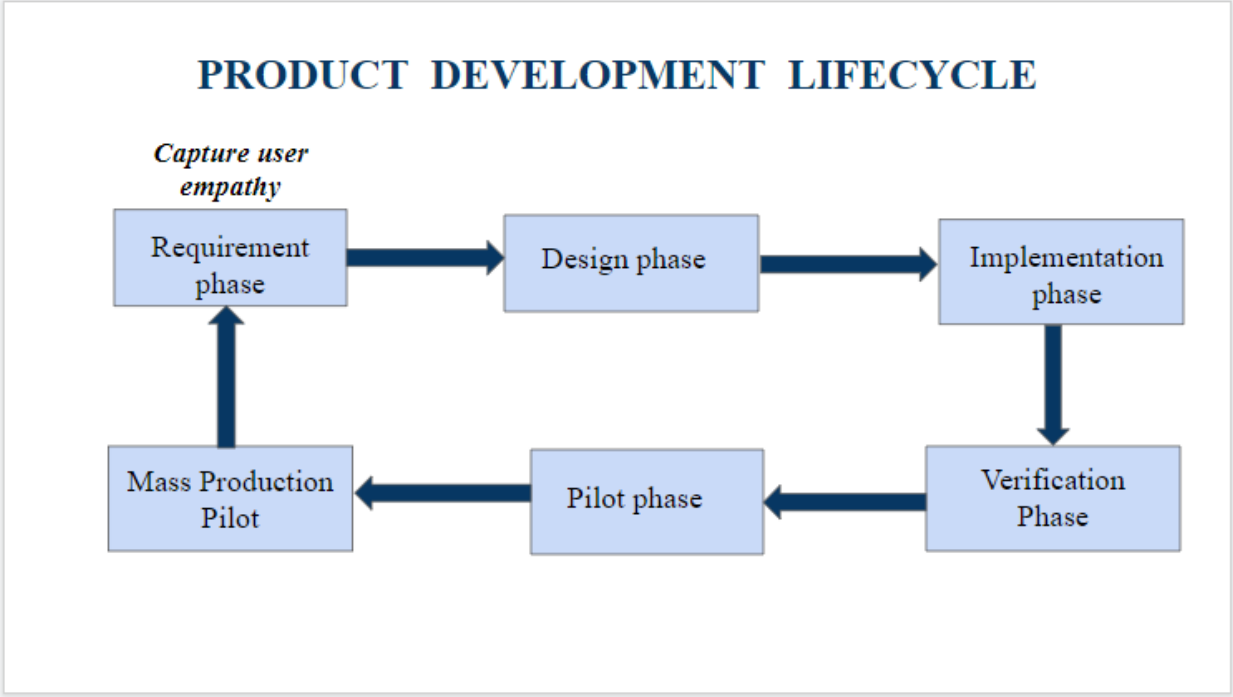

Figure 2: Software Product Development Cycle of Counter-Technology Applications

As seen in fig.3, the product development cycle of counter technology applications is identical to that of any software product. The requirement for such an application is evaluated with the help of research and the need evaluated. The revenue generation model for the application can also be evaluated during this initial phase, whether it is a paid, partially paid or free monetary cost is decided. Most importantly, this is the phase where strategies to capture the customer's empathy are evaluated and this is the key element in the entire cycle. From this phase, the product enters the design stage where graphical representation, screen design and graphic designing (UI/Ux designing) and so on comes into picture. The cycle then involves the Implementation stage where software developers develop the product and the testing team evaluates and tests it. When the product is ready for launch, it undergoes the pilot run or pilot release where it is shared with few close-knit individuals and their feedback is taken into account for any improvements the product may need. Finally, the application reaches the mass production pilot phase when it is released with few features or all features as per the revenue generation model to the market.

The role of Positive Psychology and positive Technology

To tackle the question of technostress or issues emanating from excessive usage of technology, positive psychology is a promising area to be explored. Positive Psychology proposes that life experiences of individuals can be utilised positively to ensure well-being and growth [Brivio et.al, 2018]. Positive psychology is defined as the scientific study of what makes life most worth living [Peterson, 2008]. A sub-product of the same philosophy is positive technology and it is defined as "the scientific and applied approach to the use of technology for improving the quality of our personal experience" [Riva et.al, 2012]. Positive technology proposes to utilise technology as a positive force in people's lives by analysing what makes individuals happy in life and hence strengthen personal growth and development. This requires the understanding of the root causes of happiness in people and the same has been addressed by positive psychology. Positive technology has been experimented as a solution to embrace cross-cultural acceptance between immigrants, the use of virtual reality technology as a mental institution to understand certain social phenomena, to get a deeper sense of individual's well-being and spirituality and so on [Gaggioli, 2019]. The realm has a lot to be explored as the concept of individual containment and well-being is largely subjective and hence offering a range of opportunities to proactively customise positive technologies in everyday lives.

Combining counter-technology applications and positive psychology

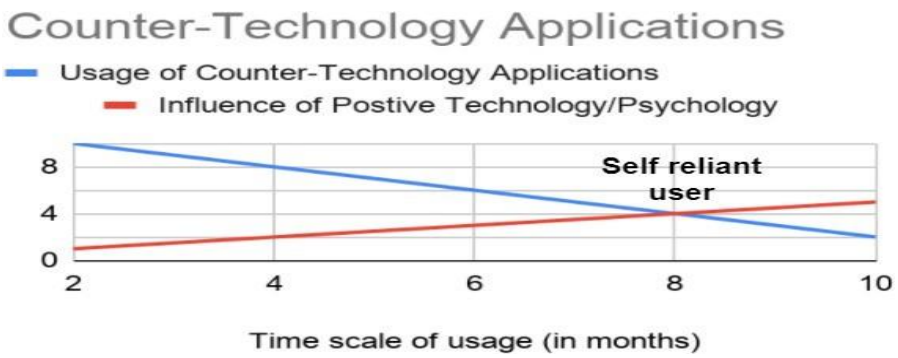

Figure 3: Relationship between counter-technology applications and role of positive psychology/technology plotted against a time scale (months)

The realm of counter-technology applications have been useful in identifying the issue of technological overburden and initiating the first steps towards countering the same. However the success of these applications should be judged not by the permanence of the same among individual device users. The mobile applications must contain features that enable the user for a self-evaluation of their performance and set a self-reliance timeline post which the applications analytics shall determine whether the individual has shown improvement and needs the application or not for longer in their device. This perspective shall be rightly observed to be an altruistic point of view and can be imagined to be at cross-junctions with the question of profitability. This would be the scenario where such technological interventions to the question of too-much device usage shall be viewed with a different sense of profitability. The ideal intervention would be through the joint efforts of research, sectoral study and psychological determination of the needs of the human mind and how to develop self-reliance through the same. This has immense potential for being the collaborative effort of the corporate and the social sector where the former would contribute towards the use of technical realm of innovations while the later shall corroborate the behavioural needs and analysis of individuals and communities or technology users.

As seen in fig 2, the relationship between the usage of counter-technology applications and the influence of positive psychology and technology is of an inverse nature. This means that as the usage of the counter-technology applications reduces over time, the influence of positive psychology and technology shall increase in users. This will lead to a state of the "**self-reliant user**" at the point of intersection as seen in the figure. Hence the aim of all organisational and individual interventions must be to use this time-frame analysis to empower the users and ultimately make them self-reliant.

Recommendations

Product Development side

Counter-technology application developers have to design a product that is focused on messaging coming from the realm of positive psychology and technology. This will involve an overall objective of bringing in a balanced view of technology and generally aiming at a positive growth oriented mindset for the user. There is also the important question that what can a user invest his/her time on if not with their gadget, especially when the use of the

gadget at a particular point of the user's day is for leisure. For feeding in this gap, it would be useful for the application to gather an in-person profile of each user which involves gathering the user's non-digital interest areas and non-digital hobbies. This will help the application developers to use the help of AI (artificial intelligence) to also generate messaging that would guide the user towards the offline activities which he/she may have reduced investing their time on as a result of excessive gadget usage. It is also important to be explicit in generating messaging around the ill-effects of excessive technological dependence which would serve the purpose of self-realisation for the user. Hence there has to be a fair balance between positive messaging and messaging on the ill-effects of technology overuse to create a holistic sense for the user. It has also been observed that features such as challenges to away from the device for stipulated timings, flagging user's phone usage as well as auto generated weekly/monthly feedbacks of the user's phone usage creates a slow yet steady technology de-addiction for users.

Research across potential sectors and organisational interventions

Since the subjective nature of positive psychology and technology in individuals leads to a plethora of opportunities for intervention, it is imperative to identify, analyse and reflect upon the technostress, techno anxiety, techno-complexity and so on on a sectoral basis. A study across Malaysian librarians in public universities revealed that they experience high levels of techno-uncertainty and moderate level of techno-overload and techno-complexity but only experienced a minimum level of techno-invasion and techno-insecurity (Ahmad & Amin, 2012). Similarly, it is useful to determine the potential technologically overburdened sectors at a macroscopic level and determine its technological stress or associated dimensions at an individual as well as a community level. It would be useful to insert a gendered lens and an identification of socio-cultural-economic background of individuals in the same and determine the differential distribution of individuals with various gender identities and backgrounds. This shall add more nuance to their responses to self-analyzation with regards to use and relation with technology and hence determine the ideal organisational interven- tions. This must be through the combination of academic research from technology scholars and organisations specific to each sector.

Professional technological overburden needs a careful plan of countenance from the organ- isational level which has long-term utilities. Organisations need to foster work-life balance of its employees from the view that the same improves the employees productivity and hence that of the organisation. This is of primordial importance when viewed with respect to the current pandemic times and the future of work increasingly planned with a definitive percentage of employees permanently working from home even under normal circumstances. There should be adherence to work hours and the strict termination of work related knowl- edge dissemination post fixed hours of the day. From the perspective of counter-technology applications, the organisation shall recommend relevant applications for its employees or provide them from the organisation for the employees utility.

Marketing side

Understandably, the altruistic nature of the above thought process for counter-technology applications calls for a different style of marketing for the product as well. It is contradictory that the counter-technology applications have to be developed to ensure that the success of the application is measured by the ability of the users to stick on to the timeline set by them- selves and dissociate themselves from the application as they become self-reliant. The concept requires the revelation of revenue generated from investing in such an application by combining it with other products that are upfront run for profit maximisation. Hence, counter-technology applications shall be marketed effectively by other companies or agents investing in non-software products. The applications could serve the purpose of advertising the non-software entities and the companies could in-turn offer these applications as part of their corporate social responsibility (CSR) venture. In this way, the counter-technology applications serve the purpose of advertising for the companies that endorse them as well as the applications are able to reach a wider user base. Another strategy is to promote the applications among the mobile de-addiction centres that are slowly coming up in various parts of the country. Such communities could even invest in the paid models of such applications for the benefit of the entire cohort they seek to address.

Conclusion

The arena of technological progress has been mostly countered by conservationist stands against technology and the viewing of the same as a disruptive force. However it must be realised that the question has never been whether technology is good or evil, but to foster its progress from a positivist view and clearly determine its utility and the context that it addresses. Technological anxiety, stress and various similar individual and community dysfunctionalities are issues that need to be tackled through the optimum utilization of technology, self and community evaluation and adequate psychological interventions. It requires the interplay and coordination of actors from the technological or corporate domain as well as the social sector to formulate a constructive solution and employ the branch of positive psychology and hence positive technology to its maximum utility.

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