A Content Analysis of Wired Magazine and Self-Tracking Devices

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Abstract

Living in a modern society is becoming more complex, so in order to keep up with, a person should accomplish various kinds of task at once. Daily life requirements, obligations and the capacity of human memory lead us to collect and control our behaviors, bodies and lives through self-tracking devices. Aim of this paper analysis of emerging digitalized self-tracking trend through content analysis of Wired Magazine. Wired Magazine, both in printed and online, monthly, publish technology related articles how emerging technologies affect culture, the economy and politics. It reaches more than 30 million people each month through wired.com, digital edition. Since the term 'quantified self' emerged for the first time in Wired Magazine, for this reason Wired Magazine is one of the most important sources to be used for content analysis. This present study carries out a content analysis of all the issues until December 2016 through 'self-tracking' and two other related terms: 'quantified self' and 'lifelogging'. The usage period and popularity of these terms and, the relation network with the main topics and the sub-topics are examined. As a result, it is possible to define wired magazine as a medium in which industry-academia and users come together and, feed each other reciprocally. Wired Magazine have contributed significantly and continues to contribute to the development of the digitalized self-tracking trend in terms of its content.

Keywords: self-tracking quantified self, lifelogging, content analysis, trend analysis

Introduction

People are bombarded about daily responsibilities and tasks. It takes effort to meet daily requirements about work and private life. Compared to the past daily life, before computerization, today's network of relationships established throughout the day is quite difficult for a person to follow. Therefore, individuals need to get support from the artificial objects at a certain level in addition to his or her memory for everything need to be followed within tasks or job. Self-tracking devices arise from the intersection of these requirements, obligations and the capacity of human memory. Lupton (2016) notes that in recent years detailed quantifiable data have gained value over the value of one's other forms of information about life, health and well-being. The process of digitization has begun to accumulate the individual's self-consciousness, to push for a more holistic sense of self. While the support of the technology may simply be reminiscent of what to do (remembering future events), it can also store and organize information about a person, such as physical activity (Figure 1e: Fitbit charge 2; Figure 2h: Wellcore Wellness activity tracker & fall detection device for seniors), amount of water consumption (Figure 2f: The Pryme smart cup), seizures (Figure 2c: The Embrace smartwatch for spotting epileptic seizure), sleep quality (Figure 2e: SleepImage sleep tracker) etc. It is not new activity that an individual record his or her personal data, it has been already done in history through pen and paper, but with the digitalization of the world, trend of digitalized self-tracking activity emerged. For identifying this emerging trend, various industries had been searched for clues to support it. As a result of these investigations, products designed with similar approaches were seen in the health, fashion and furniture industries.

(a) (b) (c) (d) (e)

Figure 1. Proofs for emerging trend via three times rule
a: Ford's Max Motor Dreams smart crib b: Hexoskin biometric tops c: UpRight posture corrector d: Elf Emmit stress relief headband e: Fitbit charge 2

In the furniture industry, automobile company, Ford designed microphones and sensors embedded a smart crib for babies (Figure 1a). The crib is designed for helping parents to get the baby back to sleep by rocking the crib via monitoring baby's sleeping patterns. In the health industry, UpRight which is a funded in Kickstarter designed as posture corrector (Figure 1c). It gives feedbacks via vibrations to improve one's posture and tracks daily activities. Another example in this industry is Elf Emmit stress relief headband which aims "improve focus, sleep, meditation and learning processes, while combating stress by combining ancient traditions and modern technology" (Figure 1d). It has five different programs that tracks specific data about user and use it for improvement. Last example in this field is a smart wristband Fitbit charge 2, which is basically an activity tracker, but also can track sleep and work as a reminder for move (Figure 1e). Another example of fitness tracker in fashion industry is Hexoskin biometric tops (Figure 1b), which is a piece of cloth that can track various physical data as heart rate, breathing rate, steps, sleep positions, etc.

This emerging trend started to arise in the health industry. A quiversful of wearable sensors is becoming widely available and these let us measure data about our health, as well as receive immediate feedback about how we are performing. The products developed with wearable sensors are basically starting to learn us and intelligently collect data about us or interrupt our daily life for optimal health and productivity outcomes. Since the data that obtained from the users are also differ from each other, tracking devices will ultimately be customized for each person. The National Institute of Mental Health (NIMH) have listed current trends in app development as:

- Self-management apps
- Apps for improving thinking skills
- Skill-training apps
- Illness management, supported care
- Passive symptom tracking
- Data collection

Several terms in addition to 'Self-tracking' practice which defined as monitoring, measuring and recording aspects of one's body, behavior and life; such terms are lifelogging, personal informatics, personal analytics and the quantified self (Lupton, 2016, p.8). Personal informatics and personal analytics terms often used in academic literature in the area of human-computer interaction (Lupton, 2016, p.9). The term lifelogging, which is regarded as the most rooted one, emerged in the early days of personal computing (Sellen and Whittaker, 2010). Lifelogging defined by Selke (2016) as a heuristic collective term, refers to diverse types of self-tracking

that range from health monitoring and the detection of one's location and presence to the measurement of productivity at work (p.1). Krynsky (2010) also defines the lifelogging term as "the process of tracking personal data generated by our own behavioral activities"
The terminology related to this emerging situation only recently started to become clear. Wolf and Kelly realized that the people around them were collecting data about themselves, seeing this personal data collecting culture as a new trend and introducing the term 'quantified self' to describe this detailed digitalized self-tracking phenomenon. Later, in his article published in *The New York Times* in 2010, Wolf described the term self-tracking as "self knowledge through numbers". The quantified self (QS) defined by Swan (2013) as 'any individual engaged in the self-tracking of any kind of biological, physical, behavioral, or environmental information.'
For indicating the difference, the term of lifelogging can be defined as a form of transformation that allows to collect all kinds of personal data digitally or non-digitally for the purpose of later reflections while the QS can be defined as collection of one's personal data and the search for ways to achieve some predetermined physical or non-physical changes by making associations over accumulated data.

Literature Review

One of the main factors that enables QS devices to emerge is technological developments besides human needs and demands. The term referred to in the literature as 'the internet of things' and defined as "the general idea of things, especially everyday objects, that are readable, recognizable, locatable, addressable, and controllable via the Internet - whether via RFID, wireless LAN, wide-area network, or other means" by the U.S. National Intelligence Council (2008), is important in this occasion. This term has been instrumental in the emergence of QS devices, which are capable of constant activation and real-time data exchange and evaluation. The emergence of digital technologies that can help in collection, calculation and demonstration of personal data is crucial in the development self-tracking phenomenon (Lupton, 2014; Lupton 2016). Those digital tools which embedded sensors and microprocessors are used to collect relevant data mostly quantitatively to name some variables such as body functions, emotional states, sexual and social encounters, work efficiency, physical activities and geographical locations through movement, sound waves, temperatures and other data. In some cases personal data can be collected and displayed qualitatively using words, pictures, and objects (Lupton, 2016). Quantitative or qualitative data about a person is actually a part of one's self-fulfillment adventure. Supporting health-related behavior change, collecting data for future conditions about body and mind is essential for allowing the individual to control and to satisfy themselves. Possibility of discomfort in daily actions, or for just transmitting one's everyday life to third person's eye, people have been constantly storing a lot of information whether physical or non-physical about themselves. Most of the time digital self-tracked data are stored in the cloud-based computing system that only developers can access and use it for their purposes (Lupton, 2016).

For centuries, people have been using non-digital technologies to monitor and measure the physical or non-physical characteristics of themselves. Mobile digital devices connected to the Internet have facilitated real-time, more detailed measurement and monitoring of body and daily life, also simplify the analysis, presentation and sharing of these data (Lupton, 2016). These data that are tracked and measured can serve in different areas. According to Selke, the term of lifelogging can basically be examined in 4 category: monitoring health, human tracking (Gps or radio cells), human digital memory and surveillance/sousveillance (2016). It is basically

aimed at storing the actions we have taken at that moment and accumulating them for use when the time comes. The French sociologist Gabriel Tarde commented about the further development of society and social statistics in 1890;

"*a time may come when upon the accomplishment of every social event a figure will at once issue forth automatically, so to speak, to take its place on the statistical registers that will be continuously communicated to the public and spread abroad pictorially […]Then, at every step, at every glance cast upon poster or newspaper, we shall be assailed, as it were, with statistical facts, with precise and condensed knowledge of all the peculiarities of actual social conditions*" (Tarde, 1903 s.133; Gertenbach, Mönkeberg, 2016).

Tarde's utopian view has evolved over time and with development of technology, it has begun to gain a more realistic and possible dimension. In the 1980s, the attention of social and cultural theorists began to draw the relationship between the human body and computer technology. The concept of cyborg has been a source of inspiration for the cultural theorists who have written about the effects of computerized technologies on human configuration and subjectiveness (Lupton, 2012). One of the earliest examples of lifelogging is Steve Mann's work, the EyeTap project in the early 1980s. Since 1994, he has started to broadcast his life on the website 7 days 24 hours, and over time, this process was opened up to instant viewers and moved to a level where they can be involved. Also in the mid-80s Mark Schulze, a mountain biker, created the first helmet cam by rigging a video camera to a portable video recorder (Winchester, 2015). In 2004, the first GoPro was launched to take adventurous in time photographs. Another study in the early 2000s that attracted attention was Microsoft's MyLifeBits project, where researcher Gordon Bell digitally captured a lifetime's photos, messages and work, while colleagues designed software to navigate it (Stuart, 2014).

Living in a modern society is becoming more and more complex, and in order to keep up individuals are required to accomplish various kinds of task at once. Aforementioned multitasking lifestyle drives us to keep up everything happening around us at that moment or in the near future. Sometimes this exhausting journey leads us to get affected physically and mentally. Being aware of this situation basically provokes us to be better. By collecting digital data, people aim to reach healthier biological body and overall to reach a better life level. Ultimately the core of the ideologies of the lifelogging movement is the idea of "creating a better human" (Gertenbach, Mönkeberg, 2016). At present mobile phones which can collect and keep large amount of data, it generally processes data about how we use that device or our action patterns in a specific area like walking or running through GPS or radio cells. Since the advent of smartphones and tablets, numerous commercial applications have been created, many of which are directed at consumers who wish to track or monitor their exercise, dietary or sleeping habits, pulse, or even more private personal data such as fertility or menstruation cycles. It is possible to discuss the usability of applications that compile data about more than one area and require the individual to take and engrave measurements which obtained manually. People have been storing data about themselves manually for centuries (Lupton, 2013). The relationship between an increase in the efficiency of an activity that has been going on for such a long time and the production of devices capable of automatically processing data in a specific area and without being aware of the individual is worth investigating. This relation in software has led the emergence of new and specialized products for each specified activity, products that aim to bring us to a better level both physically, mentally and emotionally. For example, activity tracker Jawbone has an "idle alert" feature to preventing users from sitting too long by

vibrating. Another one, HAPIfork which designed for helping users have mindful eating habits, also

vibrates when fork using frequencies shorter than 10 seconds. This utensil aims for eating speed control by the right amount of chewing (Schüll, 2016).

Some organizations, including private institutions, and even the governmental state encourage use of healthcare applications more commonly through health promotion campaigns. This effort mainly for translating someone's potential use into meaningful data through recorded information about their activities or eating habits, etc. Therefore, those organizations constantly create reminders for us to be in health-promoting behaviors (Lupton, 2012).

According to Department of Media and Information in Apple app store and Google play store, currently there are more than 97,000 health-related apps available in the health and fitness category and every month more than 1000 items are added, with about 1000 more being created every month. It is anticipated that every year this amount will add up to 25% more new health related applications. It is anticipated that *they* will be added by 25% every year (Peng et al., 2016). It should be noted that besides the applications used only on mobile phones, many customized products are designed today. These products include smartwatches (Figure 2b), wristband sensors (Figure 2c), wearable sensor patches (Figure 2a,d), artificial reality-augmented glasses, brain computer interfaces, wearable body metric textiles (Swan, 2013).

Figure 2. Self-tracking gadget examples from Wired Magazine

a: Fuseproject Kernel of Life b: Moodnotes c: The Embrace d: Lumo Lift e: SleepImage
f: The Pryme Smart Cup g: Bellabeat h: Wellcore Wellness i: Lapka

Among these products wearable technologies are also quite varied. Products that specialize in a number of areas are available and usable via a smartphone or computer program. These devices, which present the user with the resulting data in the form of figures, texts, diagrams, notifications and alerts, are still entirely focused on the desire to improve one's self. The wearable products intelligently collect data about users or interrupt daily life for optimal health and productivity outcomes. For example a device called Kernel is being developed by Fuseproject in response to a brief from Microsoft owner Bill Gates' charity the Gates Foundation and Wired Magazine (Kernel Diagnostic Amulet, n.d.). Kernel is cloud-based test and treatment system for illness, especially malaria (Figure 2a). Other example is Moodnotes which designed as a personal trainer for user's mental health (Figure 2b). Moodnotes works as a mental diary, tracks user's mood and determine what influences it and helps users to build up healthier thinking habits. Since the data obtained from the users are also different from each other, those devices are ultimately customized for each person. The National Institute of Mental Health (NIMH) have listed current trends in app development as: self-management apps, apps

for improving thinking skills, skill-training apps, illness management, supported care, passive symptom tracking and data collection. Apps and gadgets use the device's built-in sensors to collect information on a user's typical behavior pattern, promise to improve memory or thinking skills. These behavior patterns have begun to vary in the following forms: physical health (how energized/healthy you are), emotional health (how you are doing in general, whether you are feeling positive vibes), and mental health (how efficiently you could focus today, how creative you are). There are currently 505 registered tools listed on the Wolf's website, quantifiedself.com that serve this purpose. (Quantified self-guide 2017). Devices that designed for this issue mainly deal with some output obtained by measuring (conditions, symptoms, genome, biomarkers, behavior, environment) the actions (research, treat, intervene, experiment, track, measure) of a person. Swan (2009) lists these outputs as: self-expression, enhancement, prevention, normalization, improvement and cure.

Research method: Content Analysis

This paper aims to investigate the progress of digitalized self-tracking trend since its inception through the alteration of self-tracking applications and gadgets subject to Wired magazine. To meet that goal a content analysis of Wired Magazine from the first January 1993 volume to December 2016 volume was conducted. Wired Magazine is an American magazine establishment published both in print and online monthly. It publishes technology related articles and on how emerging technologies affect culture, the economy and politics (Wired). This magazine is chosen as medium of data collection, because it reaches more than 30 million people each month through wired.com, digital edition.
In the literature review, frequently used terms to define the field were accepted as key words (Self-tracking, quantified self and lifelogging) and used to analyze the articles published in the magazine. Those selected keywords are that formerly listed as: self-tracking, quantified self and lifelogging.

Results & Discussion

There are 109 results for "quantified self", 23 results about "self-tracking, and 13 results for "lifelogging" terms in online database of wired.com (see Table.1).

Table 1. Year based relevant article quantity

Keywords	1993-1999	2000-2005						2006-2011						2012-2016				
Self-Tracking	-	-	-	-	-	-	-	-	-	-	2	4	1	4	4	7	1	-
Quantified Self	-	-	-	-	-	-	-	-	-	-	1	2	1	13	34	35	16	6
Lifelogging	-				1	1	-	-	1	1	1	1	-	-	3	2	2	-

When the articles published in the first years of the magazine are examined, it can be said that these terms which are relatively new have emerged from the concept of "tracking/tracker" and "monitoring". There are 1070 results in health monitoring, 1368 results for tracker, and 2007 results for self-track keywords.

It can be seen that the articles about the key terms have been started to be written in 2009 as a result of the obtained data. It is seen that the technological developments have been examined

since this date, and the products and applications serving this purpose have started to launch. In the late 2000s, and Apple and Nike's collaboration on the Nike+iPod fitness tracking device gave consumers a way to use their existing technology to keep fit (Winchester, 2015). In 2009 the activity tracker of Fitbit Company was sold. In 2011 Fitbit improved existing product by adding an altimeter, a digital clock and a stopwatch, and since today still improving their products. In the same year on November, first generation of UP by Jawbone, an activity tracker released. As of 2012, lifelogging, "self-tracking" and "quantified self" keywords are observed to increase in interest articles. 2012 marked a year of unprecedented investments and research into the intersection of technology and fitness with products such as Nike Fuelband, The Fitbit One, and The Fibit Zip. 2012 was the year of crowdfunding, and the two biggest sites (Kickstarter and Indiegogo) each featured activity trackers among their most successful products. From this date on, it is observed that the products are diversified, new features are added and the accuracy rate in the measurement increased.

In the first article about quantified self named “Know Thyself: Tracking Every Facet of Life, from Sleep to Mood to Pain, 24/7/365” Gary Wolf (2009) who is one of the kickstarter of ‘quantified self’ movement with Kevin Kelly, a co-founder of Wired magazine conducted a mini research about himself, tracking sleep, exercise, blood pressure, mood, caffeine and alcohol consumption. He stated that they noticed in last two years their acquaintances start to ‘extract streams of numbers from ordinary human activities’. They are talking about a new personal data culture ‘Self-knowledge through numbers’ that emerges and indicates that it is becoming easier to self-track with new tools. In the same issue as Wolf's entry to the concept, Wired published four articles on quantified self-tracking focusing on specific areas: running, exercise, health and nutrition (Lupton, 2016).

In the "quantified self" search, 92 articles reviewed in more detail published dates between October, 2016 and June, 2009. It is realized that the articles are tagged with some key words pointing out the topic by the authors. These key words are specific to this search: design, business, gear, science, magazine, security (Table 2).

Table 2. Article keywords and usage percentage for ‘quantified self’ search

	Article Topic							
	Design	Business	Gear	Science	Magazine	Security	Sponsored	Undetermined
Quantity	21	18	17	6	3	1	19	7
Percentage	22,80%	19,50%	18,40%	6,50%	3,20%	1%	20,60%	7,60%

In addition, some articles are not marked with any keywords, and some articles are marked as sponsor content. In addition to article topics, some extra tags which address to subject headings of the article has been made (Table 3).

Table 3. Article keywords and detailed topics for ‘quantified self’ search

	Health	Activity	Productivity	Privacy	Fashion	Other	Environment	Effects	Personal	Business
Design	8	2	3	2		3	3	1	2	1
Business	4	7	2	4		1				4
Gear	4	11			1	2	3			
Science	5								1	1
Magazine		1				1				1
Security		1		1						
Sponsored	4	1	2	5		4		3		7
Undetermined	3	3		1	1	1		2		3

When the tables are examined, it is seen that the articles are most frequently marked with the 'design' key word. The word 'business' and 'gear' are closely following keywords. From this data, it can be read that authors express and associate the concept of 'quantified self' with these words at first glance. The articles tagged with the word 'design' appear to have been written about a wide range of products. In the case of 'gear', it seems to focus more on health related issues and activity tracking.

In the subject headings, it is intended to give clues about the subject product or concept is related to. While 'activity tracking' refers to products and applications that help the individual to retain data about his / her physical characteristics (step, running, cycling, blood pressure etc.), in the heading of 'health related issues', a more comprehensive follow-up (medical issues, woman issues, sleep tracking, etc.) is implied. In the title of 'other', articles about human beings and products, sociality related devices were taken into consideration. The term 'environment' includes agricultural, personal environment, carbon footprint and other environmental factors. In the heading of 'effects', the psychological and sociological effects of devices and applications on humans and society are discussed. The term 'personal tracking' refers not only to a specific feature of a person, but also to almost every feature that can be captured and transformed into a data.

The next detailed examination was made on the basis of "self-tracking" term and examined 18 articles that did not appear in other searches (Table 4 and Table 5).

Table 4. Article keywords and usage percentage for ‘self-tracking’ search

	Article Topic							
	Design	Business	Gear	Science	Magazine	Security	Sponsored	Undetermined
Quantity	3	2	3	1	3	1	3	2
Percentage	16.6 %	11.1%	16.6 %	5.5%	16.6%	5.5%	16.6%	11.1%

Table 5. Article keywords and detailed topics for ‘self-tracking’ search

	Health	Activity	Privacy	Effects	Personal	Business
Design	1			1	1	
Business	1		1			
Gear		2				1
Science		1				
Magazine	3	1				2
Security		1	1			
Sponsored		2		1		1
Undetermined			1			1

It is seen that the articles that appear in this search are less both in number and in terms of subjects than in the 'quantified self' study. This term is often referred to as 'activity tracking', which is contextually referred to.

Lastly, 10 articles that appeared in the 'lifelogging' search which were not common to other subjects were examined for content (Table 6 and Table 7).

Table 6. Article keywords and usage percentage for ‘lifelogging’ search

	Article Topic					
	Design	Business	Gear	Culture	Sponsored	Undetermined
Quantity	2	2	1	1	1	3
Percentage	20%	20%	10%	10%	10%	30%

Table 7. Article keywords and detailed topics for ‘lifelogging’ search

	Activity	Privacy	Other	Effects	Personal	Business
Design		1			1	1
Business		1				2
Gear	1					
Culture			1			
Sponsored			1	1	1	
Undetermined		1	1		1	

Looking at all three searches, it is clear that there is a correlation between the headings that point to the content of the articles. For example, the articles on which the concept of 'productivity' is highlighted include 'privacy issues', furthermore, it is also seen that the concept of 'privacy issues' is emphasized in the context of 'business' and in the articles that concern the production and consumption industry. Within this context, the devices that enable bosses to constantly monitor workers 'productivity' have been subject to many articles (Metz, 2015; Finley, 2014; Flaherty, 2014; Enthoven, 2013; Finley, 2013; Drummond, 2012). Seidenberg, in her article in November 2014, beside the transforming power of health data which is our most personal asset, acquired from genome-based therapeutics and diagnostics to pulse-monitoring and smart watches, asking the question of ‘*why should we continue to share it?*’.

Wired articles are evaluating concept work and market-driven products in self-tracking practice. When you look at the contents, it is seen that a very large part of these articles are found with positive comments and predictions about the products. This positive approach is also a factor that allows the trend to develop and spread.

In particular, the articles on the subject of 'privacy issues' have particular support for the health issue. Although Seidenberg (2014) emphasizes privacy risks, she advocates the need for people to measure and share their data because of the potential for change in the health and pharmaceutical sectors and for the benefit of all humanity. Since 2009, the issue of health has become a subject for more articles each year.

In the development of the digitalized self-tracking trend, it can be said that it is actually a loop feeding between industry/academy and Wired magazine. In the first years of the magazine, some people have been doing experiments on themselves and do-it-yourself devices that you can follow on your own. In the magazine, especially in the first years following the introduction of the term quantified self, some of the experiments that some people have done on themselves and the do-it-yourself devices that you can follow yourself are discussed. Then, on this concept that emerged in the business world, products and services that serve this field have begun to emerge. Especially in 2012 and afterwards, the products that the industry reveals and the concepts that the academy put forward have begun to be the subjects of the magazine. The publication of the articles titled 'Review' and edited as an evaluation of certain products also started in 2012.

In fact, Wired magazine has a feature of being a medium to bring together both industry and academic environment and potential or existing users to discuss the needs and requirements. They are among the other media that serve this area because of the number of users they have reached. Because of those features, it can be said that Wired Magazine works as both trend indicator and trend innovator.

Conclusion

We experience times people try hard to get in shape both physically and mentally, and quantified self (tracking) devices provide an effective tool for motivating users toward lifestyle change and make data collection process easier. The ideas that could once be called utopian or science fiction have become commonplace nowadays. The products, which have emerged in order to make the individual better in physical, mental or emotional sense, have evolved in a form that can serve more different purposes over time. For example, Jordan and Pfarr (2014) refer to 'a future where self-tracking harnesses a whole population's data to identify patterns and make meaningful recommendations'. Another dimension is quantified workplace concept where an employer measure everything about their employees' work lives which could raise privacy issues. When we are collecting information about ourselves unconsciously, the days when others gather information about us apart from our knowledge are not far away. From the perspective of Wired Magazine, they are publishing pioneering articles on technological developments due to concept of the magazine, conducting reviews on new products and applications and writing reports to anticipate new developments or negative situations in the future. The fact that in every month about 30 million people are accessing through wired.com in addition to the printed issues giving this media an important role.

It can be said that this digitalized self-tracking trend did not become mainstream, yet. The fact that the products available in the market are expensive enough to be regarded as luxury as discussed by Tso (2013), this issue actually indicates that this trend is not yet included in the trendy early majority, which is accepted by the early adopters. Furthermore the design process of tracking devices should be investigated to learn the underlying cause why these products are not very popular. One of the assumptions in design process that Munson (2017) indicates, "people will use personal informatics tools indefinitely" is worth to reviewing. Besides the dealing with resulting data, people find it hard to give the specific information to apps or gadgets

like what we ate that day. Difficulty of data entry process can cause users to not use the device continuously, longer periods of abandonment of the gadgets or don't replacing when the device is broken down (Munson, 2017).

Another reason for not becoming mainstream is about dealing the resulting data. CEO of Lark Technologies indicated that more than 90% of tracking gadget users are not motivated by looking at the obtained data (Schüll, 2016). Munson (2017)also point out this issue in another assumption "More data are better". He suggest that through a study that they have been doing with colleagues a way forward around the "minimum viable data" that can further a goal. Speaking of problem areas related to tracking devices will allow design process of devices to be modified in the future. It will be possible to increase the use of these devices day by day, especially by facilitating data entry and transforming the resulting data into a meaningful way that the user can apply the data actively.

On the other hand there are mobile apps, scales, and activity trackers that beam data they collect to the cloud are helping some doctors and hospitals keep tabs on their patients and inform treatments. Yet the variety and amount of data required to work with the healthcare industry will not be reached. Insurance and electronic medical records companies are investing in and partnering with tech outfits which encourage consumers to use activity and health tracking tools and upload the data to their platforms. The variety of products that have emerged to store and analyze our personal information actually brings with it the issue of privacy. The absence of any legal regulations on confidentiality of health data leads to the emergence of establishments that act as a marketplace for information. In addition to this, the amount and the diversity of data obtained allows to progress in academic and product development areas.

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Biography

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