

**The Sociotechnical Effects of Social Media, Telecommunication Technology, and the
Egyptian Revolution**

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On my honor as a University Student, I have neither given nor received unauthorized aid on this
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STS Research Paper

The Inspiration for the Egyptian Revolution

The phrase that was abuzz on social media in the Middle East, specifically in Egypt, in January 2011 was “The answer is Tunisia” (Hussein, 2021). This tweet referenced the protests and change in regime that was occurring in Tunisia, the first country to go through the Arab Spring. Political unrest had been present for many years in the Middle East, yet no successful protests were planned until 2010. Inspired by the Tunisians in 2010, Egypt planned its first successful protest in January 25, 2011 (Hussein, 2021). The success of the protests is often attributed to Facebook groups and social media technology as it allowed for the organization and broadcast of the protests. Before the Arab Spring, social media was not actively being used for political purposes but since the Arab Spring, one of the main purposes of social media in Egypt is to spread awareness of power abuse and corruption. The dramatic change in social media adoption and usage in Egypt causes the Egyptian revolution to be a prominent example of how society often simultaneously shapes and is shaped by technology, a concept known as technological momentum (Hughes, 1994). Throughout the paper, the framework of technological momentum will be used to analyze how Facebook, Twitter, and telecommunication companies like Vodafone, played a crucial role in the Egyptian revolution and its success and how the Egyptian revolution contributed to the feature enhancements released by the social media and telecommunications companies in the following years (Howard et al., 2015).

Research Question & Methods

Using the framework of technological momentum, the research paper evaluates how social media changed and was changed by the society in Egypt. The usage of social media before 2011 in Egypt along with the concept of trends and retrieving news through social media is

explored to understand how social media shaped the society of Egypt and the rest of the world. In addition, various ways in which the Arab Spring changed social media and telecommunication companies is observed through analysis of company announcements and feature updates. Key words and phrases such as “Facebook private groups,” “technological suppression”, “trends”, and “internet shutdown” are used to explore sources for the research paper. To perform the proper analysis, the STS framework of technological momentum was used to ensure the full cycle and effect of the Egyptian revolution on social media is observed. Researching statistics, reading various articles including interviews conducted during and after the Egyptian revolution, and researching the timeline of major innovations of Facebook and Twitter are several methods used to attain the data and analysis. Then, the connection between social media, Vodafone (a telecommunications company), and political change is demonstrated below which proves that these technologies had a major impact on the success of the Egyptian revolution and were also impacted by the actions of the Egyptians (Clarke & Koçak, 2019).

History Regarding the Egyptian Revolution

Egypt, along with Tunisia, were two of the most prominent countries participating in the Arab Spring. The Arab Spring is known as a series of anti-government protests, uprisings, and armed rebellions that spread across much of the Arab world in the early 2010s (Hussein, 2021). The Arab spring started in December 2010 when the Tunisian police seized Mohamed Bouazizi's, a jobless graduate, cart for selling vegetables without a permit. As a response, Bouazizi sets fire to himself and later dies. Following the Wikileaks publication of US criticism of the Tunisian regime, the Tunisians were provoked to protest and were successfully able to overthrow Ben Ali from his presidency in January 2011 (Ungaro & Vale, 2012).

Mohamed Bouazizi inspired an Egyptian man to set himself on fire next to the parliament building in Cairo in protest of economic conditions in January 2011. Seeing the unrest among the Egyptians, an Egyptian youth movement called the 6th April Youth organized a Facebook event providing detailed instructions for a protest, including phone numbers of human rights lawyers who would be on call (Clarke & Koçak, 2021). Having human rights lawyers on call is crucial as it encouraged the commoner Egyptians, who often could not afford legal aid in situation of police brutality and abuse, to participate in the protests. Since this was a public Facebook event, the authorities were aware of the potential of a protest but did not expect much of a response because of the strict emergency laws prohibiting most mass gatherings. To their surprise, on January 25, which is also known as National Police Day in Egypt, young men and women of all ages crowded into the heart of the capital chanting “The people want the fall of the regime” (Hussein, 2021).

To keep the protests organized, activists sent live updates via Twitter about where demonstrators were headed and which areas to avoid. Due to a violent police sweep (including the usage of tear gas and automatic weapons), the protestors did not remain throughout the night. To many Egyptians, the shouts and protests for democracy and freedom seemed like an unachievable dream, yet regardless of religion, age, gender, or social status, the Egyptian people united and marched the streets of Cairo demanding change (Todras-Whitehill,2020). On January 28th, they came out in even greater numbers, uniting over the oppression faced and refusing to leave until Mubarak stepped down. Mubarak responded by shutting down the Internet. To the government’s surprise, this encouraged more Egyptians to protest. Five days later, on February 2nd, 5:18 am, the Internet was back due to international pressures, economic reasons, and ineffectiveness of preventing protests (Cohen, 2011). Despite the oppression, the Egyptians were

persistent in the protests and on February 11, Mubarak stepped down which resulted in an outburst of joy and euphoria.

Technological Momentum

The overthrow of Hosni Mubarak could not have happened without both the power and unity of the Egyptian society and the technology available. In the 1990s, two polar-opposite STS theories emerged – social determinism and technological determinism. Social determinism states that technology is modified by the social structure, history, and cultural values in an irreversible and irreparable way (Smith, 1994). On the other hand, technological determinism states that society itself is modified by the introduction of new technology in an irreversible and irreparable way (Smith, 1994). Thomas Hughes merged the two theories into a theory called technological momentum which states that the relationship between technology and society is time-dependent and reciprocal (Hughes, 1994). There is currently very little research on the presence of technological momentum with regards to social media and no research regarding technological momentum and the Arab Spring.

A Canadian philosopher, Marshall McLuhan, is the only philosopher who commented on technological momentum with regards to social media. He stated that one should focus on “the form of a medium rather than the content it carries” (Thitivesa, 2017). In other words, the way of communication changes the emphasis on the way we recognize and react to the information. Technology can bring about different outcomes in which they are also socially constructed, it is just a tool that is used for activities which can produce either benefits or harms. Technological innovations in and of itself is unable to function and bring about any effects without participation from the human. Therefore, technology should not be regarded as an independent variable which completely determines changes in society as it is the combination of human activities on the

platforms which gives it the power to change society. This concept is further explored in the paper through the Egyptian Revolution (Thitivesa, 2017).

Although direct research regarding technological momentum and the Egyptian revolution does not exist, many reporters have spoken about on how social media allowed the Egyptians revolution to be successful. Facebook is what allowed the first protest to occur successfully while Twitter allowed live updates to be broadcasted to allow the Egyptian people to stay united. Looking at the effects of the social media usage during the Egyptian revolution, there is currently no research on how the use of social media during the Egyptian revolution adapted and influenced social media companies. Because of the lack of research, this research paper will also be observing how the Egyptian revolution influenced the purpose of social media and telecommunication companies.

Effects of The Egyptian Revolution and Social Media on Each Other

The question answered throughout the paper is, through using technological momentum as the framework, how did social media change the society due to the Egyptian revolution and how did the Egyptian revolution change social media? Fawaz Rashed's tweet in 2011 summarized how social media changed the society in Egypt when he said "We use Facebook to schedule the protest, Twitter to coordinate, and YouTube to tell the world #egypt #jan25" (The Guardian, 2012). Although this tweet states how social media was used, it is also stating that Egyptians used social media to voice opinions, shed light on abuse, and attempt to hold the government more accountable in a way that could not be done before. Social media no longer was being used just for personal updates, but it was now being used to protest and change governments - something that could not have been done in the past. With the new power of social media displayed for all to see through news channels and social media itself, Facebook

and Twitter capitalized on the movement and added features that would aid in rapid delivery of news and provide a voice to the oppressed. Not only was social media and Egypt affected by the Egyptian revolution, but when the United Nations issued a response to Mubarak's internet shutdowns saying internet shutdowns are not justifiable under any reason, the rest of the world was also affected. Social media is a clear example of the technological momentum framework as social media was changed as a result of the Egyptian society and social media also allowed for change in the Egyptian society. Furthermore, social media's functionalities changed over time with system updates, which is discussed in the following paragraphs, making the technology time-dependent, the last criteria of the technological momentum framework.

In a non-English speaking region led by oppressive regimes, such as in Egypt, the adoption of new technologies is slower than in the West. Not only is the adoption challenging, but often the technology is only offered in English. With regards to Egypt, in 2011, only 34% spoke English which made the mass adoption and usage of social media when first launched challenging. Despite these hurdles, the Egyptians worked together to use Facebook and Twitter successfully to overthrow Mubarak. Before March 2009, Egyptian political bloggers connected with each other through traditional means of networking. However, in 2009, Facebook introduced its Arabic language service which allowed Egyptians to form and connect with their large social networks all at once (Domingues, 2014). Using the wide audience available on Facebook, in 2010, Egyptians created a Facebook page called We are All Khaled Said to spread awareness about one particular case in which a twenty-eight-year-old was beaten to death by police officers in Alexandria, Egypt. The example of police brutality was one of the first cases to gain national recognition and opened the door for people to post, anonymously, similar stories of political oppression (Halawa, 2019). Seeing stories of oppression on social media united the

Egyptian people to courageously take the initiative and overthrow the current regime of Mubarak. As previously mentioned, Facebook was used to organize the initial January 25th protest. In the beginning of 2011, the number of Facebook users in Egypt was 4.7 million. However, by April 1st, 2011 the number rose to 6.65 million. Arab users in total increased by over 100% between January and March of 2011 (Mubarak, 2011). The statistics alone signify how the success of the first protest and revolution led to a major increase in Facebook usage in Egypt, therefore changing the Egyptian society.

Not only was the usage of Facebook increasing in 2011, but the number of tweets from Egyptians also increased. The average number of tweets per day the week before January 25, 2011 was 2,300 tweets (Mubarak, 2011). After the revolution, the number of tweets jumped to 230,000 per day. The Foreign Policy magazine declared the Egyptian revolution the Twitter “news moment” of the year (Mubarak, 2011). Egypt stood with two specific hashtags, #egypt and #jan25, which were the top Twitter topics over the first months of 2011. Both hashtags built the top two Twitter trends with 1,400,000 and 1,200,00 mentions respectively. Below in Figure 1 is a graph that shows the daily tweet volume in correlation with the mentions of #jan25 in Egypt. The daily tweet volume was often dominated by #jan25 mentions and increased as the climax of the revolution approached (Domingues, 2014). Although the number of tweets and the usage of Twitter was heavily influenced by the protests, Twitter never launched an Arabic site before 2011 which deterred many prospective users from using Twitter. Seeing the usage of Twitter during the Arab Spring caused Twitter to take into consideration the large potential customer market in the Middle East (Kalish, 2012). Seeing the increase in Facebook and Twitter usage and analyzing the usage of social media during the Egyptian Revolution, part of the definition of technological momentum is fulfilled. Technological momentum requires technology to change

the society and it is evident that social media caused the Egyptian government to be overthrown and improved the Egyptian society.

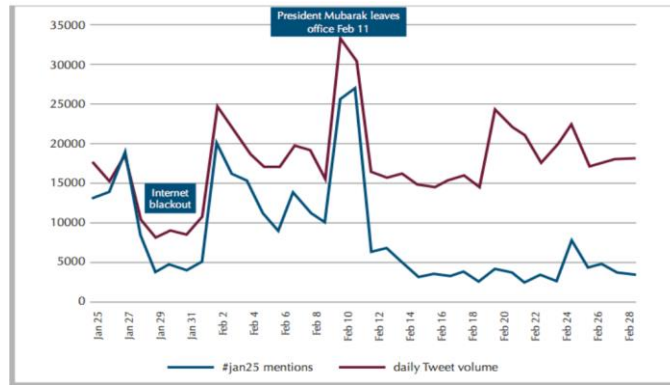


Figure 1: Daily Tweet Volume

The figure shows the daily tweet volume in correlation with the mentions of #jan25. The first peak in the graph is on February 2nd, 2011 which is when violent clashes led to 1,500 injured people. The second peak is in February 11, 2011 which is the day Mubarak stepped down. It is evident through the graph that the number of tweets was heavily affected by the events surrounding the day. In addition, the tweet volume during this time was often heavily dominated by #jan25 mentions (Domingues, 2014).

The Egyptian revolution played a major effect on the adoption of social media in Egypt which allowed for the benefits of social media to be amplified in Egypt. Although social media was used before January 25, 2011, the power of social media was not visible to Egyptians until the success of the January 25th protest. Youssef Salah summarized the effect of social media on the Egyptian society best when he tweeted, “The day we realized what needed 30-40 years to change could be altered in days #Egypt #jan25stories #jan25” (The Guardian, 2012). The technology surrounding social media allowed Egyptians to finally speak against abuse and demand justice to create a better society and change history within the span of a couple of weeks.

Looking at the remainder of the definition of technological momentum, for a technology to follow the framework of technological momentum, the technology must also be influence by the society and in this case by the Egyptians. Through the revolution, Facebook and Twitter discovered the importance of the Middle Eastern market and saw that their technology gave a

voice to the oppressed through the Arab Spring. Wanting to capitalize on the movement, Facebook and Twitter took the Arab spring into consideration when releasing features and updates, discussed below, in the years after the revolution. Looking first at the updates for Facebook, in 2011 Facebook received the largest number of major updates. According to TNW, a Financial Times company, “2011 was its [Facebook] most significant year yet, and it was one in which the firm took steps to transition itself from being a popular social network to a web-based operating system.” The major updates introduced by Facebook in 2011 are the comment platform, the subscriber button, and sponsored stories. The subscriber button’s release was the most important as its purpose is to provide more options for following news or celebrities (Russell, 2011). In addition, in 2011 Facebook released its current user interface which has a cover photo and a timeline. Adding the cover photo and timeline allowed the social media platform to become more about showing what you were sharing and posting and less about a person’s personal information (Mullins, 2016). The last major change that occurred to Facebook after the Egyptian revolution is the public’s adoption of the news feed. In 2006, Facebook launched its news feed, but users initially despised it. After multiple years and various protests including the Egyptian revolution, the news feed was adopted by the public. The news feed was the first real social feed and was what made Facebook one of the biggest distributors of information around the world (D’Onfro, 2016). As evident in the updates by Facebook, Facebook modified their platform in a way that takes the usage of Facebook during the Egyptian revolution into account.

Not only did Facebook adapt their technological updates to the current society, but so did Twitter. Through the Arab Spring, Twitter recognized the Middle East as an additional consumer market. Because Arabic is right-to-left, Twitter avoided adopting the language as it would

require complex engineering. However, in January 2012, Twitter launched the Arabic language compatibility feature along with Farsi, Hebrew, and Urdu. Twitter had 13,000 volunteers help translate its site into the four new languages showing that the demand existed for the site. The large number of volunteers also displays how the society indirectly forced Twitter to implement those updates (Farah, 2012). In addition to adding languages to the software, Twitter also introduced new changes to user timelines and Twitter launched brand pages for business accounts towards the end of 2011. The benefits of the changes to the timeline are it allowed for conversations to be easily tracked, allowed for retweets to be used as an analytical tool, and created a more user-friendly Twitter (Hussain, 2016). All of these updates ultimately further allowed for information shared over Twitter to be easily accessed by the user. The aforementioned changes, specifically the adoption of right-to-left languages, would not have been implemented in 2011/2012 had the Egyptian revolution not depended on Twitter for its success.

The Egyptian Revolution also affected the telecommunication company Vodafone as well as politics for the rest of the world. During the revolution, the Egyptian government took unprecedented steps of shutting down the internet access in the entire country. There was a cyberspace blackout that lasted a week, but did not thwart the revolution (Kredell, 2021). The Egyptian government, with 80 million people and a modernizing economy, cut off nearly all access to the network and shut down cellphone service. This resulted in a 90% drop in data traffic to and from Egypt. Vodafone, a cellphone provider based in London with 28 million subscribers in Egypt, announced, “all mobile operators in Egypt have been instructed to suspend services in selected areas” (Richtel, 2011). Many were shocked by the five-day internet shut down and saw clear abuse of power. When the revolution succeeded and after receiving much

backlash from the Egyptian society, Vodafone decided to create a telecommunication industry dialogue with Orange, another major telecommunication company in Egypt, to help prevent future abuses. The industry dialogues' mission is to find a common way to fight against the threat to the freedom of the internet (Jeff Landale, 2020). In addition, the United Nations issued a historic statement, which is under Section 4c, which changed politics for the world as it declared internet kill switches unjustifiable under international human rights law even in times of conflict (Micek, 2020). Therefore, through the revolution, initiatives were started, and an international law and statement was passed to avoid internet and social media abuse. The change in the society produced as a result of the usage of social media during the Egyptian revolution displays the second aspect of technological momentum – society changing and enhancing the technology. Through the increase in usage over time of technologies such as the internet and social media, society was changed to one in which internet and social media access became a human right rather than a luxury. The large dependency on internet and community acceptance shows how social media is time-dependent, which is the last criteria for a technology to follow technological momentum. Over time and with the events in society causing social media to be adopted at different paces, the functionality and critically of social media changed. Seeing all three parts of the definition of technological momentum (a technology that changes society, a technology that is changed by society, and a technology that is time-dependent) it is clear that social media is an example of a technology that follows the technological momentum framework.

Through researching events surrounding Facebook, Twitter, Vodafone, and the United Nations around 2009-2013, the concept of technological momentum is evident as social media and technology both impacted and were impacted by the Egyptian Revolution. Though much research has been acquired to arrive at the aforementioned conclusions, limitations did exist that

prevented further conclusions. Due to the amount of information, research was limited to two years before and after the 2011 revolution. In addition, the second Egyptian revolution that overthrew Morsi and the other revolutions throughout the Arab Spring were not taken into consideration for this research paper. Future research should include looking at the second Egyptian revolution and seeing how Morsi's regime used social media and how it differed from Mubarak's regime. After reviewing the second revolution, future research should also include looking at the remaining revolutions in the Arab spring and how they iterated on Egypt's success and attempted to overthrow their regimes. Research on additional revolutions will provide further insight on how social media, technology, and society was impacted by the Egyptian revolution and how the outcome of similar events is different in societies with different governments, infrastructure, and economic wealth.

Conclusion

Egyptians used the new power Facebook, Twitter, and YouTube provided to allow them to fight for justice for the first time in decades. Through the usage of social media during the revolution, Facebook and Twitter discovered the hidden potential of the Middle Eastern market and started focusing on rolling out Arabic features and features that focused on spreading news rather than user's personal information. Proving the concept of technological momentum, social media technologies helped shape the society and was also shaped by the society through the Egyptian revolution. Though the revolution happened 11 years ago, oppressive governments still exist, and social media can still be used, and new features can be implemented, to give a voice to those oppressed. Currently, social media is still being used to spread awareness about police brutality in Egypt in an attempt to continue improving the government. Furthermore, social media is also being used to bring awareness to the war occurring in Ukraine. Understanding how

social media was affected and was used to bring positive change in Egypt will allow the world to understand how to use the tools of social media to help others. It will also provide the basis for how to use social media in the future to advocate for positive change. Social media has become an active member of the world, and if used correctly, can bring major positive changes.

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