

The Reasons Social Media Contributed To The 2011 Egyptian Revolution

Nadine Kassem Chebib
Jeddah, 21492, Saudi Arabia

nadine_chbib@hotmail.com

Rabia Minatullah Sohail
Jeddah, 21492, Saudi Arabia

rabia3891@hotmail.com

Abstract

In recent years, social media has become very significant for social networking. In the past, its main use was personal, but nowadays, its becoming part of all facets of our lives, social and political. In the first quarter of 2011, the Middle East has witnessed many popular uprisings that have yet to reach an end. While these uprisings have often been termed “Facebook Revolutions” or “Twitter Revolutions”, there are many ambiguities as to the extent to which social media affected these movements. In this paper we discuss the role of social media and its impact on the 2011 Egyptian revolution. Though the reasons for the uprising were manifold, we will focus on how social media facilitated and accelerated the movement.

Keywords: Social Media, Egyptian Revolution 2011, Facebook, Twitter, YouTube.

1. INTRODUCTION

This paper explores the impact social media had on the Egyptian Revolution in 2011 which encompasses the events that started on 25 January 2011 and ended with President Hosni Mubarak’s resignation on February 11, 2011, thus ending his 30 year old regime. [1 & 2]

The uprising began when inspired by the events in Tunisia which led to the ouster of the Tunisian President, the Egyptian people took to the streets and demanded an end to the government of President Hosni Mubarak [1]. The people of Egypt had many grievances against the government, mostly related to political and legal issues, which motivated them to step out in the streets and demand changes. It is believed that social media played a very important role in the Arab Spring 2011, a wave of demonstrations and protests that has been taking place in the Arab world since 18 December 2010 [3].

According to a Cairo activist, “We use Facebook to schedule the protests, Twitter to coordinate, and YouTube to tell the world” [4]. The New York Times believed that Facebook and Twitter helped people in organizing and coordinating protests, by cross-communicating and information spreading [5]. In its annual analysis of the world’s human rights, Amnesty International praised the role of websites such as Twitter and Facebook in igniting the biggest revolt against oppressive regimes since the end of the Cold War [6].

This paper explores the reasons due to which social media accelerated the Egyptian revolution. Even though the triggers of the revolution were numerous, social media played a very important part in uniting the youth of Egypt and helping them in organizing and coordinating the protests against the government. We look into the different factors due to which social media had such a huge impact on the revolution despite the government’s attempts to block and control it. These reasons include demographic factors as well as other factors which made social media a preferable tool for the Egyptian protesters.

2. LITERATURE REVIEW

Socially, revolution is defined as a drastic and far-reaching change in ways of thinking and behaving which will lead to a fundamental change in power and social structure, in a relatively short period of time. [7]

2.1 Social Media

To begin with, social media will be defined as follows:

Social media is a social tool of communication; it consists of websites that interact with the users, while giving them information. It includes a large variety of websites; The Social Bookmarking Websites (e.g: Del.icio.us, Blinklist, Simpy), where users interact by tagging websites and searching through websites bookmarked by other people; The Social News Websites (e.g: Digg, Propeller, Reddit), where people interact by voting for articles and commenting on them; The Social Networking Websites (e.g: Facebook, Hi5, Last.FM), where users interact by adding friends, commenting on profiles, joining groups and having discussions; The Social Photo and Video Sharing Websites (e.g: YouTube, Flickr), where people interact by sharing photos or videos and Wiki Websites (e.g: Wikipedia, Wikia), where users interact by adding informative articles on various topics and editing existing articles. Any other website that allows its users to interact with the site and other visitors is a social media website [8].

In the following section the three most effective social media websites during the 2011 Egyptian revolution, Facebook, Twitter and YouTube, will be discussed.

2.1.1 Facebook

Facebook is a popular social media website launched in February 2004 [9]. Facebook membership is free, but a user has to create an account with a valid email ID [10]. Facebook has various features; every member has his "Wall", a page that allows his friends to post their messages to him; "Status" allows the user to share and inform his friends of his updated location and actions; "Photos" allow the user to upload pictures; "Poke" allows members to send each other virtual pokes, "News Feed" which highlights important information including profile changes, upcoming events and birthdays of a user's friends [9].

"Facebookers" have the option to post and comment on their profiles, their friends' Walls, pictures, and other personal information. They can keep in touch with their friends through status updates, messages or instant messaging. They can also create and join interest groups and "like" pages including pages created for brands endorsing advertisements [9]. Facebook can be used to browse and join different common interest groups, organized by colleges and workplaces, pull contacts from a web-based e-mail account, find friends using a search engine, and exchange messages including automatic notifications [9 & 10].

Today in May 2011, Facebook has around 700 million active users [11]. According to a study conducted by Compete.com in January 2009, Facebook is the most used social networking service [9]. It is also the most popular social networking site of the world [10], where 14 million photos are uploaded daily [12].

2.1.1.1 The Number of Followers

Facebook allows each user to have up to 1,000 friends per friend list. They can have the same friend on multiple lists as well. Users can have up to 100 friend lists [13].

2.1.1.2 Facebook Usage in Egypt

Facebook is the most popular social media network in the Middle East [14] and has 8,357,340 users in Egypt as of July, 2011 [15]. 78% of Egypt's Facebook users are between the ages of 15-29 years and 22% users are above the age of 30 years [16]. In the second edition of a series of reports produced by the Governance and Innovation Program at the Dubai School of Government, it has been observed that among Arab countries, Egypt has seen the highest increase in the number of Facebook users in the first quarter of 2011. The report surveyed Facebook users in Tunisia and Egypt and also found that six out of 10 respondents in both countries said that blocking access to social media provided a boost to the revolutions [17].

According to the Egyptian Ministry of Communication, 70 million Egyptians own a mobile phone, constituting more than 87% of the population which provides them easier access to internet and social media websites [18].

2.1.2 Twitter

Twitter is one of the most popular social networking websites, launched in 2006. Twitter usage is also free. Members of Twitter can use the service to post and receive messages to a network of contacts. Members can build a network of contacts, and invite others to receive their Tweets, and can follow other members' posts. Twitter makes it easy to opt into or out of networks. Members can also choose to stop following a specific person's feed [19].

Twitter users are able to send and read messages called tweets. Tweets are text-based posts of up to 140 characters displayed on the user's profile page. Users may subscribe to other users' tweets, which is known as "following" and subscribers are known as "followers" or "tweeps". Users can group posts together by topic or type by the use of "hashtags". "Twitter Lists" allow users to follow lists of authors instead of individual authors [19].

Twitter's usage usually increases during important events. Tweets are publicly visible but senders have the option to restrict message delivery to just their followers. Users can tweet through the Twitter website, compatible external applications (such as for Smartphones), or by Short Message Service (SMS) available in certain countries [19].

On June 2010, Twitter was estimated to have 200 million users, generating 65 million tweets a day, equaling about 750 tweets sent each second, and handling over 800,000 search queries per day. Twitter is sometimes described as the "SMS of the Internet". Twitter is ranked as one of the ten-most-visited websites worldwide by Alexa's web traffic analysis. A February 2009 Compete.com blog entry ranked Twitter as the third most used social network based on their count of 6 million unique monthly visitors and 55 million monthly visits. In March 2009, a Nielsen.com blog ranked Twitter as the fastest-growing website in the Member Communities category for February 2009 [19].

2.1.2.1 The Number of Followers

Twitter allows each user to send 250 direct messages per day, 1,000 updates per day. Retweets are counted as updates. Users can make 4 changes to account email per day. The technical follow limit is 1,000 per day. Once an account is following 2,000 other users, additional follow attempts are limited by account-specific ratios [20].

2.1.2.2 Twitter Usage in Egypt

The average number of Twitter users in Egypt between January and 30 March, 2011 was 1,131,204. The most popular trending hashtags across the Arab region in the first quarter of 2011 were #egypt (with 1.4 million mentions in the tweets generated during this period) #jan25 (with 1.2 million mentions), #libya (with 990,000 mentions), #bahrain (640,000 mentions), and #protest (620,000) [21].

According to Ossama El-Badawy, the Online Competitive Intelligence Manager, internet in Egypt witnessed a dramatic growth after the revolution with a 100%+ Twitter users growth during recent months [22].

2.1.3 YouTube

YouTube is a video-sharing website on which users can upload, share, and watch videos, launched in February 2005. Most of the videos on YouTube are uploaded by individuals, although media corporations like CBS, BBC, Vevo, Hulu and other organizations also upload their material. Unregistered users can watch videos, and registered users can upload an unlimited number of videos for free [23].

According to Alexa's ranking, YouTube is the third most visited website on the Internet. As of October 2010, YouTube was serving two billions videos a week accompanied by advertising. According to James Zern, a YouTube software engineer, 30% of videos account for 99% of views on YouTube [23].

Videos uploaded to YouTube by standard account holders are limited to 15 minutes in duration. The file size is limited to 2 GB for uploads from YouTube web page, and to 20 GB if Java-based Advanced Uploader is used. Since June 2007, the interface of the website is now available with localized versions in 31 countries including Egypt. The interface is available in 30 different languages [23].

According to Ostrow, 2009, while other social media websites may see rise and fall in the future, YouTube is the only website that will continue to thrive [24].

2.1.3.1 The Number of Followers

To watch a video on YouTube, there is no need to register as a user. Anyone can watch the videos that have been uploaded on the website. The embedding option can be used to share the videos uploaded on YouTube on other social media websites. The embedding option makes it easier for people to promote videos and help them go viral [23].

2.1.3.2 YouTube Usage in Egypt

According to the report prepared by Techno Wireless, during the first week of the Egyptian Revolution 2011, Egyptian users viewed 8.7 million pages on YouTube. This number was reduced after the blockade of internet services by Egyptian authorities from 28 January until the first of February [25].

2.2 The 2011 Egyptian Revolution

The 2011 Egyptian Revolution refers to the events that started with a popular uprising on January 25th, 2011 and ended on February 11, 2011 with the resignation of the Egyptian President Hosni Mubarak [2 & 3].

2.2.1 Demographics of the Protestors

In Egypt, a country where the where the proportion of young people is significantly larger compared to other age groups, the majority of the protestors were youngsters. Mostly unemployed, between the ages of fifteen to twenty- nine years old, the Egyptian youth formed the largest proportion of protestors. As of July 5, 2011, Egypt's population consists of 62.8% people between the ages of 15-64 years and 32.7% people belonging to the age group of 0-14 years [26]. Egypt is close to the peak of its youth bulge, for in the past few years this majority has started to decline as the share of fifteen to twenty-nine years old is decreasing. These youngsters are heading toward the job market, and facing lots of problems due to high unemployment rate [27]. According to a survey conducted to explore the way Egyptians used internet during the revolution, 28% of internet users relied on the Internet to stay tuned with the revolution news and updates. This percentage goes up to 63% among those who participated in the demonstrations [22].

2.2.2 Reasons and Triggers

Different forms of revolutions around the world have recurring patterns in common, that were also prominent in Egypt. According to Trotsky, poverty was not the only cause of revolution. For a revolution to happen, an electrifying spark is needed. For the past 30 years, violent death has been the most common catalyst for igniting rebellion. In 1978, the mass incineration of hundreds in an Iranian cinema was a trigger for the Iranian Revolution. Recently, the Tunisian vegetable vendor Mohammed Bouazizi set himself on fire which intensified the protests [28].

For decades Egypt has been hiding major problems that caused poverty, high prices, social exclusion, elite enrichment, unemployment and corruption in the country. Underlying reasons were always there, until a catalyst, the Tunisian revolution, triggered the Egyptians. Dozens of deaths at the hands of the pro-regime supporters amplified the protestors' resolve to fight for freedom [29].

The revolution in Egypt was a result of accumulated misery and hardships that the Egyptians have been facing for decades; autocracy, high levels of corruption, and grinding poverty. Roubini said, "What has happened in Tunisia is happening right now in Egypt." Similar protests in Morocco, Algeria and Pakistan are related not only to high unemployment rates and

to income and wealth inequality, but also to a very sharp increase in food and commodity prices [30].

A significant trigger to the Egyptian Revolution was the brutal death of Khaled Said in June 2010. The publishing of the graphic heart-breaking photos of his death by beating at the hands of the police took place on Twitter despite the government's opposition [31].

Another trigger that initiated the revolution was a Facebook page "We are all Khaled Said" created in honor of Khaled Said. This page's popularity soon increased to reach around 600,000 likes and the page acted as a key organizing centre for the Egyptian protests [32]. At the same time, a heart-breaking Youtube video footage of Khaled Said's death was viewed by more than 500,000 people that further ignited their rage [32].

2.2.3 Social Media as a Tool in the Egyptian Revolution

"Why do the Tunisian youth 'demonstrate' in the streets, don't they have Facebook?" this was a joke quotation of a Jordanian newspaper, doing its rounds in Egypt [33].

Hosni Mubarak was forced to resign after 18 days of continuous protests in Egypt. The revolution was facilitated by the use of social media where most of the protests were organized. Social media has been a crucial tool in building the Egyptian movement, and was connected to the emergence of the new tech-savvy generation in the Muslim brotherhood. The Egyptian protestors included a vast number of internet-savvy, Twitter and Facebook users who coordinated the movement. The Egyptian government tried to protect itself by blocking social media sites but was unsuccessful, according to the media expert Walter Armbrust. It is important to stress that social media acted as a tool for the protestors and was not the sole basis for the revolution [36].

In his blog, Riyaad Minty, responsible for the social media services in Al Jazira, outlined the importance of Facebook for the journalists since it helped them actively follow the events. He insists equally that the social networks permitted Al-Jazira to be "Updated". "Facebook and Twitter helped us foresee in advance, when and where future manifestations might happen", he said [35]. The failed attempt of the Egyptian government to block access to the social media tools on January 26, 2011 during the heavy manifestation was quiet revealing. Social media tools were seen as the biggest digital threats of the government, sabotaging its ability to control [37].

Tunisia and Egypt have opened up the debate of the role of social media and its effect on movements. While revolutions occurred long before Twitter, it is now prominent that political phenomena can be accelerated by social media. These effects require reflection on the similarities of both 2004 Kiev and 2011 Cairo protests, and how technology and social networks played part in them. In both countries, manifestations seemed to break out of nowhere, mainly led by well-educated yet anonymous youth. Technology played a role in both. Back in 2004, Twitter was not available, but still Internet and mobile phones were major players. In Egypt, social media threatened the regime that reacted by blocking internet and social media; however, the blockade was not successful and numerous workarounds occurred [38].

For any mass movement to take place, a space for communication is needed. A few decades ago, this used to happen in bookshops and underground newspapers' offices. Today, online spaces have been added to the regular ones on the ground. According to Ahmed, a social activist in Tahrir Square, online activist meetings replaced the regular secret ones that could have been broken up by the police; it was much safer [33].

Despite an initial five-day blackout of internet and mobile phones' networks, social media outlets, Facebook and Twitter, continued to play instrumental roles in organizing protests in Egypt [39].

2.2.4 Speed of the Revolution

The Egyptian Revolution started on the 25th of January 2011 and ended on 11th of February 2011 lasting a total of 18 days, overthrowing the 30 years old Mubarak regime [28]. The

Jasmine Revolution in Tunisia, which ousted president Zine El Abidine Ben Ali, lasted 28 days [40]. The Egyptian revolution was the only one among several others that are still going on in the Arab Spring, 2011 that succeeded in overthrowing the regime in the shortest time period [3].

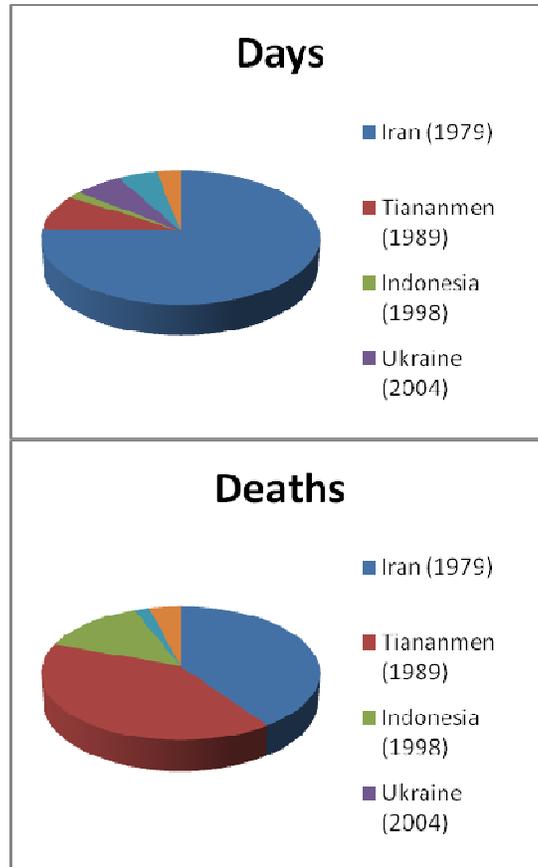


FIGURE 1: Days of Revolutions and Deaths that occurred during those Revolutions

As shown in the above pie charts, the Egyptian revolution is the second shortest revolution in terms of both, the number of days it lasted and deaths during the revolution [28].

2.2.5 How Social Media Was Used in Some Other Revolutions

According to Fadi Salem, Fellow and Director of the Governance and Innovation Program at the Dubai School of Government: "It is no coincidence that Tunisia witnessed an 8% sudden surge in the number of Facebook users during the first two weeks of January 2011, coupled with a shift in the usage trend from merely social in nature into primarily political." [41].

Traditional media also played an important role in the Tunisian Revolution. The coverage of protests in Tunisia by Al Jazeera, the international television news network headquartered in Qatar, sparked protests in other countries including Egypt. However, the importance of social networks in helping activists to transmit popular anger through user generated content into organized protests cannot be ignored. In 2001, social networking technology was used by Philipinos when a million protestors were motivated by a chain of text messages to occupy one of Manila's main highways and demand the resignation of then President Joseph Estrada. In 2003, text messages saying, "There is a fatal flu in Guangzhou," spread awareness about the existence of the SARS virus in China and forced the Chinese government to acknowledge the problem. Next year, in Spain, young voters assembled by text message the day before an election led to the defeat of the ruling party and the end of the country's participation in the Iraq War [42].

2.3 Influence of Social Media on the Egyptian Revolution

2.3.1 The Acceleration Effect

Nowadays what used to take a year to be created and implemented is possible in a few weeks. Businesses have changed the way their transactions are carried out due to five new technologies: business collaboration; social media; analytics; business mobility; and cloud computing. Scarce resources, time and information can now be used effectively [43].

According to Riyaad Minty, responsible for the social media services in Al Jazira, social media made it easier for reporters to find contacts, respond directly live and have discussions with journalists [35].

Stowe Boyd, social philosopher and blogger, observes that ideas spread more rapidly in densely connected social networks. Social media was a crucial speedy tool for empowering regular citizens to make their voices heard, and provided them with an opportunity to participate in a movement [32].

According to Duncan Watts, a principal research scientist at Yahoo! Research, social network can create an "instantaneous phase transition", a fast change that would have taken much longer without its use [38].

2.3.2 Source of Info for News Agencies

International politics has been radically shaped with the appearance of social media. Politicians or even presidential candidates have been constantly campaigning online to gather support. The political institution's pride has been overcome to break all the communication taboos. Unable to adapt, news media exclusivity has also been transgressed; internet has contributed to cheaper, less official forms of press releases. Media passively report on these posts; media's role is changing to restate already published stories posted online. The news release time has drastically decreased, as updates are instantly "Blackberried" to journalists. Big news agencies are setting up their own official blogs, with their journalists commenting on copied breaking news. News coverage is becoming the population's duty, instead of the reporters' on-site coverage [44].

Twitter has always become an important source of breaking news and live events, endorsed with photos and videos from on-the-ground witnesses. This can be attributed to Twitter's "early adopter period" when it first gained popularity in business settings and news outlets attracting primarily older users [45].

2.3.3 The Blockade

On January 25, protests started throughout Egypt. On January 26, the Egyptian government blocked internet access in most of the country when they realized the protestors were using social media to coordinate and organize the protest [1]. During the first two days of the demonstrations, Egypt blocked Twitter and then Facebook before forcing ISPs to shut down [46].

The Egyptian government blocked social media sites and even mobile phone networks. Despite the blockade, satellite channels like Al-Jazeera broadcasted live coverage minute by minute, getting updated reports from correspondents using landline connections [33].

Another reason for the failure of the blockade was that the protestors had already expected it from the government and were prepared for it. A Facebook event, set up days in advance, received tens of thousands of attendance confirmations and a Google document posted to a Facebook group collected email addresses of the group's members in case of a blockade. Many projects aimed to help the Egyptians in getting heard over phone lines onto the world wide web: Stop404.org, an Egyptian-Lebanese collective effort, offered a "live audio news bulletin from activists inside Egypt", while the Twitter account @jan25voices provided brief sound bites and text updates from phone calls back to the country. Global Voices was aggregating tweets and blog posts from still-connected Egyptians [46].

According to Wael Ghonim, "One of the strategic mistakes of [the Mubarak] regime was blocking Facebook. One of the reasons why they are no longer in power now is that they blocked Facebook. Why? Because they have told four million people that they are scared like hell from the revolution." [47].

3. HOW SOCIAL MEDIA FACILITATED THE 2011 EGYPTIAN REVOLUTION

In this section, the features that made social media an attractive tool for the Egyptian protestors will be discussed and analyzed.

3.1 Accessibility

One of the many reasons social media played an important role in the Egyptian Revolution, 2011 was its accessibility. The following factors make social media easily accessible:

3.1.1 Low Barriers to Entry

Social media accessibility is free of charge/licenses/affiliations; it is granted to everyone. Social media is the newest in a long line of information sharing innovations. Nonetheless, it is the most accessible and thus significantly impactful [38].

Free access to social media has democratized influence and control, to shift the power from authorities to regular citizens [49].

Social media is widely accessible uncontrolled media; the barriers to entry are almost nonexistent. These tools are truly revolutionary and have been used to support activists' key tasks: amassing support, communicating with like-minded people, and spreading the word [37].

The first barrier of entry to the social networking services is becoming a member of a social media website. These websites require reasonably small effort and time to get started. They have relatively simple sign up forms and it is pretty easy to find friends as well [50].

In order to become a member of a social media website, all that is needed is to add up some basic information to create a profile, and then search for contacts. Later, the online interaction will naturally increase the number of connections. Most social networking sites have their own jargon to describe actions on the site, and these are relatively easy to figure out, or a new user can check the "Frequently Asked Questions" section to find a definition [51].

To have a Facebook account, which is free, a user has to navigate to the "Sign Up" page, provide his/her name, gender and date of birth, a valid email address and a password. After the sign up form is completed, an email will be sent to the provided address. Clicking on the confirmation link will complete the process [13].

To sign up for Twitter and YouTube, which are also free, a similar process is performed [52 & 53].

In order to watch, embed and share YouTube videos, an internet user does not have to sign up for a YouTube account. All videos uploaded on YouTube can be viewed by the public. But a registered "YouTuber" can create his/her own videos, and comment on the videos posted on the YouTube page [23].

The second barrier of entry is adding people to one's network. In both Facebook and Twitter a user can search all users, not just friends of friends. The search is simple, and is done by typing in the quick search box, the name or/and email of the person [50].

Most of Facebook's features are based on the idea that users like to stay in touch with and connect with people in their lives. The Friend Finder application on Facebook automatically runs a check of the emails in one's address book finding those who currently have profiles on Facebook and suggests them as friends to the users. Additionally, Friend Finder prompts the user to invite his/her non-Facebook contacts to join the network [54].

On Twitter, one can browse a list of accounts related to his/her interests [55].

Once you become a member, you have to maintain the account. This includes updating and improving personal pages, searching for people that have joined, and adding them to friend lists [50]. The website administration also keeps asking additional security questions from time to time to improve the account security [56].

3.1.2 Low Communication Barriers

Social media has been useful in breaking the communication barriers that hinder transmission of a message. Whether it is a political campaign, a manufactured-product publicity campaign, or even an emergency-response service, now different industries are employing social media to their best advantage [48].

Since online interaction requires no interpersonal skills, the number of people socializing online is sharply increasing. People can treat each other as a bunch of online protocols. Communication becomes easier by transcending many codes of behavior; one can approach a complete stranger, he/she can discuss private issues with much less hesitation, disclosing even the most private secrets. Online users can engage in the hottest debates assertively to defend their views, what many cannot do in the real offline world. With a few clicks, they can cross out whomever they don't like. With less interaction barriers, they can get pretty communicative to express their outlook, and even attract supporters [57].

According to Helen Farrar, head of internal communications at Virgin Media, social media is moving "water cooler conversations" into the public arena, making it easier to understand people's messages and emotions. In summary, barriers of communication are fading. This is bringing dry topics to life, coordinating the work of people at different departments [58].

3.1.3 Easy to Use

Connecting on social media networks with family and friends is fairly simple. Most popular social media tools are easy to figure out, even without instruction manuals [59].

Technically, the usability of social media pages is uncomplicated:

1. Most social media websites have a straightforward user interface¹¹. They are simple in terms of design and colors, and are context-sensitive, displaying features only on demand. The aim is to keep a clear content, where conversations can take place smoothly [60].
2. Good usability requires good search functionality, and social media provides a soft multi-dimensional experience; apart from the traditional search, advanced search can be categorized by communities or interests, and even filtered from the most to the least relevant results [60].
3. This will allow users to join selective groups. Likewise people can meet those with common focus, and find out more about their topic of interest [60 & 61].
4. Call-to-action buttons are placed prominently, mostly like a real button to make it easily identifiable and motivational to be clicked. Sometimes icons or small illustrations are used as well [60]. The interface content is clearly readable, where content blocks are visually separated by colors or designs [60].
5. The sign-up-form is short with straightforward questions [60].
6. The interface provides real-time updates as soon as events occur by signaling with an eye-catching notice, to get the user's attention on any changes [60].
7. A member's interface is usually personalized and user-centered¹⁴; recommendations and suggestions are often provided, after learning about the user's interests, based upon his online activities. Additionally, social media facilitates "Word-of-Mouth Advertising"; members can easily invite friends to the network, and share links and videos, and thus spread the word in social circles. Moreover social media creates the "network effect", which is the effect the user of a service has on the value of that product to other people. Consequently, the accumulation of small network contributions can result in highly used applications [60].

Social media networks work by the actions of its users and are extremely user-centric. They provide required relevant information to the users, and offer a one-click-interface that makes it easy for them to manipulate their pages. It is a customized service that makes it attractive and easier to be used [60].

Since the social network applications are created for public, they are user-friendly, facilitating the interactive process of utilizing it [60].

3.1.4 Mobile Phone-enabled Technology

According to Facebook statistics, there are more than 200 million active users currently accessing Facebook through their mobile devices. People who use Facebook on their mobile devices are twice as active on Facebook as non-mobile users. Additionally, there are more than 200 mobile operators in 60 countries working to deploy and promote Facebook mobile products [62].

During protests in Egypt, Tahrir Square was teemed with mobile phones, graffiti, journalists, camera crews, etc. When some forms of media were blocked, others were still available to help the protestors. Mobile phones' cameras were used to record footage of manifestations. Later, pictures and movies were broadcasted and/or displayed online [33].

Popular social media sites such as Facebook can be accessed via mobile phones. These web-based social networks are extended to mobile access, through mobile browsers and Smartphone applications [63].

Facebook mobile products work on all phones with mobile web access. All that is required is to download via any mobile browser the free mobile application, and the user will enjoy navigating his/her page from his phone. Additionally, "Facebook Text Messages" services include updating "Status" and messaging friends, using mobile text messages. It also entitles receiving text messages with status updates, messages and "Wall" posts as they happen [64].

iPhone, Android, BlackBerry, Windows Phone7 and iPad carriers can easily download a free Twitter application via their mobile browser, and enjoy the Twitter mobile products. Another alternative applicable to any mobile phone is the Twitter via "SMS" service [65].

Mobile phones played a major part in organizing demonstration in Egypt, and that was the reason cellular network was blocked by the government. Autocratic regimes can no longer control information spread to monopolize their power [66].

During protests, Cairo streets were crowded by people taking pictures and videos from their cellular phones. As a result, cameras and mobiles phones were ripped from their hands, and even from the journalists' hands. [67]

Mobile phones appeared to be the most tangible technology during the revolution. Basically, text messages and calls were used to coordinate and communicate the protests. Beyond that, mobile phones allowed protestors to document the events by posting photos and videos. It enabled them to write history. [68].

3.1.5 Embedding Option

YouTube allows people to embed clips anywhere, from blogs, to social networking profiles, to the front page of popular websites. YouTube initiated this concept and it has become a driving force behind the collective 1 billion minutes users spend every day watching YouTube clips. It helps people and concepts "go viral". Many types of content can now be embedded including documents, music or maps. The embedding concept is one of the most important innovations in social media in this decade. YouTube is no longer dependent on any other social network to be successful. With the decline in popularity of MySpace, YouTube has become just as popular for sharing clips on Facebook, Twitter and other online communities [24].

Each YouTube video is accompanied by a piece of HTML, which can be used to embed it on a page outside the YouTube website. This function is often used to embed YouTube videos in social networking pages and blogs. Embedding can be disabled by the video owner. Embedding makes it very easy to share articles, photos and videos through several social media websites [23].

3.2 Credibility

3.2.1 Truth From Compelled Youngsters

Egypt's Facebook community is one of the youngest in the Middle East. 78% of Egypt's Facebook users are between the ages of 15-29 years and 22% users are above the age of 30 years [16 & 69].

Wael Ghonim, a 30 year old Egyptian, was chosen as the most influential personality of 2011 by Time Magazine [70]. Wael is a Google executive who is considered the mastermind of the Egyptian revolution. Ghonim started a group on Facebook "We are all Khaled Saeed" in memory of an Egyptian who was brutally killed by the Egyptian police. Using his Facebook page, he helped in organizing protests and motivating the youth to continue protesting against the government [71].

Ghonim was a marketer who branded the revolution and convinced people to trust it. Ghonim had great dislike for police violence and used his Facebook group to promote video clips and newspaper articles about police violence. He constantly kept on reminding people that they should continue to fight for their country. His page attracted hundreds of thousands of people and the idea of revolution took root in peoples' minds. He constantly interacted with the followers. When "day of silence" was planned in Cairo, he polled the users on the color of shirt they should wear. When the Tunisian Revolution ended, he used Facebook to organize a public protest. He asked 50,000 followers to pledge their support for the protest, but 100,000 protestors signed up. The revolution was pre-arranged just like the launch of a successful brand. Another benefit of using social media was that users from Tunisia and Serbia were able to share ideas and give advice to the Egyptian protestors, thus overcoming the geographical boundaries. The youngsters from Egypt and Tunisia shared different methods that could help in evading surveillance and shared tips on how to overcome any barriers posed by the police like rubber bullets. This helped in preparing the protestors beforehand for any barricades or tactics that might be used by the police to stop them. Social media helped the protestors stay one step ahead of the government and police during the revolution, thus giving them competitive advantage. When the government unblocked internet on February 1, 2011, the number of Facebook users increased by 100,000 [71].

3.2.2 Organic Uncensored Unedited Info

95% journalists working in Middle East use Facebook, Twitter and other social media websites mostly for staying in contact with family and friends. Only 35% journalists use social media as a source of news [14].

According to a research conducted by Pear Analytics in which they analyzed 2,000 tweets over a two-week period in August 2009 from 11:00 AM to 5:00 PM (CST), the tweets were divided into six different categories: 40% of the tweets consisted of pointless babble; 38% of the tweets were conversational; 9% were pass-along value; 6% were self-promotional; 4% were spam and 4% were news. Even though the percentage of tweets that shared news was low, most people who use social media sites like Facebook and Twitter share the everyday happenings in their status updates and Twitter usage typically increases whenever something important is happening. Thus the conversational tweets and those of pass-along value during such times mostly contain information about the latest developments [19].

Tweets and Facebook posts and YouTube videos served as transparent content for online users as well as cable news networks such as Al-Jazeera [32].

3.3 Instantaneous Updated Information Sharing

In his blog, Riyaad Minty, responsible for social media services in Al Jazira, affirms that the social networks helped Al-Jazira in staying "Updated". "Facebook and Twitter helped us foresee in advance, when and where future manifestations might happen", said Minty. "They also made it easy for us to find contacts to respond live and discuss the latest developments with journalists [35].

Social media helps in getting real-time information. According to Duncan Watts (researcher and a principal research scientist at Yahoo! Research), social network can create an “instantaneous phase transition”, a fast change that would have taken much longer without its use [38].

Social media keeps users informed with its constants location updates, live streaming videos and instant photo uploads [72].

It amazingly covered the Egyptian revolution by providing constant updates and immediate feedbacks, all in the form of action and reaction [73].

3.4 Multi-Dimensional Media

According to Facebook statistics, there are over 900 million objects that people interact with (pages, groups, events and community pages). An average user creates 90 pieces of content each month (web links, news stories, blog posts, notes, photo albums, etc.) [62]

3.4.1 Multi-Communication

The social media network includes a variety of interfaces that are interrelated and mostly complementary. Some of the different services provided by social media and the websites that provide them are given below:

1. Blogs¹⁵: Blogger, ExpressionEngine, LiveJournal, Open Diary, TypePad, Vox, WordPress, Xanga
2. Microblogging¹⁶: FMyLife, Foursquare, Jaiku, Plurk, Posterous, Tumblr, Twitter, Qaiku, Google Buzz, Identi.ca Nasza-Klasa.pl
3. Location-based social networks: Foursquare, Geoloqi, Gowalla, Facebook places, The Hotlist
4. Social networking: ASmallWorld, Bebo, Cyworld, Diaspora, Facebook, Hi5, Hyves, LinkedIn, MySpace, Ning, Orkut, Plaxo, Tagged, XING, IRC, Yammer
5. Events: Eventful, The Hotlist, Meetup.com, Upcoming
6. Information Aggregators: Netvibes, Twine (website)
7. Online Advocacy and Fundraising: Causes, Kickstarter [71]

3.4.2 Multimedia

The social media network is a multimedia tool that enables sharing:

1. Photography and art: deviantArt, Flickr, Photobucket, Picasa, SmugMug, Zoomr
2. Video: sevenload, Viddler, Vimeo, YouTube, Dailymotion, Metacafe, Nico Nico Douga, Openfilm
3. Livecasting: Justin.tv, Livestream, OpenCU, Skype, Stickam, Ustream, blip.tv, oovoo, Youtube
4. Music and audio: ccMixer, Pandora Radio, Spotify, Last.fm, MySpace Music, ReverbNation.com, ShareTheMusic, The Hype Machine, Groove Shark, SoundCloud, Bandcamp, Soundclick, imeem.
5. Presentation: scribd, SlideShare [71]



FIGURE 2: The VEN diagram of social media. [39]

3.5 Overcome the Social Differences and Physical Distances

The latest technology is erasing common communication barriers such as physical distance, overcoming isolation and transgressing privacy and even standards, by creating new ones [44].

As a student at Harvard, Mark Zuckerberg started Facebook in 2004, to get Ivy League students to easily identify and connect with each other. In other words, his purpose was to help people with similar interests and backgrounds find each other, stay connected and share news of mutual interests [75].

Social media helps in gathering real-time information, by facilitating the “weak ties”, that is, the physically distant and socially diverse relationships across the globe. The two revolutions (Ukrainian and Egyptians), both significantly shaped by internet usage, were peaceful, since both were socially driven, as opposed to those hierarchically driven. Socially driven revolutions are subject to views from different perspectives and social classes [38].

With Facebook and Twitter and the like, barriers between the political authority and the public have been lifted, to make it easier for the regular citizens to contribute and make their worries heard [76].

Even in companies, social media brings dry topics to life, coordinates the work of people at different places, and creates ties between people who usually do not find a need to interact in real life. At Asda Stores Ltd. a British supermarket chain, face-to-face communication between its 170,000 is combined with social media activities to provide bigger opportunities for sharing and working together. [58].

Social media seems to be narrowing the communication gap, to connect people of different ages, gender, ethnics, etc. [77].

The Egyptian mass movement of 25th January unified different groups to call for one goal. Groups were varied socially and politically including workers, bloggers, democracy campaigners, senior judges, and even the followers of different religions such as The Muslim Brotherhood and Coptic Christians. Diversified communication media, including the social media, were used to get the message across [32 & 33].

Coming from different sectors of society, Egyptian protestors at the forefront included young tech-savvy Egyptians, the Muslim Brotherhood, a UN former nuclear agent Mohamed El Baradei, businessmen, lawyers, academics, etc. The strength and cohesiveness of the first protests was stunning. They were scheduled to occur in several cities in addition to Cairo, and reached Alexandria, Nile Delta, Suez and Ismailiya [29].

3.6 Empowering Tool for Everyone

After being excluded from the political scene for a long time, the Arabic youth found in the new technology a means to make their voices heard around the globe. “Thanks to these new means of communication, the young are not spectators anymore, they have become news makers”, explains Joe Khalil. The online forums enabled the general public to challenge the monopolies of power in the country. Social media was a crucial speedy tool of empowering regular citizens, and provided them an opportunity to participate in a change [32]. Suddenly passive citizens stood up for their rights and defied authority [38].

In his article, Solaris (2009) writes: “As passive individuals, we are starting to experience a powerful validation and significance by the use of social media; we are becoming influential and active. The social revolution calls for distributed participation and resolution. Due to social media, regular people are empowered to engage, and if not, they are intentionally removing themselves from the radar screens of influencers and decision makers”. [49]

3.7 Cumulative Effect on Emotional Build-up

According to Gladwell, a Canadian writer for the New Yorker, social media could not be considered a necessity or a cause for a revolution to take place, but it does play a major role; it extends social networks and makes them more significant [76].

Social networks' main role is to spread information and coordinate actions. These modern networking theories came after the investigations into how crickets and Malaysian fireflies can synchronize their actions without a leadership structure. According to Brian Solis, a digital analyst and principal at Altimeter Group, the density of network, due to facilitated connections, was a major decisive factor in the events of Egypt [38].

The phenomenon of social media has redefined self-interest, by replacing the individualistic attitudes (Me First) with a collectivistic spirit (We First) [32].

In a 2007 story in the New York Times, a market research firm (Yankelovich) estimated that 30 years ago, an average person was exposed to about 2,000 messages a day, compared to about 5,000 today. The actual number varies depending on the sources, estimating that this can reach about 9,000 impressions daily. In fact, the proliferation of social media exposes us directly and indirectly to messages and impressions [49].

In their book *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives*, Nicholas Christakis and James Fowler discuss how relationships can be contagious. The fact that one's behavior and actions can impact a complete distant stranger through regular social transfer is quite interesting. The cumulative effect of this transfer increases with the use of social media networks [82].

A recent study conducted by Facebook data scientist, Adam D.I. Kramer, found that emotions are contagious. While psychologists have long known that people exposed to a person experiencing strong emotions may experience similar feelings, catching them through facial expressions, tones of voice or some other means, nowadays social media has become the means of transmission. In his study, Adam D.I. Kramer analyzed postings by about 1 million English speakers and their roughly 150 million friends in several countries to show that the words people use in their status updates influence the emotions of their online friends for days. It was found that people who use strong emotional words like "happy," "hug," "sick" and "vile" in their status updates ignite similar emotions in later Facebook postings by their friends [79].

Social media has helped spread cognitive dissonance connecting opinion leaders and activists to regular citizens, which quickly expanded the network of anti-regime protestors. According to Brian Solis, these social outlets increased the "density" of connections, which was the cause of "unity" among protestors. Similarly according to Stowe Boyd, "Ideas spread more rapidly in densely connected social networks. So tools that increase the density of social connection are instrumental to the changes that spread. And, more importantly, increased density of information flow (the number of times that people hear things) and of the emotional density (as individuals experience others' perceptions about events, or 'social contextualization') leads to an increased likelihood of radicalization: when people decide to join the revolution instead of watching it." To understand this density and its impact, three dimensions should be considered: vertical, horizontal, and the compounding effect of social media from one country to another [32].

1. Vertical Threshold: Relative to United States and Europe, social media has little penetration in the Arab world with its 21 million Facebook users. One of the triggers that started the revolution, was the Facebook page created in honor of Khaled Said. This page increased in popularity to reach around 470,000 'fans'. In parallel, the Youtube video showing Khaled Said being beaten by the police was viewed by more than 500,000 people which fueled further rage. As a result, low penetration of Facebook in the country was overcome by the vertical scaling through crucial Facebook pages such as Khaled Said's, Asmaa Mahfouz's (a 15-year old), and Wael Ghonim's (a Google executive).
2. Horizontal Expansion: Social media expanded the lines of protestors from young tech-savvy students to doctors, lawyers, judges, Christians, women, State TV personnel, and most importantly foreign supporters.

3. **Compounding Effect:** In different countries other than Egypt, social media played a crucial role in extending connections between people, thus increasing density, circulation and consequently rage buildups [32].

Through social media, the user's voice is amplified and transmitted in the form of online word of mouth; this happens due to several components:

1. The user talks to similar people (in terms of demographics, interests, etc.).
2. The user talks to many people at the same time.
3. The user is free to self-express his/her concerns, opinions [73].

Social media has a great power to influence through its inherent features and design. It has a considerable ability to create an impression and influence people from just one post on Facebook, Twitter or YouTube. In his book "Tribes", Seth Godin calls this phenomenon the age of leverage, and considers it a threatening one to the status quo.

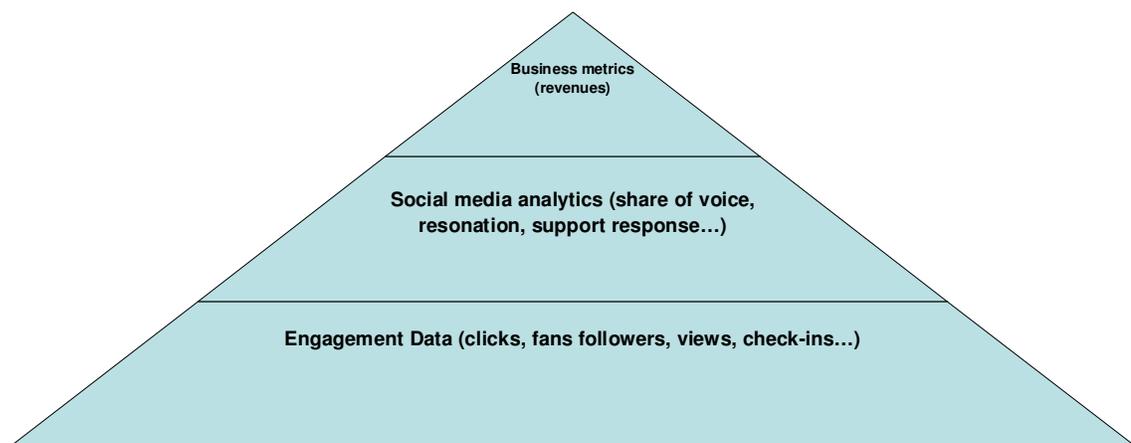


FIGURE 3: Social media ROI pyramid

3.8 Contagious Effect, Social Epidemics

In their book *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives*, Nicholas Christakis and James Fowler discuss how relationships can be contagious. Contact between individuals and their networks of people can either directly or indirectly influence their lives; they explain how common social epidemics are spreading fast, observing how obesity is contagious, the rich get richer, etc. Although we prefer to be at least in self-control, yet most of what we do, from what we eat to who we sleep with, and even the way we feel, is significantly influenced by those around us and those around them, and those around them. Our inter-related shared actions can affect beliefs and change behaviors of people we've never met. Similarities are increasing around the globe, with globalization internationalizing every fad, disseminating every contagion, unifying every market, and increasing challenges. Social networks are becoming the hub of diversity meetings. They harbor a flow of intense emotions that can be actively shared to touch hearts, shake feelings, shape perceptions and thus behaviors. The author suggests that our happiness is connected with the happiness of people three degrees removed from us; whether we're happy or not depends in part on our friends' friends' friends. [82]

In his book *The Tipping Point*, Malcolm Gladwell says that new fashion trends, increase and decrease in crime rate, the transformation of unknown books into bestsellers, increase in teenage smoking or the phenomena of word of mouth are all examples of social epidemics. According to Malcolm Gladwell, three characteristics; contagiousness, the fact that little causes can have big effects; and that change happens not gradually but at one dramatic moment – are the principles that define how epidemics spread. But the third is the most important because it is the principle that provides insight into the way modern change happens. Epidemics are an example of geometric progression: when a virus spreads through a population, it doubles and

doubles again, until it has (figuratively) grown from a single sheet of paper all the way to the sun in fifty steps. According to Malcolm, epidemics tip because of the astonishing efforts of a few carriers or when the epidemic agent is transformed. In order to make sure a message is not ignored, it is very important to ensure that it makes an impact and sticks in the memory of people. There are methods of making a contagious message memorable by making small changes in the presentation and composition of information that can make it stick. Epidemics are strongly influenced by their situation, by the circumstances and conditions and particulars of the environments in which they operate [83].

3.9 Uncontrollable Flow of Information

In the age of internet, global transactions at different levels can be executed through online messaging; from raising money in Moscow, to having scoop stories appear in The Guardian. Since most of the information is outsourced, it is not possible to control what is said online, which gives space to oppositions to self-express freely [44].

Although the Egyptian security forces set up a special unit to monitor internet activists, it was impossible to track the vast numbers of online users. Shared connections could be accessed everywhere [33].

Twitter was positioned by its founder as a news-bearing medium which was obvious during the Egyptian protests; Twitter flooded with links, images and information about the crisis. Despite the internet blockade in Egypt, news, images and videos continued to spread around Twitter [85].

In an attempt to squash the protests, Mubarak blocked the internet access on the 28 of January 2011. Despite this blockade, obviously some Egyptians were still able to access the net through workarounds. Below is the Twitter timeline during the crisis. During the shutdown, people tweeting by less than half in comparison to their normal rate, are colored by red. (Some nodes have been removed due to a lack of data). Although the shutdown affected a huge part of the Egyptian network, yet those affected regions remained dense due to active nodes; in fact many Egyptians were still connected to people who had the internet access [86].

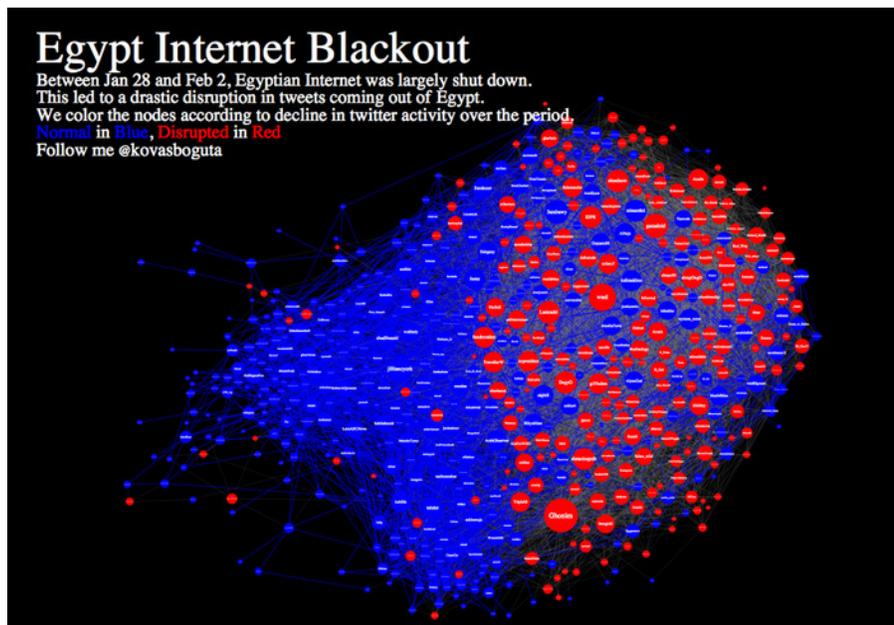


FIGURE 4: Egypt Internet Blackout

The following diagram shows every single tweet from the network in Figure 4 from January 24 to February 3. Each node in the network corresponds to a row of tweets. Obviously there is a significant chute on the 28th, the first day of the blockade. However, many were still finding a

way to tweet a little. The blockade did not prove completely successful. During that same period, notably a significant rush in tweets from the blue nodes occurred, showing the sense of urgency the shutdown created [86].

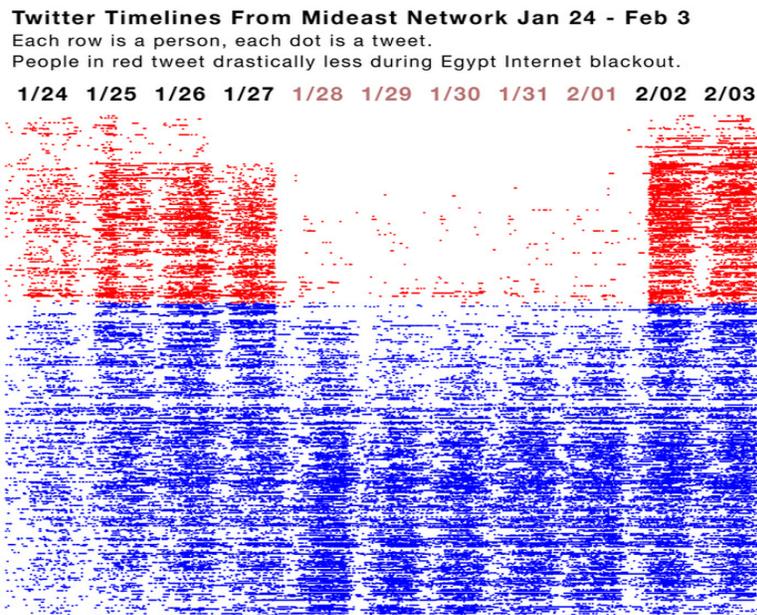


FIGURE 5: Twitter Timelines

4. RELATED WORK

The 2011 Egyptian Revolution gained a lot of attention regarding its effectiveness and the speed with which it succeeded. It has been termed “Facebook ” or “Twitter” revolution by many people. There are skeptics who do not believe that social media played a major role in the revolution. According to Navid Hassanpour, the biggest factor that fuelled the Egyptian revolution was the internet shutdowns by the government. According to Hassanpour, after the shutdowns, the movement intensified and spread to more parts of the population [87]. According to Zack Brisson, social networking is an important force in some parts of the Egyptian society. People under 35, middle-class and above mostly use it as a source of news and information. The most popular social networking platform is Facebook [88]. Malcolm Gladwell says that revolutions took place before the social media and social media did not play any significant role in the 2011 Egyptian revolution [89].

5. CONCLUSION

Social media has become an integral part of today’s political culture. It helps minorities and youngsters in making their views heard. Even politicians now use social media to gather support and interact with their supporters. The popularity of social media is increasing at a very fast pace among the youth. One of the reasons is its easy accessibility and user-friendly features. Social media is freely accessible, which makes it very attractive for the youth and the general public who use social media websites in order to interact with their friends and relatives, and also to stay updated as to the current happenings. Instead of ignoring the role social media can play in social and political movements, the focus should be on how to use social media to its best advantage.

Social media played an important role in many social movements, but its main purpose has been to facilitate in organizing movements and holding discussions. Social media itself cannot be termed as a trigger for the revolutions. In the 2011 Egyptian Revolution, social media’s main role was as a facilitator and an accelerating agent. Social media helped the Egyptian youth in holding online discussions and meetings, organizing protests and staying updated. The increase in the number of social media users and the increasing traffic on social media

websites shows that social media played an important role during the revolution. Even when the Egyptian Government blocked social media and later, internet access, it wasn't possible to completely control the flow of information to the outside world as numerous workarounds occurred. Social media became an invaluable tool for the protesters as it helped them in coordinating and later, sharing the latest events with the outside world.

Social media is considered a credible source of news and updates. This might be because most of the news and updates come straight from the eye witnesses and are uncensored and unedited. Traditional media is also utilizing social media sources in order to gather and share the latest updates and live events.

Although the actual numbers of social media users in Egypt was small, the majority who was connected to social media was politically active and influential enough to gather the support of a large number of people. If used properly (as witnessed in Egypt), social media can help in converting a popular trend or movement into a social epidemic (or "going viral"), thus accelerating its growth at a much faster pace.

6. RECOMMENDATIONS FOR FUTURE WORK

We have the following recommendations for future work:

1. A comparative study of the several uprisings in the Arab Spring 2011 can be conducted in order to find similarities and differences.
2. It can be compared to other revolutions (like Tunisia) in order to identify the factors due to which the Egyptian Revolution succeeded in overthrowing the government in a very short time period.
3. A time-series analysis can be conducted in order to compare the recent social media revolutions with some of the successful revolutions in the past.

7. REFERENCES

- [1] C. Kanalley. "Egypt Revolution 2011: A Complete Guide To The Unrest" Internet: www.huffingtonpost.com/2011/01/30/egypt-revolution-2011_n_816026.html, April 1, 2011 [June 5, 2011]
- [2] "2011 Egyptian revolution." Internet: www.wikipedia.org/wiki/2011_Egyptian_revolution, July 30, 2011 [June 10, 2011].
- [3] "Arab Spring" Internet: www.wikipedia.org/wiki/Arab_Spring, July 31, 2011 [June 7, 2011].
- [4] "Social media" Internet: www.wikipedia.org/wiki/Social_media, July 11, 2011 [June 15, 2011].
- [5] "Human impact of Internet use" Internet: www.wikipedia.org/wiki/Human_impact_of_Internet_use#Internet_and_political_revolutions, July 29, 2011 [June 20, 2011].
- [6] "Internet is double-edged sword in Arab revolts: Amnesty" Internet: <http://arabia.msn.com/News/MiddleEast/AFP/2011/May/5547543.aspx?region=all>.http, May 13, 2011 [May 20, 2011]
- [7] "Revolution" Internet: www.wordnetweb.princeton.edu/perl/webwn?s=revolution [May 25, 2011].
- [8] D. Nations. "What is Social Media?What are Social Media Sites?" Internet: www.webtrends.about.com/od/web20/a/social-media.htm, [June 20, 2011].
- [9] "Facebook" Internet : www.wikipedia.org/wiki/Facebook, July 28, 2011 [June 15, 2011].
- [10] S. Jain. "40 Most Popular Social Networking Sites of the World" Internet: www.socialmediatoday.com/soravjain/195917/40-most-popular-social-networking-sites-world, October 6, 2010 [June 14, 2011].

- [11] "Facebook is globally closing in to 700 million users!" Internet: www.socialbakers.com/blog/171-facebook-is-globally-closing-in-to-700-million-users/, May 30, 2011 [June 3, 2011].
- [12] "Facebook" Internet: www.socialmediastatistics.wikidot.com/facebook, [April 15, 2011].
- [13] "Facebook Help Centre" Internet: www.facebook.com/help/?page=768, [June 2, 2011].
- [14] "Credibility of social media" Internet: www.newzglobe.com/article/20110516/credibility-social-media, May 16, 2011 [June 3, 2011].
- [15] "Egypt Facebook Statistics" Internet: www.socialbakers.com/facebook-statistics/egypt, [July 28, 2011].
- [16] T. Seksek. "Facebook statistics in the MENA region" Internet: www.interactiveme.com/index.php/2011/02/facebook-statistics-in-the-mena-region, February 16, 2011 [May 5, 2011].
- [17] "Egypt sees highest increase in Facebook users in Arab world, says report" Internet: www.thedailynewsegypt.com/egypt-sees-highest-increase-in-facebook-users-in-arab-world-says-report.html, June 9, 2011 [July 15, 2011].
- [18] T. de Kerros. "Why Egypt Could be the Technology Story of the Decade" Internet: www.theentrepreneurialist.net/2011/01/17/why-egypt-could-be-the-technology-story-of-the-decade, January 17, 2011 [March 27, 2011].
- [19] "Twitter" Internet: www.wikipedia.org/wiki/Twitter, July 27, 2011 [July 15, 2011].
- [20] "About Twitter Limits (Update, API, DM, and Following)" Internet: www.support.twitter.com/entries/15364-about-twitter-limits-update-api-dm-and-following, [July 22, 2011].
- [21] T. Seksek. "Twitter Usage in the MENA region" Internet: www.interactiveme.com/index.php/2011/06/twitter-usage-in-the-mena-middle-east, June 8, 2011 [July 4, 2011].
- [22] "Study: 63% of demonstrators during in the Egyptian Revolution Used the internet as the only news source" Internet: www.arabcrunch.com/2011/07/first-report-about-the-internet-and-the-revolution-in-egypt.html, July 5, 2011 [July 18, 2011].
- [23] "YouTube" Internet: www.wikipedia.org/wiki/YouTube, July 27, 2011 [July 20, 2011].
- [24] A. Ostrow. "YouTube Is the Top Social Media Innovation of the Decade" Internet: www.mashable.com/2009/12/22/youtube-2010, December 22, 2009 [June 2, 2011].
- [25] "A significant increase in the number of Internet users in Egypt after the January Uprising 19th March, 2011" Internet: www.mymobimobi.com/en-lang/viewNews/62, March 19, 2011 [July 14, 2011].
- [26] "The World Factbook, Egypt" Internet: www.cia.gov/library/publications/the-world-factbook/geos/eg.html, July 5, 2011 [July 12, 2011].
- [27] "Population pyramid" Internet : www.wikipedia.org/wiki/Population_pyramid, [July 23, 2011].
- [28] M. Almond. "How revolutions happen: Patterns from Iran to Egypt" Internet: www.bbc.co.uk/news/world-middle-east-12431231, February 14, 2011 [March 16, 2011].

- [29] M. Asser. "Q&A: Egyptian protests against Hosni Mubarak." Internet: <http://www.bbc.co.uk/news/world-middle-east-12324664>, February 11, 2011 [March 16, 2011].
- [30] D. Schechter. "The hidden roots of Egypt's despair" Internet: www.english.aljazeera.net/indepth/opinion/2011/01/201113113211680738, January 31, 2011 [March 25, 2011].
- [31] N. Baumann and S. Mahanta. "What's Happening in Egypt Explained" Internet: www.motherjones.com/mojo/2011/01/whats-happening-egypt-explained, February 23, 2011 [March 25, 2011].
- [32] S. Mainwaring. "Exactly What Role Did Social Media Play in the Egyptian Revolution?" Internet: www.fastcompany.com/1727466/exactly-what-role-did-social-media-play-in-the-egyptian-revolution.html, February 14, 2011 [March 16, 2011].
- [33] A. Alexander. "Internet role in Egypt's protests" Internet: www.bbc.co.uk/news/world-middle-east-12400319, February 9, 2011 [March 16, 2011].
- [34] http://www.lorientlejour.com/category/Dossier+Proche-Orient/article/692416/Les_nouvelles_technologies%2C__outil_du_revolutionnaire_arabe.html
- [35] R. Minty. (blog) Internet: www.twitter.com/#!/riy/status/31770006161195008, [April 14, 2011].
- [36] "Did social media create Egypt's revolution?" Internet: www.bbc.co.uk/news/world-middle-east-12435550, February 11, 2011 [March 16, 2011].
- [37] C. McCarthy. "There's no such thing as 'social media revolution'." Internet: http://news.cnet.com/8301-13577_3-20029519-36.html#ixzz1Ku8MdLUK.html, January 26, 2011 [March 16, 2011].
- [38] Greg. "Social Media and Revolution: Internet: www.digitaltonto.com/2011/social-media-and-revolution, February 9, 2011 [March 16, 2011].
- [39] A. Malone. "Egyptian names daughter 'Facebook' to commemorate social media's role in Egyptian revolution." Internet: www.digitaltrends.com/computing/egyptian-names-daughter-facebook-to-commemorate-social-medias-role-in-egyptian-revolution, February 21, 2011 [March 16, 2011].
- [40] "Free Tunisia Culture Jam explores the Jasmine Revolution" Internet: www.levantinecenter.org/event/free-tunisia-culture-jam-explores-jasmine-revolution, February 14, 2011 [July 29, 2011].
- [41] P. Feuilherade. "Facebook Use Soars in Arab World" Internet: <http://technorati.com/politics/article/facebook-use-soars-in-arab-world>, February 08, 2011 [July 25, 2011].
- [42] S. L. Suarez "Social Media and Regime Change in Egypt" Internet: www.campaignsandelections.com/publications/campaign-election/2011/march-2011/Social-Media-and-Regime-Change-in-Egypt, March 16, 2011 [May 1, 2011].
- [43] M. Smith. "The Business Technology Revolution in 2011" Internet: <http://marksmith.ventanaresearch.com/2011/02/18/the-business-technology-revolution-in-2011>, February 18, 2011 [March 16, 2011].

- [44] D. Greenfield. "How the Internet Destroyed American Politics" Internet: www.statebrief.com/briefblog/2010/12/09/how-the-internet-destroyed-american-politics, December 9, 2010 [March 16, 2011].
- [45] M. Lynch. "Will the Arab revolutions spread?" Internet: http://lynch.foreignpolicy.com/posts/2011/01/26/will_the_arab_revolutions_spread January 26, 2011 [March 16, 2011].
- [46] J. York. "The future of Egypt's internet" Internet: <http://english.aljazeera.net/indepth/opinion/2011/02/20112174317974677>, February 1, 2011 [June 3, 2011].
- [47] D. M. Scott. "Blocking Facebook and Corporate Regime Change" Internet: www.webinknow.com/2011/02/blocking-facebook-and-corporate-regime-change, February 15, 2011 [March 27, 2011].
- [48] "Social Media – Unique Uses to Break Down Walls of B2C Communication" Internet: <http://www.chispamarketing.com/social-media-unique-uses-to-break-down-walls-of-b2c-communication/>
- [49] B. Solaris. "The Social Media (R)evolution: Your Time is Now." Internet: www.briansolis.com/2009/11/revolution-your-time-is-now, November 20, 2009 [March 16, 2011].
- [50] C. Allen. "Evaluating Social Network Services". Internet: http://www.lifewithalacrity.com/2003/12/evaluating_soci.html, Dec. 16, 2003 [May 19, 2011].
- [51] "Social Networking: Cast Your Social Net on the Web" Internet: http://www.findingdulcinea.com/guides/Technology/Internet/Social-Networking.pg_0.html, [May 19, 2011].
- [52] "How To Sign Up on Twitter: how to create an account". Internet: <http://support.twitter.com/groups/31-twitter-basics/topics/104-welcome-to-twitter-support/articles/100990-how-to-sign-up-on-twitter>, [May 19, 2011].
- [53] "Sign up for a YouTube Account". Internet: <http://www.google.com/support/youtube/bin/answer.py?answer=161805&safe=active>, [May 19, 2011].
- [54] "Make Facebook useful: Find your friends ". Internet: <https://www.facebook.com/help/?guide>, [May 19, 2011].
- [55] "How To Find People on Twitter: Twitter Search!". Internet: <http://support.twitter.com/entries/14022-how-to-find-people-on-twitter-twitter-search>, [May 19, 2011].
- [56] "Facebook" Internet:www.facebook.com, [June 4, 2011].
- [57] B. Zain. "Do online social networking sites both help and damage communication skills?" Internet: <http://thereasoner.com/articles/thought-are-online-social-networking-sites-destroying-the-offline-socializing-skills-of-people>, August 9, 2007 [March 16, 2011].
- [58] J. Ingham. "Social media at work: breaking down barriers to communication." Internet: www.personneltoday.com/articles/2010/03/18/54886/social-media-at-work-breaking-down-barriers-to-communication.html, March 18, 2010 [March 16, 2011].
- [59] L. Brauner. "Why Aren't Social Networking Sites Easy to Use?". Internet: <http://online-social-networking.com/are-social-networking-sites-easy-to-use>, 2009 [May 19, 2011].

- [60] M. Cronin. "Crucial UI Features of Social Media and Networking Sites". Internet: <http://www.smashingmagazine.com/2009/06/03/9-crucial-ui-features-of-social-media-and-networking-sites/>, Jun. 3, 2009 [May 19, 2011].
- [61] D. Nations. "Social Networking Guide for Beginners - Social Networking Help". Internet: http://webtrends.about.com/od/socialnetworking/a/socialnetwork_b.htm, [May 19, 2011].
- [62] "Activity on Facebook Users Facts from Facebook" Internet: <http://www.facebook.com/press/info.php?statistics>, [June 2, 2011].
- [63] "Mobile Social Network" Internet: http://en.wikipedia.org/wiki/Mobile_social_network, July 30, 2011 [May 19, 2011].
- [64] "More Facebook Mobile Products". Internet: <https://www.facebook.com/mobile/>, [May 19, 2011].
- [65] "Take Twitter with you". Internet: <http://twitter.com/#!/download>, [May 19, 2011].
- [66] J. Cashman. "Sparking the Egyptian Revolution via Mobile". Internet: <http://www.jagtag.com/blog/sparking-egyptian-revolution-mobile>, Feb. 2, 2011 [May 19, 2011].
- [67] " Mobile phone cameras capture protest moments - #Jan25 Egypt Revolution ". Internet: <http://www.flickr.com/photos/sierragoddess/5435989568/>, Feb. 10, 2011 [May 19, 2011].
- [68] "Egypt: not a social media revolution". Internet: http://www.quirksmode.org/blog/archives/2011/01/egypt_not_a_soc.html, [May 19, 2011].
- [69] C. Malin. "15 Million MENA Facebook Users – Report" Internet : <http://www.spotonpr.com/mena-facebook-demographics>, May 24, 2010 [March 25, 2011].
- [70] "Wael Ghonim - A 30 year man behind Egypt Revolution...becomes a most Influential Personality of 2011(Time Magazine)!" Internet: www.facebook.com/notes/media-mug-international/wael-ghonim-a-30-year-man-behind-egypt-revolutionbecomes-a-most-influential-pers/202219329823027, May 22, 2011 [May 30, 2011].
- [71] M. Schaefer. "How Social Media Turned a Brand Into a Revolution" Internet: <http://www.businessesgrow.com/2011/02/27/how-social-media-turned-a-brand-into-a-revolution>, Feb 27, 2011 [June 5, 2011].
- [72] Suebob. "You may find this hard to believe, but I am an introvert. I have a "role" to play, but I fundamentally am a loner". Internet: <http://mashable.com/2008/08/15/irony-alert-social-media-introverts/>, Aug. 10, 2008 [May 22, 2011].
- [73] O. Shaaban. "Social media sparking the Egyptian revolution in 2011". Internet: <http://www.slideshare.net/interactspa/social-media-sparking-the-egyptian-revolution-in-2011-7042873>, March, 2011 [May 26, 2011].
- [74] "Social Media". Internet: http://en.wikipedia.org/wiki/Social_media#Communication, Dec. 16, 2003 [May 19, 2011].
- [75] C. McCall. "How Social Networking is Single-Handedly Destroying Communication." Internet: <http://drmccall.wordpress.com/2010/08/29/how-social-media-is-single-handedly-destroying-communication/>, August 29, 2010 [March 16, 2011].
- [76] M. Gladwell. "Why the revolution will not be tweeted." Internet: http://www.newyorker.com/reporting/2010/10/04/101004fa_fact_gladwell#ixzz1Kuj92Q82.html October 4, 2010 [March 16, 2011].

- [77] S. Grout. "Break Barriers Using Social Networking - Reach Different Generations." Internet: <http://ezinearticles.com/?Break-Barriers-Using-Social-Networking---Reach-Different-Generations&id=5801761.html>, December 13, 2010 [March 16, 2011].
- [78] J. Kasteler. "How Social Media is Influencing Your Behavior." Internet: <http://searchengineland.com/how-social-media-is-influencing-your-behavior-40615>, May 4, 2010 [March 16, 2011].
- [79] M. Swift. "Facebook spreads emotions among friends" Internet: www.mercurynews.com/business/ci_18183052?IADID=Search-www.mercurynews.com-www.mercurynews.com&ncklick_check=1, June 6, 2011 [June 10, 2011].
- [80] Jeff Bullas. "5 Case Studies Of Social Media's Viral Power". Internet: <http://www.jeffbullas.com/2010/05/10/5-case-studies-of-social-medias-viral-power/>, [May 26, 2011].
- [81] A. Panisson "The Egyptian Revolution on Twitter", Internet: <http://gephi.org/2011/the-egyptian-revolution-on-twitter/>, Feb. 15, 2011 [May 27, 2011].
- [82] N. Christakis and J. Fowler. "Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives." London, UK: Little, Brown and Company, 2009.
- [83] M. Gladwell. The Tipping Point. London, UK : Little, Brown and Company, 2000, pp. 7-75.
- [84] B. Warner. "Breaking the rules, one life-saving Tweet at a time." Internet: <http://socialmediainfluence.com/2010/03/31/breaking-the-rules-one-life-saving-tweet-at-a-time>, March 31, 2010 [April 16, 2011].
- [85] J. O'Dell. "How Egyptians Used Twitter During the January Crisis". Internet: <http://mashable.com/2011/02/01/egypt-twitter-infographic/> Feb. 1, 2011 [May 26, 2011].
- [86] K. Boguta. "What Happened When Mubarak Shut off Egypt's Internet". Internet: <http://www.kovasboguta.com>, Feb. 21, 2011 [May 27, 2011].
- [87] Kat Asharya. "Internet Shutdowns Fueled Egyptian Revolution, Not Social Media." Internet: <http://www.mobiledia.com/news/105219.html> Aug 29, 2011 [September 15, 2011].
- [88] Zack Brisson. "The Role of Technology in the Egyptian Revolution." Internet: <http://thereboot.org/blog/2011/03/18/the-role-of-technology-in-the-egyptian-revolution/> March 18, 2011 [September 16, 2011].
- [89] Annie Paul. "Egypt, Gladwell and the Social Revolution." Internet: <http://anniepaulose.wordpress.com/2011/02/06/egypt-gladwell-and-the-social-revolution/> February 6, 2011 [September 15, 2011].

8. LIST OF ABBREVIATIONS

- 1-AFP: French news agency
- 2- The Republican Party nominee for Vice President
- 3- Swiss Pharma: A leading pharmaceuticals company in the area of Healthcare.
- 4- MTV Video Music Award (commonly abbreviated as a VMA), is an award presented by the cable channel MTV to honor the best in music videos.
- 5- PayPal is a Web-based application for the secure transfer of funds between member accounts.
- 6- GB (gigabyte) is a multiple of the unit byte for digital information storage. 1 gigabyte = 1000000000 bytes.
- 7- Java is a programming language that derives much of its syntax from C and C++ but has a simpler object model and fewer low-level facilities.

8- YouTube's Advanced Uploader helps users reliably upload large files to the site (up to 20GB). By using Java on the client side, the file is transmitted in chunks ensuring each piece of the file is received before sending the next.

9- Cable News Network (CNN) is a U.S. cable news channel founded in 1980 by Ted Turner.

10- The New York Times is an American daily newspaper founded, and continuously published in New York City, since 1851.

11- User interface describes the way people interact with a site and the way users can access its functions.

12&13- It is a location-based social networking website based on software for mobile devices.

14- User-centered design (UCD) is a design philosophy and a process in which the needs, wants, and limitations of end users of a product are given extensive attention at each stage of the design process.

15- A blog is a type of website or part of a website. Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse-chronological order.

16- Microblogging is another type of blogging, featuring very short posts.

17- Hashtag symbolized by #, is used to mark keywords or topics in a Tweet. It was created organically by Twitter users as a way to categorize messages.