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Convergence and divergence of ICTs in Egyptian newsrooms: A longitudinal approach

ABSTRACT

The convergence of information communication technologies (ICTs) in news-making processes has changed the nature of news production in post-Arab Spring Egypt. Several newsrooms have integrated ICTs into their daily routines to develop their content and reconnect with their audiences. Although on the surface this seems a positive development, it appears that today, just a few years after integrating ICTs, Egyptian newsrooms are lagging behind. This study examines the utilization of ICTs – especially social media – in three Egyptian newsrooms. Three waves of questionnaires in 2012, 2014/2015 and 2018 which constitute a longitudinal survey of ICT convergence across the three newsrooms. The questionnaires' repetition of cross-sectional questions allowed the author to measure changes in newsrooms' adoption of ICTs over this seven-year span. In short, this study measures how newsroom culture has changed in relation to ICTs, how newsroom management views ICTs and the growing role of social media in newsroom operations.

INTRODUCTION

Information technologies were a pillar of the Arab Spring uprisings. In Egypt, activists used social media platforms such as Facebook and Twitter to organize protests and share thousands of news articles, tweets, videos and images documenting the brutality of the Hosni Mubarak regime (Bhuiyan 2011). Meanwhile traditional newspaper coverage was divided between state-owned outlets and independent or opposition party newspapers. Independent newspapers such as *Al Masry Al Youm* and *Al Dostor* were instrumental in increasing citizens' awareness. During the revolution, they amplified social media content showing the regime's faults and vulnerabilities (Kamel 2014). By contrast, state-owned media like *Al Ahram* functioned as propaganda outlets presenting Mubarak as a wise leader who was working to protect both the state and protestors during this turmoil (Abdallah 2014).

Online discussions in Egypt were intensively active after the 2011 revolution. Citizens began to cluster into groups, each with its own agenda, to foster several scenarios for the coming process of democratization (El Gody 2018). In few months, new forms of interactive media started to develop, compensating for the fragility of official political channels (Hofheinz 2009; Radsch 2016). Social media platforms became a playground for new and old political parties, activists and various ideological groups, creating 'online spaces of flows' to cater to the emerging needs of the readers (El Gody 2012: 146; Radsch 2016). Political parties/actors began creating news portals to attract these online communities in order to have them interact with each other's ideas and with the idea of news portals in general (El Gody 2020). In short, the 2011 revolution created a version of a virtual, knowledge-networked, communitarian society which was clustered around different ideologies (Fahmy 2010; Ayish 2018).

As the popularity of social media news websites/accounts such as *Rasd* and *Ten Minutes News* grew, more Egyptians went online for more immediate news coverage and information. Citizens started using these interactive features to fill the void created by traditional newspapers' ignorance. There, they asked questions, offered comments, stated their opinions, engaged in political debates and communicated with other readers (El Bendary 2013). News on social media became an alternative urban hub and acted as an interface between events in the streets and the society; it thereby facilitated a sense of networked community connecting the real and the virtual worlds (Radsch 2016).

Before the uprisings, such interactivity was a long way off in Egyptian mainstream journalism (Murphy 2011). Ghanem (2016), stated that while journalists pretended to know their audience and to generate 'institutional knowledge', they were not utilizing information communication technologies (ICTs) to address citizens' needs or include citizens in news and political discussions. Since 2011, the Egyptian public has demanded a more independent and free media which not only connects with the public but also works with the public towards a sustainable democracy (El Bendary 2013). As the Egyptian public has become more active in news production processes (Heinrich 2012; El Gody 2013), the task for journalism organizations now is to figure out how to include interactive content in audience everyday information nodes. To salvage their existence, the newspaper industry needs to adapt to the new networked society which has emerged based on converging ICTs – primarily by incorporating social media into news-making processes. This required a new form of journalism to develop based on this increased connectivity and interactivity.

NETWORK JOURNALISM AND NEWS PRODUCTION IN EGYPTIAN NEWSROOMS

Marconi (2020) discussed how the future of newsrooms depends on investment in both human and technology capital. This discussion echoes Lee and Tandock Jr (2017) discussion on how news production changed with the emergence of ICTs, especially the adoption of social media in journalism processes. Social media offers news organizations the opportunity to develop new types of journalism which help them connect and interact with their audiences.

Social media convergence is seen as an on-going journalistic process 'occurring at various intersections of media technologies, industries, content and audiences' (Kolodzy 2012: 4). The convergence of social media and newsroom operations can be understood as journalists curating a pool of content (see Figure 1) and disseminating it across a variety of social media platforms, rather than publishing stories in a single medium (Quandt and Singer 2009; Lesitaokana and Akpabio 2014). Journalists must therefore learn to communicate and interact effectively with ICTs – for this reason, various journalists and organizations which had previously operated in separate spheres (e.g., television, radio, newspapers, etc.) have converged to social media to provide news content in many formats (Lesitaokana and Akpabio 2014). Convergence affects how journalists execute and conceptualize their jobs and roles within society (Salvatore 2013), in part because the emergence of ICTs makes various stakeholders in news-making processes more integrated and interactive (Bruns 2005; Thorsen and Allan 2014). Convergence is, therefore, a type of cross-newsroom cooperation which allows news organizations to cover more
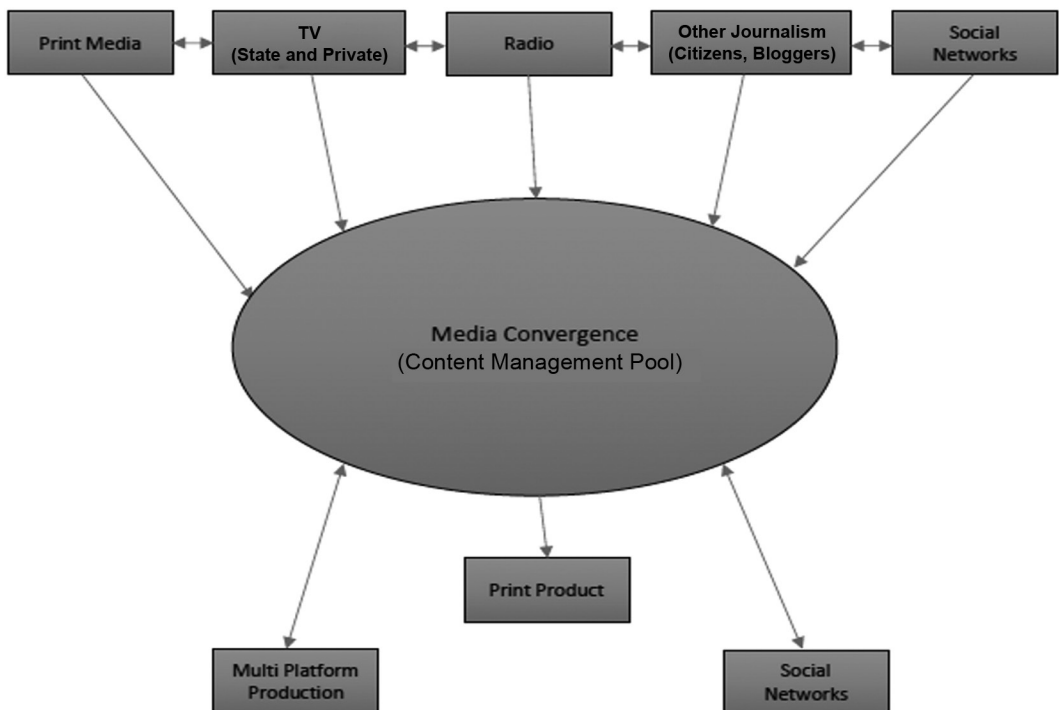

Figure 1: The operation of a newsroom's content pool (adapted from Quandt and Singer 2009).

ground by dividing reporting among different media (Kolodzy 2014; García-Avilés et al. 2014).

Steensen (2018) outlines integration, immediacy and interactivity as the most essential features of converged journalism. Immediacy is the idea of getting something of interest to an audience as swiftly as possible. Interactivity offers open channels for readers to interact with journalists, sources and politicians. The new, emergent model of communication prizes interactivity by allowing readers to provide feedback and participate in news-making processes in various ways (Bowman and Willis 2003). The development of online networks ultimately engendered a new form of journalism: network journalism.

This study is theoretically grounded on this notion. Deuze and Witschge (2018) see that the task for journalism organizations now is to figure out how to include their traditional and alternative content in audience everyday information nodes. Journalists today are expected to 'reskill, deskill, and upskill their practices and working routines' and move beyond the borders of newsrooms to meet the audience and other multitude of actors that contribute to the making of the news, consequently creating a conscious sense of how to reach to citizens and listen to them as well as enabling them to listen back and to each other.

In Egypt, ICTs created spaces for public deliberation in a networked public sphere. Many banned groups seized upon this new avenue of communication, and issues that had been considered resolved were discussed again. Salvatore (2013) examined the role of ICTs in promoting a democratic public sphere. Discussing Egypt, he argues that new media liberalized the Egyptian public and allowed them to actively participate in the political process. Social media offered Egyptians a space which was separate from the tightly monitored and censored media and political climate which had been cultivated by the Mubarak regime. However, when one turns to newspapers, Egypt's integration and development of ICTs appear more modest. A study of Egyptian newspapers showed that Egyptian newspapers do not provide any additional services to readers beyond replicating their paper online (El Gody 2000, 2013).

Considering the above discussion, this study examines the utilization of ICTs –especially social media – in three Egyptian newsrooms: *Al Ahram*, *Al Masry Al Youm* and *Al Watan.* The study examines journalists' use of ICTs in news production and the extent to which journalists integrate new media technologies in their daily routines. This study also aims to investigate the extent to which Egyptian journalists and news organizations use these technologies to interact with their audiences. In short, this study poses the following questions. First, what roles do ICTs play in Egyptian newsrooms' news-making processes? Second, what elements of ICTs are adopted and utilized inside Egyptian newsrooms? Third, what are the potentials and problems for convergence and interactivity regarding the utilization of ICTs inside Egyptian newsrooms?

RESEARCH METHODOLOGY AND SAMPLE

This study integrated a quantitative longitudinal survey and qualitative semi-structured interviews. The quantitative surveys offer a broad look at journalists' attitudes towards the use of ICTs. The survey consisted of three cycles of questionnaires conducted in July 2012, December 2014 and January 2015, and August 2018, and aimed to monitor both ICT diffusion in Egyptian news

organizations and the use of ICTs and social media inside Egyptian news-rooms. By using a longitudinal questionnaire, I was able to determine jour-nalists' perceptions of the impacts of digital technology of news production practices and routines. The three newsrooms observed as case studies were those of the pro-government outlet *Al Ahram*, the independent partisan outlet *Al Masry Al youm* and the post-Arab Spring liberal independent outlet *Al Watan*.

Qualitative semi-structured interviews were conducted during the last tier of the longitudinal survey. These interviews helped me describe how journal-ists and managers assess how ICTs affect the structure and workflow of these organizations. These interviews also helped me discover the most important aspects of this transition from conventional to digital media, and investigate how ICTs have reshaped and redefined news organizations' business models.

A total of 256 journalists participated in the study, 41 of whom participated in all three surveys (see Table 1). The number of journalists participating in this study represented the organizational structure and size. The gender distribu-tion of the survey participants reflects Egyptian journalism as a whole. The study conducted eighteen interviews during the last survey wave. Interviewees included four journalists and two editors from *Al Ahram*, six journalists and two editors from *Al Masry Al Youm* and three journalists and one editor from *Al Watan*).

ANALYSIS: DIFFUSION OF ICTS INSIDE NEWSROOMS

Many factors determine whether and to what degree ICTs are adopted within newsrooms. These factors include news organizations' ownership, the econ-omy they operate within, and their competition, management structure, edito-rial policy and journalists' attitudes towards different technologies. The digital newsroom is fast becoming the core groupware platform and workflow engine of successful newspaper organizations. ICTs have brought the promise of a multi-tasking newsroom, where reporters can gather, produce, promote and interact with different stakeholders (Belfrage and Bergström 2017).

Description	Male	Female	Gender total	Newspaper total
Al Ahram 2012	18	11	29	Al Ahram: total: 83
Al Ahram 2014/2015	12	12	24	
Al Ahram 2018	20	10	30	
Al Masry Al Youm 2012	22	9	31	Al Masry Al Youm: total: 99
Al Masry Al Youm 2014/2015	21	17	38	
Al Masry Al Youm 2018	21	10	30	
Al Watan 2012	12	17	29	Al Watan: total: 74
Al Watan 2014/2015	11	11	22	
Al Watan 2018	16	7	23	
Total participants				256

Table 1: Survey participants.

Al Ahram was the first Egyptian news organization to receive an internet connection in 1994. According to one of the vice editors of Al Ahram, the organization management saw the internet as a limited tool which could help document and verify already-known facts and sources (Editor A 2018; Editor B 2018). As the internet increased in popularity and capability, journalists exerted pressure on their managers to further integrate the internet into their workplace and work processes. As a result, Al Ahram's management wired four workstations in order to make sure that journalists used the technology within the limits of Al Ahram's policies. According to an anonymous journalist interviewed, computers with internet access was only available 'for a few hours at a time', and journalists reserved time on these computers using a sign-up sheet (Journalist A 2018).

Several editors and journalists interviewed stated that before the revolution, investing in ICTs was not a priority for Al Ahram because of the 'government's heavy-handed role in news-making' (Editor B 2018). Government press releases and interviews with officials were the main sources of information available to the paper's journalists (Editor A 2018). In this context, several journalists interviewed stated that Al Ahram organization's main role 'was and still to spread the "government's agenda"' (Journalist A, C and D 2018). ICTs and social media were seen as tools used by dissidents; they were not appreciated as a tool for reporting. A senior manager at Al Ahram indicated that the organization's social media presence was to sustain the 'prestige of the organization', rather than to improve the quality of reporting or interact with the paper's audience (Editor B 2018).

After 2011, the rise of ICTs and social media pushed Al Ahram to change. However, although tech-savvy employees were promoted to managerial posts, the organization's senior managers were reluctant to adopt these new technologies and the organizational structure that these technologies demand. Senior manager of Al Ahram stated in an interview that he thought of social media as a 'trendy fad which would not last, and that Al Ahram's audience is traditionally-minded' (Editor B 2018).

The case of Al Ahram demonstrates the importance of organizational finances in this process. Al Ahram's internet has not been upgraded since 2005. The organization is in a deep financial crisis and is barely kept afloat by government subsidies. This helps explain why infrastructure is not a priority within the organization.

These issues affected the diffusion of ICTs and social media inside Al Ahram, where the use of ICTs and social media has been largely limited to fact-checking, providing higher-resolution images for articles and sharing traditional content on social media. Table 2 shows that during the 2012 wave of surveys, Al Ahram's journalists and managers stated that ICTs had not yet found their way into newsroom production routines. During the 2014/2015 wave of surveys, journalists stated Al Ahram's management had moved on to using ICTs to develop news content, to diversify the sources of information (i.e., rely less on the government) and to interact with its audience. In addition, social media was seen as a way to promote the organization and regain the trust of its audience. New online teams developed in order to generate compelling content on social media, and news content was updated regularly throughout the day in order to keep Al Ahram visible on social media.

Furthermore, the organization allows their audience to comment on their social media pages and potentially point the organization towards new and developing stories. This became a crucial part of Al Ahram's operations

	Al Ahram 2012	Al Ahram 2014/2015	Al Ahram 2018	Al Masry Al Youm 2012	Al Masry Al Youm 2014/2015	Al Masry Al Youm 2018	Al Watan 2012	Al Watan 2014/2015	Al Watan 2018
Online production of news	×	×	×	✓	✓	×	✓	✓	×
Publishing across multiple platforms	×	✓	×	✓	✓	×	×	✓	×
Posting on social media	×	✓	✓	✓	✓	✓	✓	✓	✓
Promoting news content	✓	✓	×	✓	✓	×	✓	✓	✓
Engage with audience	×	✓	×	✓	✓	×	✓	✓	×
Digital photography production	✓	✓	✓	✓	✓	✓	✓	✓	✓
Live video production	×	×	×	✓	✓	×	×	✓	×
Working with graphics	×	×	×	✓	✓	✓	✓	✓	✓
Multimedia editing	×	×	×	×	✓	×	×	✓	×
Working with data journalism	×	×	×	×	✓	×	×	✓	×
Use analytics	×	✓	✓	×	✓	✓	×	✓	×
Blogging	×	×	×	✓	✓	×	×	×	×

Table 2: Elements of ICTs activities inside the three newsrooms.

because the organization was trusted 'to give the state's official viewpoint amid a deluge of "fake news" and rumours following the revolution' (Editor A 2018). However, *Al Ahram*'s attitude towards ICTs, which improved between 2012 and 2014/2015, took a step backward by 2018 (Tables 2 and 3). The 2018 survey showed a decrease in the use of ICTs and social media in news production and publishing. Interviews showed that, although the organization maintained its online presence, management viewed social media with suspicion because they believed that social media had been hijacked by the Muslim brotherhood to promote 'a state of fear' (Journalist B 2018). This, too, is rooted in the paper's financial situation – three journalists (Journalist A, B and C) stated in interviews that *Al Ahram* simply does not have the funds to combat the Muslim brotherhood's online presence. In addition, some of

these journalists stated that they saw social media's interactivity as undermining the professionalism of journalists and opening them up to 'personal attacks or requests from readers' (Journalist A 2018). One journalist stated that news audiences need to understand that 'we are a public service organization, *Al Ahram* stands with the state not the system or regime policy. Further, we cannot engage in promoting personal issues or solve individual problems, that is not the role of journalism' (Journalist A 2018). For these reasons, *Al Ahram* scaled down its online presence and the frequency of its online updates.

By contrast, the management of *Al Masry Al Youm* aimed not to parrot the government's line on various issues, but to become the most highly circulated newspaper in Egypt. To attain this goal, the management of *Al Masry Al Youm* introduced ICTs to its newsroom in 2004 and has sustained deep engagement with ICTs. ICTs became central to *Al Masry Al Youm*'s operations. *Al Masry Al Youm* soon became regarded as the most influential newspaper in Egypt (Editor C 2018).

Prior to 2011, *Al Masry Al Youm* was at the edge of convergence. The majority of the paper's journalists used ICTs at least once a day to read online publications, participate in chat discussions and interact with their audience. Furthermore, adoption of ICTs expanded the scope of *Al Masry Al Youm*'s operations – the organization created different teams which worked throughout the day to find and fact-check information for articles, build the organization's database and train journalists. *Al Masry Al Youm* launched Egypt's first interactive and multimedia online news portal in 2009 in order to better attract and interact with its audience.

Results from the longitudinal study (Table 2) showed that *Al Masry Al Youm* continued this trend throughout the first two survey waves. Results from 2012 showed that *Al Masry Al Youm* adopted ICTs and social media in news production audience interaction. The semi-structured interviews indicated that *Al Masry Al Youm* made these changes because it understood the necessity of utilizing ICTs if it wanted to maintain its leading position in the Egyptian news market. Former editor of *Al Masry Al Youm* stated that it 'created specialized teams, which were ordered to follow audience discussions and get inspiration for future news stories' (Editor C 2018). It also developed new forms of storytelling and began using card graphics to make its presentation more attractive and effective (Table 2).

Al Masry Al Youm's management also made it policy that the organization must post multiple times on social media throughout the day in order to keep its online presence strong (Tables 2 and 3). During the 2013 uprising against former President Muhammad Morsi, this policy led *Al Masry Al Youm* to routinely post live videos of protests. Results from the 2014/2015 surveys showed that these plans were still in effect, and that *Al Masry Al Youm* used all available resources to maintain its strong presence in the Egyptian market (Journalist E 2018). It continued creating new and specialized teams for the production and distribution of multimedia content and management of social media platforms (Journalist E, F, G and H 2018). It also started to produce YouTube videos and podcasts to cater to the growing demands of its audience (Journalist G 2018).

However, the 2018 round of surveys showed that changes in *Al Masry Al Youm*'s management and ownership affected its plans to continue utilizing ICTs. In the semi-structured interviews, journalists (Journalist H and Journalist I) indicated that audience interactivity and the promotion, production and distribution of multimedia content 'were less of a priority' after these changes

	Al Ahram 2012	Al Ahram 2014/2015	Al Ahram 2018	Al Masry Al Youm 2012	Al Masry Al Youm 2014/2015	Al Masry Al Youm 2018	Al Watan 2012	Al Watan 2014/2015	Al Watan 2018
More than five times per day	✕	✕	✕	✓	✓	✕	✓	✓	✕
From three to five times per day	✕	✓	✕	✕	✕	✕	✕	✕	✕
From one to two times per day	✓	✕	✓	✕	✕	✓	✕	✕	✓
From two to five times per week	✕	✕	✕	✕	✕	✕	✕	✕	✕
At least once per week	✕	✕	✕	✕	✕	✕	✕	✕	✕
Rarely	✕	✕	✕	✕	✕	✕	✕	✕	✕
Never	✕	✕	✕	✕	✕	✕	✕	✕	✕

Table 3: Frequency with which news organizations updated their online and social media content.

(Journalist I 2018). Editors and journalists also indicated that online publishing and updates were limited to one or two updates or publications per day (Editor D 2018; Journalist I 2018). Several interviews asserted that Egypt's economic recession, the 'floatation of the Egyptian pound, a lack of advertising, and an increase in printing prices were also to blame' (Editor D 2018).

Al Watan emerged after 2011 and soon became one of the leading liberal voices in Egyptian politics. The organization philosophy is to attract a young generation of journalists who are eager to present quality work (Editor E 2018). This means that several of its journalists are social media users. Like *Al Masry Al Youm*, *Al Watan* integrated ICT infrastructure into its groundwork plans for its newsroom. Because its younger staff understood the importance of ICTs in the post-2011 political climate, *Al Watan* relied heavily on ICT to create a collaborative and constantly updated online presence. Results from the 2012 wave of surveys showed that *Al Watan* started by being active across different points of the ICT production spectrum (Table 2).

The 2014/2015 survey wave indicated that *Al Watan* had continued utilizing ICTs to generate ideas for coverage, research content and approach interviews and multimedia content with the specific goal of producing original content for social media (Editor E 2018). The interviews indicated that *Al Watan* used social media mainly to interact with its audience and build its readership (Journalist K 2018; Editor E 2018) To this end, *Al Watan* created a team to promote the organization's content across different social media platforms and publish original content at regular intervals (Table 3) – at 9:00 a.m., 12:30 p.m., 4:00 p.m., 7:30 p.m. and 11:00 p.m. (Editor E 2018).

The 2018 wave of surveys indicate that Egypt's recession affected *Al Watan*'s circulation and advertising revenue. As a result, *Al Watan*'s management reduced its investment in ICT convergence and shifted its focus to posting material on social media. One journalist stated that Egypt's newly

established Supreme Council for Media Regulation did not promote the use of social media, fearing a re-emergence of public protests, and that this affected *Al Watan*'s operations because management felt pressured to not contravene the interests of the state (Journalist L 2018).

Each of these three newsrooms showed different attitudes towards ICTs and online publishing. These attitudes were reflected in each organization's policies. *Al Ahram*'s conservative attitude can be seen in how it used only a limited number of publishing platforms (primarily Facebook and Twitter) in 2011 (Table 4). By 2014/2015, *Al Ahram* had begun to branch out to other platforms, including YouTube, and was more active on social media during the 2013 uprising against President Morsi. By 2018, *Al Ahram* had begun to use a more diverse range of social media apps and was more active on Facebook and Twitter. Interviewees cited economic pressures and *Al Ahram*'s desire to avoid misinformation and fake news on social media as key factors which explain these shifts.

By contrast, the 2012 and 2014/2015 surveys indicated that *Al Masry Al Youm* utilized a wide range of social media platforms and was very active on social media, updating at least once a day. By 2018, however, *Al Masry Al Youm* slowed its interactions and publications on social media (Table 4), though it remained active on select platforms, such as Facebook.

Al Watan was active through the first two tiers of the longitudinal survey. Table 4 shows that the organization published widely across different platforms to reach its audience. The 2014/2015 survey wave showed that *Al Watan*'s journalists had developed strategies to continue publishing across different social media platforms on several points throughout the day. The 2018 surveys indicated that, like the other two organizations, *Al Watan* selectively engaged with social media to meet the economic demands of the Egyptian recession.

	Al Ahram 2012	*Al Ahram 2014/2015*	*Al Ahram 2018*	*Al Masry Al Youm 2012*	*Al Masry Al Youm 2014/2015*	*Al Masry Al Youm 2018*	*Al Watan 2012*	*Al Watan 2014/2015*	*Al Watan 2018*
Organization website	✓	✓	✓	✓	✓	✓	✓	✓	✓
Facebook	✓	✓	✓	✓	✓	✓	✓	✓	✓
Twitter	✓	✓	✓	✓	✓	✓	✓	✓	✕
YouTube	✓	✓	✕	✓	✓	✕	✓	✓	✕
E-mail	✕	✕	✕	✓	✓	✓	✓	✓	✓
Web alerts	✕	✓	✕	✓	✓	✓	✓	✓	✓
Mobile apps	✓	✓	✓	✓	✓	✓	✓	✓	✓
Live stream	✕	✕	✕	✓	✓	✕	✓	✓	✕
Online videos	✓	✓	✕	✓	✓	✕	✓	✓	✕
Podcast	✕	✕	✕	✕	✓	✕	✕	✓	✕
Snapchats	✕	✕	✕	✓	✓	✕	✓	✓	✕
Discussion boards	✕	✓	✕	✓	✓	✕	✓	✓	✕
Blogs	✕	✕	✕	✓	✓	✕	✕	✕	✕

Table 4: News organizations' use of ICTs and social media platforms.

JOURNALISTS' USE OF ICTS IN THEIR DAILY ROUTINES

Newspapers' adoption of ICTs and social media fundamentally changed journalists' roles and practices, from monitoring and pitching story ideas to research and writing to distributing content. Social media has also facilitated journalists' interactions with sources and audiences. Social media is largely seen as a valuable tool for journalists to brand their organizations, themselves, and their content in today's competitive market (Hedman et al. 2017). The three waves of surveys asked journalists to indicate what they used ICTs for (multiple answers were accepted). Here, the results are examined in detail. For each organization, I first examine data aggregated from all three surveys and then engage each individual survey.

Al Ahram journalists adopted ICTs more or less independently because 'Al Ahram had no strategy to adopt ICTs' (Journalist B 2018). Averaging the results of all three surveys (Table 5), it appears as though *Al Ahram* journalists used ICTs primarily to follow politicians and activists (69.9 per cent). Research (57.8 per cent), getting story ideas (55.4 per cent), monitoring audience debates (54.2 per cent), checking for breaking news (51.8 per cent) and searching for sources (50.6 per cent) were also popular activities. Less than half of *Al Ahram*'s journalists used ICTs to gain access to information (43.4 per cent) or network with news sources (41 per cent), and even less used social media to improve the credibility of their content (27.7 per cent). Only a handful of *Al Ahram*'s journalists used ICTs to searching for user-generated content, improve the speed of their reporting or foster collaborative or crowd-sourced work.

	Al Ahram				*Al Masry Al Youm*				*Al Watan*			
	2012	2014/ 2015	2018	Total	2012	2014/ 2015	2018	Total	2012	2014/ 2015	2018	Total
Research	48.3	75	53.3	57.8	64.5	71.1	86.7	73,3	93.1	81.8	78.3	85.1
Publishing	13.8	33.3	23.3	26.5	38.7	44.7	33.3	39.4	68.9	86.4	47.8	67.6
Networking	37.9	58.3	30	41	67.7	71.1	63.3	67.7	82.8	86.4	69.6	79.7
Follow online activists	75.9	87.5	50	69.6	77.4	71.1	60	70	89.7	90.1	52.2	78.4
Monitor audience debates	62.1	70.8	33.3	54.2	80.6	76.3	63.3	73.3	93.1	90.1	60.9	82.4
Interact with audience	34.5	41.2	13.3	28.9	54.8	47.4	36.7	46.5	48.3	63.6	34.8	48.6
Check for breaking news	58.6	58.3	40	51.8	90.3	81.6	63.3	78.8	93.1	81.8	60.9	93.2
Get story ideas	58.6	75	36.7	55.4	90.4	68.4	53.3	70.1	91.7	90.1	60.9	75.7
Accessing information	37.9	66.7	30	43.4	77.4	63.1	70	70	82.8	81.8	56.5	74.3
Finding sources	37.9	70.8	46.7	50.6	61.7	71.1	80	24.2	89.7	86.4	60.9	79.7
Crowdsourcing	0	16.7	3.3	6	12.9	15.8	10	13.1	27.6	36.4	13	25.7
Finding UGC	6.9	25	6.6	12	22.5	28.9	33.3	28.3	31	40.9	34.8	36.5
Collaborative work	0	12.5	0	3.6	19.6	21.1	26.7	22.2	20.7	27.3	8.7	18.9
Improve credibility	3.4	75	13.3	27.7	29	36.8	43.3	36.4	58.6	86.4	47.8	63.1

Table 5: Journalists' use of ICTs inside newsrooms (percentages).

In the 2012 survey, 75.9 per cent of *Al Ahram* journalists used ICTs and social media to monitor activists and politicians, and 58.6 per cent of journalists used ICTs to get story ideas, interact with their audience and do research. The 2014/2015 survey tier showed an increase in *Al Ahram* journalists' ICTs activities. In 2014/2015, 87.5 per cent of the organization's journalists used ICTs to follow activists and politicians, and 75 per cent stated that they use ICTs to conduct research and improve the credibility of their content; 70.8 per cent used ICTs to monitor audience debates and diversify their sources. The interviews indicate that these activities were especially popular after the 2013 uprising. In contrast, accessing online information and checking for breaking news were not popular activities among *Al Ahram* journalists. The 2018 survey wave indicated that only about half of *Al Ahram* journalists indicated that they use ICTs every day, and that online interactions with audiences and monitoring of audience debates dropped significantly between 2014/2015 and 2018. The interviews indicate that this shift is largely attributable to management's 'interference in the organisation's news agenda' (Journalist A 2018).

By contrast, the aggregated results of the three surveys showed that over 70 per cent of *Al Masry Al Youm*'s journalists used ICTs to 'pitch story ideas, check for breaking news, find sources, monitor audiences, activists, and politicians, and access additional information for their work' (Journalist F 2018). Networking (67.7 per cent) was a popular activity among *Al Masry Al Youm* journalists, as was improving the speed of reporting (65.5 per cent). Interacting with audience members (46.5 per cent), publishing (39.4 per cent) and improving the credibility of reporting (36.4 per cent) were less popular activities. Finally, *Al Masry Al Youm*'s journalists only rarely used ICTs to find user-generated content or seek out opportunities for collaborative or crowdsourced reporting.

In the 2012 wave of surveys, 90.4 per cent of *Al Masry Al Youm* journalists indicated that they use ICTs to generate news ideas and check for breaking news; 80.6 per cent indicated that they use ICTs to monitor audience's online discussions, and 77.4 per cent responded that they use ICTs to follow politicians and activists and get access to additional information. Networking (67.7 per cent), researching (64.5 per cent) and searching for sources (61.7 per cent) were also popular activities. Little more than half of *Al Masry Al Youm* journalists interviewed in 2012 stated that they used ICTs to interact with their audience, and even fewer stated that the used ICTs to publish, find user-generated content and seek out opportunities for collaborative work and crowdsourcing. The 2014/2015 survey showed a higher level of ICT engagement and a more general distribution of activities; 81.4 per cent of *Al Masry Al Youm* journalists reported using ICTs to check breaking news, and 71.1 per cent reported using ICTs to research, find sources, network and follow activists and politicians. Publishing on social media and digging for story ideas (68.4 per cent) were also popular. The 2018 survey showed a change in *Al Masry Al Youm* journalists' attitudes towards ICTs; 93.3 per cent of respondents indicated that they used ICTs to instantly publish content. Research (86.7 per cent), finding sources (80 per cent) and accessing additional information (70 per cent) were also popular. Although it had been popular in 2012, only 63.3 per cent of *Al Masry Al Youm* journalists reported using ICTs to check for breaking news in 2018. Monitoring activists (63.3 per cent) also experienced a relative decline.

Finally, *Al Watan*'s journalists were more active than the journalists from the other two organizations. It appears as though *Al Watan*'s relatively late

start helped journalists work closely with ICTs and without government pressure. For instance, more than 50 per cent of *Al Watan* journalists indicated that they regularly use ICTs for more than two of the fifteen reasons listed in our survey, and two-thirds of *Al Watan*'s journalists chose ten of the fifteen reasons. Almost all *Al Watan* journalists surveyed (93.2 per cent) stated that they use ICTs to check for breaking news because they believe that news happens on the streets first and in newsrooms later. Research (85.1 per cent) and monitoring audience debates (82.4 per cent) were also popular, which is confirmed by the interviews' indication that *Al Watan*'s journalists are invested in following ordinary people's news agendas and discussions. To this end, networking and finding user-generated content were much more popular among *Al Watan*'s journalists than journalists from either *Al Ahram* or *Al Masry Al Youm*.

Al Watan's journalists followed the trend established by journalists from the other two organizations by displaying a general increase in utilization of ICTs and social media in 2014/2015 and a decrease in 2018. *Al Watan*'s initial push to utilize ICTs and social media to their full potential can be seen in the high percentage values of the 2012 survey, where research (93.1 per cent), checking for breaking news (91.7 per cent), following activists and politicians (89.7 per cent) and finding additional information for stories (89.7 per cent) scored high. Networking (82.8 per cent) was also very popular in this period. The 2014/2015 survey indicated that *Al Watan*'s journalists continued utilizing available ICTs and social media resources to the fullest – almost all of them relayed multiple answers. The 2018 survey showed a divergence in *Al Watan*'s use of social media. The interviews indicated that economic pressure was a main reason for this divergence: *Al Watan*'s newsroom technology was not updated, journalists struggled to perform their work and management seemed to be 'less than thrilled to promote the use of ICTs' according to *Al Watan*'s junior editor (Editor E 2018). Another journalist stated that 'it seems to have been a general issue, as the system became intolerant of any form of critique', adding that because 'news needed to be steered toward the national goals set by the system, journalists became less enthusiastic about using ICTs' (Journalist M 2018).

Next, we will examine each organizations' use of specific ICTs and social media platforms (Table 6). In general, the surveys found that *Al Ahram* journalists used the fewest number of social media platforms and preferred mainstream platforms such as Facebook, Twitter and their newspaper's website. Social media platforms which generally target younger audiences, such as Snapchat, were not utilized by *Al Ahram*'s journalists. *Al Ahram* used relatively few social media platforms in 2012, and stuck mainly to Facebook and Twitter. Although the 2014/2015 survey showed an increase in the number of social media platforms used, we can see that platforms such as Reddit and Tumblr began losing their popularity among *Al Ahram*'s journalists around this time. Finally, in 2018, they began to lose their general interest in using social media platforms but continued to use Facebook and their organization's website regularly.

Journalists working for *Al Masry Al Youm* were more active on social media platforms. More than half of this organization's journalists used Facebook, YouTube, Twitter, Instagram and the chat function on *Al Masry Al Youm*'s site. Other applications such as LinkedIn, WhatsApp and Snapchat were popular among journalists in this organization, which shows that *Al Masry Al Youm* aimed to reach and engage a diverse audience. In the 2012 survey wave, *Al*

	Al Ahram 2012	Al Ahram 2014/2015	Al Ahram 2018	Total	Al Masry Al Youm 2012	Al Masry Al Youm 2014/2015	Al Masry Al Youm 2018	Total	Al Watan 2012	Al Watan 2014/2015	Al Watan 2018	Total
Facebook	68.1	83.3	66.7	72.7	64.5	81.6	70	77.1	69	86.4	52.2	68.9
YouTube	31	58.3	33.3	27.1	61.2	76.3	66.6	68.7	65.5	77.3	39.1	60.8
Twitter	41.3	58.3	40	45.8	70.9	63.2	36.7	57.6	69	72.2	39.1	60.8
Website chat	68	79.1	40	62.7	48.4	73.7	33.3	53.6	55.2	54.5	21.7	44.6
Instagram	31	37.1	30	33.7	38.7	73.7	40	52.6	37.9	63.6	34.8	44.6
Flicker	34.5	37.5	3.3	24.1	29.1	28.9	0	20.2	31	18.2	4.3	18.9
Redditt	24.1	20.8	0	14.5	25.8	23.7	13.3	21.2	41.4	22.7	4.3	24.3
Tumblr	17.2	16.7	0	10.8	22.6	21.5	20	21.2	21.1	13.6	4.3	14.9
LinkedIn	10.3	12.5	6.6	9.6	29.1	31.6	36.6	32.3	37.9	50	34.8	40.5
WhatsApp	6.8	20.8	3.3	9.6	6.4	36.8	33.3	26.3	58.6	77.3	30.4	54.1
Snapchat	0	4.1	0	1.2	0	23.7	33.3	19.2	44.8	59.1	30.4	45.9

Table 6: ICTs and social media platforms used by journalists (percentages).

Masry Al Youm's journalists indicated that they mainly used Twitter (64.5 per cent) and Facebook (61.2 per cent). Publishing videos on YouTube and interacting with audiences through YouTube comment sections were also popular among Al Masry Al Youm journalists in 2012. The 2014/2015 survey showed that Al Masry Al Youm's journalists strayed away from Twitter and began to use other interactive applications such as Instagram, Snapchat and WhatsApp. The 2018 survey indicated that Al Masry Al Youm journalists now use a wide range of applications, and that only two (Facebook and YouTube) are used by more than half of these journalists.

By comparison, Al Watan's comparatively younger journalists regularly used applications which were underutilized by their counterparts at Al Ahram and Al Masry Al Youm, such as Snapchat, Reddit, Tumblr and Flickr. This was vividly apparent in the first wave of surveys. Interviews indicated that Al Watan's journalists used WhatsApp mainly to conduct interviews and receive images and videos captured during demonstrations, especially during 2013. The surveys indicate that Al Watan's journalists were active across different social media applications in 2012, but that their use of Flickr, Reddit and Tumblr dropped significantly in 2014/2015 and continued to decline in 2018. However, Facebook continued to be the main social media platform utilized by journalists to tab politicians' and activists' discussions and interact with their audiences. Results from the 2018 surveys affirm the above assertion that Al Watan's journalists have diversified the social platforms they now use, even though over 30 per cent of them still use Facebook, Twitter, YouTube and Instagram regularly.

CONCLUSION: CONVERGENCE AND DIVERGENCE OF ICTS/SOCIAL MEDIA IN EGYPTIAN NEWSROOMS

This study aimed to assess the convergence of ICTs – especially social media – in three Egyptian newspapers: *Al Ahram*, *Al Masry Al Youm* and *Al Watan*. It described the extent to which social media are used by Egyptian journalists in their work through a three-stage, longitudinal survey.

This study found that the Egyptian revolution forced Egyptian newsrooms to adopt convergence plans and integrate ICTs into their news-making processes. It also found that social media has brought about fundamental changes at the level of organizational structure, and that it blurs the boundaries between traditional and new forms of news-making by increasing cooperation and compatibility across different elements of the production cycle. However, after few years interest or divergence of ICTs started to develop.

In the case of *Al Ahram*, convergence seems to have been a short-term strategy to recover its 'lost credibility'. However, as one *Al Ahram* journalist stated, 'convergence requires commitment and long-term planning'. Although the organization integrated ICTs into its production immediately after the Arab Spring uprisings, but did not continue doing so or updating their ICT infrastructure. Financial difficulties, including lack of government subsidies, were a main factor in this decision. Interviews with *Al Ahram* management and journalists indicated that the organization avoided depending on ICTs because its conservative bent tied social media to the rise of fake news and rumours. Furthermore, journalists stated that the organization's management did not have a policy to implement social media use inside the newsroom, which created a state of confusion. One editor criticized *Al Ahram*'s management as not cultivating innovation or taking risks because the adoption of new technologies needed to be approved by the Egyptian government. Others indicated that the newspaper prioritized the publication of original content in the actual newspaper, offline. Finally, the interviews indicated that *Al Ahram*'s leadership became less interested in audience engagement as these other concerns mounted.

Al Masry Al Youm's management, on the other hand, provided a strong ICT infrastructure from the outset. Furthermore, the newspaper's management developed tactical plans to recognize and implement the complex diffusion of ICT inside the newsroom. In the 2012 and 2014/2015 surveys, *Al Masry Al Youm* journalists and management recognized the importance of multidimensional journalists and journalism, both in the newsroom and in society in general. The establishment of specific teams for online content further integrated online and offline production processes, making content-sharing more common among *Al Masry Al Youm*'s journalists. The paper's management used ICTs to propagate its brand and increase the organization's visibility by continually publishing original content across different social media platforms. However, change in the organization's ownership and subsequent financial pressures affected the execution of the original structural convergence plans, and this eventually led to the decline and divergence of the paper's ICTs strategies.

Finally, *Al Watan* put the convergence of ICT infrastructure and utilization at the heart of its organizational plans and brand. Its management saw ICTs as a necessity component of its plan to be a competitive and quintessentially modern Egyptian news organization. In the same vein, the organization created several teams to manage different social media platforms and

produced regular, original content and advertisements throughout the day on social media. It also used social media to monitor audience discussions and create a news agenda which was rooted in audience's concerns and interests. Their social media teams function as their own node in Egypt's newly established networked society, and in the first two waves of surveys this study found that *Al Watan*'s journalists were exceptionally active across a variety of social media platforms. However, financial pressure and lack of sustainable advertising revenue affected the organization's ICTs strategies and eventually curbed their use of social media platforms.

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