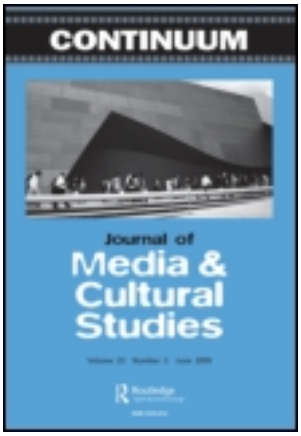
This article was downloaded by: [University of Central Lancashire], [John Mills]
On: 28 January 2014, At: 03:51
Publisher: Routledge
Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Continuum: Journal of Media & Cultural Studies
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/ccon20

MoJo in action: The use of mobiles in conflict, community, and cross-platform journalism

John Mills [a], Paul Egglestone [a], Omer Rashid [b] & Heli Väätäjä [c]
[a] School of Journalism, Media and Communication, University of Central Lancashire, UK
[b] Sandbox, University of Central Lancashire, UK
[c] Tampere University of Technology, Finland
Published online: 31 Aug 2012.

To cite this article: John Mills, Paul Egglestone, Omer Rashid & Heli Väätäjä (2012) MoJo in action: The use of mobiles in conflict, community, and cross-platform journalism, Continuum: Journal of Media & Cultural Studies, 26:5, 669-683, DOI: 10.1080/10304312.2012.706457

To link to this article: http://dx.doi.org/10.1080/10304312.2012.706457

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms &

Conditions of access and use can be found at http://www.tandfonline.com/page/terms-and-conditions

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Continuum: Journal of Media & Cultural Studies
Vol. 26, No. 5, October 2012, 669–683

Routledge
Taylor & Francis Group

MoJo in action: The use of mobiles in conflict, community, and cross-platform journalism

John Mills[a]*, Paul Egglestone[a], Omer Rashid[b] and Heli Väätäjä[c]

[a]*School of Journalism, Media and Communication, University of Central Lancashire, UK;* [b]*Sandbox, University of Central Lancashire, UK;* [c]*Tampere University of Technology, Finland*

As citizen journalism and social media continue to influence and shape the global media landscape, and as smartphone technology becomes increasingly prevalent and affordable, this paper details four international smartphone-centric case studies that utilize a beta-stage editorial commissioning platform and accompanying smartphone. The study comes as increasing numbers of news organizations and citizen journalism tools harness the power of smartphones to both collect and publish editorial content. This paper examines the potential for community, student, and professional reporters to collate and transmit media via a tailored publishing platform provide and asks whether this platform can create a seamless link between smartphone content production and newsroom-based operations. It outlines considerations for future platform development and potential design methodologies to facilitate improved content capture methods, making the case for ongoing and collaborative co-design.

UCLan's School of Journalism, through the RCUK-funded Bespoke Project, trialled Nokia Research Center's technology with community users, professional journalists, and student reporters between 2009 and 2011.Test locations included Fort Bastion, Afghanistan, rural Kenya, and Preston and Manchester in the UK. This paper also investigates the tension created when incorporating new platforms with pre-existing newsflows, and looks forward to a newsroom ecosystem where mobile phones are integrated within standard working practices.

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Introduction

Mobile phone technology – equipped with high-resolution video capture, 3G or greater network connection, GPS functionality, Wi-Fi, and web browsing – is fast becoming a legitimate media collection and dissemination tool. This paper examines how the Bespoke Project – a multi-disciplinary journalism and digital design project – worked with Nokia N900 smartphones and a beta-stage mobile co-creation platform to complete a number of international mobile journalism (MoJo) case studies. Users ranged from community members to professional journalists operating in conflict scenarios. The paper discusses how both community contributors and 'live' commercial newsrooms are able to harness the potential of a smartphone-centric content creation platform from inception to publication of editorial content.

Traditional media have been slow to respond to the changes in social behaviour afforded by mobile technology: in the UK it took the BBC until the mid-noughties. Public contributions from the 2004 bombings in Madrid and the Asian tsunami that followed in December marked the beginnings of the BBC's new relationship with the people 'formerly

*Corresponding author. Email: jmills@uclan.ac.uk

ISSN 1030-4312 print/ISSN 1469-3666 online
© 2012 Taylor & Francis
http://dx.doi.org/10.1080/10304312.2012.706457
http://www.tandfonline.com

known as the audience' (Gillmor 2006). In 2005, Vicky Taylor, editor of the BBC news website's interactive section, received 6500 photographs of an explosion at the Buncefield oil refinery sent in by ordinary people. By 2005 'citizen journalism' – the collecting, reporting, and distribution of news by members of the public using mobile phones and portable handheld devices – was becoming mainstream (Verclas and Mechael 2008). And so traditional news organizations like the BBC, NBC News, and CNN began actively encouraging the submission of User Generated Content (UGC), believing the public's contribution would improve media whilst recognizing there was little they could do to stem people's enthusiasm for participating in news.

Riding the tide of UGC, mobile software developers have caught on to the appetite for local news shared across mobile phones, published online, or sent to a traditional newsroom. Blottr (2011) is a UK-based user-generated news service. A downloadable iPhone or Android application enables anyone, anywhere in the UK, to capture and report news. In autumn 2011, it was reported that the BBC is developing a 'news gatherer' app for citizen journalists to send stories directly to the BBC's content-management system (EJC 2011). CNN, Associated Press, Al Jazeera, NBC, and UK broadcaster Sky News all have mobile applications linking citizen journalists' mobile handsets to their newsrooms.

Another approach is to provide a marketplace where news content creators, especially non-professional citizen journalists, can link with professional news media. Meporter (2011) offers a mobile journalism application for citizen journalists linked to multiple news outputs. On the other hand, Scoopshot (2012) acts as an intermediary between media organizations and freelancers or citizen photojournalists enabling access to their created news content. It provides content creators with a dedicated mobile client for content delivery and receiving tasks, as well as a platform for news organizations to manage the process. Meporter and Scoopshot pay for the content by licensing and syndicating it to news organizations. However, MMS (multimedia) messages currently remain the most widely promoted way to send mobile news content to the news media.

The biggest use of mobile platforms by mainstream news media organizations is for distributing their content. Pew Internet research shows that 59% of American adults use a wireless connection by means of a computer mobile phone to access the Internet (Smith 2010). Al Jazeera launched its mobile offering in 2006. It is increasingly difficult to think of a national or international news provider that does not distribute media rich news content via mobile (Westlund 2008) – though some user experiences are better than others.

If there is a gap in the uptake of mobile technology by mainstream media organizations it is in the area this paper addresses, that of integrating mobile technology within the workflow of professional journalists. There are some examples of integration. The Mobile Media Unit at Al Jazeera Labs has equipped its professional journalists with mobile phones so they can file reports from the field. Similarly, in 2007 Reuters, in partnership with Nokia, experimented with a mobile journalism toolkit. Reuters journalists were given a Nokia N95 mobile phone and ancillary equipment including a tripod, small keyboard, and a microphone to test in the field. Nokia believed the N95's ability to automatically record meta-data such as GPS location, time and date of a story adds richness and, arguably, heightened authenticity. Subsequent tests of similar field kit have been carried out most notably in Finland (Jokela, Väätäjä and Koponen 2009) raising some technical issues and also some issues around the journalists' perceptions of their professional standing when made to use mobile phones for video content acquisition. An earlier study by Koponen and Väätäjä (2009) recording the experiences of early mobile adopters in six Finnish news organizations concluded that journalists were dissatisfied with the audio quality of mobile phones and found the keyboards difficult.

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

The integration of a mobile acquisition and editorial management platform and the implementation of a mobile workflow within professional journalism practice are still relatively undocumented. There are various reports of journalists in professional newsrooms using a variety of specialist software to stream live video from mobiles. Broadcasters occasionally use mobiles for video when there is no immediate access to satellite uplinks, but integration is essential for large media organizations where IT infrastructure is centralized, and where all data needs to be shared across multiple sites.

It is against this background that the potential of an integrated smartphone-newsroom workflow featuring social media outputs operating side-by-side with traditional publishing platforms, all providing multi-platform publication points, becomes visible. As a story breaks, unfolds, and becomes open for further refinement and analysis (a process that is suggested by Bradshaw (2007) in his Model for the 21st Century Newsroom) smartphone technology has the capacity to fulfil many elements of media generation, editing, and processing remotely from the newsroom (Väätäjä 2012).

The Bespoke Project: Background

'Bespoke' is an interdisciplinary RCUK-funded project comprising hyperlocal journalism (Bespoke 2011) and digital design innovation. Between 2009 and 2011, Bespoke worked with residents and a range of organizations in the Callon and Fishwick community of Preston, UK and used mobile phones to collect, collate, and publish community-generated news stories. The project – which involved the University of Central Lancashire (UCLan), University College Falmouth, University of Dundee, University of Newcastle, and University of Surrey – sought to produce digital products in a community that were inspired and interrogated through community reporters, dubbed Insight Journalists, who populated a local newspaper with a distribution of 2200 homes and the hyperlocal website (Bespoke Hyperlocal 2011). To help deliver mobile multimedia, Bespoke partnered with Nokia Research Center to develop and test a platform known as Mobile Co-Creation (MCC), which allowed media organizations to manage newsflows, assign commissions, collect submissions, issue feedback, and manage reporters with differing expertise. The media trails discussed here were based within Bespoke's 'journalism' element and led by UCLan. One year into the two-year project, Nokia formed the spin-out company Newelo, which continued to develop a business-ready product branded Need4Feed (Newelo 2011). As such, our tests used an evolving content platform from Nokia Research and Newelo and the Nokia N900 smartphone, which was the only model that was supported by the alpha- and then beta-stage platform. For the purposes of this paper, Nokia and Newelo's platform will be referred to as MCC/Need4Feed.

Bespoke conducted field trials in Kenya and Afghanistan; a week-long student trial in the north-west of England; and the longer testing period with community reporters and filmmakers in Callon and Fishwick. Bespoke also tested the platform with voluntary and professional newspaper reporters and filmmakers, and UCLan journalism students. Subjects spanned community activities, the student demonstrations in November 2010 in Manchester, and reports from Fort Bastion, Afghanistan.

Through these case studies this paper will examine the potential for N900 smartphones to function as a multimedia capture device within newsflows and add value to them. The trials hoped to interrogate whether an editor > journalist > newsroom > publication workflow could be driven wholly through mobile and examine if the convenience, flexibility, and size of the device would add value to existing practices. This paper will

also explore what happens when a mobile newsflow is placed into a real-world deadline-driven environment.

To understand the process and observations made during the course of our case studies, we first introduce the Nokia N900 smartphone and the MCC/Need4Feed prototype platform.

Smartphone capabilities

The attributes that should be considered when choosing a smartphone for journalism range from hardware and software capabilities to user experience. It is important to check the media capture and editing capabilities, mobile network frequencies supported, presence of Wi-Fi, Bluetooth, cable connectivity, GPS, battery life, input interfaces and the user experience, especially ease-of-use, efficiency, effectiveness, and reliability.

The Nokia N900 was launched with the premise of bringing the power of desktop computers to mobile devices. A Linux-based operating system called Maemo5 brings features like multitasking, widescreen video capture, touch screen, and a full QWERTY keyboard. The N900 supports quad band frequencies, Wi-Fi (802.11 b/g) and high-speed data connectivity. On paper, and when viewed against the demands a journalist may ask of it, the N900 appears to the have the potential to be a good multipurpose mobile reporting device (Forum Nokia 2009).

Platform spec and commissioning process

MCC/Need4Feed creates separate groups for each of the news publishing organizations utilizing the platform. An organization can subsequently choose to make access to its group private, invite-only, or public. An organization can manage its group/s by assigning various roles to different users e.g. administrator, editor, and user. MCC/Need4Feed also introduces a concept of rewards/points whereby users are rewarded for their contribution to a group/system. The combination of rewards/submissions is used to introduce ranks amongst users. The point/reward allocation is selected and controlled by the 'editors' and administrators of the group. Editors request specific content through a task-oriented approach whereby new 'tasks' can be assigned to users in the system. These users can employ either their mobile device or the web interface to respond and submit content related to that particular task.

Before exploring the commissioning process through the MCC/Need4Feed platform, let us take a brief look at how and where it fits in the existing news commissioning workflow. MCC/Need4Feed is a web-based platform designed to be linked into an existing newsroom workflow. It could be accessed through its own web interface or through an Application Programming Interface (API). An overview of the work flow is shown in Figure 1.

As seen in Figure 1, the editors assigned for our case studies used the MCC/Need4Feed web interface to log into the service. The second approach of using API was only utilized to extract the data from the MCC/Need4Feed interface into Bespoke's hyperlocal website or to other resources. It can be argued that the approach taken by MCC/Need4Feed could work well as newsrooms can decide how the new platform fits into their existing workflow. Reporters or editors can choose how they transfer content from the web interface. If new middleware has been built which utilizes the API, the data can be inserted or extracted directly through the existing newsroom system. However, it was observed through the course of our case studies that MCC/Need4Feed's approach to linking does not work well.

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

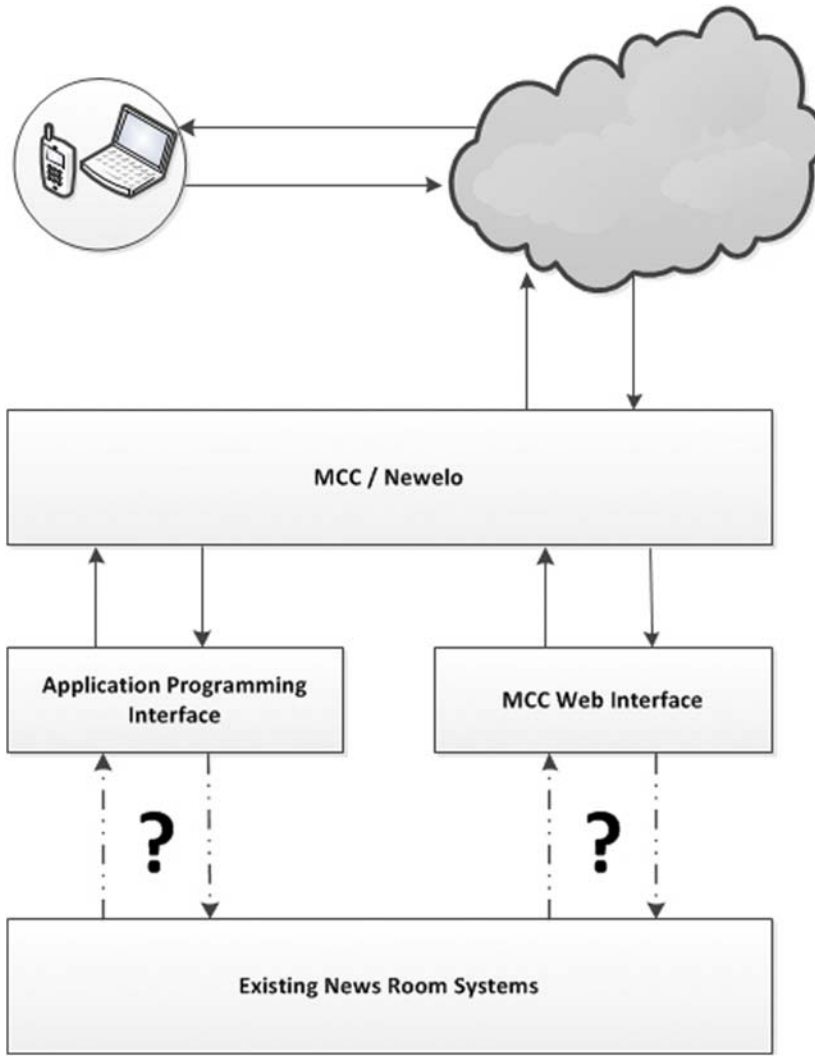


Figure 1. MCC/Need4Feed, integration into existing news room work flow.

Additional resources are required from the organizational point of view to link the existing newsroom systems to MCC/Need4Feed via the API. These resources range from financial costs to the time taken to build and to train users on the middleware. Moreover, we had access to a limited API which only allowed extraction of information. There were other features present to create and manage users in the group but we found that since the software was still going through its development lifecycle, they were not fully implemented. A similar observation was also made on the web interface where a lot of the features were either not completely implemented or not implemented at all.

Figure 2 shows the commissioning process or task assignment in MCC/Need4Feed. During the course of our case studies we utilized the web interface to create and assign new tasks. Here, our experience was similar to the one for the API, i.e. there were either features not implemented or not robust enough to complete the newsflow cycle effectively. Some of these deficiencies can be attributed to the platform's development state whilst

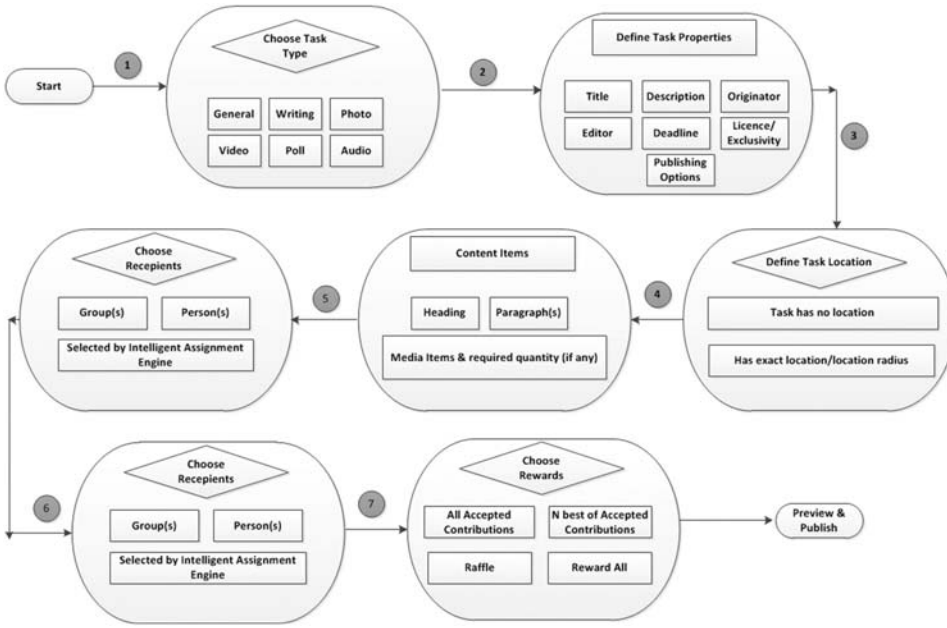


Figure 2. New task commissioning in MCC/Need4Feed.

others are due to lack of insight whilst making design choices or overruling them due to organizational constraints.

Training provision

N900 and MCC/Need4Feed users received a similar level of training, but with varying levels of support during individual trials. Initial training was delivered in a consistent fashion and involved the following stages. User groups were introduced to the smartphone's basic functionality by a team of researchers who described how to use the still/video camera, change camera settings, connect to Wi-Fi, activate or deactivate GPS, browse the internet, and make telephone calls. The research team then introduced the MCC/Need4Feed platform and outlined how to log in to the platform, receive and sign-up to editorial commissions, and add content to the various input fields to create a story. During this phase, it was necessary to outline a number of functions that were not completely active or implemented, and explain that the workflow was a relatively rigid offering. However, the platform did allow for all elements of multimedia creation to be produced individually, and therefore provided some flexibility. For editors, specifically those located at the Lancashire Evening Post (LEP) who would issue commissions to a reporter heading to Afghanistan, the 'assigning and commissioning' web-functions were explained in organized training workshops.

Follow-up support

Researchers provided additional and ongoing support for users, but the level of support varied in each case study due to practical considerations. Community reporters received higher levels of one-to-one assistance due to the proximity and length of the trial. Participants on the week-long student project were supported by two researchers familiar

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

with the technology. Both the LEP staff reporting in Afghanistan and students visiting Kenya received formal training but had no additional support *in situ.*

Case study one: Bespoke community reporters

Working in Preston's Callon and Fishwick area, we tested both the Nokia N900 and the MCC platform from Nokia Research before it spun-out to form Need4Feed. This early-stage trial was conducted in Autumn 2009 and initially involved 15 'Insight Journalists' with diverse experience of both reporting and smartphone technology. Some had extensive experience of filmmaking and high-quality video equipment, whereas others had minimal experience of journalism and had not used a mobile smartphone previously. Due to the instability of the platform at this stage, researchers limited the trials to a smaller test group and phones were issued for specific assignments.

Assignments were issued via the 'commissioning editor' who was a researcher based at UCLan. These were then received and completed by community reporters in a variety of locations around the city. Examples included video footage of a visit to a nature reserve, interviews with a local rapper, and an assignment looking at Preston's Young People's Services (see Figure 3).

Users with a track record of media generation appreciated the phone's innovative approach to multimedia content and conveyance within a community news environment, but felt the user experience was insufficiently developed. There was frustration at not knowing when a 'task' had been received by the editor and the inability to quickly see chronologically-arranged deadlines. Large video files also meant long transfer times, and users were unsure whether data had been sent and/or received.

Users with less experience found the phones difficult to navigate and the process of completing a task time-consuming. They were also likely to ignore the phone as a content gathering device if they could not understand its functions quickly and easily.

Figure 3. Nokia N900 and MCC/Need4Feed in action.

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Case study two: Lancashire Evening Post – Afghanistan

The LEP is a regional paper based in Preston (UK). It partnered with Bespoke to investigate hyperlocal journalism and how mobile phones could be integrated into a professional newsroom environment. The phones and both versions of the content management system were tested at LEP at various points, but this paper will concentrate on a one-week visit by reporter Andy Sykes to the UK military base in Fort Bastion, Afghanistan in 2010, living with and covering the daily activities of troops (Figures 4a and b). We armed Sykes with a reporter's kit including two Nokia N900 smartphones, a solar charger, and a Bluetooth keyboard for word processing.

Before the trial, researchers had investigated 3G and mobile coverage in Afghanistan. Typically, local mobile operators (Afghan Wireless) had increased levels of coverage in Kabul and other major areas, rather than in outlying regions. Nevertheless, Fort Bastion was reported to have Wi-Fi hubs and PC terminals, which meant that if mobile network coverage was not present, the LEP reporter could either connect to Wi-Fi, use the N900 as a mass storage device and transfer media to a PC and from there access the web-based Need4Feed platform, email or use file-sharing software for larger files. The reporter would mainly be covering his own news agenda, but would receive assignments issued from the LEP's digital editor. Outputs included a chronological blog (LepOnline 2010), regular stories on lep.co.uk, and a number of print titles by publisher Johnston Press.

User reflections were markedly split between the usability of the phone on the ground, and the effectiveness of the platform. Throughout the trial, no assignments issued by the newsdesk were received in Afghanistan. Researchers were unable to ascertain whether this was due to a technical problem with the phone locally or as a result of the user's limited familiarity with both the phone and software. The N900 itself as a multimedia content collection device also came under scrutiny. Although the ergonomic design of the keyboard was criticized, its Wi-Fi capabilities and camera meant Andy could fact-check on the go and take publishable images without a photographer. The lightweight nature of the phone and its mobility was also praised.

Case study three: Cross-platform – Finland and Manchester

The origins of this week-long trial in December 2010 are two-fold. The first comprised 25 UCLan journalism students running a cross-platform multimedia news operation. Content generated was published on a student-led website (Hotpot 2011) and included internally-produced TV bulletins, radio broadcasts, and a newspaper. The N900 and MCC/Need4Feed platform was to be used as a means of gathering multimedia content such as video, still images, and text. The second element of this project took place simultaneously in Tampere, Finland. A dedicated website (Vjm.magazine 2010) was established and populated with content captured on N900s by four postgraduate visual journalism students over a month-long pre-trial. During this period they used the smartphone for news creation (photos and text-based stories) and the MCC/Need4Feed client for receiving assignments and creating/submitting stories. A link between the two national outputs was created through a shared daily news conference where students would identify which themes each reporting jurisdiction would explore.

In Finland, the course leader was responsible for sending the mobile assignments to four mobile multimedia journalists. Some students worked as editors, finalizing and publishing the content to the website. In the UK, a handful of students took the phones on assignments over the week, often rotating phones between individuals. Assignments were

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Figure 4. 4a and b. Reports from Camp Bastion, Afghanistan, captured with the N900.

created and issued based on the initial news conference and flexible news agenda decisions made throughout the day.

Student feedback spanned smartphone limitations relating to: (1) reliability of the device in capturing multimedia, and quality of the media; (2) availability and speed of

network connections when uploading or downloading; (3) limited battery life-time; and (4) impracticality of writing with the small keyboard. On the other hand, the smartphone was described as a handy and lightweight device that is always available for reporting, enabling communication with the newsroom and other contacts, as well as access to information *in situ*.

Some participants expressed that phone calls and emails would be as or more effective than the online platform for reaching the mobile journalists. Creating online assignments was felt to be time-consuming and therefore inefficient when there was only one mobile journalist who would receive the assignment and carry it out. Nevertheless, the possibility of reaching a wider international network through the mobile assignments was seen as beneficial. Furthermore, direct integration into existing editorial systems would increase the system's attractiveness. The online platform's ability to manage content production was generally perceived as needing simplification.

A key reflection from UK-based staff was the lack of integration of the N900 and the MCC/Need4Feed platform into pre-existing broadcast, radio, print, and online newsflows. Tutors who supervised the process summarized: 'We were … servicing a website, print publications, radio and television. Logistically we couldn't rely on four mobile phones, which from our standpoint had limited capability – there were also technical problems. I'm afraid if we had relied on these phones we wouldn't have produced much at all. Certainly the platform has a part to play in the media mix, but from my students' point of view they were clumsy and slow – instead of being a help they were a hindrance'. UCLan tutors also felt the training was a key issue for extracting the most value from the process, and that had the participants been better practiced, the amount of usable content would have improved. The Finnish students with more hands-on experience and where the reporting process completely relied on the smartphones and the prototype platform, had more positive perceptions of the system, workflows, and the created content for news reporting.

Case study four: The Pipeline Project – Kenya

In February 2011, UCLan students spent 10 days at the Maasai Centre for Field Studies, Kenya. Their aim was to test the N900s and MCC/Need4Feed as an acquisition and production tool for journalists working in remote locations. The plan was to send multimedia content captured and edited on location back to the UK newsroom for inclusion in online and print products produced by MA Journalism students.

Four smartphones were used as capture devices with the Newelo platform engaged as the editor interface for sending briefs directly to each handset. The only energy source for the handsets was solar/car batteries which were only available for two hours in the evening. Reception was reported to be 'good' by those using the handsets both in the Maasai Centre and around rural East Kenya. There was no Wi-Fi or Internet connection at the centre or in the field so the only available option was to send material over the Zain or SafariCom mobile networks (Figures 5a and b).

Users with journalistic experience encountered a number of barriers. One participant suggested that 'the platform is completely counter-intuitive, even the language non-journalistic'. The trial also revealed the cost of international data: one 268.6k image file cost £88.72 to transmit from the N900 in Kenya back to the UK. In this case, the amount of data transferred was much higher than that which constituted the actual size of image. This can be attributed to multiple sending retries and an overhead generated by the application communicating with the MCC/Need4Feed system.

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Case studies: Summary

The case studies revealed a number of recurring usability issues around both the smartphone and the platform which can be identified despite the disparate geographic, skills base, and range of users.

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

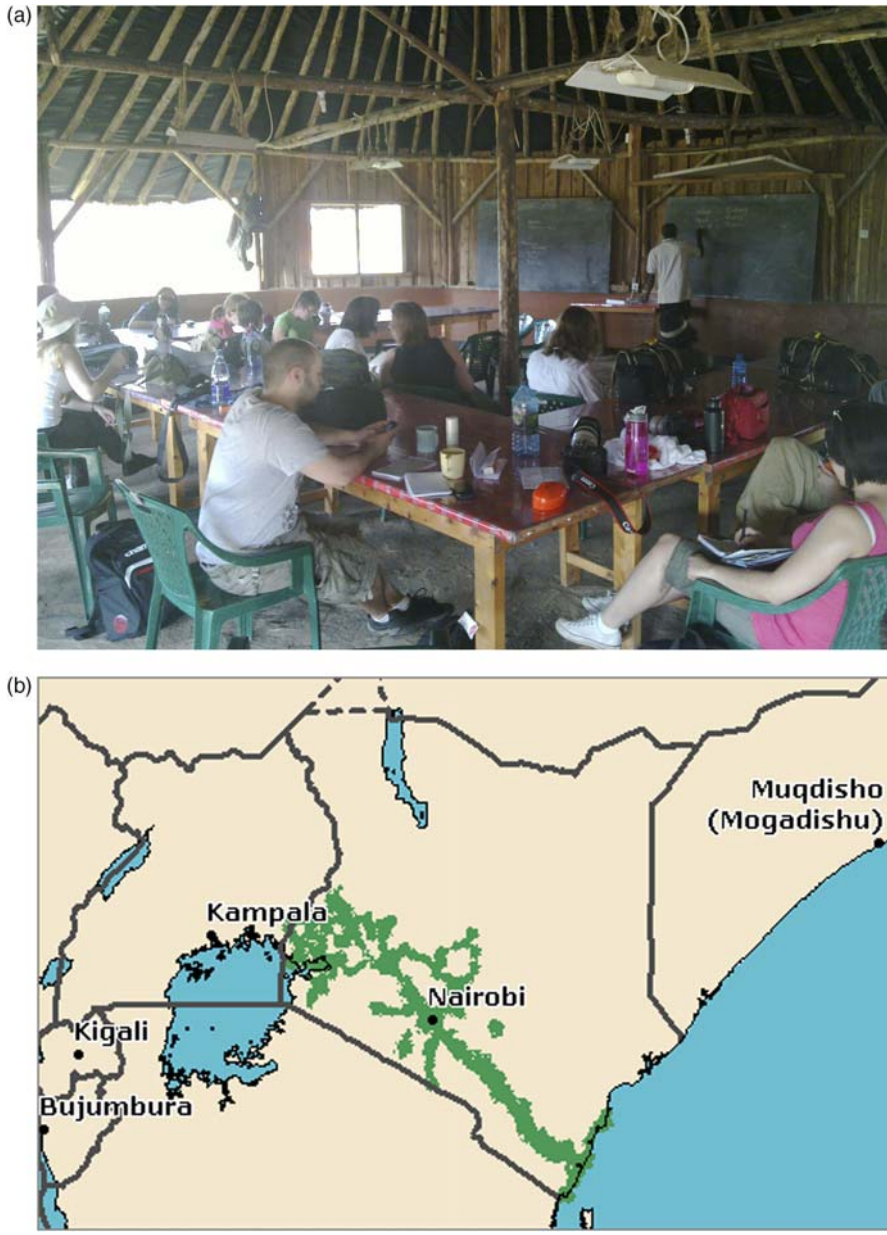


Figure 5. 5a and b. Maasai Center in Kenya (image captured and transmitted to MCC/Need4Feed by N900) and mobile network coverage of Zain and SafariCom (T-Mobile 2011).

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Smartphone usability

For some new and inexperienced users, the N900's operating system interface design presented a number of usability issues. Some also felt the keyboard was ineffectual in constructing anything other than a hundred words or so. The LEP's digital editor explained that 'time is usually of the essence, particularly for a newspaper or a website that is regularly being updated. Part of the problem with this kit is the keyboard. It's not easy to type on it, and everybody seems to have found the same problem, myself included'. The expansive and small icon-driven menu system for the camera, for example, was seen as an obstacle for some users.

Platform functionality

The beta-stage status of the MCC/Need4Feed platform resulted in inoperable menus, changing workflows, and a general sense of unease among users. When working in a 'live' reporting environment (Kenya, Afghanistan, and the North West/Finland trial) journalists would simply resort to other methods of content collection rather than 'fighting' with the technology.

Integration with existing newsflows

Early in the cross-platform project, the lack of technical integration with existing content management systems for broadcast, radio, and print became evident. Increased workload was either taken on by users to extract and include data, or this process wasn't completed at all.

International data costs

The Kenyan trial revealed the costs of data transfer, from which questions arose concerning sustainability and cost-effectiveness of international file transfer over mobile networks.

Conclusion

Throughout the trials, the use of smartphones resulted in similar user responses. The beta-stage and disconnected platform was far from the finished article, and therefore held the potential to create frustration. There was also a feeling – particularly within the professional newsroom and from the student journalists – that the phones may not have been quite advanced enough to produce content that they felt was publishable when held against alternative devices such as digital SLR cameras. Sometimes this impression was based on hard evidence, but occasionally on a preconception that N900s were inferior to traditional alternatives, as is also highlighted in previous studies mentioned above (Koponen and Väätäjä 2009). However, with more experience working with the smartphones and platform, and when the prototype solution functioned reliably, the users' perceptions can be more positive (Väätäjä and Egglestone 2012). Furthermore, mobile phones have already proved the feasibility of integrating UGC from citizen photojournalists into newsroom practices (Hänska-Ahy and Shapour 2012; Pantti and Bakker 2009; Väätäjä et al. 2011).

The expectation that an isolated MCC/Need4Feed platform could serve as a tool for managing journalists in the field by sending them commissioning briefs is somewhat at odds with the working practices of traditional journalists. With training, most would use the equipment to gather and send content but there is little evidence they would make use of the commissioning potential of the platform, particularly as a simple text message,

email, or phone call message outlining a brief from a news editor would fulfil the same purpose as a 'task' assigned by an editor within the platform. Nevertheless, on reflection many participants were enthused and excited by the vision of a fully-fledged and integrated mobile-based content gathering device.

Looking forward, a key requirement for a successful mobile capture device is to effectively incorporate it into a newsroom workflow and be aligned to standard newsroom file types and other technical norms. But effective integration does not simply end at workflow. Training and support would need to be effective too. Following the trial in Afghanistan, the LEP newsdesk editor reflected what the ideal training scenario would be, but acknowledged the realities of a newsroom environment. Throughout the research, and envisaging a working environment beyond the single platform and smartphone examined here, Bespoke researchers feel a number of additional features and functions are required by a smartphone-ready content management system. These could enable the smartphone and platform to assist professional reporting and community reporters in voluntary or semi-professional scenarios. In addition to conveying commissions and content, the platform should ideally be integrated within existing newsflows and access social media outputs. Smartphones with mobile internet access and Wi-Fi could act as a hub to bridge internal publication methods and external social media outputs like Twitter and Facebook. To extract the full capabilities of smartphones, they should act as a communications and content generation hub that allows users to not just collect content, but to edit, publish, and then form a dialogue around the content while on the move and working remotely from the newsroom. In some respects, smartphones could be seen to function as a converged newsroom in their own right.

The largest barrier to uptake seems to be the tension between the development of the technology workflow and its lack of integration with editorial processes. Complex content management systems (e.g. Avid, ENPS, Vizrt, and Atex) have adapted to accommodate the working practices of editorial teams that best serve the intended output. Similarly, news companies train employees on their own editorial systems and the emerging workflow becomes standard. Interrupting the newsroom's *modus operandi* attracts above the line costs of integrating the new technology (if this is feasible) and re-training the workforce. It also introduces below the line costs, as adaptation to new working practices slows down the editorial process. As LEP reporter Andy Sykes told researchers on his return from Afghanistan: 'In an ideal world, reporters out in the field will be able to connect to the [LEP's content management system] so they can write straight into the paper, from the phone straight into the final page'.

There is a lack of professional standards on information processing and exchange between various newsroom CMS/publishing platforms. This extends to standalone systems such as MCC/Need4Feed that could bridge the gap between reporters, professional newsrooms, or community/open journalism hubs. These platforms may not easily combine with existing systems and most professional newsroom CMS vendors have developed add-ons that support mobile-based reporting.

One thing became clear during conversations with participants in this study: a participatory design process engaging with journalists from across the traditional news disciplines of print, broadcast and online together with the companies building contemporary newsroom content management systems is an essential part of the development pathway for mobile news platforms, as is a thorough understanding of newsroom culture and the demands of editorial workflow. The design process requires two layers. Layer one is the design and development of an open standard and perhaps an associated certification authority for information exchange across various journalism platforms. Input from professional

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

journalists, researchers, and developers from both industry and academia could form the basis of this. Layer two would bring together professional journalists, community reporters, researchers, and developers to create a reference platform based upon the forementioned standard. This platform could also form the basis of an open-source journalism hub capable of accepting news reports from community and professional journalists alike and making the content available to professional newsroom platforms thus creating a standards-based journalism ecosystem.

The outcome of this 'design requirement' is one that was envisioned by the students, academic staff, professional reporters, and community journalists who took part in our trials: they sought seamless integration between smartphone and content management systems. When placed within a fluid production environment (Bradshaw 2007) mobile technology has the potential to be a central tool within the breaking news environment. Journalists can use smartphones with data connectivity, along with social media and centralized publishing platforms, to update on breaking news, write, edit, and publish material, and refine and develop content using a mobile web browser or native application remotely from a centralized newsroom. During our trials, MCC/Need4Feed was unable to offer this multi-layered functionality, but we recognize mobile journalism could become a more streamlined, efficient, and effective process as long as its workflow is truly embedded within newsroom systems.

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014

Notes on contributors

John Mills is currently a member of UCLan's School of Journalism, Media and Communication, before which he was based at the university's Sandbox centre for creative and digital industries. He has curated and supported volunteer and professional community journalists as part of the Bespoke Project (www.bespokeproject.org). He has previously established business-to-business editorial offices in Manchester and Leeds, and more recently headed a team of virtual newswire reporters based throughout the UK and Europe.

Paul Egglestone is Digital Coordinator at UCLan's School of Journalism, Media and Communication. As a former independent TV producer he worked for BBC, ITV, and Sky on regional and network programming. With the BBC, he developed a major cross-platform narrative training programme called inFUZE. In 2010 he was identified as a leading innovator in journalism and media.

Omer Rashid is an Interaction Developer at Sandbox, University of Central Lancashire. His current research interests include Human Computer Interaction, Mixed Reality Gaming, Contactless Communication, and User Engagement. With extensive experience in research and development for mobile devices, his work has received accreditation from organizations such as Nokia and Association of Computer Machinery (ACM).

Heli Väätäjä is a researcher at the Department of Software Systems at Tampere University of Technology, Finland. She is finalizing her PhD on using smartphones in mobile news making. Her research interests are mobile and ubiquitous Human Computer Interaction, usability and user experience, work related systems and services, and crowdsourcing – particularly in the field of news journalism.

References

Bespoke. 2011. Welcome to Bespoke. http://www.bespokeproject.org.

Blottr. 2011. Breaking News 24/7 – UK News – Blottr. http://www.blottr.com/.

Bradshaw, P. 2007. A model for the 21st century newsroom: Pt 1 – The News Diamond. http://onlinejournalismblog.com/2007/09/17/a-model-for-the-21st-century-newsroom-pt1-the-news-diamond/.

European Journalism Centre [EJC]. 2011. BBC to launch citizen journalism mobile app. http://www.ejc.net/media_news/bbc_to_launch_citizen_journalism_mobile_app/.

Forum Nokia. 2009. Device details – Nokia N900. http://www.developer.nokia.com/Devices/Device_specifications/N900/.

Gillmor, D. 2006. *We the media: Grassroots journalism by the people, for the people*. Sebastopol, CA: O'Reilly.

Hänska-Ahy, M.T., and R. Shapour. 2012. Who's reporting the protests? *Journalism Studies* : 1–17.

Jokela, T., H. Väätäjä, and T. Koponen. 2009. Mobile journalist toolkit: A field study on producing news articles with a mobile device. In *Proc. 13th International MindTrek Conference: Everyday Life in the Ubiquitous Era*, 45–52. Tampere, Finland: ACM.

Koponen, T., and T. Väätäjä. 2009. Early adopters' experiences of using mobile multimedia phones in news journalism. In *European Conference on Cognitive Ergonomics: Designing beyond the Product – Understanding Activity and User Experience in Ubiquitous Environments*, 1–4. Helsinki, Finland: VTT Technical Research Centre of Finland.

LepOnline. 2010. Reporting from a warzone blog. http://leponline.wordpress.com.

Meporter. 2011. Citizen journalism and hyperlocal news reporting. http://www.meporter.com.

Newelo. 2011. Newelo. http://www.newelo.com.

Pantti, M., and P. Bakker. 2009. Misfortunes, memories and sunsets: Non-professional images in Dutch news media. *International Journal of Cultural Studies* 12: 471–89.

Scoopshot. 2012., http://www.scoopshot.com/.

Smith, A. 2010. Mobile access 2010. http://www.pewinternet.org/Reports/2010/Mobile-Access-2010.aspx.

The Hotpot. 2011. The Hotpot. http://www.ukjournalism.co.uk/thehotpot.

Mobile, T. 2011. T-Mobile cost and coverage. http://support.t-mobile.co.uk/help-and-support/index?page=home&cat=costs_and_coverage.

Väätäjä, H. 2012. Mobile work efficiency: Balancing between benefits, costs and sacrifices. *International Journal of Mobile Human Computer Interaction* 4, no. 2: 67–87.

Väätäjä, H., and P. Egglestone. 2012. Briefing news reporting with mobile assignments: perceptions, needs and challenges. In *Proc. Computer Supported Cooperative Work CSCW'12*, 485–94. New York: ACM.

Väätäjä, H., T. Vainio, E. Sirkkunen, and K. Salo. 2011. Crowdsourced news reporting: Supporting news content creation with mobile phones. In *Proc. Mobile HCI '11*, 435–44. New York: ACM.

Verklas, K., and P. Mechael. 2008. *A Mobile Voice: The use of mobile phones in citizen media*. United States Agency for International Development.

Vjm.magazine. 2010. UTA–UCLAN Mobile Journalism. http://vjmmagazine.uta.fi/category/utauclan.

Westlund, O. 2008. From mobile phone to mobile device: News consumption on the go. *Canadian Journal of Communication* 33, no. 3.

Downloaded by [University of Central Lancashire], [John Mills] at 03:51 28 January 2014