Model for the
21st Century Newsroom
Redux

Context
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Comment & Conne
(comments, forum, wiki, tag,

Paul Bradshaw

Model for a 21st Century Newsroom - Redux

How digitisation has changed news organisations in a multiplatform world

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1. Introduction

In 2007 I published 'A Model for the 21st Century Newsroom', a series of models exploring how journalism might be organised to best play to the strengths of the world that we were now operating in. The physical limitations of traditional newsgathering, production and distribution were now being overcome by digital equivalents. The production line model that had dictated news production for a century was meeting a networked mode of operation where anyone could take on editorial and distribution roles.

Computational power and virtual networks allowed journalists to ask questions and access contacts that might have previously been impractical to answer or reach. We were no longer limited in the medium that we could choose to tell our story, or the time and space that we had to tell it. New forms of media were yet to settle down into standard formats; old ones were being reinvented.

There were, it seemed, countless opportunities to do journalism in a different way - but very little time, or resources, to find out which ones were most effective. There was a danger that instead of using these opportunities to tackle journalism's problems, established news organisations would instead tack them onto existing production processes - and be overtaken by online-only start-ups in the process.

The 21st Century Newsroom, and its accompanying diagram the News Diamond, was adopted and adapted by a

number of news organisations in the UK and around the world. Meanwhile, technology, user behaviour, newsroom culture and the commercial context continued to change.

This report, then, attempts to revisit the Model for the 21st Century Newsroom in the light of those developments and the growing experiences of those organisations and individuals dealing with them. What emerges is a picture both of increasing formalisation of production processes and the emergence of entirely new fields of operation. Breaking news, for example, is now dealt with online with particular confidence, while news apps and the increasing role of data present new challenges for information management and presentation. Cultural and technical barriers to collaboration are slowly breaking down and the desire to explore collaborative projects increasing. In a nutshell, the battle of the last five years has been to organise people - both within and outside of the organisation - and the focus has been on speed. The next challenge for the industry will be organising information itself - with a focus on depth.

The new version of the News Diamond, then, is both simplified and made more sophisticated as a result. Whereas the original was exploratory this new version reflects wider existing practice. Whereas the original focused on process, this overlays research on participation and distribution.

Based on a combination of interviews with journalists, editors, developers and executives and a review of current literature, this report attempts to summarise the way that multiplatform journalism is organised and managed across

a wide range of news organisations - national and local, print and broadcast, magazines and online - both in the UK and internationally.Â It explores how news increasingly operates in 'real time' and in response to the audience as much as it seeks to generate a response from them. It explores the rise of the liveblog format as a way of doing this while retaining institutional control - being 'of the network' while not always 'in the network'; the ways that news organisations are dealing with the challenges of providing context, including the rise of 'explainers' and tag-driven internal aggregation - and how new types of information are leading to new types of news apps that allow users to control and customise their experience of the story.

The report is divided into three sections: 'The Context: Devices, Rhythms, Content' is an overview of how people consume news and information online - and how that continues to change.

'21st Century Newsroom Redux' outlines how a news story increasingly moves through a series of stages from initial 'Call To Action/Response To Action' through to 'Comment and Connect' and 'Control and Customise'.

And a final 'Recommendations' section outlines a series of practical implications for journalists and editors.

2. Context: Rhythms, Content, and Devices

People's news consumption behaviour has changed enormously over the past decade - and is continuing to change. Once dictated by clear points of consumption, the rhythm of our news consumption has become so regular that we are barely aware of it[1][1] - from an irregular but pronounced beat to a constant static.

This change is not just about people having access to the internet, but about the contexts in which that access is made. The workplace is becoming a key site for online news consumption (Boczkowski, 2010), leading to a rise in consumption of socially 'safer' content such as sports reporting and celebrity journalism but not more sensitive material such as politics[2][2]. This notion of the popularity of socially safe content online is supported by research into the sharing of links on Facebook[3][3] which found that, of news stories that were shared, the top category was "sports/art/entertainment" with 40% of news links shared, while the bottom category was politics, making up 9% of linked news articles[4].

Online, we are moving from a model of distribution where

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[1]http://people-press.org/2008/08/17/key-news-audiences-now-blend-online-and-traditional-sources/

[2]http://www.niemanlab.org/2011/02/youre-probably-reading-this-at-work-heres-why-that-matters/

[3]http://online.journalism.utexas.edu/2011/papers/Baresch2011.pdf

the audience is actively engaged with the news, to one where they are, according to social network researcher danah boyd:

> "Peripherally aware of information as it flows by, grabbing it at the right moment when it is most relevant, valuable, entertaining, or insightful. To be living with, in, and around information. Most of that information is social information, but some of it is entertainment information or news information or productive information."[5][4]

This new rhythm of news consumption was identified in 2008 in ethnographic research by The Associated Press[6][5]. Jill, an insurance broker from Brighton, is representative:

● She watched TV news in the morning as she ate her breakfast and prepared for work

● Listened to the radio in the car on the way to work

● Checked her email every hour, seeing Yahoo headlines 10 times per day

● Received text messages & email alerts

● Had a live scoreboard on her desktop

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[4]http://www.educause.edu/EDUCAUSE+Review/
EDUCAUSEReviewMagazineVolume45/StreamsofContentLimitedAttenti/
213923
[5]http://www.ap.org/newmodel.pdf

● Listened to more radio in the car home

● In the evening she gets news through Facebook and email while watching the TV

Data on peak times of media consumption[7][6] adds a quantitative dimension: radio peaks in the morning and the afternoon, TV in the evening, the web around the time that people arrive at work and at home. Similarly, email use peaks in the early morning just after web use (once people have checked the web, they check their mail), and text messaging peaks just before the peak of web use in the evening, and just before people go to bed.

Figure 1.14   Proportion of all media activity throughout the day
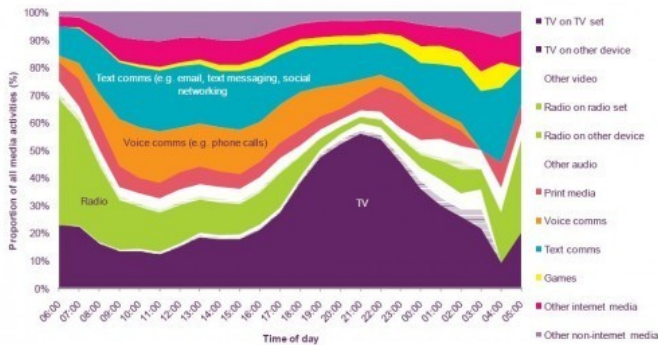

Image from http://stakeholders.ofcom.org.uk/binaries/research/811898/Full_-Chart_Pack.pdf

An understanding of these rhythms is forming the basis

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[6]http://stakeholders.ofcom.org.uk/binaries/research/811898/Full_Chart_Pack.pdf

for a number of online publishing operations. Business Desk, for instance - an online-only operation which covers business news across three UK regions - receives 80% of its visits during a two hour "attention window" when its users are travelling to work, and during which the website sends out a daily email.

News is social

News online is particularly social, and related to lifestyle: news is shared, it is searched for. It is social currency, and it 'comes to me from other people'. "Positive content" is distributed by users significantly more often than "negative content" and the traditional neutral voice of news organisations therefore becomes problematic in distribution terms:

"If we tweet with wonderment and excitement ("Wow, this new WordPress levitation plugin is amazing!"), it'll get more clicks and more retweets than if we play it straight ("New WordPress plugin allows user levitation")."[8][7]

This importance of social news online may be due in large part to the fact that internet use is dominated by participation in communities: in May 2010 95% of internet users visited a site in the 'search and communities' category, for an average of six hours and 40 minutes. Facebook users alone spent six and a half hours on the site that month. 'News and information' sites, by comparison, were visited

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[7]http://www.niemanlab.org/2011/02/like-share-and-recommend-how-the-warring-verbs-of-social-media-will-influence-the-news-future/

by 78% of users, who spent an hour and a quarter there[9][8].
Of course, just because a user is not on a news website does
not mean that they are not consuming news or information
- and news organisations may have to ask whether their
online distribution strategy should take this into account.

Equally, news organisations should be aware of research
into the benefits that people get and expect from the
medium: one review of the literature surrounding this lists
the following:

> "Interpersonal utility, [to] pass time, informa-
> tion seeking, convenience and entertainment
> [...] Companionship and social needs [...] re-
> laxation [...] Social escapism [...] interactive
> control [...] economic gain [...] fame [...] Prob-
> lem solving, persuading others, relationship
> maintenance, status seeking, and personal in-
> sight."[10][9]

News is connected strongly with email - both explicitly and
contextually: Yahoo! Mail displays headlines while users
are checking mail, for example. And consumption is for
many a 'scratch the itch' activity undertaken because they
are bored in what they are doing, not because they want to
find out something specific, or are engaged in an issue.

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[8]http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr10/internet-web/

[9]http://online.journalism.utexas.edu/2011/papers/Lee2011.pdf

Multitasking is identified in numerous surveys of media consumption: people consume news while doing other things. In some cases, they are digging further into the background to the news while they watch it, or talking to others about it. And for a majority of consumers news is something they stumble across while looking for something else[11][10].

Consumers are promiscuous in their news consumption: 65% of internet users do not have a favourite website[12][11], while research in 2009 by Oliver & Ohlbaum (see image below)[13][12] found that readers of the print edition of The Telegraph, for example, only spent 8% of their time reading online news on the website; in contrast other print competitors in the quality press accounted for 20% of their time.

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[10]http://people-press.org/2008/08/17/key-news-audiences-now-blend-online-and-traditional-sources/

[11]http://www.journalism.org/analysis_report/news_environment_america

[12]http://www.economist.com/node/15017453?story_id=15017453

Playing the field

Daily Telegraph readers, % of time spent on online news sources, November 2009

image from http://www.economist.com/node/15017453?story_-id=15017453

The situation is still developing, with the increasing penetration of smartphones and tablets presenting further types of consumption behaviour which are different again from that of the web. Data from comScore suggests that smartphones and tablets are shifting online news consumption from 'first thing at work' to 'first thing in the morning', a pattern repeated in data from Instapaper[14][13].

These devices are used less throughout the working day and there is a suggestion that for many news consumers they help break the association of the internet - i.e. computers - with work. Mobile devices are social devices;

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[13]http://readitlaterlist.com/blog/2011/01/is-mobile-affecting-when-we-read/

tablets are a consumer technology. It is not only their technical functionality that is important, but also their social contexts and meaning. News organisations - still getting to grips with publishing news online - are having to adapt again for patterns of mobile consumption that are very different to that seen on the desktop.

But while consumers are increasingly experiencing news as something that surrounds them - sometimes from multiple outlets - they also demand depth. In the AP study, despite their tendency to 'snack' on news, people expressed a desire for more depth in their news: they were fatigued with constant bite-sized updates. Delivering depth was one of AP's three key recommendations, along with improving discoverability of deep content; and creating social currency.

The next section explores just how news organisations are reacting to those desires for depth and for social currency.

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[4] *There was, however, a clear difference between age groups, with the majority of political articles shared by users aged over 35, and 25-34-year-olds making up over half of those sharing sports, arts and entertainment stories. In addition, separate research by Pew suggests that Facebook users are more politically active than similar Americans: see* http://www.poynter.org/latest-news/top-stories/136036/pew-finds-facebook-users-more-politically-engaged-are-political-

news-websites-where-their-audience-is/[14]

3. Introduction to the new Model for a 21st Century Newsroom

As stories are picked up and move through news organ-isations they increasingly pass through a series of stages. From initial tweet through to potential interactive news app, this process has become relatively formalised, and at each stage journalists and editors are clearer about the editorial, organisational and commercial focus underlying it[1].

The six stages - three focused on speed and three on depth - are shown in the following diagram, and explored throughout this section:
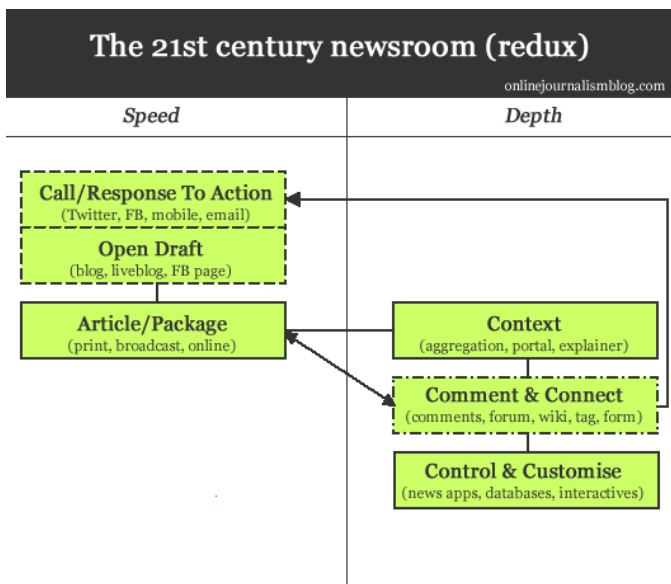
Stage 1: Call To Action/Respond To Action

Speed is one of the key qualities of journalism: we want to be the first to a story, or to a particular part of it. It is the battleground on which emerging news technologies do their fighting - from newswires' use of the telegraph to newspapers' increasing comment and analysis in the face of competition from broadcast. If we can't be first to break

the story, then we will settle for getting the first picture, or the first interview, the first reaction, or the first analysis[2]. In the new environment we can begin to add being the first to *verify*, or the first to *curate* or *aggregate*.

That history of competition between media has led to a range of production routines, dictated by the deadlines of broadcast and print distribution. Historically, those routines have been constrained by physical limitations - reporters had to gather the information for the story, type it up or edit it in some sort of production facility, and then pass it on to others to sub-edit, design, schedule, print or distribute. Each stage relied on work at the previous stage. It was a factory line, with shifts and deadlines, aimed at delivering a product at fixed times.

Digitisation and convergence offer new ways to make

money from the same content, but it has also disturbed the rhythm of the factory line.

To be able to compete in these new markets - or at least defend them from potential competitors - media organisations began to adopt web-first strategies. Print journalists had to adapt to producing live coverage. Broadcasters became bloggers. And both are still trying to find a way to combine the demands of filling a half-hour bulletin or double-page spread with the elastic space of their web and mobile properties.

The fundamental challenge is that news is now being produced without the physical constraints that had underpinned the organisation of the newsroom. Newsgathering, production and distribution can now occur simultaneously - and increasingly do.

2. News production in a digital world

OnlineJournalismBlog.com

Newsgathering News production
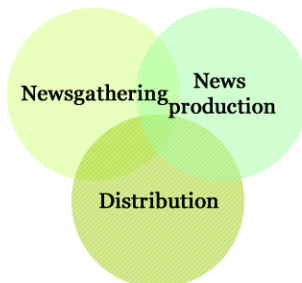
Distribution

It is not that publishing is instant - that is also the case with live broadcasts - it is that *distribution* is instant, and of a viral nature[3]. When something newsworthy happens, news of it *travels to* people, many of whom then seek out more information. They do not wait for the evening news, or the next morning's paper.

This creates a pressure to streamline the editorial process and the number of stages a reporter must go through to publish. The fact that they can publish without editorial filtering is as significant as the fact that anyone can.

This is not an alert

The naming of this first stage in a story's journey through the news organisation is deliberate, but also needs further clarification. While journalists are using networks such as Twitter as effective means of both responding to unfolding events and calling for others to act to help improve coverage (by, for example, providing extra information, leads, expertise, etc.), if those are the only things that journalists are doing on those networks, it will most likely prove ineffective.

As The Guardian Data Blog's Simon Rogers says: "Instead of just 'chucking it out there' to a 'grateful public', you realise that in most cases there will be experts in the audience who can often do the analysis of a particular data set better than you can"[4][15]

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[15]http://www.currybet.net/cbet_blog/2010/11/internet-week-event-datajournalism-guardian.php

The use of Twitter, then, should be geared towards **creating the most fertile environment for when the journalist needs to put out a call to action**. A good example is provided by the Norwich Evening News' Stacia Briggs, a columnist whose injection of personality into the @eveningnews Twitter feed creates a particularly fruitful relationship with other users. As former colleague Mary Hamilton writes[5][16]:

> "[B]etween the straight tweets that link the reader to important stories and keep people up to date, @eveningnews is genuinely funny and wonderfully compelling. It's a fantastic mix that makes readers feel they have a genuine relationship and a line into the paper – as is shown by the number of stories that come straight to Stacia via @eveningnews [Stacia says:] "I've been given feature ideas, news stories, pictures, video, song clips – it's been like a news sweet shop.""

The naming of this stage also recognises that on many occasions the first 'alert' of a news event does not come from a news organisation, and in some cases there exists a "news vacuum" around the event where no correspondents are present on the ground to provide updates. "First the tweets come, then the pictures, then the video, and then the wires," as The Guardian's Matthew Weaver puts it[6]. "My

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[16]http://maryhamilton.co.uk/how-local-news-twitter-engaging

Twitter feed provides me with everything from tips to official statements, the majority of which have been published on Twitter before anywhere else," says Neal Mann[7][17]. It is worth adding that data such as the names of survivors or locations of emergency services also increasingly forms part of the 'Actions' being called for or responded to.

Organisational responses

There is a distinction to be made between how news organisations deal with sourcing and filtering contributions from users at an organisational level, and how reporters do so at an individual level. A wide range of approaches exist: Some organisations outsource the management of comments and other UGC to external companies; some create separate teams internally; some have made it a responsibility of journalists; and some journalists take on that responsibilty regardless.

At VG Multimedia in Norway, for example, editor-in-chief Espen Egil Hansen asks journalists to spend at least 10% of their time engaging with readers. The site boasts an unusually high proportion of traffic coming direct to the website. In Southern California the experimental student news website Neon Tommy asks journalists to participate in story distribution and attracts over 360,000 page views a month[8][18]. And while a few years ago news organisations

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[17]http://www.bbc.co.uk/journalism/blog/2011/05/bbcsms-neal-mann-fieldproducer.shtml

[18]http://articles.latimes.com/entertainment/la-et-onthemedia-20110323

including Sky and the New York Times appointed 'Twitter correspondents' and social media editors, the titles were soon removed as entire newsrooms adopted the roles as a "shared responsibility"[9][19].

For many other news organisations, action takes place away from the news website - using Facebook pages for specific events and stories; email[10]; YouTube tags for videos and Flickr photo pools for images; or Google Forms as a way for users to send in specific information on a story[11][20]. News organisations have largely recognised that the battle to 'own' UGC has been lost: the majority comes from third party platforms.

The value of such contributions both editorially and commercially are well recognised. An editor at the Washington Post acknowledges "The value of having 'a thousand people' telling the newspaper what is going on at a local level rather than solely relying on newsroom staff." and at the Belgian newspaper Nieuwsblad.be "More than half the input we receive through these local email addresses is useful."[12][21]

However, concepts of 'citizen journalism' and 'UGC' are so vague in this context as to be, for the most part, functionally useless. In 2007 I identified seven different types of contributor, each of which might have fallen under the

[19]http://www.poynter.org/latest-news/top-stories/110111/why-the-new-york-times-eliminated-its-social-media-editor-position/

[20]http://www.reportr.net/2011/04/02/lessons-engage-audiences/

[21]http://online.journalism.utexas.edu/2011/papers/Hermida2011.pdf

'UGC' umbrella[13][22]:

● the 'brain' (the expert);

● the 'voice' (those with strong and well expressed opinions);

● the 'ear' (those who aggregate what is taking place in their field);

● the 'accidental journalist' (a witness to a news event);

● the 'value adder' (someone who improves the quality of content through activities such as commenting or tagging);

● the 'technician' (who uses technical skill to add value by putting your content or data into new contexts)

● the 'crowd' (who help contribute to a project by performing small parts of it individually)

Skills surrounding working with - and attracting - each of these different types have developed in the past few years, as have the tools both enabling journalists to monitor online content, and for users to produce that themselves.

In addition, each of these groups can be seen to have been adopted in different ways by different parts of the news operation. 'Technicians', for example, have been particularly successfully cultivated as a community by The Guardian's Simon Rogers and his Data Blog team (over 3,000 developers are now part of its Open Platform

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[22]http://onlinejournalismblog.com/2007/10/02/a-model-for-the-21st-century-newsroom-pt2-distributed-journalism/

initiative[14][23]), and before that by the pioneering BBC Backstage initiative, launched in 2005 but closed in 2010.

Numerous special projects have attempted to benefit from the efforts of 'The crowd', including Channel 4's 'Cutsmap', Canada's OpenFile, and, most memorably, The State in South Carolina, which used crowdsourcing to track down a bad smell in the town[15][24].

The Guardian's Paul Lewis has been a particularly successful exponent of the art of working with crowds at an individual level, connecting with online communities to break stories including the role of police in the death of newspaper vendor Ian Tomlinson; the existence of undercover agents in the environmental protest movement; and the death of a man being deported to Angola[16][25]. In planning to cover a march against budget cuts, he put out a crowdsourcing call in advance of the event. He feels that a crucial factor that makes crowdsourcing a success is that there is a reason for people to help.

The focus on the 'Accidental journalist', meanwhile, has moved from creating in-house submission forms to monitoring sites such as YouTube, Flickr, Twitter and Facebook, where useful content is much more likely to originate. The UGC 'newswire' Storyful, for example, now provides such a role to a number of news organisations by monitoring

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[23]http://online.journalism.utexas.edu/2011/papers/AitamuroLewis2011.pdf
[24]http://www.thestate.com/2010/10/26/1531113/where-is-it-smelly-in-columbia.html
[25]http://www.currybet.net/cbet_blog/2011/03/paul-lewis-investigative-journalism-twitter.php

content at the 'firehose' point (before content is indexed by search engines), as well as providing verification services.

There may be a case for an eighth category of contributor, too: user behaviour (The Guardian's Meg Pickard calls them "strangers"), which is providing an increasing numbers of leads for journalists. Homicide Watch's Laura Amico, for example, describes how one example led to her unearthing an unreported murder[17][26]:

> "1. I had four searches for "20 year old male killed on fort stanton se may 4" in my search terms this afternoon, but in my records, I didn't have any homicide that met that criteria, and I wasn't aware of anything that has happened today, May 4.

> "2. Searches for "Fort Stanton homicide" failed, so I tried a more general approach. I searched "RIP" in realtime and sorted results to those nearby on Google. That yielded a truckload of RIP Twitter messages to "Fonnie," including some including photos of a man who looked to be about 20 years old.

> "3. So I took the search term "RIP Fonnie" to Facebook where I found a memorial poster

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[26]http://lauraamico.tumblr.com/post/5196806316/reporting-from-analytics-example

with the birthdate 7-14-90 and the death date of 5-4-11.

"4. At this point I knew that a DC man named or nicknamed Fonnie died, and was likely killed, on May 4. But my only geographic clue was that initial search on my site, which said Fort Stanton. So I reached out to two people a) Gwen Crump, the MPD spokesperson and b) Ron Moten, the co-founder of Peaceaholics. I reached Ron first, he confirmed that a 20 year old male had been stabbed to death in Woodland Terrace, near Fort Stanton, and that he had died at a local hospital early Wednesday morning. But he didn't know the exact address where the crime occurred or the guy's name. Then Gwen called. She confirmed the homicide, gave an address, and IDed the victim as 20 year old Alphonzo Epps.

"The whole process took about an hour, start to finish."

Similarly, The Nation used analytics to debunk media hype around a Sarah Palin video[18][27]; and The Guardian's Zeitgeist project allows it to spot unusual patterns in traffic that sometimes lead to the commissioning of new content. The

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[27]http://www.thenation.com/blog/37462/new-data-shows-sarah-palin-paper-grizzly

Huffington Post have even used it to test-drive alternative headlines[19][28].

From 'push and pull' to 'pass': the distribution pressure

The 'Call To Action' and 'Response To Action' in the initial stages of a story offer key opportunities to influence a distribution infrastructure which - unlike in print and broadcast - news organisations do not control.

Online, distribution is dominated by two major infrastructures: the search engines, and social networks.

In both, speed or depth are crucial, as will be explained throughout this report. And the power to distribute is largely in the hands of users, who can boost a page's ranking on search engine results by linking to it on their website, or boost its traffic directly by doing so on social networks. Research in Canada, for example, showed that people were twice as likely to get their news from friends and family than news organisations or journalists on social networks[20][29], and they feel they get a broader range of news there too. From a newsroom perspective journalists report that stories involving active use of alerts early on produce "significantly higher" page impressions than a typical breaking news story. This is partly because the

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[28]http://www.niemanlab.org/2009/10/how-the-huffington-post-uses-real-time-testing-to-write-better-headlines/

[29]http://www.mediaresearch.ca/en/projects/documents/CRMCSocialnewsApril27.pdf

previous models of distribution - the 'pull' of tuning into a broadcast and the 'push' of receiving a paper or magazine - have been complemented by 'pass' models online, embodied by the link.

This is particularly strongly illustrated by an image (shown below) of tweets relating to the death of Osama Bin Laden that show two key roles: that of Donald Rumsfeld's Chief of Staff, Keith Urbahn (who had around 1,000 followers), and *New York Times*' digital media reporter Brian Stelter (who had 55,000)[21][30], who retweeted Urbahn's tweet - a 'Response To Action'.

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[30]http://mashable.com/2011/05/07/bin-laden-visualization/
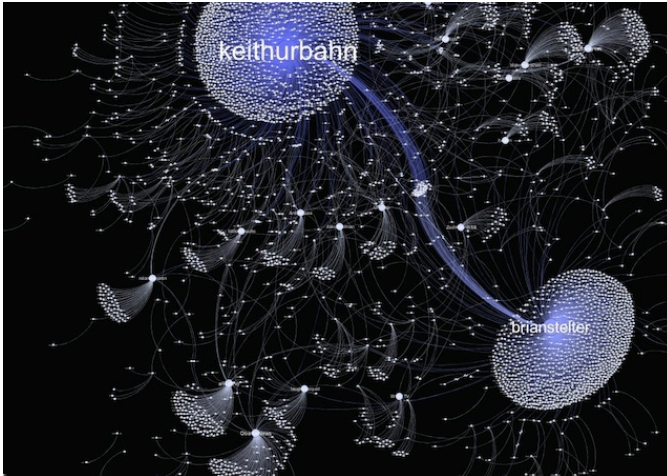
Stage 2: Open Draft: liveblogging - "The first draft of journalism"

The Guardian's Andrew Sparrow, writing about his experiences of liveblogging the 2010 general election, says "If journalism is the first draft of history, live blogging is the first draft of journalism."

"It's not perfect, but it's deeply rewarding – on any day, I was able to publish almost every snippet that I thought worth sharing, which is not the case for anyone who has to squeeze material into a newspaper – and it beats sitting on a battlebus."[22][31]

Charlie Beckett's report 'The Value of Networked Journalism' is similarly enthusiastic, arguing that "It could become the new online 'front page'":

> "The way it changes reporting is typical of networked journalism. It is a concentrated dose of participatory, interactive and connected news media, facilitated by a professional, mainstream media journalist or team."[23][32]

In some cases the liveblog has indeed become a key feature of the front page, if not *the* front page: on the website of Denmark's Berlingske newspaper, for example, the liveblog

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[31]http://www.guardian.co.uk/media/2010/may/10/live-blogging-general-election

[32]http://www2.lse.ac.uk/media@lse/POLIS/Files/networkedjournalism.pdf

is an important front page fixture, and is responsible for a significant proportion of user activity. Most UK news websites have hosted a liveblog on their homepage, as, for instance The Telegraph did during the royal wedding[24].

Liveblogging is about more than just immediacy, however. It is not 'more, faster', but a format that provides the opportunity for **more**, **faster**, **from multiple directions and in multiple media**, **responding to a networked context**.

Liveblogging in a networked environment

Liveblogging can justifiably be regarded as a web-native form of journalism, something qualitatively different to live reporting on broadcast media, or a 24 hour news 'ticker' - or indeed, any form of media outside of a networked environment.

Liveblogging has to accommodate a number of key features of online publishing. In addition to covering the event itself, the journalist must also react to other coverage of the event - by organisations and individuals - and react to the demands of users, both directly (through hosted comments and messages) and indirectly (through 'open' comments, hosted on open platforms such as Twitter, and through user activity, e.g. trending terms and rising searches).

Liveblogging also has to perform a function distinct from all of that other coverage. **A liveblog must define itself by how it adds value to the user within a network**.

This is a key difference which needs to be explored further.

Print and broadcast media can make few assumptions about their audience's access to other information. Traditional live reporting will typically, for example, document the event from one person's perspective (the commentator) with occasional background detail, two-ways and analysis to 'fill in the gaps' when there is little to report directly.

Liveblogging, however, must assume that many of those taking part in the event will be publishing their own coverage at the same time, and across the same platforms - the web, Twitter, Facebook and other social networking websites.

To merely replicate the observational role is, in most cases, to add little value to what already exists around the news event. And in the case of events where meaning is contested (such as demonstrations and protests), a single journalist's point of view can actually appear poorly informed when placed in the context of access to a diversity of apparently better-informed voices and perspectives.

News organisations are learning that the discipline of liveblogging is both reactive and proactive. At its base is indeed the need to reactively **document** what is taking place in front of the reporter - but as other voices compete within the online space, the journalist must then also **aggregate** the most important of those. As The Guardian's Matt Wells says, they are "Open about the limitations of journalism and draw in the expertise of the audience – and even take
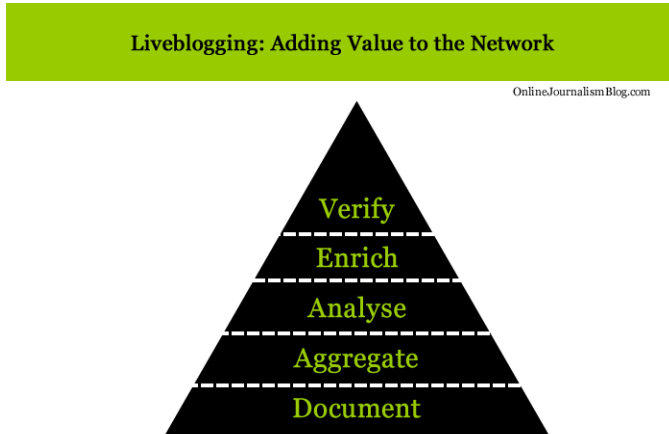
input from journalists on rival publications."[25][33]

Aggregation is a particularly key theme that runs throughout the liveblogging skillset: while the journalist must produce **analysis** of what is happening based on their specialist knowledge, they will also need to aggregate analysis from elsewhere and identify which gaps remain. And while they can **enrich** coverage by adding video, audio, photography, maps or other media - again they will need to be aggregating these multimedia elements from platforms such as video- and photo-sharing websites.

The final layer - that of **verification** - is perhaps the most important in an event where so many contested claims are often being published and distributed. Giving names, places and times to disputed incidents; gathering eyewitness testimony and checking official reports are key areas where the authority of a news organisation will be asserted and tested. It is no longer enough to simply bear witness to key events.

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[33]http://www.guardian.co.uk/media/2011/mar/28/live-blogging-transforms-journalism

Liveblogging: Adding Value to the Network

OnlineJournalismBlog.com

Verify
Enrich
Analyse
Aggregate
Document

Liveblogging challenges

As it has matured the genre has adopted examples of best practice, and adapted to new technological developments. Although it was first used for time-limited stories such as sports events, it has since been used to report on events that stretch over longer periods of time. As a result, structure has taken on increasing importance in allowing users to navigate the "stream" of information presented.

Editorially Andrew Sparrow tries to open his liveblogs "with 'this is what we expect to be announced today' to set the tone and topic in the morning, and finish the day with a round-up of key reaction to events", as well as

including regular round-ups of the key points for users who are dipping into it[26][34]. Former Guardian journalist Kevin Anderson suggests a better solution may be to break up the posts at "major inflection points".

On the technical and design side The Guardian have added formatting for elements such as blockquotes and staff contributions[27][35], as well as indicators when one reporter replaces another as host, but there is still a feeling that they can become overly long and confusing when the event being blogged does not have a defined timescale.

As the information contained in liveblogs proliferates, other navigation options may be worth exploring. Search is a particularly important method for users to navigate content on the web as a whole[28] and it may be possible to encourage users to search within the liveblog more by having an in-built search box, for example. Equally, word clouds can be effective both in communicating the overriding themes of large amounts of text while - if words are made clickable - providing a mechanistic navigational tool as well (Springer's realtime tag cloud of the most frequent keywords of the last 200 articles downloaded[29][36] is one similar example in action).

A further consideration should be the devices where users interact with content: the rise of mobile devices in con-

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[34]http://www.currybet.net/cbet_blog/2011/02/live-blogging-at-the-guardian-andrew-sparrow.php

[35]http://charman-anderson.com/2011/02/23/live-blogging-evolved-context-and-curation-not-just-collection/

[36]http://realtime.springer.com/keywords

sumption behaviour raises issues for the formal liveblog format. Possible solutions might include formats designed for mobile devices; dedicated apps; and directing users to third party platforms via workarounds such as branded Twitter hashtags[30][37] and curated lists.

Blogging's function in the production process

Blogs continue to perform an important role in multiplat-form reporting, providing space for extra detail and user input. It's notable that one of the few UGC activities to see an increase between the Ofcom communications market reports of 2009 and 2010 was commenting on blogs[31][38].

The communities that exist around a particular field are key to the adoption and success of journalists' blogs. Journalists working in areas such as sport, for example, have found their Twitter and blog activity particularly productive in building up relationships with communities who are passionate about football, or cricket.

Areas such as business and politics, meanwhile, have found the blog format to be particularly useful for the parts of their work which do not fit into traditional print and broadcast structures: the details. Still, some fields remain

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[37]http://onlinejournalismblog.com/2011/03/23/should-you-brand-a-hashtag/

[38]http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr10/

where blogging is less successful, such as education and health.

A widening diversity of blogging platforms has also changed the medium: tumblelogging has found a role in dozens of news organisations as they attempt to open their processes to their audiences; flexible moblogging platforms like Posterous are lowering the barrier to entry, while geolocation and realtime information add further possibilities still. The Posterous blogging tool's iPhone app, for example, added an 'events' option which allows users to instantly begin blogging about an event taking place around them. The app aggregates other blog posts from the same location, using geolocation data as a method of aggregation. This and similar apps Color and Mobli - which do the same for photoblogging - are relatively unsophisticated uses of the technology but provide an indication of how things might continue to develop as geolocated information and devices continue to proliferate, and users' literacy increases.

Stage 3: Articles and packages

As news organisations have struggled to adapt their production processes for multiplatform publication, for some organisations original print and broadcast deadlines have become problematic. Some editors acknowledge that the website may go without updates while journalists turn their attention to the presses; or feel that individual journalists at the centre of growing stories come under un-

necessary pressure to supply information to numerous platform teams.

In some cases publishers have taken the business decision to move from daily to weekly publication - as The Birmingham Post did in 2009 - or from weekly to monthly - as Press Gazette did in 2008 - or to cease publishing in print at all. This simplifies matters but does not solve the problem. As outlined in the final section of this report, hierarchies are being flattened to address this, while the editor's role becomes increasingly that of managing these points of conflict.

Online, articles and packages face a distribution problem, squeezed as they are between the snack-sized bites of news typified by the tweet, and the interactive experience that can drive so much traffic through Google and Facebook. Yahoo! Labs's Yury Lifshits's research into the social analytics of online news concluded that there is "no driver for materials with mid-range (few weeks-few months) lifespan"[32][39], and recommended exploring new promotion mechanisms. In the meantime, it seems that the best option to maximise article reach is to have a coherent strategy in its earlier 'Call/Response To Action' and 'Open Draft' stages.

After the article/package stage, however, things get more interesting for online distribution, user engagement and commercial opportunities.

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[39]http://research.yahoo.com/files/YL-2010-008.pdf

Depth

If the 'speed' part of the news process is primarily about facilitating user *input* and *distribution*, the 'depth' part focuses on managing *output*.

As consumers move from a need for awareness to a need for understanding, the journalist and news organisation is expected to provide focus, and filters.

Likewise, while speed and immediacy play a key role in the initial distribution of news, depth plays a crucial role in more general shareability. At this stage of a story, people may still be sharing new updates - but they will also be sharing deeper analysis, context and interactivity.

Lifshits' research into what stories attracted the most 'Likes' on Facebook, for example, suggested that publishing frequency was not important, and news organisations should opt for "depth over breadth".

Opinion and analysis were the most common type of stories 'liked' - and therefore distributed - by users. Others included lifestyle, photo galleries, interactives, humour and odd news. (Facebook, of course, is a bigger source of traffic for news websites than Google News, or indeed all sites other than the three major search engines.)

This desire for deeper content is also supported by other research which suggests that Wikipedia is one of the most popular destinations for developing news-related searches.

"For the Israeli-Lebanon conflict: people were

> searching for the history of the conflict; for Hezbollah: for... from maps for information on the region, and the top source... the top place that people went to in searching for those terms were to Wikipedia, and so all of the news and analysis that the mainstream press were creating around this was being missed because they weren't showing up at the top of the search engine results." (Heather Hopkins, Hitwise)

And as explored in the *Context* section, the AP study 'A New Model for News' similarly identified a desire among news consumers for more substantial news treatment.

This is not something as simple as 'curation' or editorial selection, but is perhaps more accurately described as **a form of information design which accounts for interaction from other parts of the network**. This can take any number of forms, whether that is a user typing in a postcode or clicking a button, or a burst of collective user activity based on anything from what they are sharing and clicking on to what they are searching for.

This increasing user control as described by the original News Diamond increasingly requires information reaching the end of the process with enough meta data (information about the content, such as its author, key organisations or individuals, and so on) to make that control possible.

There must, however, clearly be an editorial judgement that the creation of that meta data itself warrants the

investment of time and effort - and strategies in place to ensure the addition of that meta data. Such judgements are now being made both in the selection and construction of content management systems, and retrospectively in the application of textual analysis to archive material in order to identify individuals, organisations and locations featured within it.

Stage 4: Context: portals, networks, explainers, pages and aggregation - the wikification of news

News websites' constant production of content can be both an advantage and a disadvantage. On Google News, for example, speed is key: the site will give added weight to the first webpage published on a particular story.

But Google News is only responsible for a small proportion of traffic to news sites - smaller traffic than, as we have already seen, Facebook. And certainly smaller traffic than its big brother, Google.com.

On Google.com, while results from News will be embedded - more prominently with current events - broadly speaking depth is king. Webpages that have built up thousands of inbound links over months and years will often rank more highly than entirely new ones.

From a commercial standpoint Google's own Marissa Mayer has frequently emphasised the need for news organisations to compete online by adopting "living URLs" or "Wiki-fication of news".

Many news organisations have responded by launching topic pages - including Northcliffe's regional newspapers; The Telegraph; The New York Times and the Huffington Post.

Steve Yelvington makes a distinction between these topic pages - aimed at the wider, casual user - and 'beat blogs' - that also monitor developments within a particular story, but are aimed at smaller groups of loyal readers.

This again reflects the distinction between immediacy and depth, and between control over input and control over output. A beat blog is often aimed at those people who will hear about things first - in the immediacy stage of the process. A topics page is aimed at those who come to it late, and want an overview.

A good topics page, Yelvington says, has several obvious components:

1. "An editorially crafted synopsis. Who/what is this about? Why should I care? This is where a reporter's expertise pays off.

2. "Images, maps, or infographics.

3. "Links to Web resources.

4. "Links to conversation. If this is significant, won't people be talking about it? Where do I find them?

5. "Links to multimedia components.

6. "Links to incremental coverage. Let the drill-down begin.

7. "Who covers this topic? How can I reach this person?"

An earlier precursor to this list can be found in part of the original Model for a 21st Century Newsroom[33][40] that expresses a similar list in terms of the '5 Ws and a H':

- **Who** can I connect with?

- **What** did the journalist read to write this?

- **Where** did this happen?

- **When** are events coming up that I need to be aware of?

- **Why** should I care?

- **How** can I make a difference?

The problem for many news organisations is that their topic pages are usually organised automatically, drawing on data about each article through tags, meta tags, or semantic analysis, and organising the results chronologically.

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[40]http://onlinejournalismblog.com/2007/11/12/five-ws-and-a-h-that-should-come-after-every-story-a-model-for-the-21st-century-newsroom-pt3/

This can have enormous advantages. The Guardian's use of tags to create on-the-fly and customisable subject pages, for example, requires no extra effort on the part of journalists or developers. Martin Belam and Peter Martin explain how "We would never have the resources to manually manage a page specifically devoted to Maternity & Paternity rights[41], but with tags we get one almost for free." as well as allowing content to be presented in different contexts without, for example, "the Film and Sport desks having to have a lengthy conversation about it"[34][42].

Tags also allow you to create new contexts for information based on user behaviour and relationships between tags. For example, a page on Egypt might recommend Tunisia (because there are many news stories sharing both those tags) or Protest (because that's where many users go next) or Cairo (because there's a semantic relationship).

But this automated approach comes with numerous disadvantages. Belam, for example, sees news organisations as suffering from their own "obsession with chronology" online. Even national news website topic pages that are automatically aggregated suffer from being organised in reverse chronological order: "Instead of the kernel of the story, you'll mostly see a drip-drip of recent stories featuring figures at the periphery of the sorry tale"[35][43].

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[41]http://www.guardian.co.uk/money/maternitypaternityrights

[42]http://www.guardian.co.uk/info/developer-blog/2011/jan/10/tags-are-magic-1

[43]http://www.currybet.net/download/pdf/belam_tyranny_of_chronology.pdf

Instead there is an emerging body of thought that tagging and other meta data can form the basis for more sophisticated editorial judgements. For instance, as Stijn Debrouwere argues[36][44], we can build navigation algorithmically

> "Using the basic elements of a story — its theme, its genre, its medium, the locations it talks about — as our building blocks.

He provides a number of examples of how different rules can produce different primary navigation:

● "the music section: everything with music as a theme

● "latest and greatest: all recent content in the genre reviews, with a score above 75% and ten responses by readers, unless the review is less than a day old, in which case we'll show it regardless of the amount of comments

● "'All eyes on the 2010 elections': all video and photographs related to the event 2010 elections (either themselves or through the stories where these videos and pictures are included)

● "modern living : everything tagged environment and lifestyle

● "Child abuse in the Catholic church (special) : every story related to the organization Catcholic church that has child abuse as a theme"

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[44]http://stdout.be/2010/04/14/navigation-headaches/

"If we want to be on top of the news," he notes, "we need to be able to assemble this kind of ad-hoc navigation quickly and effortlessly, not by asking an editor to skim through the entire archive, hand-picking stories that might be relevant for these special dossiers."

The problem of prioritising that algorithmically selected information remains, however: the editor's job is not redundant.

Tags and other metadata can also form the basis for other extra layers of interaction provided by the news app - explored further below.

Explainers

In some ways the automated topic page is the liveblog of context, where the individual unit being aggregated is the article rather than the update. The result can be useful to those who want to be able to access the most recent information on a particular subject from one page, but can also be confusing for those who are not involved in the day to day reporting of the issue and want something introductory.

Much more successful on this front - both from the perspective of SEO and user experience - is the 'Explainer', which focuses on giving context behind current events.

Used by Mother Jones and the Huffington Post among others, these have proved hugely successful: in the case of the former they "partly" credit the format with a 420%

increase in web traffic[37][45]. The format also lends itself particularly well to online video, which does not have the technical demands of broadcast video and can simply consist of a reporter and a whiteboard, or animated statistics, music and clips.

Megan Garber feels there is a distinction between these explainer pages and the more ad-hoc liveblogging format:

> "The basic design decision [Mother Jones] made in creating its Egypt explainer — breaking it down into categories, encyclopedia-style — imposes an order that more traditional attempts at dynamic coverage (liveblogs, Twitter lists, etc.) often lack.

> "In news, one of the biggest barriers to entry can be simple intimidation. We talk a lot about "engagement" in journalism; one of the most fundamental ways to engage an audience, though, is by doing something incredibly simple: producing work that acknowledges, and then accommodates, ignorance."

It also presents an opportunity to engage users who may not normally be consuming news offline. Strikingly high

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[45]http://www.niemanlab.org/2011/03/mother-jones-web-traffic-up-400-percent-partly-thanks-to-explainers/

percentages of users encounter news stories while searching for something else[38][46] - most internet use is goal directed, and according to some research, while "acquiring current affairs information is rarely a primary goal ... these people may encounter news more frequently on the Web than they would offline"[39][47].

Stage 5: Comment and connection: analysis and reflection

News is highly social - and becoming more so - and news organisations have an important role in being involved in the discussion that takes place around it - not least because of the likelihood that it will lead to further stories, or commercial opportunities.

This is the point in the progress of a story during which casual users most seek to connect with each other around a particular issue - but there will also be active users who were connected already at the initial stages of a story's development, and already having these discussions. The question then becomes how to operate next to these connected communities - how to locate them, how to work with them, and whether to use relevant content on a technical level, through aggregation, linking, or other forms. Der Spiegel's online forum, for example, has 100,000

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[46]http://people-press.org/2008/08/17/key-news-audiences-now-blend-online-and-traditional-sources/

[47]http://online.journalism.utexas.edu/2011/papers/Baresch2011.pdf

members, making it one of the biggest debate platforms in the German-speaking region[41][48]. The Guardian's Science Blogs network[42][49], by contrast, uses aggregation to partly address this problem. Others use Facebook pages[43][50] or Flickr photo pools.

It is also the stage[40] at which journalists tend to be most comfortable with (if not uncritical of) contributions from users. It allows a news organisation and its reporters to get a feel for the areas that are least understood, or generate the most discussion. A new challenge for journalists lies in being able to adopt different 'codes' of communication depending on the platform, while also managing the different demands that multiple audiences place on them. Technically there is the challenge of encouraging and identifying good quality contributions beyond methods such as requiring registration or (in the case of Slovakia's Piano system) payment, or instituting voting and 'karma' systems (where users' contributions are automatically published or held back based on previous behaviour)[44].

In France Rue89's sytem allows instant publication of a comment as a standalone article, as well as the ability to showcase the best twelve comments directly underneath the relevant piece. The Guardian's editorial guidelines ask journalists to "Participate in conversations about our content and take responsibility for the conversations you

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[48]http://online.journalism.utexas.edu/2011/papers/Hermida2011.pdf
[49]http://www.guardian.co.uk/science-blogs
[50]http://mashable.com/2011/02/27/facebooks-growing-role-in-social-journalism/

start"[45][51], a position supported by internal research: their Head of Digital Engagement Meg Pickard notes from internal research that if a journalist commented on a thread early on the overall tone of comments increased, and the amount of moderation required in the thread decreased (in some cases by up to half)[46]. The introduction of community coordinator positions is one attempt to bridge gaps between users and journalists and editors. Few mainstream news organisations have come close to commercialising their news site as a platform for users to connect . Outside of traditional organisations, however, the Huffington Post comes close; Mashable is experimenting with its Mashable Connect service; Slashdot and Boing Boing are well established news communities; and the Conde Nast-owned Reddit has also enjoyed recent success.

Stage 6: Control and Customisation: multimedia and the news app

As it becomes apparent that a story or issue is commanding widespread interest a news organisation might begin to invest resources in something that distinguishes their coverage from that of their competitors, and provides the

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[51]http://www.guardian.co.uk/info/2010/oct/19/journalist-blogging-commenting-guidelines

userbase with the ability to control and/or customise the information surrounding it[47].

Initial work in this area centred on the clickable interactive: typically a selection of multimedia resources (video, audio, galleries, maps and text) that the user could navigate based on their own interests.

More recently there have been two key developments that have changed this stage of the news process: the increasing use of databases, and the rise of the (often database-driven) 'news app'.

The challenge for many news organisations is reorganising their production processes to account for the possibilities of news apps and controllable content. As Jonathan Stray notes: "newsrooms are geared around content creation, not getting people information"[48][52]:

> "The primary product is seen to be getting the news out, not helping people find what is there. (Also, professional journalism is really bad at linking between stories, and most news orgs don't do fine-grained tracking of social sharing of their content, which are two of primary signals that search engines use to determine which articles are the most relevant.)"

Kevin Marsh similarly comments on the way that the focus on the story form has created an editorial blind spot[49][53]:

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[52]http://jonathanstray.com/the-editorial-search-engine
[53]http://www.bbc.co.uk/blogs/theeditors/future_of_journalism.pdf

"Our audiences have rumbled the weaknesses of 'the story', even if we haven't [...] They know that on some subjects – crime; youth; leadership; the wars in Iraq and Afghanistan; the thing George Bush used to call 'The War on Terror'; most aspects of politics – 'the story' may well reinforce their prejudices but does nothing to give them the kind of information they need to be active citizens.

"[...] The web has unbundled the bundle we used to sell audiences as a paper or a bulletin; it's erased the distinction we journalists used to make between 'news' – what we said it was – and information, stuff, the whole of the rest of the world. The web is enabling our former audiences to come to their news in their ways at their times. Our old image of gripping them with our 'stories' is no more."

And Stijn Debrouwere highlights the need to consider more than narrative in the way a story is managed:

"The first day a story is published, the narrative will undoubtedly be the most important aspect of the coverage, but later on a story can get a second life in a database, become part of a mashup or be displayed as an entry on a topic

> page. And for those purposes, we don't care
> about narrative, we crave information."[50][54]

News apps - the phrase is instructive, suggestive as it is
of standalone products separate from the generic branded
news product - directly address user control, building
utility and functionality on top of traditional storytelling.

And so ProPublica's dialysis facility locator[51][55] adds a
data-driven search engine on top of investigative reporting;
and the Los Angeles Times's real-time crime map[52][56]
automatically detects statistically significant spikes. "Both
can be thought of as story-specific search engines," argues
Stray, "optimized for particular editorial purposes."

Other functionality added by news apps include the ability
to provide information specific to a user's location at that
moment, or to one that is entered; how a particular story
will affect someone based on their demographic details;
control over time (through bookmarking, for instance) or
space (through drag and drop, or through the ratings of
others in their social circle, for example); to see information
displayed against a map, or a timeline. To explore by
medium, or theme, or even mood.

There are now clear commercial drivers behind these news
apps: the rise of the mobile app market has provided
a payment and distribution infrastructure. In addition,

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[54]http://stdout.be/2010/04/22/we-are-in-the-information-business/
[55]http://projects.propublica.org/dialysis/
[56]http://projects.latimes.com/mapping-la/crime/

publishers are increasingly interested in the potential for improved metrics around user data and activity, and being able to continue to compete with other publishers on engagement as well as pure numbers. There is even a burgeoning news app industry emerging across Europe, from France's OWNI and Dataveyes to Effecinque in Italy, Flo Apps in Finland and Open Data City in Germany.

For RBI's Karl Schneider this commercial case is making data journalism very important to the organisation:

> "Not just because of the good user experience – it's a much more effective experience than writing up a traditional article – but because it also allows us potentially better capabilities for capturing user data about how they interact with that content than you can with just an article."

Research suggests that interactivity is positively associated with user satisfaction, favourability and involvement with news sites, and that relevancy and customisability are the most important qualities in online news for young consumers at least. This is defined by one researcher as:

> "News delivered in a media format they are comfortable with — easy to navigate, interactive, searchable, filterable, containing graphics and videos, and providing much more information than newspapers for optional in-

depth reading [...] enabling viewing from var-
ious digital devices and allowing time shift-
ing."[53][57].

And so, editors at Le Figaro see personalisation as a way
of increasing reader loyalty[54][58], AP have nearly dou-
bled the number of interactive graphics that they produce
each month[55][59], and The Texas Tribune's investment in
databases has seen them draw three times as many views
as the site's stories.

News apps are not, however, exclusive to the 'control and
customise' stage - some work to provide commenting and
connecting functionality - or both. VG Multimedia in
Norway have created a number of "quick and dirty" news
apps to help readers "help each other", from a site for those
stranded by the Icelandic volcano eruption and a wiki on
where users could get a swine flu shot, to a tool that allows
approved users to correct typos[56][60].

From a single editor to many

News apps introduce a new factor in the way that infor-
mation is managed within the news organisation. Until re-

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[57]http://informationvalet.wordpress.com/2009/11/23/indiana-purdue-
researcher-finds-relevancy-customizability-most-important-to-young-news-
consumers/

[58]http://online.journalism.utexas.edu/2011/papers/Hermida2011.pdf

[59]http://www.niemanlab.org/2011/04/ap-interactive-visualizes-a-future-of-
stories-that-reach-beyond-text/

[60]http://www.reportr.net/2011/04/02/lessons-engage-audiences/

cently, the judgement on what information was published or not - and in what format - was exercised, ultimately, by one person: the editor. The move to multiplatform publishing, however, has meant a need for multiple editors: one to make decisions on each platform.

That proliferation of editors in space is further compounded by a similar **proliferation of editors in time**: the permanence of online content - as opposed to its ephemeral nature in broadcast and print - has led to content being revisited, re-presented and re-ordered as new products are created. Stories created now - and their associated information - must be created in such a way that future editors across multiple platforms can easily access them for republication.

As a result some news organisations are adopting content management strategies that divorce content from platform, and add 'meta' information that provides for future editorial and technical developments. At the Financial Times and Sky, for example, information is increasingly kept in the structured XML format, allowing them to publish quickly in widely varying formats depending on editorial need. At The Guardian tagging and the API play key roles; and at Reed Business Information they are working towards a system in which different elements of a story are semantically described in such a way that they can be combined in different ways depending on the platform that is used to access them (they also prefer a less powerful - but flexible - content management system to one that might be able to do more in the current context, but will be less able to adapt as things change).

The role of the API

The rise of the news app has also been further facilitated by the spread of Application Programming Interfaces (APIs) across news organisations and across the web as a whole, allowing integration between news content and other content - including the functionality of Twitter, Facebook, Google Maps or any other API.

APIs have introduced a much-needed flexibility into cross-platform publishing, allowing news organisations to adopt an 'open innovation' approach, benefiting from the knowledge and experimentation of users, suppliers, and others. One examination of the use of APIs[58][61] by news organisations including The Guardian, New York Times, NPR and USA Today, for example, found that the technology helped accelerate internal and external product development - as "news organizations draw on existing experiments as frameworks for their own exploration":

> "To cite one example, an external collaborator drew up the Guardian's Politics API, which covers information about politics and elections in the UK, and information in the Guardian Data Store to create a 'voter power index.' The index assessed the importance of a single vote in a given region, and thus indicated whether voting there would make a difference in altering the political power

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[61]http://online.journalism.utexas.edu/2011/papers/AitamuroLewis2011.pdf

structure. Open APIs thus hold potential for new products that may lend fresh perspective on the democratic purposes that are central to journalism's function."[57]

Other examples including being able to build an iPad app "for a fraction of the normal cost", and external collaborators developing products for a niche audience. This also allows publishers to address the 'Innovator's Dilemma'[59] of being overtaken in new markets due to the low initial commercial value of innovating there. NPR, for example, saw a 100% increase in traffic over one year that they attributed to their API being used for mobile platforms[60][62].

Speed - a key requirement of any news organisation covering a developing story - is also facilitated by the existence of APIs, allowing faster collaboration within the organisation and with outside organisations and users. (More broadly, the adoption of 'agile' development practices, involving short cycles of production where at the end of each a small piece of software is finished, have also made inroads into app development[61][63]).

Other advantages include being able to exert greater control over how content is used, gaining more useful metrics on who is using content (and how), and opening up new opportunities for partnerships and business relationships,

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[62]http://www.journerdism.com/the-big-winner-at-ona-apis-for-news-organizations/

[63]http://www.poynter.org/latest-news/top-stories/119853/key-departures-point-to-4-factors-critical-to-the-future-of-programming-and-journalism/

as other organisations know that integration will be made easier by the existence of the API.

The API does, however, raise problems - specifically in the challenges of integrating a traditional story structure and article unit with a database-driven structure that requires more atomisation, updating and maintenance (many of these issues are explored in the section relating to 'Context' above). There are also legal issues around licensing rights relating to content such as images and newswire copy.

These problems with the standard structure of news processing are becoming increasingly visible as new ways of gathering, telling and distributing stories take shape. Matt Waite, a programmer who built the Pullitzer-winning PolitiFact news app, writes that "All this talk [about] innovation and saving journalism is just talk until developers are allowed to hack at the very core of the whole product."[62][64]:

> "While I was at the St. Petersburg Times, we took this approach of rebuilding the core from scratch with PolitiFact[65]. We built it from the ground up, augmenting the story form with database relationships to people, topics, and rulings (among others). We added transparency by making the listing of sources a required part of an item. We took the atomic

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[64]http://www.niemanlab.org/2011/03/matt-waite-to-build-a-digital-future-for-news-developers-have-to-be-able-to-hack-at-the-core-of-the-old-ways/

[65]http://www.politifact.com/

> parts of a fact-check story and we built a new
> molecule with them. And with that molecule,
> we built a national audience for a regional
> newspaper and won a Pulitzer Prize."

A further technical factor is the development of HTML5, allowing many news organisations to create a news app experience that works within the browser and across mobile platforms. Once again, the barriers are being lowered further.

The Model for a 21st Century Newsroom and the Law of Participation Inequality

As a final exercise I have attempted to relate these stages in production to the 'Law of Participation Inequality' outlined by Jakob Nielsen[63][66]: on any given webpage roughly 90% of users will be 'lurkers', not participating in content creation; 9% will be occasional contributors and 1% will be active contributors.

Looking at the model through this lens brings some qualities to the fore: that 'lurkers' are targeted at particular stages of a story's evolution; and active users at others. The objective in those initial stages, for example, is clearly to reach that 1-10% of users who might be able to contribute

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[66]http://www.useit.com/alertbox/participation_inequality.html

something unique, and who might be able to increase the visibility of your coverage through their distribution activity. This means acting outside of the news website, working across networks to make yourself findable to those searching for your story.

The foundations laid at that stage can bring rewards as the story begins to reach the mass audience of lurkers, while building relationships with that 1% of active users can be particularly important in stimulating discussion during the 'Comment and Connect' stage.
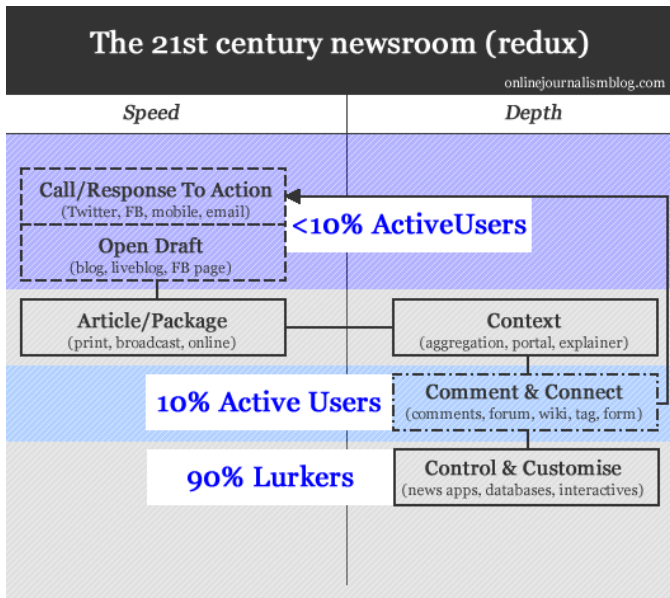
In turn, comments can themselves provide the spark for the cycle to begin again: a case study or lead revealed in the comments can initiate the 'Call to Action' of asking for others who have similar information across social media or in email newsletters. These are not absolute rules - inputs as part of a news app might form the lead for a new story, for instance - but they are indicative and useful in clarifying objectives.

They also form part of the basis for the final section of this report, which makes some broad recommendations about how journalists and editors might build on the knowledge presented here.

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[1] *Peter Houston of B2B publisher Advanstar writes*[67] *of an ambition to "develop content packages that run from initial tweets exploring the viability of a feature, through public polling of the community, the release of interview audio clips, interim blog posts, features in print and integration of archive material online. The process is public and collaborative; the output is continuous across multiple platforms. Nothing gets wasted."*

[2]*Online, however, it is not enough to talk about 'speed'. A better word is 'immediacy'. This is a quality that makes itself felt across news stories, where users can now cut past*

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[67]http://www.inpublishing.co.uk/kb/articles/from_print_to_multiplatform.aspx

the journalist and the story to the witness, the scene; what is happening **now**.

[3]*In 2009 Google and Bing recognised this when they signed a deal with Twitter to include live tweets in their search results. If you used either search engine to look for something contemporaneous you would be presented with scrolling 'realtime' results direct from Twitter in addition to the more traditional results that both search engines used to specialise in. This deal was later abandoned, although Google still embeds News results if the search is topical, as well as other data feeds such as live scores.*

But again, 'realtime' is not a particularly new development: it was possible to livestream video from a mobile phone years before Twitter was invented. But that relied on users being present at a particular website. What Twitter and Facebook have added is a distribution infrastructure: the possibility for those livestreams, and images, audioboos and texts, to be delivered to a dozen or a million users. And it's at that point that the main competitive advantage of traditional publishing is challenged.

[6]*Nicola Bruno's report on how the BBC, Guardian and CNN responded to such a news vacuum around the Haiti earthquake is useful reading in this area:* http://nicolabruno.files.wordpress. first_verify_later2.pdf

[10] *At Politico Pro the executive editor of business development Miki King says Pro has "no problem whatsoever sending out to our subscribers a two-line email that's going to give you a piece of breaking news that could impact your*

*day because we're not waiting for three hours for a reporter
to file a story on it."* - http://www.niemanlab.org/2012/04/politico-
pro-one-year-in-a-premium-pricetag-a-tight-focus-and-a-business-
success/

[24] *This change has not just been facilitated by technical
opportunity and changing journalism culture. Commercial
considerations are key: liveblogging attracts large audi-
ences (in March 2011 they accounted for 9% of all visits to
The Guardian website), is sticky and allows print media
to compete with broadcast media. It is increasingly cheap
and easy to implement thanks to web-based services such
as CoverItLive, Storify and Twitter, adapted content man-
agement systems, and the increased availability and per-
formance of mobile technology; and journalists are simply
becoming better at doing it, and spotting the opportunities
to do it. The conceptual leap from newswire headlines
to rolling live updates via Twitter is small compared to
many of the other demands of online and multiplatform
journalism. Formats and genres are powerful factors in the
development of a medium. They allow us to do our job faster
and more effectively, not just individually but in operating
with others and in communicating with users who have
developed an understanding of the medium too.*

[28] See Halavais, Alexander (2009) Search Engine Society,
Polity Press

[40] *The 'Interactivity' stage from the previous Model for the
21st Century Newsroom is removed in this update, as the
term has become too vague and contested to be useful. It*

is folded instead into the two remaining stages - formerly 'Analysis and Reflection' and 'Customisation'. The former becomes 'Comment and Connect' - what Ha & James call "source-oriented interactivity".

[44]*Slashdot are the classic example of this, but The Guardian operate a similar system, and Gawker recently introduced a karma system with impressive results* - http://www.niemanlab.org/2010/04/t love-gawker-finds-making-it-harder-for-comments-to-be-seen-leads-to-more-and-better-comments/

[46]*This obviously does not prove causality, but is noteworthy nevertheless*

[47]*Ha & James call this type of interactivity "audience-oriented interactivity" - see http://online.journalism.utexas.edu/2011/papers/*

[57]Chesbrough, H. (2003) Open Innovation. The New Imperative for Creating and Profiting from Technology", Harvard Business School Press.

[59]Christensen, Clayton M. (2000) The Innovator's Dilemma. HarperBusiness

4. Recommendations for Journalists and Editors

Having mapped out how news production has changed and continues to change, it is necessary to extract some core points that have practical implications for journalists and editors. What follows, then, are seven key findings of the research in how they relate to current working practices.

1. Work within networks

The most striking feature of news production to come through in the research is how journalists are increasingly working within networks, and working less within hierarchies. In a nutshell, journalists are having to learn how to collaborate with more people:

- Informally, with users outside the organisation.

- Formally, internally.

- Formally, with external organisations.

This is a very different skill from teamworking or having individual drive, and some attention should be paid by organisations to how they support this development, not just culturally but technically and commercially - through the use of APIs, for example, or blog networks - and by

individuals in how they operate beyond the immediate boundaries of the office.

While much is made of internet publishing being a "conversation", the metaphor is insufficient for how news production actually works online, where it is not clear what the editorial or commercial benefit is. "Working within networks" makes it clear that this is an organisational issue, not just a democratic one.

2. Maximise user input at the beginning of a story to maximise impact throughout

Hermida et al[1][68] use the Lippmann-Dewey philosophical debate on democracy and the media as a way of looking at the idea of participatory media and online journalism as 'conversation'. Summarised broadly, Lippman saw journalists as leaders of public debate, summing up well informed conclusions about policy discussions for a largely passive public. Dewey, in contrast, saw journalists as teachers, engaging and educating the public on key policy issues, enabling them to participate.

Research on how people consume and engage with news online suggest that there is actually room for - and a need for - both. The law of participation inequality outlined by

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[68]http://online.journalism.utexas.edu/2011/papers/Hermida2011.pdf

Jakob Nielsen suggests that on any individual website a majority of users will be passive consumers; but a significant minority - around 10% - will be active contributors. And a proportion of those will be particularly active.

Any news story can be expected to attract both. But in the early stages of a news story, when competition for sources and information is at its highest, it is particularly important that a news organisation makes contact with that 10% of active contributors, the users who might supply eye witness details or media, insider knowledge, expert insight, development expertise, distribution, or anything else that might improve the news product. This is not merely about seeking sources but about being 'findable' for sources who first witness an event or are involved in a story and search online to see if anyone else is. Search engine optimisation and social media optimisation are not just about traffic but about newsgathering too.

Hermida et al suggest that journalists see users as "active recipients", passive at some times and active at others (when the event happens and when commentary is needed). This does reflect how the 21st century newsroom model is being used within newsrooms - but I would argue that a more sophisticated understanding is needed.

Of course this 10% is not a single collection of people - an individual may be active on a particular story but passive on others: a much higher proportion of individuals are active online more generally - and that proportion is rising (it is now above 50%), and so no assumptions can be made

about who is 'active' or 'passive' from story to story.

3. Have clear objectives at every subsequent stage of production

Subsequent stages of a story benefit from a clear focus on how you want your users - the 'active recipients' - to interact with your news operation at each stage:

- To consume?

- To choose?

- To comment?

- To contribute?

Different objectives will suggest different content strategies: if you want users to contribute material then you may want to provide some yourself, or build existing relationships with likely contributors. If you want them to consume then the content should be inherently pleasurable or useful; and some types of content and more likely to engender comments than others.

4. The multiskilled solo journalist should be the last resort

The expectation that journalists should be able to 'do it all' is passing, and an increasing number of organisations are

pairing up journalists on stories so that each can monitor different aspects of the network - for example, one focusing on events and another on reaction; or one on speed and another on depth.

This structure allows each to play to their strengths, to protect against 'blind spots' and also provide a space for exchanging skills.

5. Separate content from platform

Just as news consumption has changed with the introduction of new technologies, news production has had to be reorganised to adapt to multiplatform reporting, new newsgathering techniques, and commercial pressures[2]. Broadly speaking all have led to the same outcome: a flattening of the editorial structure.

In the case of Reed Business Information, for example, the organisation decided that they could not afford to have separate teams working for print, web, and apps. The existing team structures - based as they were on the structures of the publications themselves - had to be rethought. The result was a move to a 'beat' structure, with the focus on subject matter rather than medium. A 'beat' editor now reports to a product editor for each delivery channel (each of which is looking for particular content at different rhythms) and a head of content overseeing the whole thing.

"We encourage content teams to think of publishing as something that happens all of the time, rather than as an end state," says Head of Editorial Development Karl Schneider. Reporters are encouraged to use Twitter and blogs to involve users throughout the process. "That in itself is a form of publishing, done professionally, aimed at a target audience who are feeding back information."

As discovered in previous research into the effect of blogging on journalists, this dialogue with users leads to a distribution of editorial decision making. "It's quite challenging," says Schneider.

> "In the past a news editor or feature editor would make those decisions. Now it's much more interactive – both push and pull. We expect beat editors to be more proactive in suggesting what might work in a particular channel, and part of their responsibility is to ensure that their area is well covered in *all* channels: if the arable section online is not well thought of, it's their responsibility, likewise their magazine section."

The product editor's role then becomes more focused on maintaining the news mix, while the new Head of Content coordinates to avoid tensions between beat editors and product editors. Schneider says that when they first set up this structure they expected a lot of conflict, but that so far it "Hasn't been as much of an issue", while as far as

possible they try to create content which works well across channels.

Similarly Marcus Warren at The Telegraph talks about the "democratisation" of digital publishing that was instituted with their reorganisation in 2006. Content management responsibilities went from being a minority concern to being adopted by the majority of staff. Five years on, between two-thirds and three-quarters of staff were publishing live online, while the gap between the way that content is published on the main website and the separate blogging platform "is being eroded".

And at Sky all reporters are able to stream video from their mobile phones, and expected to email still images from the scene of news events ahead of the arrival of any satellite truck, while social network feeds are monitored on the news desk alongside traditional newswires.

In addition there are an increasing number of collaborations between news organisations and other bodies, from commercial news sharing to partnerships with startups, noncommercial bodies, independent and community media.

In all of these scenes the picture is consistent: reporters are more connected with their former audiences, have fewer intermediaries to publish and distribute, more power - and more responsibility - and the editor's role is focused less on gatekeeping and more on managing partnerships and resources and devising strategy.

6. Identify where value can be added

Users are promiscuous and coverage of any given story is not limited to your own website. As a result journalists are increasingly behaving as 'editors of the internet', looking at the 'news mix' of a given story across the web and identifying areas where they can add value.

Rather than simply documenting what is happening, then, they may choose to add analysis, aggregation, context, multimedia, or verification. These skills are particularly relevant in a liveblogging context but apply across news production as a whole when working in a networked environment.

7. Curate information, not stories

The biggest challenge for online publishing during the last decade has been that of unlimited space; the next big challenge for online publishing will be that of unlimited time. A clear market is emerging for the information that news organisations routinely gather to produce stories - whether that is contained within The Telegraph's politics database, the Wikileaks warlogs, or an archive of oil spill stories that might be needed for a context piece tomorrow, a news app next year, or, in decades to come, a news game.

Tagging stories and having effective information manage-

ment strategies, publishing and maintaining APIs, creating datasets and understanding them will be increasingly important to the industry's future.

Summary

New technologies are said to take around 30 years to settle into established patterns of use[3]. The challenge for news organisations is that they are having to deal with at least three different technologies, each at different points of maturity in that timescale: the world wide web; the mobile phone; and the tablet.

Complicating matters further, these are not just technologies of consumption, but also of distribution and of newsgathering, each of which is in turn developing in different ways and at different rates.

While much is made of the transformatory potential of the internet for journalism, these technologies must first find a place in newsroom structures, cultures and production processes. Immediacy and speed has been the primary focus until now, at the expense of other qualities, such as interactivity, multimedia and linking (i.e. depth)[4][69]. But as new markets open and expand as a result of new products, changing consumption behaviour, and new commercial imperatives (for example, engagement versus pageviews), and as technological barriers are lowered (e.g. HTML5;

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[69]http://ddd.uab.cat/pub/tesis/2006/tdx-1219106-153347/dd1de1.pdf

changing CMS systems) we can expect particular expansion into this space - not just by news organisations but by start-ups like OWNI.

As editors are disintermediated, news products unbundled and stories atomised, news organisations and journalists must be nimble on all fronts. We are not even close to being finished.

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[2]*The commercial pressures are well documented: by 2010 online advertising in the UK accounted for over a quarter of all advertising spend, but six of every ten pounds spent on online advertising was taken up by paid search. Of the remaining money spent on display advertising, social networks were making significant inroads: 14% of all online display advertising according to a 2011 report by the IAB. The focus for many in the news industries shifted from planning for a 'digital future' to simply 'survival'. Despite this, there is a feeling among some in the industry that ad sales departments were not involved enough in reorganisation processes and online strategies.*

[3]See Fidler, R (1997) Mediamorphosis, Pine Forge

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