# Six Competencies of the Next Generation News Organization

By Annette Moser-Wellman

with Vivian Vahlberg, Diana Durkes, and Jennifer Edwards

November 2008
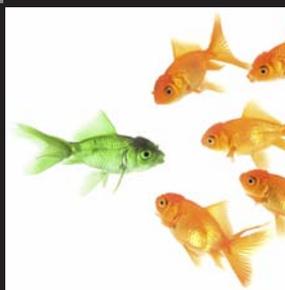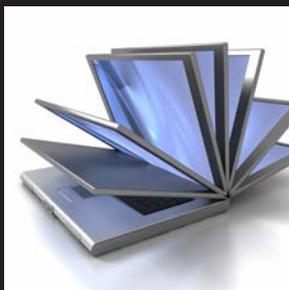
Media Management Center

Medill School   Kellogg School of Management

NORTHWESTERN UNIVERSITY

TABLE OF CONTENTS

EXECUTIVE SUMMARY

In today's changing media world, it is critically important for news organizations to identify advances in technology that will affect the future of news reporting and distribution – and then to recognize and embrace the opportunities these emerging technologies represent to attract and build audiences.

The Media Management Center at Northwestern University conducted interviews with 24 technology leaders and thinkers on how new technologies are impacting the news and information industry. The first section of this report describes several technological trends that interviewees identified as playing an increasingly critical role in the reporting, delivery and consumption of news. The second section describes six competencies that news organizations need to acquire or strengthen in order to take advantage of the promise of these technologies for the news business.

The technology trends identified are:

Information Divergence, Not Device Convergence
As consumers move away from television and newspapers for news and information, they will expect to find the information they want across multiple devices and screens, tailored to the strengths of the device and to their needs.

The Democratization of the Tools of Media
Ubiquitous, inexpensive and easy-to-use content production tools and services have opened media markets to a host of new players who can quickly convey content to a variety of platforms.

The Rise of Location-Based Mobile Information and Connections
Broader, faster connectivity and new generations of highly connected networks have emerged that help people form communities in new ways, creating new opportunities for micro-local, geography-specific and personalized content.

Richer, More Usable Information About Consumers
The Semantic Web, sensor technologies and other developments promise to provide more usable information about consumers than ever before, which can be used to more effectively tailor content and target advertising.

Advances in Visual Media
Visual content at lightning-fast speed is becoming the norm, enabling seamless and efficient delivery of visual content to multiple screens.

Advances in Getting and Measuring Attention
A different revenue model for the Web, the Attention Economy, trades on the value of consumer engagement, which content providers can – and must -- now track and measure far more effectively.

Building on the technology trends discussed by our interviewees, the report recommends a set of six capabilities that news organizations must build or strengthen to compete in the changing media landscape.

One: The Platform Strategist
To capture and keep eyeballs, it is vital to engage audiences over multiple platforms. To succeed, media organizations must develop their abilities to:
- Understand the attributes and capabilities of each media platform
- Know consumers and spot their unmet needs
- Profitably leverage their strengths and offerings across platforms in a way that meets consumer needs

Two: The Marketer
In a world where information is often treated as a commodity, news organizations must clearly define their core strengths and work to develop deep consumer engagement. This requires that they:
- Differentiate on content
- Differentiate on opinion

Three: The Community Builder
News organizations can sustain audience by aggregating communities. To do so, they need to learn how to:
- Drive contact and collaboration
- Target content to small markets of like-minded consumers

Four: The Data Miner
Given the ability of new technologies to mine a wealth of information, data and insight about the actions and behaviors of consumers, news organizations must become able to use this insight to develop better products and new revenue streams. To succeed, they will need to:
- Leverage semantic or smart technologies
- Manage their data warehouses
- Extract value from archives

Five: The Complete Storyteller

Understanding the way people experience media is key to developing deeper engagement with consumers. Across platforms, news organizations can excel if they improve their abilities to:

- Provide rich context
- Create interactivity
- Visualize information and design

Six: The Entrepreneur

To remain viable, news organizations must think like entrepreneurs to identify new models for engaging audiences. They need to:

- Pursue the power of partnerships
- Experiment smartly
- Develop new models of advertising

In exploring the intersection of new technologies and the news media, interviews with leading technologists and thinkers illuminated many important insights and opportunities for the future of news organizations. These perspectives appear in a series of TechScout articles in the final section of the report.

INTRODUCTION

Advances in technology continue to spur great innovation in media -- especially in the news industry. At the same time, these rapid-fire innovations have upended the ways in which news is gathered and distributed and threaten the financial core of the news business. This study seeks to identify technology trends that will have an important impact on the future of news reporting and delivery in the near term. Like a scout surveying the frontier ahead, this report also explores technologies to come and recommends ways news organizations can prepare themselves for ongoing and impending change.

First, the research describes a number of leading or emerging technologies and their immediate implications on media in general and, more specifically, on the news industry. Next, we suggest competencies needed to compete effectively in the changing marketplace. Together, these competencies could well prove the difference between winners and losers in the next generation market for news and information.

The six competencies are skills that need to be either strengthened or acquired by the news company. They suggest new responsibilities for existing staff or capabilities that must be gained through an influx of new talent. Our goal is to help news organizations continue their vital roles in society and culture and remain viable business concerns in the face of the pressures that technology presents.

METHODOLOGY

This study was commissioned by the Media Management Center (MMC) at Northwestern University as part of its ongoing efforts to help news media companies respond effectively to technological, demographic and financial change.

The study was conducted by Annette Moser-Wellman at FireMark Inc., an innovation consultancy based in Seattle, Washington, with the assistance of Diana Durkes, an MMC project coordinator, and Jenny Edwards, a graduate resident in the Integrated Marketing Communications Program at Northwestern's Medill School. The report was edited by Vivian Vahlberg, Managing Director of MMC.

Researchers interviewed a sampling of 24 technology leaders and thinkers from 20 companies, academic institutions and research bodies -- from traditional newspaper, television and media companies, Internet news and information providers, software and hardware developers, digital marketing organizations, media innovation research centers and startups in the field. Included were founders and executives from firms representing new and emerging technology with application to media. Researchers purposely adopted a broad definition of news companies as those engaged in the collection, production and/or distribution of news and information.

The objectives of this study were:

- To identify emerging technologies that may be used to consume media in new ways or that may affect the gathering and distribution of news or the business model of news media companies.

- To identify what, if anything, traditional and emerging news media companies might learn from technology experts that will help them stimulate – and take advantage of – ongoing innovation.

Interviewees are listed in Appendix A. An interview protocol (found in Appendix C) was developed and fielded. On average, the one-on-one, in-depth interviews lasted 45 minutes to one hour and were recorded for further analysis. The interviews were conducted both in person and over the phone. The analysis of the findings was supplemented by secondary industry research.

THE TECHNOLOGY TRENDS

Many different technological developments and trends emerged from the interviews.

Information Divergence, Not Device Convergence

It is clear that audiences are moving further away from television and newspaper media to the Internet for news and information. In 2008, eight in 10 Americans age 17 and older now say the Internet is a critical source of information — up from 66% in 2006. Further, the Internet is rated as an important source of information by more Americans than television (68%), radio (63%) or newspapers (63%).[1] Exactly how media consumption habits will shake out in the future is unclear, as the boundaries between telecommunications, cable and mobile carriers erode; as devices emerge; and as faster third generation (3G) wireless technology becomes widespread (see box). But there's no question that habits will change as a result. In this shifting landscape, the question for news organizations becomes: How will consumers want to consume media content and how can news organizations prosper by meeting their shifting behavioral patterns and preferences?

For years, media companies expected device convergence -- one device that would perform all functions from telephone to television to Internet access. But, interestingly, our interviews predict something much different. The promised convergence of devices and digital content isn't occurring the way many expected.

> Instead of devices converging, software technology will be the link that effectively diverges or customizes information – over and across many different screens and platforms.

Netflix's Director of Corporate Communications, Steve Swasey, explains: "You're using different media for the best experience that they avail. At some point, somebody will deliver a TV or a device that connects to the TV, that has a great browser experience, but until then, we leave the browser experience on the Internet."[2]

Discrete devices will survive, and likely proliferate, because they serve different functions – mobile for on-the-go breaking news and short-form content, larger screens for task e-mail and intensive reading experiences, and the largest screens for a "lean back" experience. Instead of *devices* converging, software technology will be the link that effectively *diverges* or customizes

information – over and across many different screens and platforms. In this environment, amidst software integration, content will become customized to the function of the platform.

Venu Vasudevan, Senior Director of Software Platforms Research at Motorola, says we are moving away from appointment-based media to media that is "time-shifted, place-shifted and device-shifted."[3] Currently, higher-end cell technology can deliver flexible, personal and on-demand media experiences. For example, Vasudevan points to Motorola's SCREEN3, a software product that downloads headlines to the user as part of a mobile screen. SCREEN3 allows users to select channels of interest, from news feeds to television shows, and send the content from their mobile device, personal computer, television or digital video recorder.

SCREEN3 also enables reading the news at different levels of "fidelity." When the mobile device is opened, a rotating carousel appears and shows all the news in which the user might be interested. One click takes a user from the headline to a few lines that are digestible on a mobile device. Two clicks take a user to the "cache and carry" point in which the full story is uploaded from the network directly onto the mobile device. With SCREEN3, users can also record related content on their TVs or DVRs. This transition also works from mobile to TV or TV to mobile.

3G and 4G

Faster, wider ranging and multi-platform are the characteristics of the next generations of mobile wireless technologies: third generation (3G) and fourth generation (4G). These "generations" are essentially shorthand terms for increasingly high bandwidth speeds of wireless connectivity. The generations are defined by a family of standards set by the cooperative governmental body, the International Telecommunications Union, which first convened in 1865.

3G standards give a greater range of services and greater network coverage. This combines wider-area cellular networks with more efficient use of radio technology than now exists. For mobile connectivity, this will mean better coverage and smoother streaming of text, video and audio. Today, major U.S. network providers appear to be racing to bring enhanced capability to their existing markets, with coverage to most major U.S. cities expected by the end of 2008. Demand for news and content in interactive, video and live streaming forms will rise quickly as will expectations for cross-platform content.

Technical standards are still being defined for the fourth generation of wireless networking. Expected to evolve by the year 2015, 4G wireless connectivity will mature to a stage where fast and seamless streaming video will be the norm.[4] One application that is predicted to spread quickly as a result is the mobile vlog, a video form of blogging, which will be easily produced and viewed with fast networking and higher quality mobile cameras on the market. Networks in 4G are planned to use Wi-Fi and WiMAX networks.[5]

The recent Apple iPhone delivers similar mobile and PC interoperability and takes cross-platform experiences to a new level. The iPhone combines a phone, widescreen iPod and real-time Internet device with 3G capability. Users can talk on the phone while surfing the Web, checking e-mail, and using one or more of the phone's applications – all at the same time. Some of these include the FOX News UReport, which allows users to send pictures to

FOX News, and NowLocal, an application which uses iPhone's location services to deliver relevant hyper-local news to the mobile device. Global Positioning Service (GPS) mapping, short messaging service (SMS) and a YouTube application are some of the latest added features.

Even with the increased functionality of mobile devices like the iPhone, there will be demand for content on the traditional platforms of television and personal computers. These multiple platforms present news organizations with new opportunities -- to develop compelling content for every device at the level of fidelity a consumer wants.

> ...news organizations will need to strategically prepare for the variety of screen and content choices that are coming and for higher expectations for multiple-platform service.

With the growing choice of devices and increasing capability and speed available to consumers, news organizations will need to strategically prepare for the variety of screen and content choices that are coming and for higher expectations for multiple-platform service. Greater sophistication of devices and software will lead to growing consumer expectations for different levels and types of content from each platform. To successfully deliver experiences on and across multiple platforms, news organizations must understand what function each platform plays – and then develop products suited to the unique dynamics of each platform.

Albert Cheng, Executive Vice President of Digital Media at Disney-ABC Television Group, explains the implications: "Once we get mass penetration of [3G], you'll see a more seamless communication and distribution of enriched media, in both video and other types of content. People will be more engaged. It will create a whole different platform for media communications."[6]

The Democratization of the Tools of Media

Two unmistakable eruptions in technology are the plummeting costs of bandwidth and data storage. Partnered with the rise of inexpensive software – particularly applications available via cloud computing (see box) -- a perfect storm of innovation is democratizing the tools of media. When the means to share information quickly is democratized, new players flood into the market. Destination properties lose their monopoly on the time and attention of the consumer as the supply and quality of content increases. The news market is affected, not just in terms of consumption, but also production, giving power to new players, including amateurs. David Hobby, photojournalist at The Baltimore Sun and author of the blog Strobist, says, "It's not that the professional market is going away; it's that technology is radically changing both how things are being used and who happens to be providing those things."[7]

Here are some examples of how the democratization of technology tools is affecting, or will affect, the production and consumption of news:

Mogulus, an online television production studio and Web video host, founded its service on the power of cloud computing. Mogulus users can create video content without owning a single production tool through the offerings of a company that doesn't own a single Web server. Instead, Mogulus runs on the offsite resources of Amazon's Elastic Compute Cloud and Simple Storage Service.

> **Mogulus**
> Mogulus allows anyone – professional or amateur – to create his or her own Internet TV channel for free. "We saw a huge opportunity in democratizing all the tools that TV stations have access to that are still restricted to them and put that into a network-based platform... basically a Flash studio that allows anybody to do exactly the same thing, " says Max Haot, Chief Executive Officer and Founder of Mogulus. Users can live-mix content from Webcams, digital recorders or existing online video, collaborating with a team of friends if desired. "What we do is allow producers, anybody from a blogger at home to a large media company like one of our first clients, Gannett, to launch their own live, 24/7 television station,"[8] Haot says. They can broadcast to a channel launched on Mogulus.com, on a blog, a MySpace or Facebook profile or any Web site.

> **Cloud Computing**
> Cloud computing is a term for an offsite system of computer applications and data storage in which companies and individual users can access a host of software services and computer files from remote servers. Rather than purchasing copies of software and adding extra onsite storage capability, companies can save money by using the cloud applications on a subscription-based or pay-per-use application. This also allows increased computer capacity without investment in new infrastructure or licensing new software. A few global computing powerhouses are now leveraging their infrastructures to offer processing, storage, messaging and database services for use offsite. While there are some drawbacks, such as security and reliability, some predict cloud computing will define the future of technology.[9]

The Indianapolis Star broadcasts breaking news on its Web site, indystar.com, using Mogulus. In April, 2008, when Bill Clinton gave a speech at Indiana University, staff reporters "were able to go there just with a camera and a wireless connection and broadcast it to thousands of viewers on their Web site. It cost nothing for them,"[10] Haot says. Later in April, the Star broadcast a local press conference with presidential candidate Barack Obama to 20,000 viewers on indystar.com and usatoday.com.

Consider Qik, the video service that provides the capability to broadcast from one cell phone to anywhere on the Internet and soon from cell to cell, effectively bypassing Internet interfaces. Qik allows anyone to become a videographer. This means an on-the-scene observer can capture breaking news and stream it to viewers instantly. As a 2008 *TIME Magazine* business article says about mobile video technologies like Qik, once it "reaches the mainstream, it may prove useful for documenting natural disasters, crimes and sensitive situations in which a tiny cell phone may go unnoticed."[11]

Bhaskar Roy, Co-Founder and Vice President of Product Marketing at Qik, envisions an application this way: "Let's say CNN is able to maintain a subscriber base which says that I'm interested in knowing whenever some traffic incident or XYZ incident happens near this

particular situation by stream[ing] to my phone. So, when I'm driving, I'm able to see the video of a traffic jam in Golden Gate or some place, and I'm able to avoid it mainly because the CNN or FOX News reporter, or whoever was there on the scene, streamed that video and it got broadcast to my phone."[12]

The Rise of Location-Based Mobile Information and Connections

Development of social networking tools (from Facebook and MySpace to LinkedIn and Twitter) and the increasing "mobile-ization" of social networks via cell phones have already significantly changed the way people form communities. Two additional technology trends will widely affect the ways in which consumers interact with mobile devices and the ways they form community. The first is the greater availability of Global Positioning Service (GPS) (see box), a satellite navigation system that provides geo-spatial location with global coverage. GPS will lead to the popularization of location-based services, especially creating a new facet of hyper-local search and advertising. The second is WiMAX (see box), or radio frequency capability, which will allow for greater networking between individuals and communities of individuals.

> **GPS**
> GPS, or Global Positioning Service, is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense. As the satellites orbit, a GPS receiver measures its distance from three or four satellites at a time to calculate its own location. The service was originally intended for military applications but was made available for civilian use in the 1980's.[13] Most commonly used today as in-car navigation assistance, GPS will become a ubiquitous feature in cell phones and mobile devices. Over the next few years, the world's largest cell phone manufacturers plan to roll it into more than half of their products, up from 15 percent in 2007.[14] Combined with mobile devices, GPS is fast becoming a featured tool for mobile social networking. New applications to geographically connect users through interactive maps and photos are spreading quickly. Mobile pipelines for recommendations on nearby places and events are growing virally, as are geo-tagging games.[15] For media and advertisers, mobile and GPS will create a perfect partnership to geographically connect users with content and services.

When integrated with news and information, the GPS function will allow greater ability for communities to form around shared interests. Location-based services will allow for ad-serving to the handheld device that will announce specific new items and information relevant to the consumer in real-time. Marketers and news organizations will be able to tailor the content and delivery of information to specific target groups in specific locations. News will increasingly become more of a dialogue between the user, who captures information, and the local community with whom s/he shares it. Micro-level reporting will be overlaid on mapping engines, allowing for news and opinion in the local neighborhood, as well as sharing local knowledge. Information will become as micro-local as learning details about the construction project outside your apartment building or discovering what latte stand near you is offering a drink special.

On the near horizon, WiMAX-enabled phones will provide similar functionality to GPS but will also have the ability to be always connected to others in the range of the wireless

network. Should users choose, they can send alerts to those around them that are in their personal or location-based networks. These so called mesh networks allow for connections to local-area users, but can also signal to larger areas as desired.

Mesh Networks and WiMAX
Wireless mesh networks and WiMAX technologies promise ubiquitous connectivity that will allow greater access to content and Internet services from portable devices. The WiMAX standard combines broadband and wireless forms of networking to deliver high-speed broadband Internet access over a wireless connection. Since it can be used over relatively long distances, it is an effective "last mile" solution for delivering broadband to the home and for creating wireless "hot spots" in places like airports, college campuses and small communities. WiMAX offers some advantages over Wi-Fi, a similar wireless technology, in that it offers a greater range and is more bandwidth efficient. As WiMAX does not depend on cables to connect each endpoint, deploying WiMAX to an entire city, community or campus can be done more effectively and efficiently.[16]

A wireless mesh network is created through the connection of wireless access points installed at each network user's locale. Each network user is also a provider, or node, forwarding data to the next node in a system likened to a peer-to-peer network. The networking infrastructure is decentralized and simplified because each node need only transmit as far as the next one. Wireless mesh networking can allow people living in remote areas and rural neighborhoods to form community networks of affordable Internet connections.[17]

Polychronis Ypodimatopoulos, a graduate student working in The Media Lab at Massachusetts Institute of Technology (known as MIT's Media Lab), describes current research with mesh networks: "A mobile version of Facebook is old news, but creating a Facebook-like network out of mobile devices in the same physical area could revolutionize the way we discover and communicate with people around us and, if nearby shops enter the network, it could have some interesting market implications."[18]

Mesh networking allows users to connect with essentially anyone anywhere who wants to be connected.

Andrew Lippman, Senior Research Scientist and Director of Digital Life at the Media Lab, talks about the networked future like this: "Media has always been a social event, but technology and styles of use have mitigated in favor of a small number of broadcast-style outlets. But new generations who are growing up in a radically different, highly portable and constantly connected milieu are transforming media and information into a more dynamic and fluid set of interactions. Instead of 'personalization,' we think about 'socialization' of information."[19]

Richer, More Usable Information About Consumers

Web 3.0, or the Semantic Web (see box), is a term bandied about in anticipation of artificial intelligence that will power the next generation of the Web. Increasingly, these types of smart technologies are becoming available and are beginning to transform the

ways in which people consume media – and the way marketers target consumers. Many of these smart technologies are driven by consumer-generated profiles; they "intuit" interests to provide more information with surprising accuracy.

Another technology trend that promises to shape the future of media is sensor technology. Sensor data, widely collected in the forms of security videos, auto and pedestrian traffic patterns, weather and more, is becoming more accessible and available for analysis.

> **Semantic Web**
> The Semantic Web is the emerging future of how information will be organized and connected on the Internet. Semantic applications will enable computers to understand the semantics, or meaning of words and phrases, and to read and categorize them accordingly, by automation. Computers will "reason" by exchanging and relating information independent of humans. Semantic applications build on the process of tagging, assigning a keyword or term to words and concepts in online data. This is similar to how data is marked up with HTML in the existing functionality of the Web. RDF modeling, or Resource Description Framework, regards the keywords and makes connections in new ways and across software and device applications. With the capability of semantic designed applications, information on the Web is expected to become richer and more valuable.[20]

The upshot of these types of technologies for the news organization will be a rapid increase in the quality and quantity of instantly available information about media consumers. Richer information about the activity and preferences of individuals (with permission) and groups will become easily accessible. In effect, technology will participate with users in learning from their expressed choices and activities; providers can use that information to provide consumers information and services that are well matched to them.

Thus, in addition to being able to target content or advertising by a person's demographic profile, publishers will be able to also use behavioral and contextual information. And then there are the "collaborative filtering" applications, like Amazon uses for book recommendations, that contribute to a publisher's ability to easily identify and provide information consumers will consider relevant.

> The upshot of these types of technologies for the news organization will be a rapid increase in the quality and quantity of instantly available information about media consumers.

MIT Media Lab's Lippman describes the opportunity like this, "We think that social networks may lead us to think of a new definition of editing that teases the real meaning from increasingly informal messages."[21]

A portend of semantic technologies is available through a next-generation social network called Twine, which connects people around their personal interests. Once a consumer profile is submitted, Twine uses semantic technology to auto-tag content and searches metadata to provide connections to people with similar interests. It also "learns" by collecting trends in the larger community and tailors content to the individual accordingly.

"Twine learns as it is being used and makes recommendations and suggestions to connect people based on what they've done, what 'Twines' they have joined and other content they'd be interested in,"[22] explains Nova Spivack, Chief Executive Officer and Founder of Radar Networks and the developer of Twine.

These technologies also provide users refreshed and improved search capabilities that allow specific queries and provide conceptual identifications. Directions such as "Show me all the museums in downtown Atlanta" will be possible. Or "What philosophers were influenced by Nietzsche?" These enhanced search functions are available now on dbPedia, an open-source project that enables semantic search of the information on Wikipedia. These centrally located sites are just the beginning of semantic capabilities that will be available in the marketplace.

> **Sensors**
> A sensor is a device that responds to stimulus, such as light or sound, and transmits a resulting impulse. Data acquired from the impulses can reveal a variety of information based on the type of device, such as an athlete's heart rate or her location along a race route. Innovations in sensor technology, such as its inclusion in smart phones, can efficiently gather information about human behavior to be distributed to a wider audience. One recent application shows how real-time sensor data can make for a smooth commute. In a 2008 traffic experiment in Berkeley, CA, 100 students were equipped with smart phones employing GPS and traffic-monitoring software. As the students traveled a 10-mile stretch of California freeway, their sensors sent signals about each car's speed and position to the company's research facility. The data was compiled and used to predict traffic patterns and help drivers choose the quickest route.[23]

Sensor networks will also impact the quality of information available. V. Michael Bove Jr., Principal Research Scientist for MIT's Media Lab, talks about the fact that sensors are really a form of scanning information from around you.

"For a very long time, people sat in newspaper newsrooms listening to their police scanner to see what was going on Friday night. Well, what if you also had a map that showed, 'Geez, there's an awful lot of people on the Boston Common. What's going on?' Because the system will report that all these phones are there. What's going on in this place?"[24] he says.

An example of a company innovating in sensor data is a start-up called Sense Networks. This firm aggregates information about travel patterns from location sensors in cell phones, taxi cabs and other vehicles. Just like tracking patterns of interest on the Web, Sense Networks technology allows for the tracking of patterns of interest within a city. Companies such as Sense Networks can provide advertisers with highly specific recommendations on outdoor ad placement as well as advice for retailers on what locations work best. With widespread mobile adoption of these technologies, we will see highly efficient advertising and marketing guided by sensor data.

"[Now, when] I'm in a particular location, I get information sent to my phone, maybe a news story relevant about that location or an ad or some other kind of location-based

information. Down the road, it's not just if I'm at a particular location and time, but also if I'm in a certain category of person, then the technology can be a lot smarter about the way

you deliver media to somebody or the way you deliver an ad or a recommendation,"[25] says Tony Jebara, Chief Scientist and Co-founder of Sense Networks.

Look forward to recognition software that can take personalization to new levels. MIT's Bove talks about an experimental technology developed by the Media Lab called a "Bar of Soap," which responds differently by the way it's picked up. It was developed as a prototype to test the grasp classification concept. Bove believes this kind of sensor technology will be important in device development of the future. It will be able to sense from touch the functions it needs to perform.[26]

To understand the role of sensor technology and the impacts it has on consumers needs for news and information, news organizations should look to partner and experiment with providers of different forms of sensor data. They should also look to aggregate and analyze any location-based data they are currently collecting through mobile delivery and, like an ethnographer, strive to identify insights about their audiences.

Advances in Visual Media

As mentioned earlier, the plummeting costs of bandwidth, data storage and application development will lead to many changes in the consumption of media. These changes will foster widespread penetration and sharing of high-resolution video and integration of 3D (three dimensional) graphics. Combined with software services on demand, there will be an explosion of visual content available for use and a myriad of ways to use it.

Further, as operating systems for cell phones evolve, there will be more innovation in mobile visual media. Cell technologies will allow for the capture of high quality content and will provide the ability to edit or customize it in real-time. Photo-editing features will be available on mobile devices and easily shared with other mobile users or Internet sites. High quality full-length feature films and television will also be available on mobile devices.

High resolution content will also be more available cross-platform. More feature-length films will be streamed to devices in the home such as in the Netflix partnership with Xbox to provide movies seamlessly to subscribers via the Internet service Xbox Live.[27] Also coming will be greater penetration of 3D graphics that allow for rich and immersive experiences in all forms of media content, from movies to short-form video.

Android
Google has developed a versatile open-source mobile phone platform to rival the latest version of Apple's iPhone. The open-source platform, [Android](#), will be freely available to all handset makers. Google has said it hopes developers will create all kinds of applications that owners of Android phones will be able to download from the Internet and install on their devices. Unlike Apple, Google is not manufacturing an Android phone. Instead, Google has teamed up with the 34 companies of the [Open Handset Alliance](#) to make a number of different phones that will run the Android operating system. Google hopes to reach a wider market by pricing Android-powered devices low and include their advertising to generate revenue. Some in the telecom industry believe that Android's success depends on Google's willingness to share these advertising revenues. Google's focus has been on developing applications for experiential features like its touch screen and vivid 3D graphics.[28]

The coming norm in visual content is the ability to seamlessly, and at lightning-fast speed, send and receive photos, video and 3D graphics through mobile technologies. Consumers will expect graphics and want to quickly edit, share and even mash-up incoming content with their own. Again, more competitors, especially information technology start-ups, will be providing new services that don't have to be downloaded to a phone but can be streamed using remote storage capacity.

Hobby, the photojournalist-blogger, predicts a future in which visual assets such as video, movies and photo galleries will dominate. "We get more news in a visual form than in print form on a daily basis, whether we realize it or not," he says. "There will be more and more outlets for visual journalism and visual content than there ever were before."[29]

Disney-ABC Television Group's Cheng predicts the same. "A lot of the content that we produce is Internet or broadband-ready, so it is short-form and playable on the computer and on the phone. You will see a lot more of it. You will see a higher consumption once we get to the mobile piece. The consumer adoption just isn't there yet."[30]

Finally, of course, there is the technology revolution affecting television – from digital TV to video on demand, the proliferation of DVRs, the growth in home networking and the development of tools like Slingbox that make it easier to get content from the Internet to the television screen.

Advances in Getting and Measuring Attention

The explosion of information from news sites, blogs, search engines and online retailers has created what has been dubbed the Attention Economy. Since consumers have a universe of choices, the new – and scarce -- currency in the content world is attention. In the Attention Economy marketplace, consumers agree to receive services such as news, search and shopping in exchange for their eyeballs. Selling something to the consumer does not need to be direct and does not need to be instant.

News feeds ask for consumers' attention in exchange for the opportunity to show him/her advertising. Readers might choose an online book seller's site because of product news and a rating system on books, music and DVD's. In exchange, they are willing to receive ads

and shopping services. The site may further engage the readers' attention and time by offering them the choice to participate in the site's product ratings.

As more advertising dollars shift to the Web and to Web-related technologies, there will be higher expectations for measuring attention and quantifying advertising effectiveness. Web analytics will eventually standardize. In this context, Susan Hickey, Chief Marketing Officer for Nielsen Online, talks about a growing emphasis on engagement.

"Advertisers will be looking at [research] more from a quality and engagement model of measurement and understanding versus quantity and volume,"[31] she predicts. Effectiveness and therefore monetization will become a function of consumer engagement.

Concurrently, the costs of building and maintaining a Web presence will continue to plummet. This means competition for attention and engagement will dramatically increase.

Interactive television
Advances and standardization in technology have spurred experimentation in a new advertising model for cable television: interactive commercials. In these two-way advertisements, audiences can use the remote control to click an icon and choose which product promotion they'd like to watch. They can also click to see a longer on-demand commercial, purchase a product, give their opinion or bring up a recipe with the advertised product.

With 60 percent of consumer cable boxes now equipped for two-way communications, cable companies are planning to bring the interactive model of online advertising to television. They anticipate being able to offer highly specific data about consumers and their preferences, which will enable marketers to micro-target products, eventually down to the neighborhood level. One gauge of the potential of interactive advertising can be found in the recent activity of Canoe Ventures. Six large cable operators have formed a venture to promote the interactive model and have named an industry-known leader in media advertising as its chief executive.[32]

Cable companies and marketers say the interactive platform will lessen the difference between the viewer and the advertiser, making advertisements more effective and more measurable. At issue, as on the Web, is consumer privacy. Cable networks say they plan to aggregate the data they collect and therefore preserve the anonymity of individual audience members.[33]

Many interviewees mention the proliferation of free news on and off the Web as well as saturation even of social networking sites. Smaller entrants on the Web as well as mobile firms will also destabilize the market. Industry leaders anticipate an increased battle for advertising dollars, especially on the Web. The winners will be those who can demonstrate proven consumer loyalty over time.

With this new emphasis on consumer engagement, we will see increased interest in sustaining attention over time. New computer-driven advertising models will emerge that reward sites that lead up to a sale as well as reward them for the "click" itself. Expect more pay-for-play rewarding bloggers and smaller firms that link to larger sites. Further, more cross-platform advertising systems will become the norm.

Consider the efforts of six large cable companies, Comcast and Time Warner Cable among them, joining forces in an advertising program called Canoe Ventures (see Interactive Television Advertising box). Working together, the companies plan to build a national service that will sell targeted advertising across all six cable systems. The group claims that the quality of data compiled from set top boxes is better than what Internet companies can glean, and, therefore, they can offer more specific consumer data to advertisers.

There is no question that the business model for news organizations will continue to change on the Web and off. It is incumbent upon these organizations to create new forms of revenue to stem the losses they are experiencing now and protect themselves from the mercurial future of Web advertising.

For more information on technology trends and developments that emerged during this research, see the TechScout profiles that begin on page 40.

THE COMPETENCIES

It is clear from these trends that technology is opening up many threats and possibilities that impact the world of news and information. News businesses will need fresh capabilities or enhanced skills in order to compete and grow. We outline here six competencies of this next generation news organization.

ONE: THE PLATFORM STRATEGIST

"How can I move eyeballs from one platform to another?"[34]
   – Kenneth A. Bronfin, President, Hearst Interactive Media

As the means to deliver news and information evolve, news organizations need to think as platform strategists, determining new ways to capture market opportunities by leveraging content over and across multiple platforms.

From unique perspectives on the news and special stables of personalities and information assets, news outlets must develop ways to efficiently and profitably meet the discrete needs of every screen experience. What different and unique products can they offer consumers at every level of engagement? How can they move eyeballs across platforms? In effect, what are the multiple platform and cross-platform plays?

Technologists believe a mindset change is needed. As MIT's Bove put it: "When you say we have the people who do TV, and we have people who do Internet, and we have people who do mobile media, you have created an organization where [innovation] doesn't happen. A lot of media organizations continue to think that there are these completely different venues. The [others] take advantage of all of the cross-pollination."[35]

To be successful, the news organization needs to become a platform strategist and:

- Understand the unique attributes and capabilities of each platform;

- Know consumers and spot their unmet needs;

- Understand its own strengths and offerings and identify how to profitably leverage its content across platforms to meet consumer needs.

Understand the unique attributes and capabilities of each platform

An example of a news organization that is serving consumers with unique content on multiple platforms is The Economist. Its online presence offers content from its global magazine editions but tailored for in-depth analysis and search for customers who want more information on the articles. It offers an audio version of the magazine for those who would prefer to listen as opposed to read. For those with special interests, it provides detailed quarterly features that operate as mini-magazines for technology, globalization and more. Additionally it has a version developed for mobile short-form content and also a Twitter feed. It offers video on demand as well as a searchable video library. Additionally it offers weekly newsletters and alerts when articles are published for specific feature areas such as banking or finance. It also serves the business book market with original and repurposed content. The Economist pays attention to the variety of consumers and the best platform to communicate.

Knoxnews.com, a property of the KNS Media Group in east Tennessee, is in the process of experimenting with a variety of platforms "to become more useful to our users at various levels," says Jack D. Lail, News Director of Innovation for the Knoxville News Sentinel. The group's approach is to reach audience wherever, however: in print and online, through with the Sentinel's core site, Knoxnews.com; Govolsxtra.com, a niche site about sports; and even a Songs of Appalachia series of stories and videos appealing to music lovers. In addition, KNS Media keeps mobile and Web users informed by sending text and Twitter messages throughout the day. According to Lail, Knoxnews.com looks to banner ads and Yahoo products for online revenue while it continues to try different ways to build audience across platforms. "You have to fish where the fish are," he says.

Know consumers and spot their unmet needs

With every new device, technological development and platform, opportunities arise to meet consumer needs in new ways. For example, the Gannett Co. realized it could address an unmet consumer need – and build traffic to its sites in the process -- by partnering with Cozi, a family calendar and photo screen-saving device. The partnership provides Gannett's customers an incremental service and provides Gannett a new source of revenue. Through the Cozi partnership, Gannett's local affiliates offer their readers an online service to manage schedules and share information through a central family calendar. The partnership takes advantage of Gannett's own resources: the co-branded service will incorporate local content, information and schedules from Gannett's newspapers and Web sites. In turn, Cozi will increase its national footprint through Gannett's extensive U.S. network of daily newspapers, regional publications, TV stations and local Web sites. This partnership is a brand extension for Gannett into the new and growing digital market.[36]

Mike Pardee, Senior Vice President, Research for Scripps Networks, believes success in meeting consumers' unmet needs lies in delivering content over occasion-based media. "The right content in the right context...besides content and ads relevant for the home environment, it could be things in the store that tie into the GPS on your phone, DVR, video on demand, the web and now mobile devices," he says. Scripps five cable networks, which include HGTV and the Food Network, tailors its content to create a level of motivational engagement for its viewers, then delivers it how, where and when they want it. This combination has helped to create the strong brand for Scripps networks and websites.

Pardee explains it this way, "If media can surround you and involve you like a cloud, then you're going to keep going back to that brand in any context...it's going to make a very rewarding experience."

Likewise, Dow Jones found a new way to free its customers to multitask. Its new "text-to-speech" capability in Dow Jones Factiva allows users to have the news read to them. With one click, users can listen to a news article, freeing them to do other things while they work. A "Listen to Article" link appears at the top of any full-text article with fewer than 4,000 words. The listen capability is available in English, French, German, Italian and Spanish languages.[37] This service leverages Dow Jones content into a new service.

Understand its own strengths and offerings and identify how to profitably leverage its content across platforms to meet consumer needs.

For a news organization to keep current as a platform strategist, it needs to constantly scan the horizon for emerging technologies that could be useful and for potential partners that could provide needed expertise.

In short, it needs to be able to clearly see and seize on the opportunities that open up because of new platforms and new technologies, in ways that fit the platform, the technology, the consumer and the organization.

TWO: THE MARKETER

"A lot of media executives are trying to figure out how to keep up with technology. In order to answer those questions, you have to first ask these questions: What is your identity? What is your brand?"[38]
– Amy Vickers, Director, Global Enterprise Solutions, Avenue A | Razorfish

To be players in this open environment, news organizations need to think like marketers – that is, they need to define their brands and work to develop deep consumer engagement with them. The essential first step in the process for marketers is to identify what differentiates them in the marketplace: What unique value and role do they provide? What sets them apart from other players? Once organizations identify this unique value, they can dig deep to define the intrinsic benefits they offer to readers and viewers that serve to create a meaningful experience. News organizations that create strong audience engagement will survive.

Strategic differentiators are the foundation of any brand. What does the news organization stand for in the marketplace of information (and not just news alone)? This brand identity will become increasingly important as the proliferation of media brands continues and the ability to personalize information explodes -- a subject we will address later in the report. Our interviews suggest that news organizations can achieve differentiation in two primary ways:

- Differentiation on content;

- Differentiation on opinion.

Differentiation on Content

News organizations must start with their own definitions of their content and identify what unique needs it meets or can meet in the consumer marketplace. Disney-ABC Television Group's Cheng explains: "How do we continue to support what consumers want and how can we deliver and differentiate ourselves in this new environment? We differentiate ourselves on content, because it is intellectual property and it's a strategic differentiator." In the long run, Cheng says, "Every news organization is going to have to figure out what their core strength is and how they position that in a world of information often treated as a commodity."[39]

Consider the futurist notion of a brand that has a core identity but is perceived differently by different segments, even as small as the individual viewer.

"Ultimately, you end up with a situation, and say we'll segment it down to the individual, where there will be no channel. There will be a brand, and I think maybe that's the way to think about it, that it still will mean something to MSNBC or the BBC or the Disney Channel or something else or the Boston Globe, but what it means will not be necessarily that I see the same thing you see,"[40] says MIT's Bove.

An example of a media outlet that is leveraging the power of brand is CreateTV. Public television stations in the U.S. have joined forces to enhance viewer experience with a Web service and television station, CreateTV. The Create channel has successfully carried its brand of do-it-yourself programming from television to the Internet by offering round-the-clock broadcast of favorite public television lifestyle programs, such as *This Old House*. It has bundled programming under an e-brand banner and created a wider audience who understands their unique brand benefits.

> In the hypercompetitive media marketplace, putting a stake in the ground around what the brand means will become increasingly important.

In the hypercompetitive media marketplace, putting a stake in the ground around what the brand means will become increasingly important. We see this trend taking place with MSNBC, which identifies itself as the place for politics, TMZ where viewers can turn for all things celebrity news, CNN for breaking news, Google for search, Disney as the place for family fun and ESPN as the sports leader. News organizations at every level, particularly regional and local, must analyze their differentiators to establish a strong brand. In the process of doing so, news organizations often experience a natural conflict between the need to appeal to larger audiences and the need to differentiate. Yet, with the proliferation of brands ahead, news companies have little choice but to differentiate, to hold strong brand position to shore up their audiences and attract those with common interest. There

are simply too many players in the news field with similar content. Especially as markets see a decline, they need to establish their niches and their focus**.**

Ben Elowitz is Chief Executive Officer of Wetpaint.com, Inc., a social networking site that allows users to mix wikis, blogs and forums into a user-generated community. Elowitz describes this process of differentiation: "The opportunity is to create real, genuine, community-sourced content and community with that brand affiliation at the same time. That brand affiliation actually makes the community more effective."[41]

Elowitz explains further, "You'd better know something, otherwise you're not an authority; you can't be authoritative on everything. The Wall Street Journal does an excellent job being authoritative on global and business news of major national significance, but they don't try to be the expert on any one locale. So if you're not an expert on it, then no one's going to want to read you because you don't have an authority proposition."[42]

Strong branding is an imperative for newspaper and broadcast news outlets in a cross-platform future. If a news organization has brand strength, it will translate well across media and tailor itself to different audiences. The news brand can provide a recognized and trusted source in the midst of a proliferation of products that are available in the marketplace. The same holds true for Internet brands, with the caveat that those that differentiate on technology alone will fail. Without its user recognition, Google's search capabilities can be eclipsed. News outlets that evolve into cross-platform media will be rewarded with high quality content and the ability to access it easily through branding. As another example, a technology that allows for cross-platform sharing, like Qik and its integration with YouTube, will have a larger, stronger user base than its competitors.

Differentiation on Opinion

Another form of differentiation that our interviews highlight is the increase in news and information based on opinion and micro-opinion. Helping viewers migrate to information that resonates with them personally will become a key way to cultivate audience. Motorola's Vasudevan says, "As information gets more plentiful, insight gets more precious. The value add [for news organizations] is not really so much in breaking a factual story as much as providing a perspective on it."[43]

Robert Bach, President of the Entertainment and Devices Division at Microsoft, discusses this blurring of news and opinion: "The definition of what is published content in the news space [and] what's opinion is a very interesting thing. Is a blog reporting or opinion?"[44]

Our interviews suggest news organizations are becoming more transparent with audiences about their philosophical bent on the news. Rather than striving for objectivity, the differentiation of some brands may begin with a recognized and promoted point of view on the news.

Hanson Hosein, former NBC news correspondent, now the Director, Master of Communication in Digital Media at the University of Washington, offers an example: "*The Economist* has always practiced credible trustworthy information gathering and dissemination, but it comes with an opinion and it comes with a voice."[45]

The news and information marketplace is populated with organizations like Fox, New Republic, and Salon.com that provide opinion targeted toward specific sets of consumers. In the near future, there will be even more entrants -- some whose strategy is to appeal to even smaller subsets of opinion, such as Andrew Sullivan, Joshua Marshall and other bloggers who also serve as mainstream news sources. New entrants will also add micro-interest areas that overlay news functions to continue to hold viewers.

For some media outlets, extending an invitation for audience opinion can lead to new content and another way to differentiate their media brand. While commenting features are becoming widespread, the shaping of the dialogue is an important way to make opinion-sharing stand out in the crowd. The model for the photography Web site and magazine, JPG, depends entirely on user-generated content. JPG's mission of providing an authentic community to photography enthusiasts is demonstrated in the photos and stories provided by its audience/participants. Then, the print version of JPG, published on a bi-monthly basis, contains the best of the Web site contributions, curated, or determined, by audience vote.

The news organization should be continually evaluating its place in the "market of opinion" as notions shift as to what constitutes news and professional objectivity. These questions about content and opinion differentiation are important for the journalist, but especially for the news organization as marketer.

THREE: THE COMMUNITY BUILDER

"How can I aggregate communities around passionate interest?"[46]
-- Ben Elowitz, Chief Executive Officer, Wetpaint.com, Inc.

In the face of these coming technologies, news organizations need to focus on the potential in becoming community builders, connecting people around shared interests. With an increased technological capacity for information-sharing between individuals and groups, the opportunity exists for news organizations to help shape dialogue and enable consumers to link to discussions of increasingly wider context.

News organizations will not be able to control the conversation – but they can find ways to aggregate communities by providing value in a substantive way. This value can range from depth of perspective on micro-local news to sponsorships of local events to promoting local advertisers' messages in relevant ways. For these reasons, partnerships with micro-news sites will be increasingly important.

> Creating communities around shared interests via cross-platform technologies could be considered a critical function of any news organization.

Creating communities around shared interests via cross-platform technologies could be considered a critical function of any news organization. As Hearst's Bronfin explains, "We try to create a

curated community, which is not just people talking about anything. Other sites like MySpace, or the thousands of others like it, are in some ways just pure communication devices, as a replacement for phone or e-mail. We want people to come to our site and talk about specific topics of interest. We believe in the ideal mix of editorial and the communities' opinion -- that is, bringing those together."[47]

The news organization's competency as a community builder needs people who can recognize and seize opportunities for:

- Driving contact and collaboration;

- Tailoring content for segments and micro-segments.

Driving Contact and Collaboration

Glorianna Davenport, Principal Research Scientist at MIT's Media Lab, gives a portent of the kind of contact and collaborations that will be made available through technological advances -- and how they can sustain audience.

"Let's say you were watching a presidential convention. It would really be great to be able to text message your friends and see that on your same screen while you're watching the coverage, because I think that it is that type of social chat that keeps you from switching the channel,"[48] she says.

The ability to contact and collaborate will be an added value promoted with the entry of new technologies. In the same way users chat via three-dimensional gaming technology with MMRPGs (Massive Multiplayer Role Playing Games), user interaction and community features can be a part of and enhance many cross-platform media experiences. From television to movie watching, instant messaging products will be integrated to provide dialogue and interaction across media.

Motorola is promoting an open source product for television called [TVlicio.us](). The name is a play on the social bookmarking product [del.icio.us](). The product allows the user to store favorite links, share clips from programs with friends and tag bookmarks for easy access. Users gain information on what friends are interested in, as well as provide information to the producers of the tagged or bookmarked shows.

Henry Holtzman, Chief Knowledge Officer and Executive Director of Digital Life at MIT's Media Lab, describes a new project the lab is working on: "I have a student working on something we call 'Television meets Facebook.' In this project, we're taking the shows that you watch and, with your permission, sending them to Facebook to share with all your friends through a direct integration with your cable box. You can see what your friends thought of the shows that you have recorded on your TV. The box may even record things for you that you haven't thought of programming in the first place because all your friends are watching it."[49]

One way news organizations can promote collaboration is to deeply involve the community in the reporting of news. Qik's Roy talks about the ability of high-end mobile technologies to enhance the overall conversation and dialogue with consumers.

"Today, some parts of BBC Technology News use our product so that when they're out there doing interviews, they're streaming it live, and the viewers are able to interact with this reporter," Roy notes. "Viewers can say, 'Hey, why don't you ask this question? How about this? Are they going to do this?' The overall conversation and the interview get richer, because now, all of a sudden, you have a collective mass of folks who are looking at this interview and interacting to learn more."[50]

> ...news companies will miss a beat if they create content without a sensitive appreciation of the audience and the social network they represent.

What is clear is that news companies will miss a beat if they create content without a sensitive appreciation of the audience and the social network they represent.

"News organizations are throwing resources into content with brute force and not trying to aggregate a community and create shared user-base knowledge exchange,"[51] notes Hobby, the photojournalist and blogger. Curating a community means being able to hit the sweet spot of collaboration and tap into consumers' passionate interests.

As technologies proliferate that connect people while promoting community and collaboration, people will more easily connect around shared passions and interests. This "connective tissue" function has been the traditional purview of the news organization. To remain a vital resource to the audience, news organizations must continue to know what holds communities together and to use the new tools available to aggregate them around those interests.

Tailoring Content for Segments and Micro-segments

It's common knowledge that the Internet has splintered mass communication and made it possible – and quite desirable -- to target segments of consumers with similar interest profiles. A news organization that is attempting to target local segments of its audience with tailored content is the Huffington Post, which recently began expanding into local commentary across America, starting with a site edited for Chicago. The aggregation site is managed by a single editor and includes localized information on news, sports, crime,

arts and business from different local sources as well as contributions from bloggers from the Chicago metro area.[52] The Huffington Post is actively pursuing the tailored local market to customize its message to local interests as well as to capture local advertising revenue.

A related trend is micro-segmentation – the ability to target smaller and smaller markets of like-minded consumers.

Wetpaint's Elowitz explains: "What we found is that there's a whole other category of media, which isn't necessarily all about what's in just this moment, but is more topic-focused. People are using our technology to create a replacement for the traditional magazine. They're looking at all kinds of new resources, opinions and information that they're able to add and share with others who care about the same topics. The magazine rack has literally thousands of magazines that are published. Interests are micro-segmented; people have very specific interests and they're looking to connect with content and other people who share those very specific micro-segmented interests."[53]

In addition, Wetpaint is partnering with 60 different media outlets, from the Discovery Channel to Meredith Publishing properties, to promote micro-segmented brand fan sites. Users contribute to a number of different sites, ranging from presidential election issues to scrapbooking and woodworking.

A next-generation example of micro-segmentation is EveryBlock.com, a Web site that collects news and civic goings-on, indexed by geographic location, and then organizes it all in one place. The site's location-based features keep track of news in micro-segmented neighborhoods within metropolitan areas. Adrian Holovaty, founder, journalist and Web designer of EveryBlock.com, explains how the site gets information.

"Twenty-four hours a day, we crawl on a whole bunch of sites, not just newspapers, but TV stations, radio, online-only stuff, blogs ... basically any sort of quasi-media outlet we can find that is narrative about any place in the city. We index all those by geography, so we detect which locations are referenced in every story, and then it shows up on our site,"[54] he says. The benefit of sites like this is in providing very detailed, hyper-local information via automation.

> ...building partnerships with micro-segmenting companies may be a way to hold audiences around shared interests and maintain market leadership.

In many cases, building partnerships with micro-segmenting companies may be a way to hold audiences around shared interests and maintain market leadership. News organizations must therefore keep a close watch on sites that serve hyper-local audiences, especially those that employ GPS or WiMAX capabilities to offer services that help them excel at community building.

FOUR: THE DATA MINER

"Personalization has to happen. The publishers that allow the consumer to be in control will survive because if they aren't, they can certainly go elsewhere."[55]
-- Susan Hickey, Chief Marketing Officer, Nielsen Online

These technology trends will bring with them a wealth of information, data and insight about the actions and behaviors of consumers. So news organizations stand on the brink of being able to study patterns of group purchase behaviors as well as predict preferences of individuals – and then act profitably on what they learn. When fully deployed, personalization of news and information should become more automated and more satisfying to the consumer.

Given the ability of these technologies to aggregate information about groups and individuals, the question becomes: How can the news organization use this data to develop new and better products and services that meet consumer needs – and generate new revenue streams? The opportunity exists for news organizations to develop unmatched depth of insight by analyzing attitudes and patterns of behavior and then providing the best, most relevant content possible.

To do this, the news organization needs the skills of a data miner - – an analyst of information about individual and collective human behavior who can expertly find meaning and direction in patterns of activity and interaction. It needs to be able to gather, analyze and make sense out of a wide variety of audience usage and behavioral data that is becoming available in three ways:

- Leverage semantic or smart technologies;

- Manage the data warehouse;

- Extract value from archives.

Leverage semantic or smart technologies

Editor-in-software technologies have already been adopted by some news organizations and prove to transform the news gathering and distribution process. These technologies are profiling tools that bring automated personalization to news and information choices. Users create profiles of what they want to look at and items they're interested in viewing – and then that information is used to create personalized content, notes MIT's Davenport."[56]

> Sletten foresees an editorial model that combines human thinking and machine automation.

Brian Sletten, Partner at [Zepheira](#), a data management company that specializes in setting and applying the standards of the Semantic Web, notes that, in essence, these automated editor-in-software functions replicate traditional journalistic functions: "Historically, human editors would have enough depth, breadth and historical context that they'd be able to identify what the interesting stories are. These technologies are able to associate Web items with temporal and historical components that can replicate some of that thinking."[57]

Services like [Newsvine](#) and [Topix](#) have utilized these automated editor functions for some time. But the future promises greater customization and better personalization and depth of content. Algorithms will anticipate specific interests one holds and then serve up

personalized content. Better than an RSS feed or even a recommender function like Amazon's book selection, these work because the users create the context for the information they desire.

Sletten foresees an editorial model that combines human thinking and machine automation. "I'm expecting humans in the loop to still be involved in the tagging of sites. I think the future will be a mixed model of both automated and analyst-curated results."[58]

Manage the data warehouse

Perhaps the data mining expertise most valuable for the news organization is the ability to access its existing archives. The treasure trove of information (both current and past) that news organizations own may represent a largely untapped asset – if they can unleash it.

"Content may be king, but the guy or the organization that's going to make the most money is the one that has the most creative solution when it comes to actually making that stuff accessible,"[59] says Cameron Brain, President and Chief Executive Officer of Open Box Technologies, a company that stores, manages and distributes digital media. He talks about news organizations' need for better data accessibility.

Photojournalist Hobby agrees: "I see the ones who are smart as monetizing the Lexis-Nexis kind of stranglehold on the content as it exists for the archival content -- I think that ultimately those contracts need to be escaped. You think about what a typical newspaper in a medium-sized city has that has been publishing for a hundred years now. It has just an incredible amount of historically rich content."[60]

This new future will require sophisticated and up to date expertise regarding the storing and retrieval of information – both the content that is a company's product but also the information the company gathers about consumers. Unfortunately, many news organizations struggle with getting this data to be valued internally, much less being able to provide it as an external resource.

Avenue A | Razorfish's Vickers explains: "We've found that publishers are really ready to deploy much of what advanced technology can offer. But their data warehouses aren't ready for it. And that's a big issue that a ton of places, a ton of companies, are going to have to deal with really soon in a really major way."[61]

In addition to the lack of data infrastructure, Vickers points to the challenge of organizational structure in media and especially news media companies.

"Companies' internal data structures tend to mirror their organizational structures, and when you talk about measurement, and when we talk about making sites more personalized or more localized, data needs to enable all of that. Data enables content portability; data enables more metadata which enables search and semantics and all that good stuff. But business people don't get data. They don't get technology. And technology guys don't necessarily get business."[62]

Even if a company figures out how to mine all the data it generates to produce outstanding consumer insight, that won't be enough -- if the news organization has no way to efficiently access and personalize the content it has. Fortunately, the Semantic Web and other advancements can help with this.

Brain, of OpenBox, notes, "News media outlets have a very good pedigree for producing high quality content, but what they're really lacking are the tools that actually enable that content to be consumed wherever, whatever, whenever the consumers ultimately want to."[63]

> An immediate opportunity for the news organization is to improve the accessibility of archival material via semantic search.

An immediate opportunity for the news organization is to improve the accessibility of archival material via semantic search. Software services are available commercially and via open-source that map metadata from existing files and create common concepts or taxonomies that allow for conceptual search. This can lead to a freeing of content with queries like, "Show me all articles on the New Jersey Turnpike construction" or "Show me all articles on Sunni Militia since 2005."

"We're getting to the point," says Zepheira's Sletten, "where we can automatically extract metadata - who wrote the pages that I went to today, where do they work, who do they know, what are they interested in, when these things were published, where were they published and what license is associated with this content."[64] The benefit to the news outlet to have immediate access in this way is obvious and exciting.

Thomson Reuters has introduced Open Calais, a semantic search feature that allows other companies to automate their own archives. The company has released an open-source plug-in that lets mid-tier and smaller newspaper publishers automatically attach semantic metadata to any of their content. Tools like this can do much to automate the much-needed process of tagging news organizations' content.

Even image search is going to become more accessible. Greg Heuss, President of Eyealike, which has developed search capability by face and image recognition, talks about the increased quality of search once more image-based capabilities are available. "You're going to drop in a picture of that little black dress that you want to buy and, all of a sudden, it'll pull up every black dress at every store in downtown Seattle instead of typing in "Nordstrom" or whatever the application might be,"[65] he says.

There is an urgent need for news organizations to accelerate understanding of the relationship between data management and business opportunity to remain viable in the time ahead. This must happen by creating a culture of knowledge sharing and a deep realization of the burning platform of change.

Extract value from archives

Some news organizations are selling archives by packaging information in creative ways. The Wall Street Journal has launched "Business Smart Kit," a training tool for management professionals. For a yearly fee, individual managers can select customized notices about news in their field, daily alerts, weekly updates and quarterly reviews. This is WSJ content, but curated by professors in their expertise area. Of course, a WSJ subscription is included. In effect, WSJ has created a service as an entry into the training and development market.

Time Inc. has developed a new way to sell magazines that mixes up the old subscription model. It has just launched a customized magazine subscription service on the Web called Maghound. The site allows consumers to choose magazine titles from a variety of publishers and create a mix-and-match subscription. Consumers pay one monthly fee and have the ability to switch titles at any time.

"There has been this major paradigm shift in the way consumers shop, pay for and manage the services they choose,"[66] says Dave Ventresca, President of Maghound Enterprises, Inc. Like the Netflix model, Maghound promises a new menu of choices to an audience that is now used to such offerings.

The WSJ and Maghound examples presage Avenue A l Razorfish's Vickers' prediction that, "One of the big things that I personally believe is that businesses stand the opportunity to reinvent themselves through creation of business models around services in really unique ways."[67]

FIVE: THE COMPLETE STORYTELLER
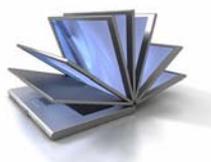
"The one thing you can't deny is we are in an increasingly visual society."[68]
--David Hobby, photojournalist, The Baltimore Sun and author of the blog Strobist

Successful news organizations have always excelled at storytelling. But now, digital technologies give them and others a much broader palette and set of tools to use in that storytelling. It's not just text, photos and videos – it's a mix of all three plus interactivity, games, charts and much more.

Excelling at these new kinds of storytelling is a competency that can differentiate news organizations from competitors. What is the text and tone of the story? How do text and images relate? Which are the most powerful tools to use for this particular story for this medium? How do short and long form stories play cross-platform?

> Excelling at these new kinds of storytelling is a competency that can differentiate news organizations from competitors.

There are many challenges ahead, as Motorola's Vasudevan explains: "How do you create a coherent media experience that doesn't disturb, [that] doesn't disrupt the fact that TV is still a pleasurable, sort of lean back experience? I think there's still work to be done. This will ultimately take people away from the notion of consuming items to really consuming stories."[69]

"The storytelling element looks specifically at the quality of message. And if the storytelling is compelling enough and is compatible enough for your audience, then that will cut through. That's really important,"[70] explains University of Washington's Hosein.

An example of a news organization that actively integrates digital storytelling is TIME magazine. TIME's Web site, in partnership with CNN, has a variety of interesting ways it displays information. A Clinton-Obama article shows pictures of the United States color-coded by county showing who was voted for. A link to an article on the "Fragile Earth" brings up a short-form video. An article on a banking crisis in Southern California is displayed in a timeline format, engaging the reader and maintaining attention longer than a traditional text article would. Digital storytellers like TIME use inventive ways of displaying information that entertain and educate at the same time.

There are three ways in which news organizations, aided by technology, should learn to excel at digital storytelling:

- Providing rich context;

- Creating interactivity;

- Visualization of information and design.

Providing Rich Context

The leaders we interviewed frequently mention the need for more contextual history in news stories. As Wetpaint's Elowitz puts it, "Content is so much more valuable when it's in context."[71] This is an opportunity area for news organizations – aided by technology. With their long institutional memories and deep archives, they can anchor a story better than a citizen journalist or any individual editor.

MIT's Davenport talks about the need for a richer context for the storytelling function of news: "I don't think right now we have a good sense of making news accountable for shaping our view of the historical moment at all. In fact, I think history has sort of disappeared almost, in favor of this new information age where everything is coming at you, everything is new."[72]

Of course, there is a journalistic challenge here, but considering the Platform Strategist competency, there is also a significant business one. If breaking news is a commodity, what is the value proposition a news organization can bring? One answer is stories based in historical context that engage the viewer.

Davenport sees great opportunity in using technology to enable, enhance and simplify the process of adding context to stories – just as search has revolutionized story-selection and retrieval.

"What I'm more concerned with are stories that link to each other and grow in time," she said. "For instance, if you have an urban issue, let's say they're going to put a highway through the city, that's a story that develops over a very long period of time -- maybe two, three years of planning, maybe five years of planning, maybe longer. It involves how you are getting the money. It involves how you are impacting the neighborhoods. If it's semi-local, it runs a lot with public meetings and people come to the meeting, but there's no way of aggregating those stories to become stories over time. So, five years in, someone moves to that neighborhood, and they can go back and get high-level view of what's going on."[73]

"How do you put older pieces together so if I want to get a view into an ongoing story, I don't have to have a journalist come and summarize it for me today?" she asks. "Can I go back and see how it was presented six months ago, three years ago? And that could very easily be a mix of television, still pictures with captions and text. It could have some summarization."[74]

> To deliver on this contextual approach to digital storytelling, news organizations first need to get their archives to be more active and accessible.

To deliver on this contextual approach to digital storytelling, news organizations first need to get their archives to be more active and accessible. As mentioned earlier, new technologies can assist in that effort. Mid-term, tagging is critical to the on-going process of asset collection. Tagging is a way to categorize information by assigning a keyword to each fact and figure within a body of content or item in a collection.

"The first thing I'd start doing is tagging every one of my stories with four or five areas of interest," photojournalist Hobby advises news organizations. "Whether it be state government, Democrats, the governor and taxes, or football, high school, sports, and the person you're writing about, every story should have tags the same way many blogs have tags. When I finish that story, the natural thing for me to do is to click on the tag that is the most interesting in that story and see the last 20 stories that also had that tag."[75]

Many organizations with large photo libraries struggle to access visuals for storytelling. Eyealike's Heuss says many organizations have not been able to tag photos.

"It's shocking to me to know that 80% of [photos] aren't tagged, and so they physically go through them by hand," Heuss says. "I think it's Corbus that has 80 million images and only 15 million of them are actually tagged."[76] The ability to link to photo archives will be important in becoming a digital storyteller.

While tagging content is a big job, Zepheira's Sletten observes that people have shown that they are willing to tag and to partake in creating the context.

"One of the big complaints about these semantic mark-up technologies is that nobody's ever going to bother to do it, and metadata is always bad," he says. "I think things like

Flickr and del.icio.us and some of these other folksonomy approaches demonstrate that when you lower the bar and demonstrate the value, people are willing to take the time to enter this metadata."[77]

An example of an organization that provides context well through tagging is LibraryThing.com, an online service that helps people easily catalog their own collections of books. It is a full-powered cataloging application, searching the Library of Congress, all five Amazon sites and more than 80 world libraries. Access to the catalogs is available from anywhere, including mobile phones. Users can edit information, search and sort books, tag books and articles, or use the Library of Congress and Dewey systems to organize collections. As everyone catalogs together, LibraryThing also connects people who have tagged the same books; as a result, it has even been described as the "MySpace for books."[78] As of 2007, LibraryThing had accumulated 13 million tags compared to about 1.3 million on Amazon.[79]

Creating Interactivity

From our interviews, it's clear that digital storytelling will absolutely involve interactivity. MIT's Davenport explains, "Right now in terms of movies, there's still a perception that a movie is an artifact. And even if you go to YouTube, people are doing sort of the complete thing that they want to do, posting it, and that's it. There's no threading with the response. There's no idea of a collection of movie clips that then can play out according to what interest somebody brings in. And the problem with that is that we're growing to be a much more interactive society."[80]
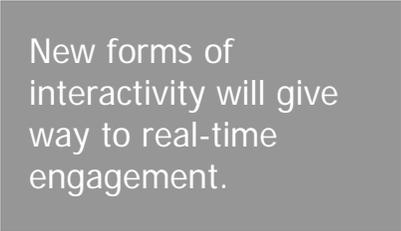
> New forms of interactivity will give way to real-time engagement.

However, innovation is happening on this interactive story front, through a process sometimes called "mash-ups". StoryBlender is an online collaborative video production platform where people can work together to "blend" their content into a new multimedia show. StoryBlender's online editing tool lets users create videos by combining images, sound, text, and video clips. When users have created new video blends they can then share it with their friends and the StoryBlender community.[81]

Stories provide an experience for the consumer that creates engagement and, at its best, an interactive experience. New forms of interactivity will give way to real-time engagement. This is already happening with the new versions of fanfiction, in which users take an existing story or game and create their own narratives online. Currently popular in MMRPG's or video gaming, fanfiction provides deep engagement by allowing the fans to contribute to everything from creating their own characters to altering the actual "universe" of the game. Wetpaint's Elowitz strives for this same consumer engagement on Wetpaint's wikis and sees its service as a form of interactivity. "People are posting everything from the basics of what are the cheat codes on the games, to wanting to share their videos and their narratives and even their fanfiction,"[82] he says.

News organizations need to go to the next step in figuring out how to supply this interactivity to the narratives they create. Given the cross-platform future, it's important to be innovative in those offerings.

Motorola's Vasudevan talks about a participatory future: "What I would like as an end user is this: I not only want to read stories, I really want to participate in with the storyteller, similar to a reality show. So, I'm a foodie, for instance. I not only want to read what Phil Vettel [restaurant critic for the Chicago Tribune] has to say about a restaurant. If Phil Vettel were to set up a sort of a Vettel TV-style news feed, I could participate in his evening jaunt through multiple restaurants and sort of live the experience. I know that I would pay for it or I would at least participate in it."[83]

Visualization of Information and Design

Another area of great opportunity is innovation in visual communication --the communication of ideas through the visual display of information. Digital technology opens up an array of possibilities in this arena. But while there are design professionals in most newsrooms, most journalists are not trained in design, especially as it relates to the visual design of a story. And furthermore, information technologists aren't trained in design either. Thus, it sometimes becomes difficult to bridge the communications gap and forge ahead to create something that is visually interesting to the viewer.

To Disney-ABC Television Group's Cheng the challenge is that "we have to start thinking like a design company because we have so much information and content available to present. The hard part is how do we deliver it effectively to the consumer?"[84] To succeed, digital storytellers as designers must have a deep understanding of both users and context in order for the design to engage.

The practical application of "information visualization" in computer programs involves selecting, transforming and representing abstract data in a form that facilitates human interaction for exploration and understanding. This concept of visually displaying data has been spearheaded by Professor Emeritus at Yale University, Edward Tufte. Seen widely as an expert on the subject of the visual presentation of information, Tufte believes that the problem with presenting information is simple -- the world is high-dimensional, but our displays are not. To address this basic problem, he offers principles of information design that digital storytellers should address, from focusing on comparing quantitative data well to demonstrating cause and effect.[85]

Avenue A | Razorfish's Vickers says that great news organizations "understand how people use the Web and how people want to use information. The way they publish information, they're cultivating personalities that are aligned to interest groups. And so they're cultivating loyalty in this kind of like one-to-one way. And in that way, they're smart curators."[86]

She talks about the importance of design and the power of visual communication: "Digital can enable us to experience news and media content beyond text. The movement of images largely narrate themselves. Through that visualization, we discover new things."[87]

She sites Newsmap as an example of these kinds of discovery experiences. Newsmap is an application that visually reflects the constantly changing landscape of the Google News aggregator. It provides a tool that divides information into quickly recognizable bands in news reporting and segments around the globe. A user can click on the teaser to link to the full length article. Stories can be displayed within the last ten minutes, last hour or more than one hour ago.

And that's what digitally-enhanced storytelling of news can do – provide a discovery process for the audience that starts with an interest and grows by following the combined imagination of both the viewer and the author of the content, facilitated by technology. "I think in the future we'll have more of this kind of discovery communication in our society,"[88]MIT's Ypodimatopoulos believes.

Additionally, when there is even greater information available through semantic agents as discussed earlier, the need for customizing information will reach a micro-level.

Avenue A | Razorfish's Vickers believes that in effect, layout, design and story will become an automated function that is generated from online usage patterns and preferences that have been designated by the consumer.

"Semantic search will up the ante on the dynamic clustering of content and how content is brought forward to individuals," she says. "Fundamentally what is happening in the consumer space is that people are either indulging in narrowing the foci and going deeper for content or they're going wide, staying shallow and are looking for context and understanding."[89]

The editor, whether human, automated or a hybrid, becomes what our interviewees identify many times as a curator -- one who can tailor information visually and also is responsible for customizing it electronically to match the needs of the audience. The consummate digital storyteller is one who helps us discover more about ourselves and our world.

SIX: THE ENTREPRENEUR

"News organizations will need to figure out what the end consumer is going to want and what they are willing to pay for."[90]
-- Albert Cheng, Executive Vice President, Digital Media, Disney-ABC Television Group

In this environment, news organizations must think like entrepreneurs and decide what assets they can leverage and what new services they can provide. Our interviewees are clear about the need for identifying new models for making money and offer a number of scenarios for the future – some of which they are fielding now, others that are still experimental.

Cheng notes: "We are using breaking news to [let consumers] know that we are there on the cutting edge, but then drawing them into our news site, which supplies other types of

categories of content that are more advertiser friendly than breaking news. For example, content verticals -- that is typically more monetizable."[91]

Three things news entrepreneurs should pay particular attention to, as they determine what assets they can leverage and new services they can provide are:

- The power of partnerships;
- Experimenting smartly;
- New models of advertising.

The Power of Partnerships

To remain viable, especially in technology operations, news organizations often will need to identify and partner with companies that have skills (particularly technological) that they don't have, that have high engagement with Web audiences, that can solidify their market leadership and shore up their consumer base.

Some partnerships will fill an immediate need – like newspapers' partnerships with Yahoo! Others are more of a long-term development or learning opportunity. Some partnerships are also investments.

These technology partnerships are an important component of the future of news entrepreneurship. Finding partners that can extend assets into ancillary services and find new ways to drive revenue will be critical.

> These technology partnerships are an important component of the future of news entrepreneurship.

Wetpaint's Elowitz talks about the value of partnerships: "We work with our partners on a revenue-share basis, where we're providing the technology that builds audience and so we're bringing something to the table, and they're bringing their brand and their authored content to the table."[92]

Creating partners that link to a news outlet's site is now also critical for success. A significant percent of traffic to NYTimes.com now comes, not through the newspaper's home page but through aggregators, blog links and other partnerships. When The New York Times announced in September 2007 that it would no longer charge readers for online access to its opinion columnists, it explained, "What changed was that many more readers started coming to the site from search engines and links on other sites instead of coming directly to NYtimes.com. These indirect readers, unable to gain access to articles behind the pay wall and less likely to pay subscription fees than the more loyal direct users, were seen as opportunities for more page views and increased advertising revenue."[93]

Fostering these sponsored partners should be of high priority to all news organizations.

News organizations also need to pursue symbiotic relationships with social media companies as well. Radar Networks' Spivack talks about the revenue partnerships available.

"Social bookmarking is the best thing for news organizations because it sends them traffic. They should be eagerly embracing as much of that as they can,"[94] he says.

Then there are investment partnerships: Hearst has made a strategic investment with E-ink, an electronic-ink-display technology that combines a paper-like reading experience with the ability to access information.
 "The vision that we've had here for a long time is the idea of electronic paper," says Hearst's Bronfin. "[It is a] device that has a radio in it, so you literally carry around something that's almost like a piece of paper and is constantly being updated. It becomes not only your news device but a place where you can read books. You can store your own papers and do whatever you want to do. And I think that brings a lot of relevancy to news."[95]

Hearst has also invested in SlingMedia, which offers The Slingbox, a device that enables consumers to watch their own live TV programming by turning any laptop or Internet-connected device into a personal TV. The Slingbox redirects, or "place-shifts," the TV signal from any cable box, satellite receiver or personal video recorder (PVR) to a viewer's location and device of choice, anywhere in the world, with a high-speed Internet connection.[96]

In a fight for the home shopper, Amazon.com has strategically partnered with TiVo to enable TiVo's subscribers to buy products while watching any broadcast or cable network program using the remote control. Viewers can use the remote to search for the desired product on Amazon.com and can either purchase it with one click or save it to the shopping cart for later. Scott Merlino, Senior Manager of Business Development at Amazon, explains the possibilities: "Now, a record label can merchandise and sell a new artist's CD on a show where the music is featured, or a publisher can merchandise an author's book during a talk show when the author appears as a guest. The marketing possibilities are endless."[97] Amid the steep competition within DVR technology, TiVo has actively sought out partnerships with advertisers to remain relevant. Given Amazon's stake in Kindle, a wireless reading device, and media partners like The New York Times, expect Amazon to make more cross-platform plays for market dominance.

Building symbiotic relationships is a good innovation investment. Another kind of partnership -- academic partnerships – can provide great value for news organizations, usually with less cost. The MIT Media Lab has a number of corporate partnerships that give partners access to the emergent thinking within its ranks.

Experimenting Smartly

Determining new platform strategies and business opportunities will likely require experimentation. Every news organization should be beta-testing new products and new types of technologies, developing experience and knowledge that will inform their decision-making and clarify the strategy play.

"We look for technology that we believe will change the world or move eyeballs from one place to another," says Hearst's Bronfin. "That activity stretches across many forms of media, and so sometimes we're not sure whether those ideas will work or not, but you

can't wait around to find that out. You want to get involved in them and bring them to the forefront."[98]

Bronfin predicts the importance of having a presence across platforms will grow as consumers personalize their consumption over multiple devices.

"For the leaders whose brand in the market for news is important, I think they will continue to grow. They'll do so by making sure that their content is available twenty-four hours a day in any format conceivable, whether on a big TV set, small cell phone screen or anything in between,"[99] he says.

> News organizations need to be experimenting with new business models at varying risk levels.

Many interviewees predict a consolidation of players in the media marketplace and a further splintering of audiences due to new entrants from unexpected places. As Vickers, of Avenue A | Razorfish, notes, "Distribution channels are thoroughly saturated. Social media is thoroughly saturated. It's now about business model."[100]

News organizations need to be experimenting with new business models at varying risk levels and need to stay entrepreneurial in their values. Embracing risk is an inherent part of building long-term value. Take The New York Times investment in About.com for $410 million in March 2005. The acquisition was the biggest for the Times Company since acquiring The Boston Globe in 1993.[101] Many were quick to criticize the Times for overpaying for a property that was seemingly easy to duplicate. But as it turned out, the Globe purchase turned out to be the riskier investment; the Times has had to significantly write down the value of the Globe. But About.com is now recognized as a top 15 content site and is one of the largest producers of original content on the Web. It is estimated to be worth $700 to $800 million.[102]

The future will bring more "bets" like this. News companies need to make such risky investments in the market "white space."

Experimentation with new advertising models will develop rapidly as well, especially as 3G mobile penetration expands. Keeping pace with innovations will be critical to success in this cross-platform play.

Talking about the cross–platform advertising opportunities, Motorola's Vesudavan says, "I think you're going to see the Web-style engagement models come to TV and mobile and that could lead to an inversion of where you don't pay so much for stories as more things are monetized in new ways. For example, I can give you the story for free, but I get information about who you share it with for more about social advertising."[103] There will also be the ability to communicate brand messages and continue advertising campaigns across devices.

Sense Network's Jebara talks about the potential of new advertising models with location-based data. "We've talked about customizing the advertising based on your location and your behavior,"[104] he says. "If you give us somebody's GPS data, latitude and longitude, we can answer demographic types of questions about the person. We can make predictions

about what this person is most interested in, the types of places they are most likely to go next."

When Sense Networks opens their API, news organizations can use their models to target profiled users with news and advertising specifically oriented to their unique locations. This kind of data would allow for the specificity of advertising to show arts news to someone in front of the Met in NYC and offer them a discount at the museum store.

Also anticipate greater user involvement in the kinds of advertising consumers choose to see. Wetpaint's Elowitz cites AWS Convergence Technologies as "company that owns a bunch of weather reporting systems [and] has a technology that lets publishers choose the brands that gets advertised on their site. So, for example, if it's a site about sports, users would be asked, 'Do you want Nike or Adidas as an advertiser?' When you start doing that, you're finding out so much more about your audiences and you're making a more meaningful connection with them."[105]

Another advertising model predicted is immersive experiences in advertising. Motorola's Vesudavan says, "If I had infinite people and infinite resources, I'd probably look at how do you maintain the popularity of TV and really bring immersive experiences into it? Could be virtual world, could be a 3D user interface, could be telescoping advertising where Toyota, when it introduces its newest car, they can not only show you a 30 second clip, they can say, 'Okay, from here, just dive into the virtual world and see what it would be like to drive our car.'"[106]

And with increasing Internet accessibility from mobile devices, the playing field for advertising will be filled with areas in which to experiment. MIT's Ypodimatopoulos foresees the development of a marketplace for local advertisers and users who want to know what's available around them.

"A shop would like to advertise and the user would like to gain access to information that they're really interested in,"[107] he says. In effect, the boutique you walk by on the street could send you an alert for a sale item you may be interested in buying. Micro-local advertising will evolve and provide opportunities for forward-moving news media companies to link buyers' and sellers' goods and services.

> "If I know exactly the kinds of videos that people are watching, I can serve up both more relevant content and more relevant advertising."

For media companies, the promise of content management advances will also provide better knowledge of consumer behavior and more value to advertisers with better targeting.

As Eyealike's Heuss explains, "If I know exactly the kinds of videos that people are watching, I can serve up both more relevant content and more relevant advertising."[108]

Content management is an entrepreneurial challenge that news organizations face, says University of Washington's Hosein.

 "The great survivors, the ones who will really capitalize on all this innovation, will be the ideal hybrid," he says. "People will continue to want professional content and, to a certain extent, they'll be willing to pay for it through advertising or on a pay-as-you-go model. And then they're going to want that user-generated content because the users are more places than where the professionals can be. We are dual-nature consumers, where we want professional and we want amateur, and so any organization that can manage that balance will do well."[109]

TECHSCOUTING THROUGH THE TRENDS

TechScout: Standing Out with Mobile and Video

Tuesday, February 19, 2008

(Annette Moser-Wellman) – Mobile and video were top of mind for most of the media executives we interviewed recently for Media Management Center's recent report on innovation and the news media.

But, of course, watching video on news sites can be a less than satisfying experience. You name the problems - takes forever to buffer, disappointing quality once you get it and no easy way to explore related content. And watching video on most mobile devices? Forget it.

Fortunately, both technologies are morphing quickly. So we thought we'd 'scout out' what's happening at the edge of the horizon and what changes might be in store for news media organizations. I caught up with Cameron Brain, CEO of a promising start-up called Open Box Technologies – a Web and mobile commercial video solutions provider - to talk about some of the opportunities and challenges media companies face when it comes to optimizing video – on mobile and off.

"As consumers, we've been sold a bunch of hogwash over the past five years or more on mobile content streaming. It's only been within the last six months that we can really start to talk legitimately about mobile content distribution at a commercial level," he said. "Before that, it was just too challenging and required too many steps on the part of the service provider and, in particular, on the part of their users."

It's the popularization of Apple, Nokia and other powerful phones that have, in Cameron's opinion, ultimately changed producer and consumer expectations for mobile video.

> It's the popularization of Apple and other powerful phones that have ultimately changed producer and consumer expectations for mobile video.

"The iPhone and the iPod touch, not to give them too much credit, but they enable such a great experience. I mean the quality of the video that you can stream to them, the simplicity of the process not only from a user standpoint, but from a developer standpoint; it's just so much easier and elegant than with most other phones, past or present," he said.

> Many of these companies produce so much content. But it's quite amazing how so much of it is just buried.

Cameron believes that news organizations could make greater strides with video – and particularly with mobile -- by paying attention to evolving ways to make that video more accessible and satisfying.

News companies, he said, "have a very good pedigree for producing high quality content. ...What they're really lacking [are] the tools that actually enable that content to be consumed, to use a far overly used term, wherever, whenever, however the consumers ultimately want to," he said.

"So many of these companies produce so much content. But it's quite amazing how so much of it is just buried."

"Content may be king but, outside of the entertainment world, the organization that's going to make the most money is the one that has the most creative solution when it comes to actually making that stuff accessible," he said. Their content needs to be easier to find, search and use.

Indeed, providing superior accessibility is one of the best ways news organizations could differentiate themselves from the competition, he believes.

"I think it's essential for media outlets and other content producing organizations to fully understand and subscribe to the inherent connection between content accessibility and competitive edge" he said.

Why? Because competing on content quality isn't too promising, he believes.

"Content quality is a relatively flat floor between the top-tier news organizations. There are some fundamental differences, but most everyone out there is generally reporting on the same sorts of topics and events. I believe a lot of people, including myself, would be very interested in consuming media from an organization that actually made it more accessible in richer formats."

Cameron thinks the kind of service and technology his firm has developed – called SesameVault – could help. It's a high-quality commercial version of YouTube plus much more -- a Web-based platform that handles everything from storing, managing, and distributing video and audio content to a wide variety of wired and wireless devices. In essence, SesameVault serves as the engine behind an organization's digital media services.

I had the opportunity to test a SesameVault-powered mobile service on an iPhone. Streaming in high definition made for a stellar video experience. And then there was the

full-screen playback. It was simply a work of art to behold.

Additionally, SesameVault promises high-quality streaming and easier uploads of consumer content from cell phones, with built-in administration controls for approving/denying submissions.

"From a producer standpoint, it's really about reducing the amount of time and effort it takes to make content accessible for any particular distribution channel," he said.

"Podcasting, for example, has been huge," he notes. "News outlets continue to produce podcasts on a very regular basis. In most cases you get podcasts via an RSS feed, iTunes or sometimes download directly from their site.

"We take this content that's already produced that's already up there on the Web and harness more value out of it by producing a mobile portal to access that content directly from the cell phone. So as opposed to actually having to download that podcast to your system and sync it your iPod or your iPhone, or maybe there's compatibility issues with your Windows Mobile or Nokia phone, we just take that content and run it through SesameVault. It's automatically re-encoded for all these different device types and made available through a portal that's compatible with all the major mobile platforms and branded for that particular customer."

Ultimately, the accessibility of so much content is one of the biggest blessings and curses of the Internet age. As everyone creates all this content, we each have to find ways to wade through it.

> News companies could also distinguish themselves by providing superior organization of information.

Cameron believes news companies could also distinguish themselves by providing superior organization of information. Changing Web technologies offer content companies the ability to master their own libraries for their own use and open up that information for consumers. The rush of content will only increase as consumers begin to upload more content.

"I wish I had more access to video. I mean, I read a lot of news. Probably on any average day, I'm consuming maybe an hour and a half to two hours worth of Web news, which is, I don't know, maybe unhealthy but I enjoy it," he said.

"There's just so much opportunity for improvement on what other information is made accessible and related to a particular article. If you're going to publish an article, why not publish and cross link a bunch photos and video to go along with it?" he asked

Why not, indeed?

If the future of news is about mobile and about video, then news companies have the ability to truly compete for the time and attention of consumers. They can differentiate themselves not just by the quality of the video but also by the ability to lead consumers to more meaningful information.

Everyone talks about providing consumers what they want, when they want it. But the technologies Cameron is talking about allow us to teach ourselves what we want. They help us become smarter. And isn't that the real opportunity and promise of the Web?

TechScout:Storytelling and Community

Monday, March 03, 2008

(Annette Moser-Wellman) -- When we peer into the crystal ball called "news," one thing we're sure to see more of is imagery. Audiences will expect more still pictures and video in news coverage and more people will want to share theirs. How can news organizations prepare for some of these changes ahead?

I decided to check-in with David Hobby, a 20-year veteran photojournalist and blogger of Strobist.com. Less than two years ago, David started writing online about lighting techniques for photojournalism students and young pros. His following has grown to 200,000 regular readers and he is so busy tending his 'flock' that he is taking a leave from the Baltimore Sun.

"The one thing you can't deny is that we are in an increasingly visual society," Hobby claims. "You probably get more of your news in a visual form that you do in a print form on a daily basis, whether you realize it or not. There are more and more and more outlets for visual journalism and visual content than there ever were before."

Hobby believes that, even now, a successful photojournalist is first and foremost a storyteller and that the expanding market for visual news will be dominated by those who excel at this art. While there will always be a place for the citizen journalist upload, he thinks that increasingly news organizations can create a niche by the power of their narrative.

"I think the art of storytelling in photojournalism is constantly evolving, but the core that's there - the values and the skill set - those really don't change. The technology changes daily and the biggest technology now is the convergence between still pictures and audio and video. Ultimately, technique is going to start to slide into the background and the final way that the story is presented is going to be driven by what suits the story," he said.

But the pace of this storytelling enterprise will continue to be quick and the ability to feed every story meaningfully to the Web will continue to be imperative.

"The deadline for most everything we shoot is five minutes ago. It needs to be up on the Web now. [At the Sun] we need to update our Web page dozens of times a day just from our department alone. We're getting much more heavily into video and more multi-media content. We want to be this 24 hour a day, round the clock,

> The biggest technology now is the convergence between still pictures and audio and video.

continuous TV channel, for lack of better words, on the Web."

Hobby is passionate about news organizations staying focused on consumers and letting users guide the experience online. Everything from photos to video to linking should be designed with the hope and intent that the consumer can be engaged with it, he said.

"You don't have to bang your head against the wall producing a tremendous amount of content. The trick is looking to see what content is already being produced. For instance, there are literally hundreds of blogs being done in the local area -- everything from cooking, to local interests, to sports out the wazoo. Why can't we news organizations wrap our arms around that and aggregate that community under a network of branded linked blogs?"

It's providing users not just what they ask for, but what they don't even know they need, that makes for a satisfying experience online.

Hobby admits that's exactly what has helped him grow his site so quickly. Instead of trying to throw a lot of resources into content, he is "trying to aggregate a community and create a shared, user-based knowledge exchange." It's providing users not just what they ask for, but what they don't even know they need, that makes for a satisfying experience online.

Hobby is doing just this at Strobist. He found an interest group that was underserved, aggregated the lot and provided a forum for new ideas and shared passions. "I began trying to teach people what I didn't learn in college. There was a big knowledge gap between what I was taught and what I needed to know once I was into the field, especially working with color being commonplace now. You really need to know how to light a lot of situations. ... I thought maybe a few hundred people would be reading it. What I didn't expect was for a million or so amateurs to pick up the ball and run with it."

Newspaper professionals often refer to their audience as readers. Perhaps 'readers' should be changed to 'viewers' as more pictures will be 'viewed' than articles 'read'.

And if news organizations are really smart, perhaps they will start calling the audience 'our community' - recognizing, welcoming and celebrating their contributions in the development of content.

TechScout: Finding That Photo, Targeting That Consumer With Image Recognition Technology

Tuesday, April 01, 2008

(Annette Moser-Wellman) -- Does your Web site allow users to upload their photos? Or do you have a large photo and video inventory? If you answered yes to either of these questions, read on. Recognition technology is rapidly evolving in ways that could create new opportunities for your media organization.

So, first off, when I hear 'recognition software,' I immediately think of Tom Cruise getting his retina scanned in *Minority Report*. But the technology to recognize people is quickly moving beyond security screening and launching into applications that offer fresh ideas for managing video and photos and even extracting value from them.

Eyealike is one such recognition software company, which seeks to take recognition technology to a new level. President Greg Huess told me about his firm's histogram technology, developed in partnership with the University of Washington. By grabbing four or five bits of information from a photo or video, Eyealike creates a "fingerprint" that allows a server to understand its content. Rather than relying on tagging (assigning a word to a piece of content to enable it to be categorized and searched), the histogram lets the computer identify what's in photo itself. Is this a face? Is this a face of a baby? Is there an animal in the photo? What kind? Is there an object such the Eiffel Tower in the photo?

Huess said, "We build out a 3D model or rendering of a face and then we look deeper – what's the length of the hair, the color and texture? What's the skin tone? What's the geometry of the face? Are there dimples and a square jaw? We put all that data in our backend algorithm and spit out the match results."

This kind of image recognition capability is in its infancy on the consumer front, with products like Riya using image recognition to enable consumers to sort pictures more easily. The major difference between Riya and what Eyealike is envisioning is the sheer volume of scanning that allows them to filter massive files – like video on YouTube. And Eyelike can recognize objects. They're also talking about linking it to advertising.

So now that you have an idea how the technology works, imagine the advertising possibilities. Any site or page with photos and videos, such as social networks or photography sites, could be "read" and used for targeted advertising. For example, if someone has uploaded a lot of baby photos, that user may well be interested in baby products. Or if someone has uploaded pictures of the Taj Mahal, perhaps this user is interested in travel ads.

> Imagine the advertising possibilities. Any page with photos and videos could be "read" and used for targeted advertising.

Recognition software could help with the massive job of making these (video and photo) libraries searchable.

Major social networks with hundreds of millions of photos have already spotted the potential of this technology, approaching Eyealike with ideas on how to target users by the content of images. Remember what retailing pioneer John Wanamaker once said, "Half the money I spend on advertising is wasted; the trouble is I don't know which half." With the growth of these recognition technologies on the Web, advertisers might soon know the answer to that question!

And for those with big libraries of video and photo, recognition software could help with the massive job of making these libraries searchable. For example, for those in the news business, many photo and video inventories are not tagged. What if you could call up images from the library without using tags? Do you want an image of the Golden Gate bridge or a corporate logo? Recognition software could allow you to scan libraries to find and call up the specific content desired, without going to all the time and expense of tagging all those images.

Eyealike hopes to revolutionize search with these recognition technology tools. You may be aware that Google has a massive program underway to get users to tag photos; recognition software could render that effort unnecessary. Huess shares, "In the next few years, search is going to be more and more image-based. For example, you're going to type in 'little black dress' and the engine will pull up every little black dress at every store in your area."

What is particularly interesting is that the same technology can be reverse-engineered to block content from being uploaded. Consider networks and movie studios. Huess says, "If you can imagine pulling down copyrighted material from a YouTube that has 170,000 uploads every single day, you have to be able to do it very quickly and, on top of that, you have to be able to do it accurately." With a claimed 95% accuracy rate, Huess' histogram technology may be able to provide protection for intellectual property that has plagued networks and movie studios since the dawn of Web 2.0.

Because it's possible to block images being uploaded in a more accurate way, social networks in China have expressed interest in using the technology to try to abide by the restrictions of the government.

"In China, the population under 30 doesn't watch TV at all. They are doing everything online. People are putting user-generated content up on these sites and social networks are running into government pressure to filter content from over 200 million users. I know that sounds absolutely horrible to us in the states, but technology like ours makes it possible to manage a bit of the chaos," Huess said.

The same technology can be reverse-engineered to block content from being uploaded.

It's been said that a picture is worth a thousand words. It's this power that the Web is just beginning to harness. It will be an exciting ride to see how the meta-data available in recognition software will shape that journey.

TechScout: Microsegmentation And the Opportunity Under Your Nose

Monday, April 14, 2008

 (Annette Moser-Wellman) -- If you have a presence on the Web, your most pressing concern should be consumer engagement. How do you get people coming back again and again and remaining interested and involved? Wetpaint's Ben Elowitz has some ideas.

Consumers come to Wetpaint, a free wiki service, choose a template and build their own forums, from fan sites to hobby clubs. Since Wetpaint started in June of 2006, it has grown to host 700,000 user-generated sites. Elowitz credits the success of Wetpaint to one of the benefits of the Web 2.0 movement: microsegmentation.

Elowitz told me, "What we've found is there's a whole other category of media the Web enables which is more topic-focused. People are using technology to create a kind of replacement for the traditional magazine. They're looking at all sorts of new resources, opinion and information that they're able to share with others who care about the same topics."

Wikis deliver the consumer engagement we want because they pinpoint the passionate interests of users. Wetpaint sees its task as expanding the amount of content available about those interests through social publishing. But what's really surprising, and instructive to any media company, is that what started as a service for individuals is now delivering big value to media brands – especially in the television industry.

Wetpaint has more than 60 corporate sponsorships – companies that use Wetpaint's technology to create their own branded fan sites. These sites are hosted by Wetpaint and also embedded on corporate sites.

"Companies like Discovery Channel, American Express Publishing and Meredith want to build socially published properties around their existing published titles to encourage engagement and extend reach," he said. "Discovery Channel has a show called *Mythbusters*. There are only so many myths that they can test every week on one episode, so many times a year. But if they can engage their fans to start sharing what their fans know, it becomes an opportunity to build an even larger content page and extend the brand to become more powerful."

> How do you get people coming back again and again and remaining interested and involved? Microsegementation.

CBS is also looking outside to handle this social publishing function; a favorite is their crime show *CSI*. The official *CSI* wiki, hosted by Wetpaint, has more

than 4,000 user-generated pages. That's engagement. Here fans embed their favorite clips, create their own custom episode guides and post their ideas, all in a dynamic forum.

This kind of partnership can be a double hit for a television company: no development costs to build the technology and new ways to capture incremental revenue. Within four to fourteen days, companies can partner with Wetpaint to create a wiki. Companies like Wetpaint handle everything from custom development to site moderation and search engine optimization. Partners can cross-promote within the network of Wetpaint's 700,000 user-generated sites. Interestingly 50% of the traffic on a Wetpaint wiki is generated from outside the partner's own network, Elowitz said.

Entertainment is where most of the wiki action is right now. Wetpaint's most trafficked topics are music, television and games. Halo 3 is a hot site. "People are posting everything from basic chat, to cheat codes, to their play videos and new narratives of the game," Elowitz said. This is called fan-fiction and has become an explosive area in social publishing as well.

It makes sense for a media company to ask itself, "What entertainment topics might my audience be uniquely passionate about?"

This ability to engage users around smaller segments of interest on the Internet is not new. Elowitz talked about the New York Times' investment in about.com, with 40,000 topic-focused sites that are all about microsegmented interests.

"When they bought about.com for $400 million, a huge investment, everyone thought they were crazy. Now it's worth well over $1 billion out of their roughly $5 billion market cap," he said.

What is thought-forward about Wetpaint is the ability to engage consumers more intimately in the process and provide templates to enable them to create their own sites and populate them with their own material. Wetpaint has category editors that act as 'curators' and frame topic areas and let the audience build out the content.

> It makes sense for a media company to ask, "What entertainment topics might my audience be uniquely passionate about?"

Elowitz believes microsegmentation is fueled by the wide availability and popularity of bite-sized content. He notes the trend of dividing existing video content into smaller clips.

"Even folks who use [Twitter](#) are consuming teeny-tiny little snippets," he said. "The content is not as cumbersome to produce because it's smaller and can be distributed one-to-one so that if I have something valuable, it can be matched to someone who wants to find it. It's a 'liquid distribution' market now that can match the producers and consumer of content on a micro-macro level.

"I love to think about what we do at Wetpaint as synthesis. We take all the little micro-contributions to make something bigger and that's beautiful because content is so much more valuable when it's in context."

At a recent [Digital Strategies Conference](#) at the [Media Management Center](#), one public relations executive showcased the success of one of its microsegment sites: a place for people to post pictures of their mustaches!

So what microsegments are sitting under your nose that you've yet to serve?

TechScout: Democratizing the tools of TV

Tuesday, May 13, 2008

(Annette Moser-Wellman) -- I visited the Newseum in Washington DC, a permanent new museum dedicated to the role of news in our culture. Beautiful building and some great exhibits. But one exhibit (for which you had to pay $8) was called "Be a TV Reporter." It involved standing behind a large television camera, talking into a microphone while reading a script from a teleprompter. My first thought was, "Couldn't we get a bit more up-to-date on the art of reporting?" Surely gathering and distributing the news has evolved since ancient times of one person behind one camera?

I recently interviewed Max Haot from Mogulus. Talk about a new way to gather and distribute news. Mogulus is a company that enables you to produce your own 24/7 TV channel and broadcast it via the Web. Mogulus provides the tools so that you can broadcast live from a camera anywhere and then mix in live reporting with video from a play list of many online sources, develop a storyboard, customize your graphics and even invite others to collaborate live with you.

Mogulus currently has more than 60,000 producers online, creating and managing these channels. They are growing by 300 channels every day -- many of them run by media companies, including newspapers. But anyone can create and produce a channel.

Haot explains it like this: "TV is, most of the time, a pre-recorded scheduled broadcast that everyone watches together - synchronized. When there is a breaking event in the world or a scheduled live show, it can go live. If a Web producer wanted to do that, she would need to buy a lot of broadcast equipment, create a traditional channel and encode it for the Internet. We democratize the tools TV stations have access to and put them into a network- based platform – a Flash-based studio -- that allows anyone to do exactly the same thing on the Internet."

> We democratize the tools TV stations have access to and put them into a network-based platform ... that allows anyone to do exactly the same thing on the Internet.

Haot said *The Indianapolis Star* puts its latest clips on Mogulus software and schedules them just like a TV station. If there is a live event, the *Star* reporters break in and broadcast it to thousands on their Website, with the use of a camera and a wireless connection. When reporters live-streamed a press conference with Hillary Clinton and the paper's editorial board, it wasn't just a Webcast followed by a blank screen. The live segment rolled into the existing video the *Star* had on its Mogulus player - snappy graphics and all.

They are generating 10 times more views by featuring 24-hour video than they were featuring on-demand video alone.

This ability to host a 24-hour video feature on a site provides a lot of novelty for the viewer. They know that there will be new content there, already selected for them. Haot believes there is a place for what he calls 'linear TV' on the Web vs. the on-demand video we are used to from the YouTubes of the world. Just like in your living room, sometimes consumers want to have a place where you can kick back and be passive. You don't always want to interact and troll for what you want on the Web. Mogulus channels help you watch a source you know and trust who has done the selection for you and may even break in live occasionally. For example, NLL (National Lacrosse league) puts clips into a Mogulus player and refreshes them regularly. They are generating 10 times more views by featuring 24-hour video than they were featuring on-demand video alone. Just one more way for a media company to enhance the offerings it provides its users online.

So the Newseum is right. Anyone can be a TV reporter. But what's really amazing is that with the tools available on the Internet, you can be a TV producer too.

TechScout: Getting the Kind of Online Metrics That Advertisers Need

Friday, June 06, 2008

(Annette Moser-Wellman) – We've all seen the stats. Online news is growing in popularity. But what do commonly-available usage statistics really tell us about the attitudes and behaviors of consumers on a news site? Wouldn't you love to have a deeper understanding of your online users? Better data to share with your advertisers? The future of online measurement is changing and Susan Hickey, Chief Marketing Officer of Nielsen Online explained to me some of the opportunities and barriers in the world of online measurement.

"We have a lot of metrics about how consumers use the Web, but when you are thinking about brand impact or consumer involvement you want to be thinking about the quality, not just the quantity. We are spending a lot of time working with clients to define engagement metrics, which may differ by industry – for example, e-commerce, media, health and consumer packaged goods," she said.

"As the Web has quickly become a communication platform for individuals, we are working to measure and analyze the impact of these consumer conversations...Who are the influentials? How does our overall online strategy work within CRM strategy? How is consumer generated media impacting our brand equity? Social networks and blogs have become the world's largest focus group," she said.

This type of consumer understanding is what advertisers are going to be looking for across the three screens of computer, television and mobile. As users consume content across platforms, measurement is going to have to merge across platforms.

> This type of consumer understanding is what advertisers are going to be looking for across the three screens of computer, television and mobile.

Susan explains: "Advertisers don't want to differentiate between a TV campaign, an online campaign or a mobile campaign. It's all got to work together and so the metrics will have to work together. The questions they will ask are, 'Am I reaching an incremental audience across these platforms? Or is it just the same audience in three difference places?'"

Measuring mobile content usage presents its own set of challenges. With the lack of standards in cell phone technology, it's tricky to build a software meter that translates across operating systems.

"Our clients see cell phones as a big area for growth and opportunity. Relative to other market sizes, cell phone penetration is high for things like texting and voice, but how

people actually use it for content is not clear. Mobile content is still in its very early stages and will be a big growth area in the future, especially because of the global nature of it."

She noted that developing meaningful Internet metrics has always been a challenge.

> Getting a clear picture of the who, how and why of online activity is a daunting task fraught with complications.

"When Nielsen started measuring television 50 plus years ago, a handful, not even a handful, of networks were measured. But since Day One on the Internet, there have been potentially hundreds of thousands of sites to measure," she said.

Getting a clear picture of the who, how and why of online activity is a daunting task fraught with complications. How do you correct for traffic data without duplicating the same user from two different PC's? How do you deselect the activity of bots and crawlers? How do you use US panel data when you realize it isn't going to represent visitors coming from in around the world?

As online ad spending continues to increase relative to traditional media, these measurement questions take on a new urgency. More and more advertisers want to understand their return on investment. And they have high expectations. The Web is seen as so inherently measurable that it makes measuring the medium even more challenging.

"There are almost limitless numbers of data sets that you can get to - whether you use them to monetize your site, understand your consumers or benchmark against competitors. So establishing measurement standards, while supporting ongoing innovation, will be the key issue for the online advertising industry going forward. It's going to take the understanding and agreement of publishers, agencies and the research companies to come up with the right set of metrics we can all agree upon," Susan told me.

> Measurement questions take on a new urgency. More and more advertisers want to understand their return on investment. And they have high expectations.

Even still, Nielsen is making significant strides in measurement of online video. The growth projections for both online video consumption and video advertising revenue are significant and advertisers want to know more about consumer behaviors. Nielsen's VideoCensus product combines panel and server research methodologies to provide an accurate count of viewing activity and engagement with in-depth demographic reporting.

And what they are learning about consumers is eye-opening. For example, online video watching by women tends to be more network television segments, yet men skew toward more consumer generated content. And, Susan said, "There is now a mini-prime time at work between 12:00 - 2:00. People are catching up on what they may not have seen previously."

They are finding that network websites are destinations for fans to deepen their experience – they go to see favorite scenes, episodes and outtakes. These viewers are very loyal and engaged and the Website is a place to become immersed in the program.

By contrast, with shorter clips and a viral nature, consumer generated media sites are much more about discovery and consumers are likely to view content on more than one.

Susan expects a balance will occur in measurement between the quantity of users and the quality of the content experience. In the future, there will be ways to measure the consumer engagement of a social networking function or a blog.

So accurate measurement may still lag behind adoption of technology, and certainly advertising, in many ways. But you can take comfort that someday and maybe even soon, you'll be able to get a bit closer to the who, how and why of your Website user. And won't your advertisers like that!

TechScout: Bouncing back to the editorial core

Monday, June 09, 2008

 (Annette Moser-Wellman) --- "The Internet changes everything! The Web operates on new values! Old rules just don't work on-line!" We've all heard the refrain and maybe even said it ourselves.

But in a surprising interview with Albert Cheng, Executive Vice President, Digital Media, of Disney-ABC Television Group, I was reminded how rapid change also creates a bounce-back effect. We realize some important things stay the same.

"We've tried a lot of things [in news]. Some have succeeded and some didn't work. We thought, for example, user generated video would be core to our success and giving consumers the opportunity to upload what they wanted would be important. But that really hasn't come to fruition. A very small percent of people actually want to upload content. The greater majority, actually the vast majority, still want to read professionally produced, editorialized content," he said.

It's easy for any organization to get swept away in the latest craze. This is especially true in the tech space when a new, sexy feature is launched weekly on the Web. But it does a company good to step back and ask what the marketplace really wants that you should deliver.

Cheng explains, "We used to run this thing called 'Talk Back' and we assumed people would want to talk to us, but, again, it was a very small amount of people. And that is not necessarily a good representative sample of what the general public wants. So it's an example of a nice thing to have but it's not core to your news editorial."

> It's easy for any organization to get swept away in the latest craze. This is especially true in the tech space.

Cheng said they've taken other risks that have brought them back to their editorial core.

"We played around with citizen journalism, and it keeps coming back to the fact that consumers on the whole still value the editorial, so we've backed off on that. We've even tried blogging. We hired a blogger and we went through about a year of it and it stretched us to think of blogging as a way to report, but it just didn't work with our audience. Blogging wasn't what people expected out of a news organization such as ours."

Cheng believes there is ultimate value in high quality content.

"Less than 2% of users actually upload anything, even on YouTube. And that's because most people don't want to do it. What winds up being really popular on YouTube are things that are illegally pirated – things professional people have already produced. And that's

why YouTube is popular -- because there is latent demand from the people who needed a place to go and see something they might have missed and that underlying demand drives the use of the technology," he said.

> Media companies have exaggerated the trend for user generated content over professionally produced content.

In a sense, media companies have exaggerated the trend for user generated content over professionally produced content, when in fact, it is the reverse.

Coming back to the consumer's wants and needs continues to be the only way to determine a 'magnetic north' in the midst of change.

"When people talk to me about, 'Oh, we can distribute live television over the Internet!' I look at them and go, 'Are you crazy?' No one cares. Because it's not being able to pipe live television through the Internet that drives it. That's not what makes people care. You'd have far more success breaking up your schedule and making your content available at any time of the day," Cheng said.

In fact, this is what Disney-ABC has done both on their site and on [iTunes](.).

Similarly, Cheng talked about the much-anticipated interactive TV in which people can click on a piece of clothing that someone is wearing and then buy it. "I have not seen that work. I think part of that is not because the technology isn't fully there to support it. I just think that consumers don't find it that interesting."

This concern for the consumers' perspective is what will finally drive the success of media companies.

As news organizations continue the sometimes-painful migration to the Web and pending mobile platforms, thinking like a technology company will be important. But first and foremost will be thinking like a content company.

Cheng said, "Our investment is in the content process and in creating good stories and creating things that people want to engage in from a content perspective. To the extent media companies can find partners in the technology space, it will only benefit them more.

"But news organizations need to spend more time really drilling down on their editorial. Where do they want to position themselves? What is compelling to my audience? The Facebooks of today will be gone tomorrow. The Googles and YouTubes aren't necessarily going to be there either because these guys differentiate themselves on technology. We differentiate ourselves on content. And we can reinvest in that."

> Coming back to the consumer's wants and needs continues to be the only way to determine a 'magnetic north' in the midst of change.

Understanding your consumers' needs, creating content that differentiates you from the competition and investing in those choices - all sound like the classics of business leadership. Even in a world upended by technology, sometimes everything old can be new again.

TechScout: Moving Eyeballs and Curating Communities

Monday, June 09, 2008

(Annette Moser-Wellman) -- If you want to see into the crystal ball of the future of media, talk with someone who heads the business development function of a media company. These leaders get the 30,000-foot view of how the Internet is changing the landscape of news.

One of them is Kenneth A. Bronfin, president of Hearst Interactive Media. You'll recognize the household names of ESPN, Cosmopolitan and the Houston Chronicle in the Hearst portfolio, but have you heard of E Ink and Idilia? These are media ventures hand-picked by Ken, who's charged with blending a traditional print and television company with strategic new and emerging technology. It's a role not without risk, and coupled with Ken's aerial view of new media, it's given him a unique perspective about the future of news and media technology.

On making technology investments:

"We look for companies that are developing new technologies and platforms that we believe will change the media world – or, as I sometimes describe to my kids, move eyeballs from one platform to another. That activity stretches across many forms of media. You're never sure what's going to work, but you can't wait around to find out. We get involved in the development of these new companies and help bring them to the forefront. We invest to own five, ten, fifteen or twenty percent or more in these start-up companies. We learn from them, we contribute to their thinking, and we make connections between them and our properties."

> We look for companies that are developing new technologies and platforms that we believe will change the media world.

On a couple of bets for the future:

"I'm a strong advocate of E Ink technology. This is the display technology used on Amazon's Kindle and Sony's Reader. Imagine if you will an electronic display that looks a lot like paper. Just as easy to read as paper. It can also be as flexible as a piece of paper -- you could roll up and handle it just as you would a newspaper. We are now spending a lot of time considering the ramifications to the media industry brought about by E Ink technology. This should be on the mind of everyone in the newspaper industry – those seeking to save the readers they have now, those seeking to bring back readers that may have left or those seeking to lure new readers.

© Media Management Center   www.MediaManagementCenter.org

"We have an investment in a company called Idilia. They've developed substantial new technology in an area called word sense disambiguation. Very simply said, their technology determines the meaning of words in a sentence. Today's search technology can certainly be frustrating and difficult - and Idilia could be the breakthrough that brings about a significant improvement for the consumer. Idilia actually determines the meaning of a string of words – they are able to figure out what each word means in the context of the query."

Editor's Note: *Things are moving fast. An E Ink executive just predicted that an e-newspaper would be tested by the end of 2008 and go commercial in late 2009.*

On online community:

> For a traditional media company, an ideal mix is a combination of editorial and community – a curated community

"We still believe that for a traditional media company, an ideal mix is a combination of editorial and community. It's what I call "curated community." We want our readers to come in and talk about a topic. Our goal is to have an editorial voice but at the same time intertwine the community's opinion. Quality community is very much the way our sites are going, allowing user-generated content to bring people into the story. We strive for two-way communication, and we're getting better and better at that. At the end of the day, it makes the content richer, it brings people back more often and it adds to the editorial content that's already been developed by our editors. That's something that advertisers are happy to put their brands against."

On the melding of TV and newspaper

"We used to see our newspaper and our TV businesses as very different businesses with different distribution and completely different business models. Five years ago, Websites were only about text and graphics but now have video. So the intersection of broadcast and newspapers is here. People still see these as two very different industries, but the fact is they seek the same audience and produce the same kind of content. We send out our newspaper reporters with not only a pen and paper, but now with a still camera or video camera.

On the outlook for traditional media companies:

"I'm often the guy who's screaming to traditional media folks: 'You got to change your ways -- now!' Most traditional media companies have been focused on meeting their quarterly earnings targets, but I believe they've been doing that at the risk of sacrificing the future of their business. It's only in recent years that the media companies have begun to endure additional risk and begun to make significant investments on the Web. You have to be ahead of the curve..."

TechScout: Watching, chatting about, clipping, annotating and sharing the news

Wednesday, June 18, 2008

(Annette Moser-Wellman) -- Here's my latest guilty pleasure: lying on the family room couch watching mildly entertaining TV while working on my laptop. Somehow when I combine the two experiences, it seems to redeem them both. I just have to be careful not to get popcorn butter on my keyboard.

I suppose this multi-tasking activity is an awkward precursor to the convergence of devices that we hear so much about in the tech community. Device convergence is at the stage of development where it has created more questions than answers for people in the news business. Will access to the Internet on a TV screen alter the way we view news and information? Will mobile devices usher in the intersection of the Web and entertainment? When we can communicate seamlessly across mobile, TV and portable computing, will the nature of news change?

It's Venu Vasudevan's job to think about questions like these. A senior director in applications software platforms research within Motorola Labs, Venu is exploring the implications of convergence on media experiences.

"One aspect of convergence that's particularly exciting is that most devices will not only render rich content, they'll also have communication channels. We believe that when you blend content and communication – when you can talk about content, you can create some new collection of experiences that you couldn't if you were just watching content in isolation."

While Venu is talking, my mind is shifting from my laptop/TV experience to my nephew, who is a big Xbox 360 fan. His buddy is miles away and yet he and my nephew play Grand Theft Auto and chat about the game while they play. I ask Venu if this is the kind of interactivity he is talking about. He says it's similar to the video game experience, but more.

"We're looking for ways to bring back social interaction for media programs. How can you combine watching something with chat, speak, instant messaging, clipping, annotating and sharing? 'Social TV' is a concept that digitally extends the couch, enabling my friends and me to join each other in watching a common TV program without being physically co-located. While Xbox 360 is fast paced, Social TV is a 'lean back' experience that turns your electronic program guide into a social dashboard."

> 'Social TV... digitally extends the couch, enabling... friends... to join each other in watching a common TV program without being physically co-located.

"TVlicious is a project of ours that brings a peer-to-peer content-sharing element to TV watching. Just like social bookmarking on the Web,

TVlicious allows you to clip TV content to share with others and chat about it over the TV screen." The name TVlicious is an allusion to the social bookmarking site de.li.ci.ous that offers users the ability to tag Web content they are interested in and share it with others."

When viewers clip stories... News organizations can see what is propagating virally and use that information to tailor content.

Sling Media has developed a similar technology it calls Clip+Sling. Users with a Slingbox can access their home TV program simultaneously on their laptops or cell phones through the Internet. With Clip+Sling, they can tag TV content, then send it to an open portal that anyone can access.

Venu believes this kind of technology will be of value to news organizations. When viewers clip stories, media companies can gauge the peaks and valleys of users' interests within a larger story in real time. News organizations can see what is propagating virally and use that information to tailor content.

"Without disturbing the TV experience, you can create a social experience around it," said Venu. You can imagine a scenario in which viewers are more interested in the news because they can interact and share their ideas online.

Venu goes further. He describes a future for TV news in which there is an overlay of content that would allow the viewer to research the subjects and characters more fully. These would be "advanced news experiences" that would allow you to access background information while you are watching. Venu likens this next-generation experience to participating in a reality show and having a relationship with the storyteller. The news ultimately becomes a dialogue.

"News is as much about the people who write the news as the news itself. The creators are also stories in and among themselves," Venu said.

Advanced news experiences... would allow you to access background information while you are watching.

When these technologies become widespread, media experiences will become intensely personal, reflecting our deeply held preferences but at the same time able to be broadly shared. We will sort out exactly what interests us and find communities with like interests.

"Personal media experiences are about convenience and about coherence. Convenience means anytime, anywhere consumption – time-shifted, play-shifted, device-shifted. Think of it as the end of appointment-based media. Coherence means that you can tailor the way the story is consumed. And that you can tailor the story to the device itself," he said.

Venu describes an application that makes convenience and coherence possible today. Advanced media synchronization software enhances the usability of mobile devices by allowing you to cache information on one device and port it to another. For example, you can pick up a story from the Internet on your desktop, then read it on your mobile as you commute home. Rather than a converged device, this application optimizes devices you

already use – enabling your "ensemble" of devices to support your media needs by invisibly coordinating with each other with little or no action on your part.

The mobile experience is made effortless and "zero click" via Active Idle technologies such as Motorola's version, Screen3. Screen3 displays news items on your cell phone's menu and gives you the choice to read a few lines or the full story. It gives you the capability to record the content on your home TV or DVR so that, with this convenience, you experience a richer, more in-depth story.

> These technologies optimize the key competitive advantage of a news organization – powerful stories.

"By allowing you to start an experience on mobile and continuing it on TV or start an experience on TV and continuing it to mobile, you're going away from the notion of listening or reading an item. You're instead going to the idea of consuming a story. Your devices will cater to you, and you can consume content across multiple devices," he said.

The good news is that these technologies optimize the key competitive advantage of a news organization – powerful stories. It allows the media company to focus on providing depth and information, to build out a narrative and tell a more complete story. Because a story is device-agnostic, it doesn't have to live on just the Internet, TV or a handheld. Stories have always had the ability to travel through time. And now they can travel through space as well.

TechScout: Hey Web. Browse msnbc.com. Read headlines.

Wednesday, July 16, 2008

(Annette Moser-Wellman) For years, we've been waiting for the one device that will combine the "lean back" experience of TV, the computing power of your laptop and mobility of your cell phone. From Sling Box to the iPhone, manufacturers have been searching for the "killer application" that will solve all our needs for news, information and entertainment in one device and bridge the gap between our home and office.

In a recent conversation with Robbie Bach, President of the Entertainment & Devices Division at Microsoft, we talked about this holy grail of devices.

"I don't believe in massive convergence of devices. I don't think there's one device. There will be two or three devices. I tend to think about it less in terms of devices and more in terms of screens. There are screens in the home, screens in your car and screens that you take with you. I think of screens instead of devices, because ultimately that's the way the consumer is going to experience whatever content they are getting," he said.

So what actually converges isn't the device itself but the ability of the user to customize the content and functionality they desire on any particular screen.

"The consumer will think, 'I have a bunch of screens around the house and I just want everything to get to those screens. When I'm at my desk, I want to get it on my screen on my desk, which happens to be connected to a PC. When I'm in my living room, I want it on my 56-inch flat panel beautiful screen, and I should be able to get it there. When I'm traveling, maybe it's my 4-inch screen which is just as crisp and sharp, and I should get it there,'" he said.

And while we can expect more power from our cell phones in the future (Bach predicts the power to run an original Xbox game on phones within the year), what will really be important are the software services. Soon most of the processing power we use won't be in the device itself; it will be in the "cloud." Cloud computing is a term for server resources available on-demand and usually provided by a third-party. Cloud computing allows the user to store data remotely rather than storing it on devices.

> Soon most of the processing power we use won't be in the device itself; it will be in the "cloud."

"That's why you see Google and Microsoft and few others building up these massive networks for data storage and data delivery. Why would you store all your music, for example, locally and risk losing it or have the hassle of moving it from one machine to

another? Same thing with your video. Same thing with your documents. Why wouldn't you store it in the cloud and just have access to it?" he asked. Cloud computing supports the availability of the content the consumer wants, when they want it and on the screen they want it.

> It's incumbent upon news agencies to both be the brand of choice and provide unique value at every "screen" experience.

Thinking about three screens presents opportunities for content providers to customize their products for the purposes of each location. At some point, individual consumers are going to make choices about their preferences for content that will be consumed across platforms. It's incumbent upon news agencies to both be the brand of choice and provide unique value at every "screen" experience.

So the question becomes: what can the news organization offer that is specific to the driving experience versus the "lean back" experience, the mobile experience and so on?

Bach anticipates that voice and touch are going to be major changes in the ways consumers interact with screens and attendant devices. "Why do people think the iPhone is cool? It's not because the phone technology is particularly brilliant. It's not even a fast network. But people like the idea of touch. It's a cool design point."

Bach surprised me by talking about the popularity of Microsoft Sync technology available in Ford cars in which you control your radio and control your e-mail by your voice. So I asked him if I can get Internet news read to me in my car. Bach responded, "Soon it will be possible to be driving in your car and say, "Hey Web. Browse msnbc.com. Read headlines." That's not a crazy scenario at all."

TechScout: Power in the Palm of Your Hand

Thursday, August 07, 2008

(Annette Moser-Wellman) My smartphone isn't very smart. It's supposed to do fancy things but has trouble just delivering e-mail. While it was expensive two years ago, it now gets frequent brain cramps and the screen freezes. It comforts me to imagine it's possessed by an evil demon. In fact, the $279 data charge I got last month confirms it.

> The intersection of quality phones and amazing technology is changing the landscape of news.

But some smartphones are getting smarter and new technologies are making me envy my friends and neighbors. The iPhone has ushered in a new enthusiasm for what is possible from the palm of your hand. The higher end Nokia phones also have unprecedented computing power. And if you look overseas, you'll see how the intersection of quality phones and amazing technology is changing the landscape of news.

Bhaskar Roy, Cofounder of Qik tells me, "What you see in Europe and Asia is the power of these high capability phones at work. In countries where public transportation is important, people get their news off of their cell phones. So while they're sitting on the train, breaking news comes from SMS, video or audio transcript and is pushed directly to their phone. In the U.S., mobile content will soon become highly customized and will be designed to match a person's personality."

Bhaskar Roy, cofounder of Qik

Qik provides a platform for streaming video from cell phones directly to the Web and soon to other cell phones. This means users can send high resolution video fast to multiple sites without being tethered to the laptop. Qik is just that - quick video to many locations. With integration to Twitter, YouTube, Blogger, and more, with Qik on your handheld, you can send video immediately to a few or a few thousand. You can even chat over the video content.

The citizen journalism aspects of a technology like this are obvious. Roy tells a story of one popular video blogger, Steve Garfield. Garfield approached Duncan Hunter as he was going to talk to CNN about the fact that he was still in the presidential race even though he was not invited to the Democratic debate. Garfield ran toward Hunter and said,"Duncan, can I interview you?" Duncan said, "Okay, but talk to one of my campaign folks." Garfield said, "No. Right now through this camera on my phone." So Hunter said, "Sure. What is it that you want to know?" Duncan blurted the entire story and it hit the Internet immediately,

before CNN even had the interview."

One global media organization, BBC Technology News, is using Qik in an interesting way. Reporters conduct interviews on-site with technology firms and collaborate with viewers in real-time through the phone. "Reporters can stream the story live and BBC blog viewers can interact with the reporter and say, 'Hey, why don't you ask this question? How about this? Are they doing to do this?' So the overall conversation and the interview gets richer. Now all of a sudden you have a collective mass of folks who are watching this interview and interacting to learn more. They stay engaged with the BBC Technology News blog," Roy said. In this video within a video example, a Qik user video streams an interview that BBC reporter Rory Cellan-Jones is recording on his cell phone.

> Reporters conduct interviews on-site with technology firms and collaborate with viewers in real-time through the phone.

Even newspapers have learned how to get more power in the hands of their reporters. The Fresno Bee and Sacramento Bee cover news with video using Qik.

Imagine what it will be like when consumers share video directly to each other as quickly and easily as they share text messages. The sources of news will expand dramatically and include exponentially more sources than the Internet alone. Viewing time will include personalized video from friends and family. Users will be able to share special moments immediately – like when a child speaks her first word or takes her first step. News events will be broadcast through informal networks and skip mainline channels. What will be the fate of YouTube when we immediately share our funny videos with only those we know and care about?

The good news for media companies is they will be able to remain relevant by providing customized choices for news, information and entertainment for their various audiences. News organizations would do well to start thinking about how to segment their consumers - to understand in detailed ways how news functions differently for different people.

To participate in this video revolution, you may need a higher quality phone. And while you're at it, will you pick one up for me too?

TechScout: Why news organizations should care about the iPhone

Thursday, August 28, 2008

(Annette Moser-Wellman) You've heard me complain about my smartphone, or what should be called a "lack-of" smartphone. Disgusted with hardware that overpromises and undelivers, I headed to the mall to check out the new 3G iPhone. As I weaved my way passed Victoria's Secret, I noticed a crowd of really energetic, enthusiastic people. At first, I thought they were waiting for a lingerie fashion show or something. Then I realized they weren't waiting for lingerie at all. They were standing in a line about a block long to get into the Apple Store. And they seemed happy about it.

I trudged to the front and asked what the wait was about. A super-friendly Apple employee who looked like he drank Steve Jobs' Kool-aid smiled and said, "People are waiting in line to buy the new iPhone."

" Well, how long does it take?" I asked him.

"Approximate wait from here is 45 minutes," he answered.

"Is there a better time to come back?"

"Oh, no. It's been about this long every day since we introduced the iPhone. I'd encourage you to get in line now. And by the way, the only version left today is the white 16 gig. Many line up before we open to see if we've gotten a new shipment. It's really exciting, isn't it?"

> What really powers the popularity of the new iPhone is what 3G functionality allows you to do.

Isn't this is every marketer's dream come true? Seems the 3G iPhone is more popular than Hannah Montana tickets. But why? At first blush, you think of the design and the 3G speed connection to the Internet. But on closer examination, what really powers the popularity of the new iPhone is what 3G functionality allows you to do. And this is why news organizations should care.

First off, there are more than 1,000 custom applications to transform your iPhone from a gaming device to a movie screen for the latest Chanel runway show. You can get Pandora, the service that selects new songs for you based on the patterns of your prior iTunes purchases. You can use your iPhone as a recording device. You can get GPS-enabled services like iWant which shows you restaurants nearby and movies playing at theaters. Some apps are free and others range in price from 99 cents to $9.99.

What I found for news applications portends the things to come when 3G technology becomes more widely available on mobile devices. News agencies need to decide how they

will respond to these kinds of entries in the news market. There are currently twenty-two applications for news; here are some of the most interesting.

Of course the New York Times is available, and this application is free. The largest newspaper in Sweden, Aftonbladet, is also free. It is available in English and offers other segmented widgets like sports, GPS services and more.

There are classic feed readers as well, but with new twists. AP Mobile News Network lets you customize your news choices, and it features local content and videos from the AP network. Applications are available like Byline that stream RSS feeds but also cache them and allow you to review off-line when you have time, such as on the subway. Jamd taps into Getty Images' collection of news photos as well as fashion and celebrity. It delivers imagery and text.

Interest-oriented news is absolutely available here. The ABA Legal News app sends alerts and updates on important issues that affect the legal community. SourceForge combines the best tech sites and filters leading stories.

Some of the most interesting are the technologies that combine location-based services with the news. NowLocal will use the iPhone GPS to send news that is relevant to your specific location. Another project, iCoMo News, by students at University of Missouri, converges information from three news outlets and maps detailed information about what is happening in the area.

> These technologies are available on the Web, but it's the power to access them remotely, quickly and on the go that makes for the business opportunity ahead.

(Editor's note: This spring, Rich Gordon, Media Management Center's Director of New Communities, led an innovative class on "locative journalism" at Northwestern University's Medill school, which experimented with GPS-triggered storytelling. While they didn't use the iPhone, they came up with valuable conclusions, including a recommendation that GPS-triggered multimedia stories ought to be presented largely in audio form, since people are typically multitasking when they use portable devices. To learn more about the project, check out the students' blog, the professor's blog, and this writeup.)

Of course, these technologies are available on the Web, but it's the power to access them remotely, quickly and on the go that makes for the business opportunity ahead. In a recent interview with Adrian Holovaty, founder of www.EveryBlock.com, he described his service that provides news by neighborhood address block: "We crawl not just news sites but TV stations, radio, online stuff, a bunch of blogs… and we index all those by geography, so we detect where, which locations are referenced in every story." Holovaty talked about the ability to automate news from city press releases to restaurant inspections and police reports.

"We take all the data and repurpose it to make it a lot more newsy," he said. "The only other way of getting the information would be to go to the city site and search for every restaurant in your neighborhood, and that just doesn't make sense. The value we add is

that notification." When these types of location-based news services are linked with GPS, imagine what advertising possibilities will be available. A plethora of opportunities will be realized to fulfill the needs of advertisers.

While iPhone is today's popular 3G device, be assured other products will be on the forefront soon and with application innovation. Google's [Android](#) is an operating system that promises to pair with telecom service providers and immediately create those widely anticipated advertising-based systems all matched with Google ads. Some anticipate these devices will be on the market as early as fall 2008.

But for today, I've decided to go to stand in the back of the line. While I'm staring at lingerie, I'm thinking that I really wanted the 16 gig black iPhone. But white will do. Any technology that creates this much enthusiasm and makes this many people happy is something I've got to have, too.

TechScout: Fighting to Win on the Web

Monday, September 08, 2008

(Annette Moser-Wellman) In the war for the time and attention of consumers, news organizations face some pretty fierce competitors. And in the wild and wooly world of the Web, the competitors to beat arguably are social networking sites.

In terms of spent per visit, we can crown Facebook as the winner in the battle. Last year hitwise.com estimated the average length of a Facebook visit at 21 minutes, three times longer than the average news and information site. Twenty-one minutes! It begs the question: should news sites just admit defeat in the war for time and attention? Or is another strategy called for?

Increasingly, news organizations are finding it more productive and profitable to work in a symbiotic relationship with others - with aggregators and with social networking and bookmarking sites. Fully two-thirds of the traffic to NYtimes.com now comes, not through the home page, but through aggregators, blogs and outside links. Many more readers come to the site from search engines and links on other sites, instead of coming directly to NYtimes.com.

> Fighting to win becomes less about competing for eyeballs and more about increasing the quality of engagement with your audience.

These indirect readers, or readers from other sites, are proving more valuable in terms of advertising revenue than even potential subscription fees. Thus, the 'walled garden' or 'gatekeeper strategy' is being replaced by a new rallying cry: If you can't beat 'em, join 'em.

I asked the creator of a social network how he thinks news organizations should view social media. Nova Spivack, Founder and CEO of Radar Networks, recently launched Twine, which he calls an "interest network." Based on semantic technologies, Twine helps users organize, share and discover more about their personal interests.

Nova Spivack

"Social bookmarking is the best thing for news organizations because it sends them traffic," he said. "They should be eagerly embracing as much of that as they can... They should be getting their content to every social bookmarking app there is. We distribute their content and [drive] the audience back to them. They are getting the clicks. News sites and publishers really need to view [social media] as complementary and as the other half of what they are doing," he said.

But driving audience to a site isn't enough. Fighting to win becomes less about competing for eyeballs and more about increasing the quality of engagement with your audience.

Hansen Hosein, Director of the Master of Communications in Digital Media Department at University of Washington, asks the question, "Is it as important as it was in the 20th century to get as many people as possible to consume your content, or it is important to get a more engaged quality of information consumer? Many people now believe it's the quality of engagement rather than the quantity of the engagement that matters.

"What that means is that you need to know your audience very well and develop and nurture that audience," he said.

In other words, news organizations need to ensure their content is so wildly compelling that it differentiates itself, draws in the audience and holds them there.

Deep knowledge of the consumer makes for competitive advantage in this environment. How can news organizations deeply understand their audience and provide exactly what they need and want? How can they partner better with social networks to distribute their valuable content. How can they leverage what the networks do best without duplicating efforts?

Spivack believes news organizations are far better partnering with than creating social networks. For example, Forbes Magazine is launching a social network for CEOs called AnswerNetwork, designed for the exchange of ideas.

Spivack weighs in on this approach: "News sites should not attempt to make their own private social bookmarking networks, the way Forbes is doing. That's a big mistake because people don't want to have 50 different accounts. They want everything in one place where they can manage and track all their interests and then click out to view the content in the publisher locations. Publishers should try to get their content spread virally and drive traffic back to them from as many places as possible. If they take the inward-focus, defensive way of looking at things, they are going to create a little tiny community. What they really should be doing is thinking of the whole Web as their community."

> Publishers should try to get their content spread virally and drive traffic back to them as many places as possible.

So the key for news organizations is to partner with those networks that can serve customers best and allow them to share content as widely and naturally as possible. Which networks will be able to capture the sustained interest of the audience? How can you spread your content virally and get it picked up on a more regular basis? Here's where the role of the marketer is so vitally important to the news organization. Spreading the information becomes nearly as important as gathering it.

Because the online marketplace is a battlefield like every other in history. It's finally a war for the heart and mind of the consumer.

TechScout: Relationships of trust and the future of on-line advertising.

Thursday, September 25, 2008

(Annette Moser-Wellman) -- A college student recently told me something shocking. "My friends aren't using [Facebook](#) anymore. We don't want information about our lives open to anyone – especially marketers. Feels like Big Brother." Well, you can't mark a trend from one data point, but you may have noticed Microsoft's recent version of Internet Explorer has a feature called "[InPrivate Browsing](#)". It automatically deletes cookies so advertisers and the like can't have access to your Internet activity. Could it be that just when the dream of highly targeted advertising seemed near, it's disappearing in a puff of smoke?

There is a new mandate evolving for the Internet advertiser: develop a deeper relationship with your audiences.

"I think what's really going to happen is that marketers will have to effectively woo people into signing into services and let them know what's in it for them, rather than surreptitiously taking the information from behind the scenes," says Doug Winfield, Vice President, Digital Strategies at Waggener Edstrom Worldwide.

He adds, "That gets to the idea of the social aspect of the Web. When you know you are entering into a relationship with a marketer, you expect to give up some degree of your personal information, but you also expect to get something in return." Winfield says we can expect this "return" to be anything from pay-for-view advertising to augmented customer service. But, one thing is for sure, advertising will be highly integrated with consumer relationships management.

How can news organizations develop this deeper relationship with consumers? By moving from a "sell advertising" mindset to a "create dialogue" mindset. As an example, Winfield describes how Dell uses social networks to keep in touch and keep a pulse on their consumers. It actively mines data from sites like Twitter to learn more about Dell users. Dell staffers also monitor [Twitter](#) for comments or anecdotes on the company's reputation, for responding to customers about service or product issues. A second-party site like Twitter can also help the company learn about and solve customer service issues.

> Just when the dream of highly targeted advertising seems near, is it disappearing in a puff of smoke?

Winfield tells the story. "I recently bought a new computer from Dell. It's a nice computer, but it came with the wrong power supply, so I decided to do an experiment. I sent a message out to the e-mail support group at Dell to see if they could solve the problem for me. I got various e-mails from Dell's tech support, but it wasn't going anywhere. Then I went to Twitter and wrote

www.MediaManagementCenter.org

a post saying, 'Hey, I just bought this snazzy new Dell laptop. Great, except wrong power supply.' The following day, I got a response from somebody at Dell asking what the problem was, what my order number was, and then a couple of days later, I received a new power supply." By scanning Web sites where their users congregate, Dell stays close to its customers needs and wants. It becomes a relationship expert.

Check out HowardForums. This is an online forum for consumer discussion about cell phones. People post problems they are having with their phones and talk about new cell phone features and functionalities. These sites are actively scanned by cell phone companies. They use them to get a better understanding of users' attitudes and behaviors and, importantly, as a place to solve customer service problems. Winfield says services such as telephone and cable providers are doing the same thing. Rather than create their own forums, they use existing communities to gather feedback and engage in the dialogue.

> News organizations need to move from a "sell advertising" mindset to a "creative dialogue" mindset.

While it's popular for news organizations to include 'talk back' features on their sites, how frequently are these forums reviewed for consumer perspective? Could new content be developed based on the dialogue? Where else might your audience be online where you could meet up and build relationships with them? How can you provide them information that would be relevant and start a conversation rather than shout a message? The ability to build relationships with consumers is one of the competencies news organizations will need to compete for advertising dollars.

Winfield explains: "Online advertising has been a big, booming area, but people may have more control in the near future over the types of advertising that they'll see. Companies have to think about how to make it more likely that they can engage people to buy their products or services. Part of success is certainly going out and doing discovery and understanding where those people are likely to be. Certainly a part of it is understanding those communities and saying the things that people want to hear, and some of it requires building relationships, because if you don't have a relationship that's built on trust, you're just a flak."

So to make the dream of effective advertising come true, companies will need to build a two-way dialogue – a relationship of trust. This should be good news for those in the business of selling news and information. Because who has a history of building those relationships of trust better than the news organization?

TechScout: On Becoming A Next Generation News Organization at NPR

Monday, November 3, 2008

(Annette Moser-Wellman) – As readers of TechScout know, I've been spending the last year scouting out technological trends that will affect the news business and mulling over what capabilities news organizations need to cultivate as a result. In just a few days, you'll learn what I've concluded, when Media Management Center publishes my new book, "Six Competencies of the Next Generation News Organization."

Imagine my delight when I realized that some of NPR's initiatives nicely illustrate the very competencies outlined in my MMC work.

So let me whet your appetite for my findings by sharing with you parts of my interview with Carlos Barrionuevo, who is Senior Director of Business Development at National Public Radio (NPR). Carlos shared with me recently how his organization is transforming for the digital age. Imagine my delight when I realized that some of NPR's initiatives nicely illustrate the very competencies outlined in my MMC work.

Here are some of the reasons I think NPR will lead in news markets to come and why NPR continues to surprise and delight audiences.

On being a Platform Strategist:

"We think about radio segments as stories. Reporters break material down to the story level, decide where that story will go and what material goes with it. We try to create dynamic internal structures that allow you to distribute to multiple platforms, whether it's an iPhone, simple streaming or a listening experience online. We are one unified newsroom supporting multiple platforms."

On being a Community Builder:

"So we said, 'Okay, we've got Facebook. We've got Twitter. We've got blogs.' But the structure of our site was a walled garden. Rather than control where our content was, we decided to open up our API (application programming interface) and put it out there so people can start to take pieces of our content and put them on their site. We thought, 'Let's just open up everything we've got and see what our audience will do. If we are truly public, let's see what happens.' It's promoted the mentality of our public mission and we can move now from driving page views to driving engagement."

On being a Data Miner:

"We are doing the down and dirty work of digitizing our archives. We have twenty-

something years of archives we need to digitize so that we can put that material to other uses. These archives can be valuable for us in terms of our public service mission as well as potentially launching into new markets and driving new revenues."

On being a Complete Storyteller:

"We are putting systems in place that actually make storytelling easier. We are combining a number of different production systems so that we can approach a story from the reporter level and the editor level and allow people to add associated content, be it pictures, graphics or notes. We think in terms of stories. We have six minute pieces which no one else does. This lends itself well to adding many different kinds of media."

On being an Entrepreneur:

"You need to change the leadership of the newsrooms to people who can understand the importance of supporting the whole organization. Online has grown up in many companies separate from what would be considered core programming. But NPR has a management commitment to integrating digital as core to the news process."

TechScout: Making the most of what you have

November 6, 2008

(Annette Moser-Wellman) The road to Internet revenue is littered with pay-for-premium-content failures. The most visible was the New York Times' TimesSelect, which charged for access to special content online. Two years after it was launched, it was abandoned in September 2007 because, of course, there was more money to be had in advertising revenue than online subscriptions.

And remember when Rupert Murdoch bought the Wall Street Journal that same year? The ubiquitous buzz on the street was that he was going to abandon subscriptions and make content free online - because of course, there was more money to be had in advertising revenue than in online subscriptions.

> Paying for premium content may be making a small but perceptible comeback.

But a funny thing happened on the way to the Internet. The WSJ online still prices its online subscription at $99 per year (and with print on promotion). What the heck happened? Either News Corp management figured it was too hard to make money through online advertising OR subscription revenue was so lucrative it was hard to walk away from it.

Either way, the WSJ example is proof positive that the days of "walled garden" content are not over. It seems that paying for premium content may be making a small but perceptible comeback. Perhaps the 'free news lunch' is slowly becoming a thing of the past?

Listen to Staci D. Kramer, Co-Editor and Executive Vice President of paidcontent.org, a site that provides global coverage of the business of digital content. "One of the things on the horizon (for news organizations) is better ways of making use of what we already do. How do you make the most of what you have now? A lot of people didn't like TimesSelect but it was in many respects the right model. Take something that people want and see if they are willing to pay for it separately. What you're seeing now are a number of publications and a number of new models trying to tap into that concept of premium subscription."

Last year when I interviewed John Skipper, Senior Vice President and General Manager of ESPN.com, he talked about the success of ESPN Insider and ESPN 360. The Insider offers premium content online for a subscription fee that complements the free EPSN.com site. Skipper said, "We believe ESPN Insider to be the second largest subscriber-based content business on the Internet after the Wall Street Journal." A second complementary Website, ESPN 360, is a broadband Internet service that is available only through Internet service providers. EPSN generates revenue through its partnership with the ISPs.

And if we want to get granular, this trend of fee-for-content extends to services as well. Consider Craigslist. Yes, Craigslist, the classified site that eviscerated the easy revenue of newspaper advertising by creating an online place for free postings. Have you tried to list a job lately? Be prepared to pay $25 to $75 per job "category" depending on your metro

location. To adequately describe a new position, you'll need to pony up multiples of that fee. How is that cheaper than the old days of newspaper listings?

So my point here is that the concept of strictly "free" content and even online services may be slowly becoming a thing of the past. Internet companies need to make money, too. And just as start-ups like [Facebook](), [LinkedIn]() and others find ways to hook you and then find clever ways to monetize the mass audience, free content can't be sustained over time without adequate revenue. So go ahead and find ways to charge for premium content. Experiment with ideas that your consumers might be willing to pay for. Because sooner or later the economists are always right. There is no such thing as a free lunch.

> Take something that people want and see if they are willing to pay for it separately.

TechScout: The Useful Local News Organization

November 10, 2008

(Annette Moser-Wellman) -- It's easy to get tied up in our underwear debating what should be the mission of the news organization -- delivering news or providing information? Jack Lail, News Director of Innovation for the Knoxville News Sentinel, knows his answer. "I'm a big believer that we have to be useful to our audience. That is really what we do. If being useful is making it easy for you to find out stuff or acquire social currency at the water cooler, that's great. But it's also how to plan your life or what you're going to do this weekend. If you focus on being of use to your audience, then the news is very important, but it doesn't have to be the only thing that you try to accomplish."

> If you focus on being of use to your audience, then the news is very important, but it doesn't have to be the only thing.

And the Knoxville News Sentinel is finding a lot of fresh ways to be of use. Facing the challenges of any local news service, the paper and its Web site, knoxnews.com, are focusing on serving audiences in a multi-platform way. From text alerts to Twitter feeds, their goal is a deeply useful engagement level with consumers.

"In our local market, we need to be the largest player in monthly visitors to our Web site," he says. "We are using different strategies to get people to come more frequently, particularly if they are not print newspaper readers."

And of course in a local market, you have to find ways to be useful vis-a-vis TV stations and their sites. Knoxnews.com differentiates itself in two important ways: breaking news and video. Breaking news is updated on the site frequently and provides in-depth reporting.

"We have to have more breaking news than they do and we have to do it more completely than they have it," Jack says. The News Sentinel's staff has produced more than 600 videos in the last year – possibly as much video as the local TV station. Reporters are given inexpensive flip digital cameras for talking head interviews and on-the-scene reporting. These video can be e-mailed virally or even embedded on a MySpace page.

As a holding of Scripps Newspapers, experimenting with new technologies at the News Sentinel and knoxnews.com is important. Jack mentions the ownership's penchant for being first to try new things, such as the new Yahoo ad serving system, APT.

He notes that trying new things in the mobile platform is important too.

"Mobile may be the dominant platform eventually," Jack says. "Certainly with devices like the iPhone, you can see how mobile could be the primary way people get information. We have our eye on it, but for now we are doing a lot of text messaging. In a week we'll do 75 to 80 text messages. As we update the Web site, the mobile sites are also updated." Knoxnews.com also has a site for the community to upload and share photos.

Jack sees more 'low-hanging fruit' in the media group's core Web sites. Growing audience penetration and monetizing every page view confirms their mission. Knoxnews.com is even launching a new site, Knoxville.com, that will be entertainment-oriented and provide more 'go and do' sorts of information.

A central factor of the marketing equation is the good use of outbound linking. "We use a blog aggregator called blognetwork.knoxnews.com to either link to or list stories. On our sports site, we often do round-ups of what other newspapers, Web sites or bloggers are saying about football, basketball, coaches or whatever. Newspapers sites need to do more linking like this instead of trying to create all the content. Instead, make it easy for others to find the content, even if it's from a direct competitor. It all goes back to the mission of being useful," he says.

> Mobile may be the dominant platform eventually. We have our eye on it, but for now we are doing a lot of text messaging.

So whether it's news, information or someone else's news and information, serving the needs of your audience prevails. Because when you become the trusted authority, you've built brand loyalty and never have to be tied up in your underwear again.

CONCLUSION

"What's the ultimate function of news media in this new digital, brave new world?"[110]
Amy Vickers, Ave A | Razorfish

The six competencies in this report reflect important capabilities news organizations need to obtain or strengthen to remain viable business concerns in the face of rapid technology innovation. Acquiring these capabilities through training, acquisition of talent or partnerships should be of primary importance to corporate leaders. Technological advancements will continue to sprint ahead, bringing unforeseen challenges to the media business – especially news media. Only those who have a posture of experimentation toward technology will survive.

Many interviewees expect a continued business struggle ahead, predicting increased competition from small entrants in the market and a consolidation of mid-size companies. As technology threatens business models, it is vital that news companies define a compelling mission and vision.

Listen how Disney-ABC Television Group's Cheng describes his organization's focus in a world of change: "Our investment is in the content process and in creating good stories and creating things that people want to engage in from a content perspective. To the extent media companies can find partners in the technology space, it will only benefit them more. But news organizations need to spend more time really drilling down on their editorial. Where do they want to position themselves? What is compelling to my audience? The Facebooks of today will be gone tomorrow. The Googles and YouTubes aren't necessarily going to be there either because these guys differentiate themselves on technology. We differentiate ourselves on content. And we can reinvest in that."[111]

Defining news media's ultimate function in a shifting technological world will be an on-going challenge for the news organization and for society. But, as this report illustrates, only a continued outward focus on the needs of consumers will illuminate the path toward success.

APPENDIX A: INTERVIEWEES

Name	Title	Company
Robert Bach	President, Entertainment & Devices Division	Microsoft
V. Michael Bove, Jr.	Principal Research Scientist, Director, Consumer Electronics Laboratory	The Media Lab, Massachusetts Institute of Technology (MIT)
Cameron Brain	President and Chief Executive Officer	Open Box Technologies
Kenneth A. Bronfin	President	Hearst Interactive Media
Albert Cheng	Executive Vice President, Digital Media	Disney-ABC Television Group
Matt Colledge	President	Idilia
Glorianna Davenport	Principal Research Scientist	The Media Lab, MIT
Ben Elowitz	Chief Executive Officer	WetPaint.com, inc.
Max Haot	Chief Executive Officer and Founder	Mogulus
Greg Heuss	President	Eyealike, Inc.
Susan Hickey	Chief Marketing Officer	Nielsen Online
David Hobby	Photojournalist and Blogger	The Baltimore Sun & Strobist
Hanson Hosein	Director, Master of Communication, Digital Media	University of Washington
Adrian Holovaty	Founder, Journalist and Web Developer	Everyblock.com
Henry Holtzman	Chief Knowledge Officer, Executive Director, Digital Life	The Media Lab, MIT
Ellen Hume	Research Director	Center for Future Civic Media,

		MIT
Andrew Lippman	Senior Research Scientist, Director, Digital Life	The Media Lab, MIT
Tony Jebara	Chief Scientist & Co-Founder	Sense Networks
Bhaskar Roy	Co-Founder, Vice President Product Marketing	Qik
Brian Sletten	Partner	Zepheira
Nova Spivack	Founder and Chief Executive Officer	Radar Networks
Venu Vasudevan	Senior Director, Software Platforms Research	Motorola
Amy Vickers	Director, Global Enterprise Solutions	Avenue A I Razorfish
Polychronis Ypodimatopoulos	Graduate Student	The Media Lab, MIT

APPENDIX B: ABOUT THE AUTHORS

ANNETTE MOSER-WELLMAN, President and Founder of FireMark Inc., is a leading expert on innovation. She is the author of *Running While The Earth Shakes: Creating An Innovation Strategy To Win in The Digital Age,* published by Media Management Center at Northwestern University in 2007. It is the result of interviews with 36 respected news media leaders and thinkers from 26 companies, including both traditional news media companies and emerging ones that became involved in news after the advent of the World Wide Web.

Her company, FireMark Inc., works with leaders of Fortune 500 firms to create market breakthroughs. She has taught thousands of business managers how to use her model for creative thinking and apply it to develop new products and services. Among her clients are The Coca-Cola Company, The Starbucks Coffee Company, Kraft Foods, Georgia-Pacific and The Ford Motor Company.

Based on her research of creative genius in the arts and sciences, her book, *The Five Faces of Genius: Creative Thinking Styles to Succeed at Work* (Viking/Penguin), demonstrates how business people can learn how to invent from the greats of history. She developed a profiling tool to assist managers in understanding their personal creative style and become inventors.

In addition to speaking engagements for corporate and public audiences, Annette consults with firms on bringing innovation to organizations. She works with management to optimize creativity and develop new ideas for today's rapidly changing marketplace. She specializes in finding the intersection between future trends and new business invention.

Annette holds an MBA from the University of Chicago and a Masters of Divinity from Princeton Theological Seminary. Her undergraduate degree was in Art and she has had an abiding interest in the lives of creative individuals. Annette's passion is to help others find their genius and use it to transform the world.

VIVIAN VAHLBERG, the report's editor, is managing director of the Media Management Center.

DIANA DURKES is a blogger and project coordinator at the Media Management Center.

JENNY EDWARDS is a graduate student in the Integrated Marketing and Communications Master's Degree program at Northwestern University's Medill School.

APPENDIX C: QUESTIONNAIRE

Northwestern University's Media Management Center
Interview Questionnaire

The hypothesis of our research is technology has upended news media industry - from gathering and production to distribution and consumption. Our goal is to help media leaders understand the full implications of technology trends and foresee what implications technology innovation will have in the future.

We are interviewing technology leaders at the forefront of change in the media industry and beyond to gain their perspective on the questions below:

- What are the most intriguing current and potential impacts of technology on news?
- What impact does your work have on news and media in general?
- What current trends do you think are most worth watching?
- What technologies are emerging that will have huge impact on information and news in the future? If you were a news exec, how would you prepare for them?
- What media companies are you most impressed with and why?
- What are the ripest areas for cooperation or partnerships between technology and media companies now and in the future? Where are the win/wins?
- In what areas do you anticipate technology overtaking media businesses --- i.e. defeat them, buy them out, make them irrelevant, etc?
- What advice do you have for media companies about partnering with, competing with, acquiring, or merging with technology companies in order to succeed?
- What are some of the trends in consumer research that media companies can learn from technology firms?
- What do technologists know about developing insight into consumer's preferences from analytics that news companies would benefit from knowing?

The information from this research will be used in executive development conducted by the Media Management Center, blogs on their site and a report to be produced and distributed to media leaders internationally.

APPENDIX D: FOOTNOTES

---

[1] "Annual Internet Survey by the Center for the Digital Future Finds Shifting Trends Among Adults About the
    Benefits and Consequences of Children Going Online," USC Center for Digital Future, 1-17-2008.

[2] http://www.hispanicbusiness.com/news/2008/7/21/microsofts_netflix_deal_keeps_pcs_in.htm

[3] Vasudevan, Venu. Telephone Interview. 30 April 2008.

[4] http://telephonyonline.com/wireless/mag/wireless_shifts/

[5] http://www.wired.com/entertainment/music/news/2005/07/68171

[6] Cheng, Albert. Telephone Interview. 17 March 2008.

[7] Hobby, David. Telephone Interview. 1 February 2008.

[8] Haot, Max. Telephone Interview. 3 April 2008.

[9] http://www.businessweek.com/technology/content/nov2007/tc20071116_379585.htm

[10] Haot, Max. Telephone Interview. 3 April 2008.

[11] http://www.time.com/time/business/article/0,8599,1825512,00.html?xid=rss-business

[12] Roy, Bhaskar. Telephone Interview. 2 April 2008.

[13] http://www8.garmin.com/aboutGPS/

[14] http://www.unwiredview.com/2008/05/14/more-than-50-of-nokia-phones-to-have-gps-by-2010-2012/

[15] http://en.oreilly.com/where2008/public/schedule/detail/1577

[16] http://www.wisegeek.com/what-is-wimax.htm

[17] http://www.wisegeek.com/what-is-a-mesh-network.htm

[18] Ypodimatopoulos, Polychronis. Personal Interview. 5 May 2008.

[19] Lippman, Andrew. Personal Interview. 5 May 2008.

[20] http://www.readwriteweb.com/archives/semantic_web_patterns.php

[21] Lippman, Andrew. Personal Interview. 5 May 2008.

[22] Spivack, Nova. Telephone Interview. 15 July 2008.

[23] http://www.calccit.org/projects/GPS-Mobile-Phones-as-Traffic-Sensors.html

[24] Bove, Michael. Personal Interview. 5 May 2008.

[25] Jebara, Tony. Telephone Interview. 7 August 2008.

[26] Bove, Michael. Personal Interview. 5 May 2008.

[27] http://www.hispanicbusiness.com/news/2008/7/21/microsofts_netflix_deal_keeps_pcs_in.htm

[28] http://code.google.com/android/index.html

[29] Hobby, David. Telephone Interview. 1 February 2008.

[30] Cheng, Albert. Telephone Interview. 17 March 2008.
[31] Hickey, Susan. Telephone Interview. 24 March 2008.
[32] http://www.usatoday.com/money/advertising/2008-07-06-interactive-tv_N.htm
[33] http://www.nytimes.com/2008/06/16/business/media/16adcol.html
[34] Bronfin, Kenneth. Telephone Interview. 29 April 2008.
[35] Bove, Michael. Personal Interview. 5 May 2008.
[36] Cook, John. 2008 June 19.
http://blog.seattlepi.nwsource.com/venture/archives/141368.asp
[37] http://www.reuters.com/article/pressRelease/idUS98053+05-Mar-2008+PRN20080305
[38] Vickers, Amy. Telephone Interview. 18 April 2008.
[39] Cheng, Albert. Telephone Interview. 17 March 2008.
[40] Bove, Michael. Personal Interview. 5 May 2008.
[41] Elowitz, Ben. Telephone Interview. 15 February 2008.
[42] Elowitz, Ben. Telephone Interview. 15 February 2008.
[43] Vasudevan, Venu. Telephone Interview. 30 April 2008.
[44] Bach, Robert. Telephone Interview. 9 June 2008.
[45] Hosein, Hanson. Telephone Interview.19 June 2008.
[46] Elowitz, Ben. Telephone Interview. 15 February 2008.
[47] Bronfin, Kenneth. Telephone Interview. 29 April 2008.
[48] Davenport, Glorianna. Personal Interview. 5 May 2008.
[49] Holtzman, Henry. Personal Interview. 5 May 2008.
[50] Roy, Bhaskar. Telephone Interview. 2 April 2008.
[51] Hobby, David. Telephone Interview. 1 February 2008.
[52] http://www.readwriteweb.com/archives/huffington_post_going_local.php
[53] Elowitz, Ben. Telephone Interview. 15 February 2008.
[54] Holovaty, Adrian. Telephone Interview. 10 July 2008.
[55] Hickey, Susan. Telephone Interview. 24 March 2008.
[56] Davenport, Glorianna. Personal Interview. 5 May 2008.
[57] Sletten, Brian. Telephone Interview. 15 May 2008.
[58] Sletten, Brian. Telephone Interview. 15 May 2008.
[59] Brain, Cameron. Telephone Interview. 23 January 2008.
[60] Hobby, David. Telephone Interview. 1 February 2008.,
[61] Vickers, Amy. Telephone Interview. 8 April 2008.
[62] Vickers, Amy. Telephone Interview. 8 April 2008.
[63] Brain, Cameron. Telephone Interview. 23 January 2008.
[64] Sletten, Brian. Telephone Interview. 15 May 2008.
[65] Heuss, Greg. Telephone Interview. 22 February 2008.
[66] http://www.foliomag.com/2008/maghound-com-set-debut-september
[67] Vickers, Amy. Telephone Interview. 8 April 2008.
[68] Hobby, David. Telephone Interview. 1 February 2008.
[69] Vasudevan, Venu. Telephone Interview. 30 April 2008.
[70] Hosein, Hanson. Telephone Interview. 18 June 2008.
[71] Elowitz, Ben. Telephone Interview. 15 February 2008.
[72] Davenport, Glorianna. Personal Interview. 5 May 2008.
[73] Davenport, Glorianna. Personal Interview. 5 May 2008.
[74] Davenport, Glorianna. Personal Interview. 5 May 2008.
[75] Hobby, David. Telephone Interview. 1 February 2008.
[76] Heuss, Greg. Telephone Interview. 22 February 2008.

[77] Sletten, Brian. Telephone Interview. 15 May 2008.
[78] http://www.librarything.com/about
[79] http://www.librarything.com/thingology/2007/02/when-tags-works-and-when-they-dont.php
[80] Davenport, Glorianna. Personal Interview. 5 May 2008.
[81] http://www.techcrunch.com/tag/story-blender/
[82] Elowitz, Ben. Telephone Interview. 15 February 2008.
[83] Vasudevan, Venu. Telephone Interview. 30 April 2008.
[84] Cheng, Albert. Telephone Interview. 17 March 2008.
[85] http://www.ercb.com/feature/feature.0008.1.html
[86] Vickers, Amy. Telephone Interview. 8 April 2008.
[87] Vickers, Amy. Telephone Interview. 8 April 2008.
[88] Ypodimatopoulos, Polychronis. Personal Interview. 5 May 2008.
[89] Vickers, Amy. Telephone Interview. 8 April 2008.
[90] Cheng, Albert. Telephone Interview. 17 March 2008.
[91] Cheng, Albert. Telephone Interview. 17 March 2008.
[92] Elowitz, Ben. Telephone Interview. 15 February 2008.
[93] Pérez-Peña, Richard. "Times to End Charges on Web Site," New York Times, September 18, 2007.
[94] Spivack, Nova. Telephone Interview. 15 July 2008.
[95] Bronfin, Kenneth. Telephone Interview. 29 April 2008.
[96] http://hearstcorp.com/about. 2 July 2008.
[97] http://www.informationweek.com/news/internet/retail/showArticle.jhtml?articleID=209400772
[98] Bronfin, Kenneth. Telephone Interview. 29 April 2008.
[99] Bronfin, Kenneth. Telephone Interview. 29 April 2008.
[100] Vickers, Amy. Telephone Interview. 8 April 2008.
[101] http://www.nytimes.com/2005/02/17/business/media/17cnd-times.html
[102] http://www.about.com/about
[103] Vasudevan, Venu. Telephone Interview. 30 April 2008.
[104] Jebara, Tony. Telephone Interview. 7 August 2008.
[105] Elowitz, Ben. Telephone Interview. 15 February 2008.
[106] Vasudevan, Venu. Telephone Interview. 30 April 2008.
[107] Ypodimatopoulos, Polychronis. Personal Interview. 5 May 2008.
[108] Heuss, Greg. Telephone Interview. 22 February 2008.
[109] Hosein, Hanson. Telephone Interview. 18 June 2008.
[110] Vickers, Amy. Telephone Interview. 8 April 2008.
[111] Cheng, Albert. Telephone Interview. 17 March 2008.