



INTRODUCING  
**NEWSHUB**

A FRAMEWORK FOR  
INCREASING EFFICIENCY  
THROUGH PERSONALIZATION  
IN BLOOMBERG BREAKING NEWS TEAMS

**Bloomberg**  
NEWS



**Carnegie Mellon University**

# EXECUTIVE SUMMARY

## Bloomberg and Carnegie Mellon University

In today's financial news world, the company that can provide the quickest, most accurate, and most insightful breaking news offers the most value to their client. Bloomberg News is collaborating with Ascend, a team of five Masters of Human-Computer Interaction students at Carnegie Mellon University, for an 8-month Capstone Project. The goal of the project is to create novel design solutions that ensure their editors and reporters are able to deliver breaking news in the best manner possible.

## Research Process

We began our project last semester by gaining an understanding of the various parties involved within Breaking News and their complex workflows. Through various research methods, we were able to synthesize our findings into four key insights (see *Milliseconds Matter*, Part 1).

## Visioning

Using these insights, we were able to generate 20 potential ideas that would allow the breaking news teams to release financial news efficiently and accurately. We presented these ideas to our project stakeholders in a collaborative meeting where we narrowed them down to one: a modularized framework that enables users to add new modules that are streamlined for the tasks they handle. These modules would be connected to one another so information users find or create in one is immediately transferred to the other modules while providing granular customizeability.

## Refining Project Scope

With a complex idea like a modularized framework, we needed to narrow the scope of our design. To do so, we conducted an extensive workflow analysis and created paper prototypes to create a list of hurdles to focus on and to validate higher-level concepts and to get a sense of our design priorities. We determined that our modularized framework would capture the fundamental breaking news components and address the key hurdles through a set of main modules: a press release monitor, a display for the press release, a headlining module, a recently sent headlines module, a secondary information module, and a call-ups module.

## Iterative Design and Testing

Through our iterative design process, we created a click-through prototype in Axure to understand the relationship between the modules. We then created a medium fidelity prototype using html, css, and javascript to test out the functionality of our prototype and to better mimic their workflow. At each stage, we conducted rigorous testing in the usability lab to gather feedback and make changes. We went through one stage of paper prototyping, two stages of mid-fi prototyping, and one stage of high-fi prototyping before delivering our final, fully-functional prototype.

# PROJECT BACKGROUND

*Bloomberg L.P. is a financial software, data, and media company headquartered in New York City and founded by Michael Bloomberg in 1981. Bloomberg's core product is the Bloomberg Terminal, an application that provides financial news and data, enables financial asset trading, and allows Terminal owners to communicate with one another.*

## THE CLIENT

Our team focused on the financial news component of the Bloomberg Terminal, otherwise known as Bloomberg News. The Bloomberg News team was created in 1990 to provide fast, accurate news to the financial community. At the time, the organization was 6 people, but as of early 2015, the organization has grown to over 2,400 news professionals in 73 countries producing over 5,000 stories a day. Bloomberg News strives to be the first to report news 24 hours a day, 365 days a year with complete context, perspective, and accuracy.

## PROBLEM SPACE

Within Bloomberg News, the Breaking News beat has an important and challenging role providing users with fast and accurate market-moving financial news. Breaking News coverage is split into four teams: Speed, First Word, Social Media, and Bloomberg News. All four teams alongside an intricate automation system share duties monitoring press wires, market data, websites, Twitter, emails, other news organizations, TV/Radio stations, teleconferences, and web events to report breaking financial news quickly and accurately. Our team was brought on to evaluate existing tools used by the Breaking News organization and to streamline their current monitoring and publishing workflows.

## MISSION STATEMENT

To increase the efficiency and speed of Bloomberg's Breaking News coverage by evaluating the existing processes and reimagining the tools that will be used by the breaking news teams of the future.

*The View from Bloomberg's  
Building in New York City*



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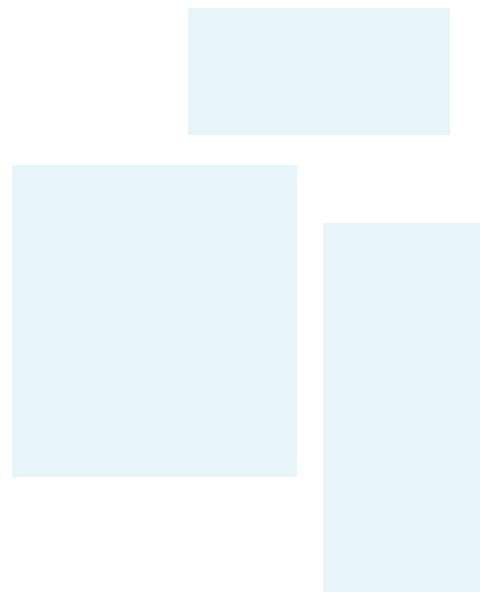
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# RESEARCH INTRO

*In the Spring of 2015, we went on three research trips to the New York City (NYC) office and conducted 14 remote interviews with breaking news teams across the globe in order to gain an understanding of the different workflows of the different teams. During our NYC research trip we conducted 26 contextual inquiries and fly-on-the-wall observations within the newsroom.*

*After synthesizing all of our research findings, we uncovered four main opportunities for improvement: disparate tools, non-standardized workflows, awareness of tools and features, and communication and collaboration.*

*In the Summer, when we were located in the NYC office, we conducted a task analysis session with newsroom editors to better understand their workflows on a more granular level. The task analysis was also used as a way to baseline the efficiency of the current workflow.*

**Top To Bottom:** *Various editors in Bloomberg News Rooms.*

# BLOOMBERG BREAKING NEWS

*Bloomberg Breaking News is the team within the larger Bloomberg News organization that is responsible for quickly delivering accurate, market-moving financial news and insights. This team writes headlines and fills, short bullet-point stories, from information they receive from wires, social media, reporters, websites, and other sources.*



## THE IMPORTANCE OF BREAKING NEWS

The primary goal of this team is to publish market-moving news in the form of short headlines and bullet-point stories. Clients use this information to directly inform their trading decisions. Additionally, some Bloomberg subscribers program algorithms to make financial decisions based directly on the headlines that are written. The implications of the news written by this team can move financial markets by millions of dollars, therefore speed and accuracy are important. News written by the Breaking News team is consumed all across the globe, and so are the teams that are producing the news. The dispersed team helps to ensure news reporting continues around the clock and that global market news is efficiently covered.

## THE BLOOMBERG TERMINAL

Bloomberg Professional (the terminal) is a \$20,000+ annual subscription service that provides over 300,000 users with up-to-date financial data news, chat functionality, and the ability to buy and sell financial assets. Bloomberg's software system is often paired with a proprietary keyboard which is optimized for speed. Users rarely use a mouse and become experts at commands and keyboard shortcuts that allow them to navigate between functions. Terminal functions are individual applications that handle one feature, like opening up a chat window or viewing a company's stock. The terminal is also used internally by the Breaking News team to distribute news. Our team's primary constraint is to work within the confines of the terminal to deliver a solution that will improve the process of delivering news to Bloomberg's users.



*The Bloomberg Terminal is the platform that editors use to publish headlines and fills, and clients use to read them.*





A Japanese News Editor's desk, monitoring seven screens at once



Breaking news editors monitoring four screens filled with potential news sources

## THE NYC BREAKING NEWS TEAM

The Breaking News Team in NYC is broken down into three sub-teams: Speed Desk, First Word, and Social Media Monitoring. Editors on the Speed Desk are responsible for getting market-moving news out first. They take news that comes in through press wires, emails, and other news outlets and write 64 character headlines that are published to the Bloomberg terminal. The First Word team elaborates on the 64 character headlines sent out by the Speed Team. They provide actionable information in concise bullet point format. They are responsible for a diverse range of asset classes, but many editors have a specific focus, or "beat," that they cover. The Social Media Monitoring team primarily watches Twitter for breaking news. They can either promote tweets through the terminal or write headlines and fills to expound upon the news.

## INTERNATIONAL BREAKING NEWS TEAMS

Breaking News is a global team. The bureaus all have the same goal of publishing market-moving news quickly and accurately. However, the workflow and team structure of these teams varies. Smaller newsrooms depend on a handful of editors that are responsible for generating headlines, publishing fills, and monitoring social media.

## NYC VS. INTERNATIONAL NEWSROOMS

While the goals of the Breaking News teams are the same in New York as they are in the international offices, there are differences in the way work gets done. The first difference is the source of information. In NYC most of the information they report on flows through the terminal, but in some international offices, they use other computer systems, television, and radio as major sources. The second difference is team structure. Most international offices do not have enough staff to separate into the three teams that New York has, so individual editors must perform all three roles. Additionally, some international offices have to publish headlines in both English and in a local language.



# UNDERSTANDING CURRENT WORKFLOWS

*We brought editors and managers from the Speed, BFW, and Social Media teams into the usability lab for an in-depth workflow analysis. In the lab, the Breaking News team members performed their daily tasks while being recorded. We were able to analyze the efficiencies of their tasks and learned about the granular interactions required with their keyboard and mouse.*

## Understanding Workflow

### TASK GRANULARITY

From our research last semester, we had a strong understanding of the general workflows of the various teams and their members. Since the project requires us to create a design solution that will enhance the efficiency of the news tools, this semester, we had to understand the various approaches team members take to accomplish their daily tasks at a granular level (i.e. what button they click, what keystroke they press, etc.). By understanding the low-level actions taken to accomplish a task, we have a strong baseline to compare with our design solution.

### WORKFLOW DIVERSITY

Although we pulled most of our participants from the Speed Desk, we were able to diversify the experience levels and roles of the various members we observed. By doing so, we were able to capture the tasks that callers, snipers, divers and editors perform. We also captured the workflow of two international team members, one from Brazil and the other from England. Finally, we recorded workflows during morning and afternoon rushes, as well as slower mid-day periods.

### PARTICIPANTS

**7** TOTAL

**3** Speed Snipers/Divers

**2** BFW Editors

**2** Speed Callers

**“My workflow varies by time of day.”**

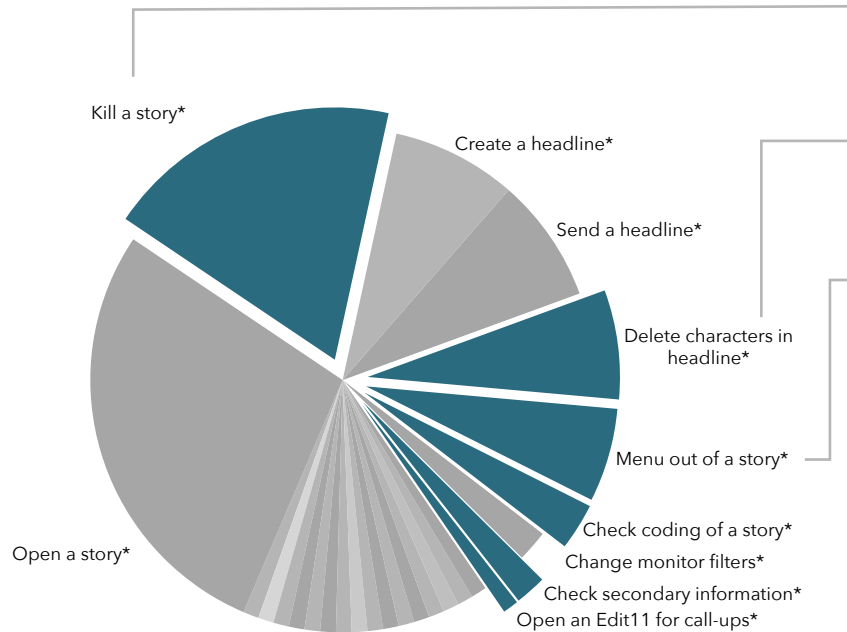
Speed Desk Manager  
London Newsroom

*A member of the First Word team in the Bloomberg usability lab, who we monitored as she completed tasks.*



# Breaking Down A Speed Editor's Day

We analyzed the percentage of the day user's spent on each task to understand how our design solves common hurdles in a speed editor's day. Our results are captured in the pie chart below and connected to the hurdles we're solving.



\* using Edit11

## KEY HURDLES

During times of high volume, the Speed Desk follows a more refined structure that allows them to efficiently divide the work among editors and publish headlines expeditiously. The rush time generally occurs before and after market hours at 7am and 4pm, respectively.

## COMMON TASKS

As we observed the various Speed and BFW team members, we identified common tasks that they perform to accomplish their jobs. We tracked the number of times they executed each task so that we could address tasks that are commonly performed.

## SUB TASKS

For baselining purposes, we tracked all keyboard and mouse interactions to understand the sub-tasks associated with the primary tasks and documented them in the following page.

## HURDLES

These 10 hurdles will be addressed in our final product (organized by priority).

### KILLING STORIES

3-step process to kill multiple stories at once.

### RESURRECTING STORIES

Killed stories cannot be recovered if an error was made.

### ADDING CODES

4-step process to check or add codes after a headline has been released.

### ACCESSING SECONDARY INFO

3-step process to find and input secondary information into an existing headline.

### HANDLING CALL-UPS

No centralized method for handling call-ups.

### DELETING IN A HEADLINE

No standard for how a headline appears after it is sent causing additional deleting.

### CLOSING OUT OF STORIES

A superfluous task that exists in the current workflow

### CHECKING FOR REDUNDANCY

No method for checking if a headline was already sent from a release besides trying to find that headline in the stream of news.

### HEADLINING FROM MESSAGES

To headline from messages, users must open a separate function.

### USING SENT HLS OR TEMPLATES

No way to send a headline efficiently using a previously sent headline.

# IMPROVEMENT OPPORTUNITIES

Patterns emerged from our research that helped us identify four main areas of opportunities for improvements.

## AWARENESS OF TOOLS AND FEATURES

Although many feature-packed tools are available, it is not always clear what tools exist and what features are available in various tools.

- Tools at Bloomberg are frequently changing making it difficult for members of the news team to keep up with the full extent of the tool functionality available.
- Currently, no system exists for asking questions or seeking help to learn tools. Thus, news team members frequently do not know the best ways to use their tools.
- Tools are rolled out to the live production environment making editors anxious to try things, which hinders them from discovering many of the features that are available to help them with their work.

## DISPARATE TOOLS

Teams within Breaking News use many different tools that frequently change, which lead to difficulty in maintaining tools and defining best practices.

- The breaking news team has access to multiple tools for performing the same task. This causes problems in trying to create best practices because there are multiple ways to complete each task.
- Each Bloomberg terminal function is designed for one task; editors constantly have to switch between multiple tools to accomplish a single workflow.
- A lot of tools that are being not being used in the way they were originally intended to be used.

## COMMUNICATION AND COLLABORATION

There are currently no structured systems available to coordinate and collaborate; teammates are not always aware of what tasks are being accomplished by others.

- The Bloomberg news team has many communication tools that they use each day causing additional overhead as they move from one tool to the next.
- The news team does not have good visibility into the work of others without directly asking them for their statuses, thus requiring them to perform additional tasks to coordinate.

## NON-STANDARDIZED WORKFLOWS

Various members of each team have multiple ways to accomplish the same task, making it difficult to develop tools that meet the needs of all the global teams.

- The Bloomberg Breaking News team workflows vary greatly from bureau to bureau making it difficult to develop tools that meet the needs of all of the global teams.
- Teams in different countries utilize different sources of information, which have not all been accounted for in the current tools. Teams modify their workflow and tools they use accordingly.

“*I don't know what WRIT is because I don't want to know what WRIT is. I want to use what I know works.*”

News Editor  
(Hong Kong)

“*We build tools. The tools work really well, but we don't build workflows.*”

News R&D Manager  
(New York City)

“*I don't know what WRIT is because I don't want to know what WRIT is. I want to use what I know works.*”

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(Hong Kong)

“*We build tools. The tools work really well, but we don't build workflows.*”

News R&D Manager  
(New York City)

# OUR VISION: MODULAR FRAMEWORK

*We met with various stakeholders to present our potential ideas. Using their feedback, we decided to create a modular framework to handle the myriad of tasks the news team performs. Since many modules are needed to handle the diverse workflows of the news teams, we decided to focus our time on the Speed team.*

## WHAT ARE MODULES?

To streamline and simplify the workflow and the tools being used by the Breaking News team, we agreed on designing a modular framework. A module is an individual tool that is used to perform a specific task in a workflow. These modules can be added to share information with one another to complete more complex, daily tasks.

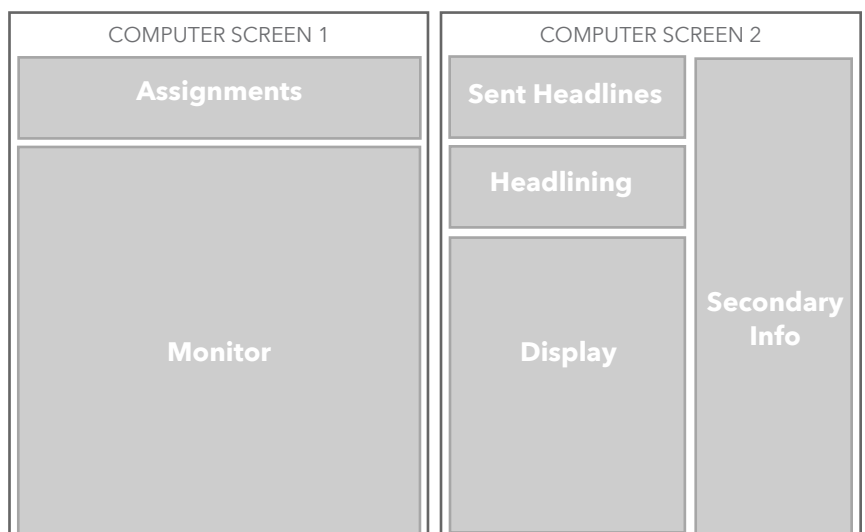
## WHY A MODULAR FRAMEWORK?

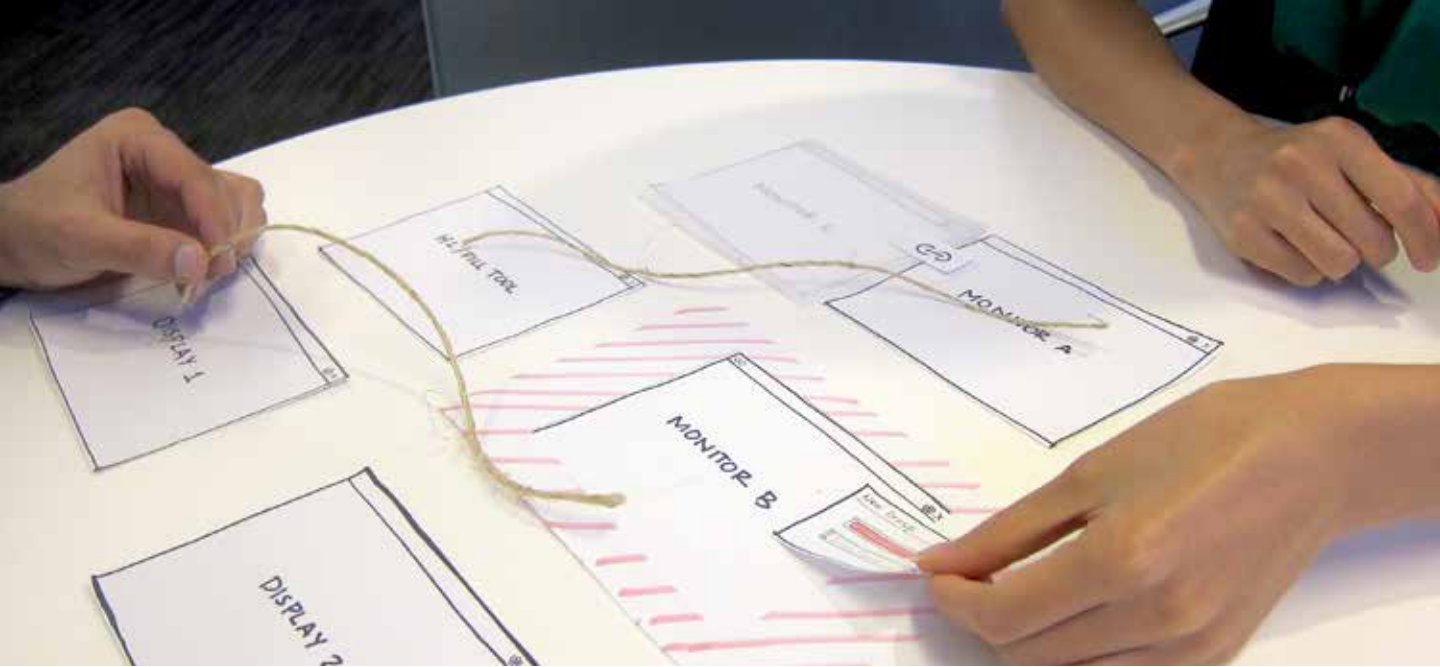
We wanted to create individual modules that best addressed each task (i.e. headlining, monitoring stories, etc.) instead of the current model of creating functions that handle multiple tasks. We also wanted to design a framework for adding modules that can communicate with one another (i.e. a headlining module would pull the relevant coding from a monitor module). This framework would allow the news development team to create additional modules that worked well in our connected ecosystem.

## SCOPE

With our vision in hand, we narrowed the scope of our prototype by focusing on the Speed team and their headlining process. We created a list of must-have modules that we set out to design. Our criteria for these modules was to create what was absolutely necessary for a Speed team caller and editor to accomplish their jobs.

*The image on the right is a potential layout of the modules we designed. While the placement of the modules is something we created to be customizable, this particular layout utilizes two of a user's four computer screens (we will go into the specifics of each module in the Final Product section of this book).*





# THE ITERATIVE DESIGN PROCESS

*After completing our user research we began our iterative design phase. Our approach was to design, test, and analyze our prototype in stages. After each stage, we refined our prototype and increase its fidelity, beginning with a paper prototype and ending with a fully-functional, web-based prototype created on the Angular.js framework.*

*Top to Bottom: Reviewing notes from contextual inquiries, meeting with our client, creating an affinity diagram.*

# LOW FIDELITY PAPER PROTOTYPE

*The Bloomberg Newsroom has a large, disparate toolset. To address this problem, we designed a modular framework with inter-connected modules. Early in the design process, we tested the framework idea with users to validate that this concept made sense with their everyday tasks.*

## METHODS & PARTICIPANTS

To quickly test our modular framework concept, we created three paper prototypes and asked editors in the newsroom to give us feedback. In the first, we asked users to link windows in three different ways and to think aloud as they were performing the task. The second was to group cards labelled with module names together to show which modules should communicate and what information should be passed among them. Lastly, we provided three different docks that could be used to add modules and workspaces.

## Findings

Through our testing, we were able to determine that there are benefits in highly-customizable, modular frameworks. Editors had no difficulty in understanding the concept or thinking through how modules could be used in their daily workflow. Additionally, we were able to determine some of the challenges that needed to be tackled as we designed the modules.

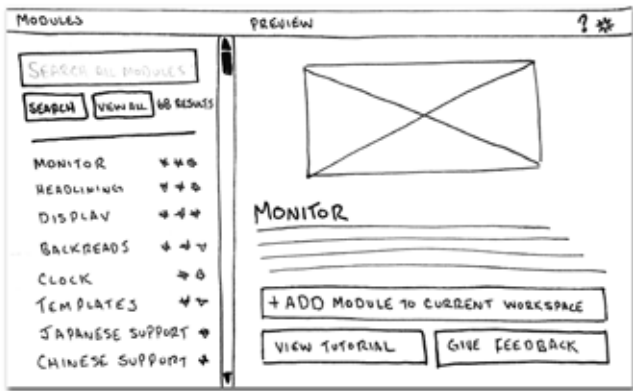
First, high flexibility and low maintenance were important for users when setting up their modules. Users had different initial preferences and there are many situations that arise during their days that take them out of their normal workflows. The framework needs to be able to accommodate the one time tasks just as efficiently as it can the standard tasks. Additionally, we learned that the modules need to be tightly connected with seamless flow of information among them.

## Design Direction

Based on this research, we moved forward with our modular framework. While we were initially going to design the framework to set up workspaces and add modules, after further discussion, we determined that this will be highly dependent on the framework chosen for implementation. We will leave that up to the design direction of the larger framework being used, whether it is launchpad, B2, or some other implementation.

Another critical decision made from this research is that manually linking is not the best way to set up the communication between modules. While we want to provide flexibility, we realize that the overhead and confusion of connecting all of the modules is too burdensome. The modules will be connected to each other by default and multiple instances of each module will not be allowed. To accommodate the flexibility needed, some modules, like the monitor and display modules will be tabbed. These tabs can be pulled out into their own windows for side by side viewing. The information flowing from the module will be determined by the last active tab.

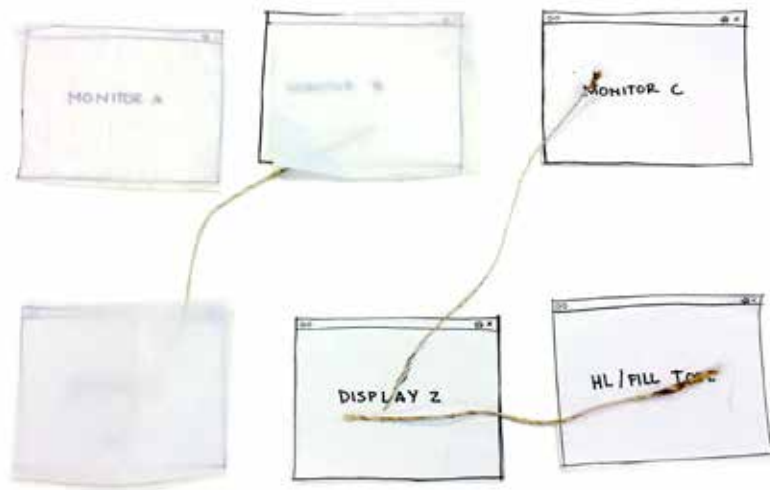




This is a module



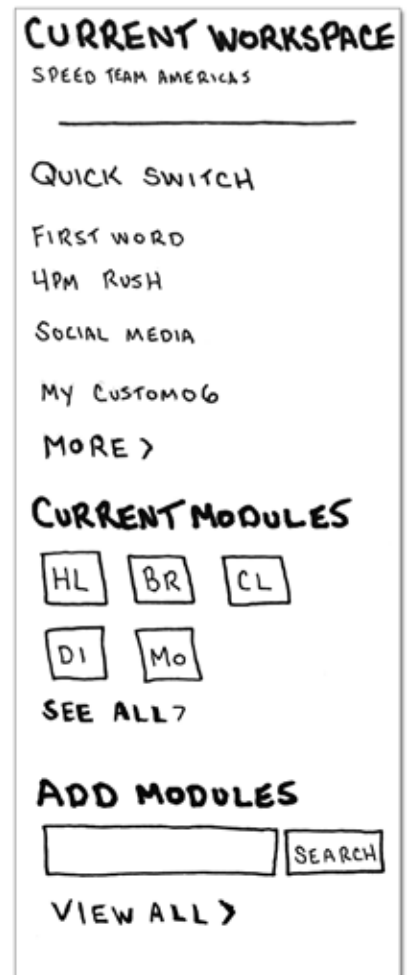
This is a module



This is a module



This is a module



This is a module

# LOW FIDELITY CLICK-THROUGH PROTOTYPE

*Editors are used to their current toolset and had some initial hesitation about breaking out their current functionality into separate modules. We wanted to create a prototype to test the impacts of separating out the display, monitor, and headline functionalities.*

## METHODS & PARTICIPANTS

We created a prototype using Axure and tested in the Bloomberg usability lab with 6 participants. Our participants included 2 members of the Social Media Monitoring team, 2 members of the Speed Desk, 1 member of the First Word team, and 1 international office editor in London. Our testing consisted of asking users to perform a think aloud with a set of tasks and an interview for feedback. During our task analysis, we asked editors to write headlines in two conditions and timed them to determine which configuration was faster.

## Findings

News editors writing headlines currently use a tool that has most of their core functionality in one location. In our proposed solution, all of the functionality would be broken into components that could be positioned right next to each other. This would allow editors to see the monitor and display at the same time, but we didn't want to sacrifice speed that might be gained from having everything in closer proximity. We tested headlining under two conditions to see if there was a significant difference in the time it took to write headlines. The first condition was having the story display open over the monitor, and the second was to have it pop up beside the monitor. We found that there was no notable difference.

We also took note of things that editors mentioned needing to have in their toolset. Users referenced a lot of detailed interactions that they used now like highlight text to copy to headline box and keyboard shortcuts. They also referred to "muscle memory" to explain that many of those things come as second nature to them and make them faster. Another theme was that different teams have different needs. This is something we were already aware of, but as they described the features they wanted, this was re-confirmed.

## Design Direction

Based on the feedback we received, we decided that it was a good decision to separate the monitor and the display module into two separate modules. There was no speed difference and this gave the advantage of allowing editors to continue to monitor incoming stories as they headlined from the display. We also decided to implement a few keyboard shortcuts to help editors work more quickly. One shortcut would bring up the name of the company based on the ticker; a second would allow them to scroll through previous headlines they had written about that story so they could use them as templates. Additionally, we suggest that all existing keyboard short cuts remain in place.

Another important decision we made was that moving forward with this project, we will focus on the headlining workflow. We understand that each team has their own needs and with the modular framework those can be accommodated in future modules. However, we focused on building out the headlining workflow because most teams do write headlines at some point during their workflows, and this scope allows us to understand our users needs and design a more robust system for them.



This is a module



This is a module

# MEDIUM FIDELITY WEB PROTOTYPE

*We focused our efforts for this project on the headlining workflow. We started our testing by looking into the three primary modules that are required: Headline Module, Display, and Monitor. We built out each of these to get feedback on how we can improve the primary functions of editors' jobs before expanding to more modules.*

## METHODS & PARTICIPANTS

We created a web-based prototype with HTML, CSS, and Javascript to test our concept. We tested 8 members of the breaking news team in Bloomberg's usability lab. The participants included 5 members of the New York Speed Desk, 1 member of the New York First Word team, and 2 international Breaking News team members from Tokyo and Copenhagen. Our testing methods included asking participants to think aloud as they performed specific tasks and also interviewing participants for feedback periodically during the tasks and at the end.

## Findings

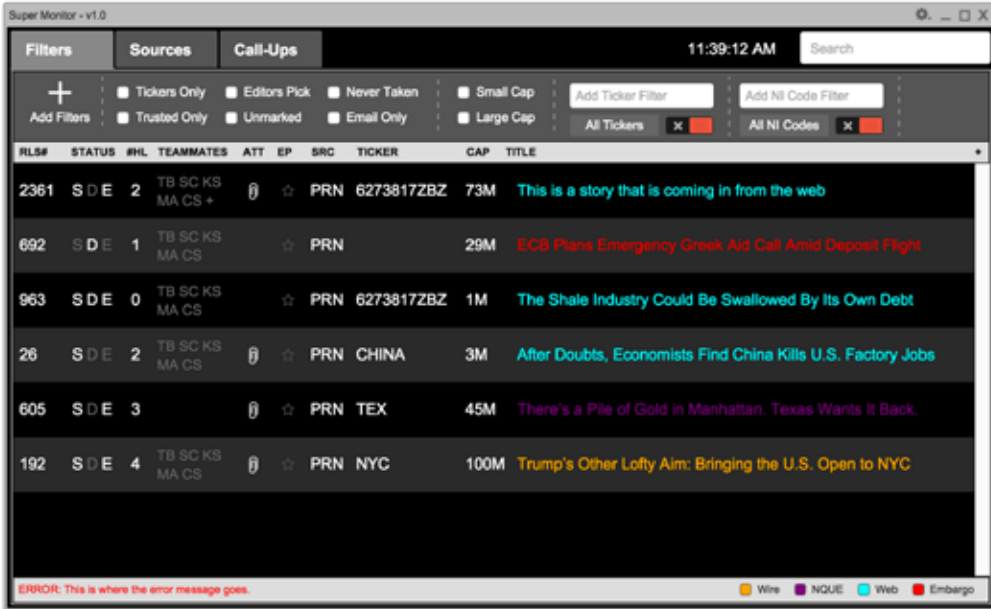
We received feedback on our three main modules from task testing and interviews. In the monitor module, we had tabs that would change the task bar at the top of the screen. One of those tabs was for changing sources that flowed into the monitor, but we got feedback that people did not really do that very often. We also had ticker filters on the task bar, but discovered that the only reason people used that was for call ups. In the display module, we learned that editors wanted to be able to navigate between previous stories. This is helpful when they are interrupted to headline a more important story and then need to go back and finish the story they were previously working on. In the headline module, many thought the space below the line separating the first 64 characters was a separate text box for fills. Additionally, we observed that no one changed the wire for the stories they were sending and when asked, most indicated that the current tools were set up to send to specific wires and they did not change that.

In this testing, we also showed users a static mock-up of the assignments module to get feedback on that before building it out. This module will fulfill the current need for call-ups. We learned that editors want to choose which stories they open from that ticker instead of forcing the first one to open. We also learned that a more obvious alert system needs to be implemented.

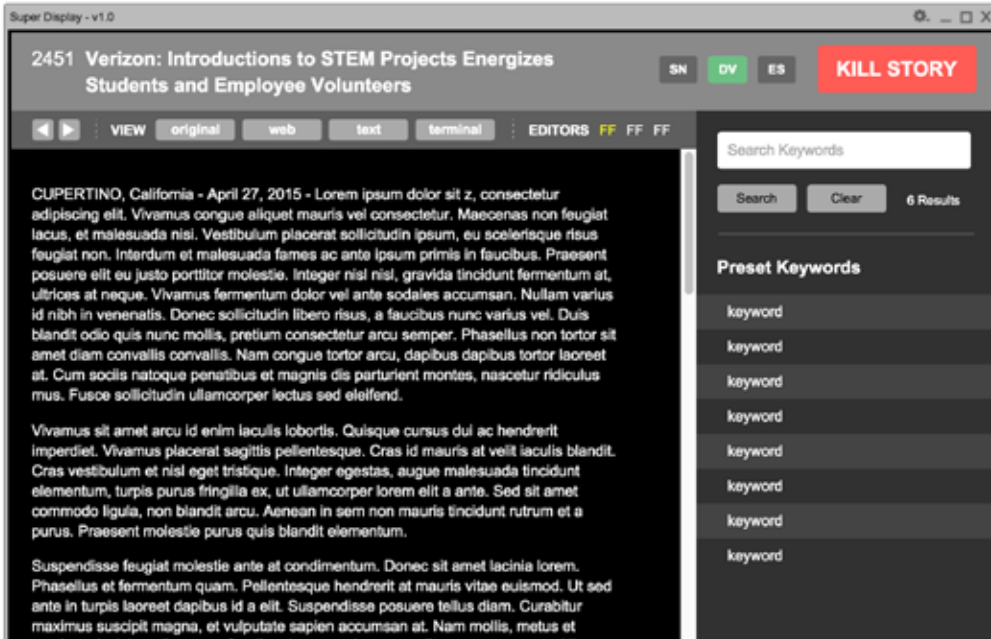
## Design Direction

In the monitor, we removed the sources tab and made that a less prominent button since people do not need to change sources frequently. We changed the tabbing system to allow people to open new monitors that can be filtered. We also removed the ticker filter in favor of custom filters that will provide flexibility while staying consistent with the rest of the filtering system. To accommodate the desire to navigate between stories in the display, we implemented a tabbing system in that module as well. All tabs can be pulled out into separate windows. In the headlining module, we removed the line to indicate the end of a headline and added a character count instead. We also removed the wire selection from the screen. This can be done in the settings since it does not change very often.

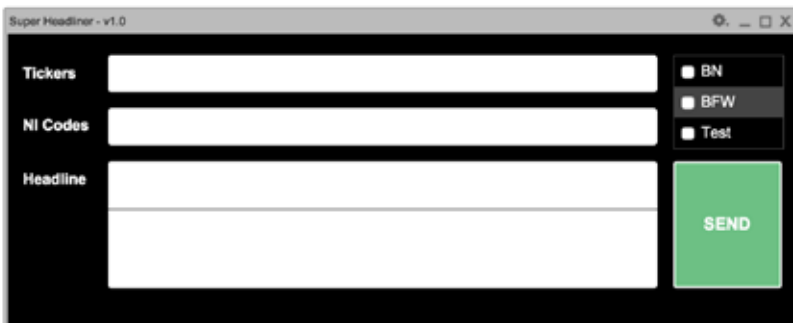
We moved forward with the assignments module based on the feedback we received. After positive feedback, we decided to have the ability for editors to see all of the stories filtered by ticker in the assignments module. For alerts, we implemented a red bar with a story title that will appear at the top of the display module. Clicking on that bar will open the story in a new tab, and if multiple stories come in at once, tickers will appear on that bar that can be clicked to open the newest story in a tab. On the monitor, all of the stories associated with assignment tickers will turn red, and a red bar over the ticker in the assignments module will also light up.



This is a module



This is a module



This is a module

# HIGH FIDELITY WEB PROTOTYPE

*In the previous round of testing, we looked at the modules essential for doing the job of an editor. This round, we added additional modules that we believe will make the newsroom more efficient and accurate in creating headlines. We built out Sent Headlines, Assignments, and Secondary Information modules and received feedback in this final round of usability testing.*

## METHODS & PARTICIPANTS

We iterated on our web-based prototype to create a more functional HTML, CSS, and Javascript application. We tested 4 participants in Bloomberg's usability lab. The New York participants included 2 Speed Desk editors, 1 European Speed Desk editor, and 1 First Word team member. We also tested one international participant remotely from Singapore. Our testing included a section where we asked users to perform a think aloud on specific tasks, an interview, and a simulated real-world experience to see how the prototype performed under more realistic scenarios.

## Findings

Watching the simulated rush experience, we noticed a few things that were not working most efficiently for editors. First, editors tried to set up their workspaces with some of the secondary modules beside each other. This was a problem with the sent headlines module because the minimum width prevented it from being small enough to fit beside most other modules. We also observed that most editors did not notice the automated headlines when using the sent headlines module. Additionally, during the simulated rush, we noticed editors only used the bar on the display and the monitor to look at the assigned stories that came in, and did not reference the assigned stories module. Lastly, we saw that when a story was killed and editors needed to headline from it, the process was not very smooth. If it was killed while they had the story in the display, they did not try to revive it before headlining from it. If they found it in the killed stories tab in the monitor, they had to revive and then find it again in the other tabs of the monitor before headlining from it.

We also received feedback from interviews with participants. We realized that even though we did not see them use the ticker filters on the assignment module to look at stories, there are situations where they would need to go back to that for reference. For the sent headlines module, we discovered that knowing the difference between automated headlines and editor produced headlines at a glance was important. We also learned that editors assigned codes and tickers to stories in bulk, so it would be beneficial to have a mode to add codes to more than one story at a time. Finally, we heard that there was too much space between the display and the headline module.

## Design Direction

Based on the feedback we received, we made adjustments for our final design. We made the assignments module have a collapsible side panel so that editors could go back to it if needed but could preserve screen space when they were not using it. We also accounted for the feedback in the sent headlines module by color coding the automated headlines and changed the NI code button to a multi-select with one button to change multiple stories at once instead of individual buttons on each line. We also adjusted the minimum size of the module to be half the size of a standard newsroom vertical monitor allowing editors to place modules side by side. To account for the desire to have the display and headline box closer together, we decrease the size of the top bar on the display which will allow editors to put the headline module on top of the display module and keep them in close proximity. Finally, we allowed editors to send headlines from killed stories without reviving them. This will allow editors to open a story from the killed stories tab and write headlines without needing to move it to the main monitor and then find it in that tab to headline.

Super Info - v1.0

### AAPL Apple Inc.

USD ▲ 132.09 2.45(+1.69%) Volume 54,222,859

High 132.97 Low 130.70 Open 131.00 Prev 129.62

▼ DES

Apple Inc. designs, manufactures, and markets personal computers and related personal computing and mobile communication devices along with a variety of related software, services, peripherals, and networking solutions. The Company sells its products worldwide through its online stores, its retail stores, its direct sales force, third-party wholesalers, and resellers.

Mkt Cap (USD) 725,140.8M

Shares Out/Float 5,761.0M/5,757.9M

Earnings Release After market 07/21/15

Fiscal Year Ends September

Website [www.apple.com](http://www.apple.com)

Headquarters Cupertino, CA, United States

Management  
CEO: Tim Cook  
CDO: Jony Ive  
CFO: Luca Maestri

Top Holders  
Vanguard Group Inc (5.85%)  
Blackrock (5.67%)

▼ EEO

	03/15 Q2 ACT	06/15 Q3 ACT	09/15 Q3 Y
EPS Adjusted	\$2.12 (36)	\$1.67 (36)	\$8.62 (47)
EPS GAAP+	\$2.12 (36)	\$1.67 (36)	\$8.62 (38)
Sales	\$55.9B (35)	\$46.8B (35)	\$226B (43)
Gross Margin %	40.779 (30)	39.477 (35)	40.291 (35)
FFO Per Share	-	-	-

▼ GUID

ANNOUN.	MEASURE	REPORTED	SOURCE
4/27/2015			
Q3 2015	Sales	46B to 48B	Apple Q2 Results
Q3 2015	Tax Rate	26.3%	Apple Q2 Results
Q3 2015	Gr. Margin	38.5% to 39.5%	Apple Q2 Results

► DVD

► NOTM

This is a module

Sent Headlines - v1.0

523 Salesforce Announces Fiscal 2016 First Quarter Results EDIT NI

SENT HEADLINES	BY	TIME
CRM Q1'16 REV \$1.5B	*A	
CRM GOAL TO REACH \$10B REV	*A	
*SALESFORCE ANNOUNCES FISCAL 2016 FIRST QUARTER RESULTS	ME	12:11:07

This is a module

Super Assignments - v1.0

### My Assignments

Add Ticker  ADD

All My Assignments

- AAPL (2)
- GOOGL (0)

### Team Assignments

- DAL SC
- BOX FE | SC

### Assignments Feed

Search Stories

RS#	TITLE
692	Apple suppliers said to start making phones with force touch
1156	Apple Releases 2Q Earnings Report



Small Cap    Large Cap    More Filters   Search by title, ticker, & more  
 Medium Cap    Clear All Filters   Search Stories

**TITLE**

- Google Inc. Announces First Quarter 2015 Results
- Fitch Affirms Samsung Electronics at 'A+', Outlook Stable
- ITC Staff Endorses Clearing Samsung, Qualcomm in Nvidia Case
- GoPro Slips as Citigroup Cuts Outlook for Camera Maker
- IBM Pushes Networking and Research to Catch Rivals in the Cloud
- NBA's Adam Silver Becomes Duke University Trustee
- Tesla Narrows Decline After Disputing Model 3 Delay Report
- Abercrombie Surges as Jefferies Sees 'Bottom Near' for Retailer
- Manchester United Announces Refinancing of Senior Secured Notes
- Facebook RELEASES 4Q EARNINGS

Wire    NQIE    Web    Embargo

884 Google Inc. Announces First Quarter 2015 Results SN DV ES **KILL STORY**

plaintext    original    web   EDITORS ME TB SC KS

**Preset Keywords**  
 billion  
 copyright  
 damages

compared to \$3.82 billion in the third quarter of 2013.

- GAAP EPS (including impact from net loss from discontinued operations) in the third quarter of 2014 was \$4.09 on 688 million diluted shares outstanding, compared to \$4.38 in the third quarter of 2013 on 678 million diluted shares outstanding. Non-GAAP EPS in the third quarter of 2014 was \$5.63 compared to \$5.63 in the third quarter of 2013.
- Non-GAAP operating income and non-GAAP operating margin exclude stock-based compensation (SBC) expense. Non-GAAP net income and non-GAAP EPS exclude SBC expense, net of the related tax benefit, as well as net income (loss) from discontinued operations. In the third quarter of 2014, non-GAAP operating income, non-GAAP operating margin, non-GAAP net income, and non-GAAP EPS also excluded an impairment charge of \$378 million related to a patent licensing royalty asset acquired in connection with the purchase of Motorola.
- In the third quarter of 2014, the expense related to SBC from our continuing operations and the related tax benefits were \$1,255 million and \$258 million compared to \$856 million and \$200 million in the third quarter of 2013. In addition, net loss from discontinued operations in the third quarter of 2014 was \$185 million, compared to \$193 million in the third quarter of 2013.

On January 29, 2014, we entered into an agreement with Lenovo Group Limited providing for the disposition of the Motorola Mobile business. Financial results of Motorola Mobile are presented as "Net income (loss) from discontinued operations" on the Consolidated Statements of Income for the three and nine months ended

786,320  
 Prev 560.22

Sent Headlines - v1.0

884 Google Inc. Announces First Quarter 2015 Results EDIT NI

SENT HEADLINES BY TIME

Super Headliner - v1.0

Tickers  BN BFW  
 NI Codes





# FINAL PRODUCT

*After four stages of design, testing, and analysis we were able to refine our prototype to its final, fully-functional version. News Mods, our final product, is a collection of interconnected modules that are created to streamline the Breaking News team's workflow through simplified keyboard and mouse interactions, by eliminating unnecessary tasks, and by creating a system of modules that share and use information from one another.*

*Top To Bottom: A news editor in NYC, a news editor in London, Ascend teleconferencing with our client*

# PRODUCT OVERVIEW

## INTRODUCING NEWSHUB

In order to gain a full understanding of the complex workflow and processes of the Bloomberg Breaking News Team we had to observe their work where it happens. We began by visiting Bloomberg News' office.

**Super Monitor - v1.0** 7/16/15 4:04:10 PM

My Stories | Killed Stories

Editors Pick | Never Taken | Packet | Small Cap | Large Cap | More Filters

SRG | Unmarked | No Ticker | NEERN | Medium Cap | Clear All Filters

ID	STATUS	SP	TEAM	ATT	SP	SRC	TICKER	CAP	TITLE
27	SDE	0		PRN	FB			245B	Zuckerberg to step down as Facebook CEO
6	SDE	0		PRN	ORCL			172B	Oracle Recognizes Marketing All-Stars at the 2015 Markie Awards
332	SDE	0		PRN					Yellow Watermelons Are The New It Fruit
5	SDE	0		PRN	ORCL			172B	Oracle Recognizes Marketing All-Stars at the 2015 Markie Awards
4	SDE	0		PRN	ORCL			172B	Oracle Recognizes Marketing All-Stars at the 2015 Markie Awards
3	SDE	0		PRN	ORCL			172B	Oracle Recognizes Marketing All-Stars at the 2015 Markie Awards
456	SDE	0	TB SC KR MA CS	BUS	ORCL			175B	Oracle CEO Larry Ellison Buys Mansion in Palo Alto
523	SDE	2	MA	PRN	CRM			44B	Salesforce Announces Fiscal 2016 First Quarter Results
7000	SDE	0	TB SC KR MA CS	PRN	MCD			100B	McDonald's Raises Quarterly Cash Dividend By 5%
87	SDE	0	TB SC KR MA CS	PRN	FB			245B	Brand Networks Honored With Facebook 2015 Innovation Award
1000	SDE	0	TB SC KR MA CS	PRN	INTC			145B	Intel Foundation To Help Refugees in Africa
2033	SDE	1	METE TB SC KR MA CS	BUS	PG			215B	Moody's Affirms Procter & Gamble Aa3/Prime-1 Ratings
1005	SDE	0	TB SC KR MA CS	PRN	INTC			145B	Intel Reports First-Quarter Revenue of \$12.8 Billion, Consistent with Revised Forecast
4224	SDE	0	TB SC KR MA CS	PRN	JPM			250B	JPMorgan, Dexia Agree to Settle N.Y. Mortgage Bond Lawsuit
2225	SDE	0	TB SC KR MA CS	PRN	MSFT			370B	Microsoft and Oculus Are Gearing Up on Playstation
884	SDE	0	METE TB SC KR MA CS	PRN	GOOG			370B	Google Inc. Announces First Quarter 2015 Results
340	SDE	0	TB SC KR MA CS	PRN	ARO			98M	Aeropostale Needs to Bring Back Shoppers or Go Private: Real M&A
4679	SDE	0	TB SC KR MA CS	PRN	YELP			3B	Yelp Launches Three New Game-changing Products
2944	SDE	0	TB SC KR MA CS	PRN	NFLX			39B	Netflix Exits Netflix With Profit of at Least \$1.6 Billion
9275	SDE	0	TB SC KR MA CS	PRN	FB			250B	Facebook RELEASES 4Q EARNINGS
8308	SDE	0	TB SC KR MA CS	PRN	MANU			3B	Manchester United Announces Refinancing of Senior Secured Notes
1983	SDE	0	TB SC KR MA CS	PRN	ANF			2B	Abercrombie Surges as Jefferies Sees 'Bottom Near' for Retailer
963	SDE	0		PRN	TESL			34B	Tesla Narrows Decline After Disputing Model 3 Delay Report
8000	SDE	0	TB SC KR MA CS	PRN	NBA			10B	NBA's Adam Silver Becomes Duke University Trustee
390	SDE	0	TB SC KR MA CS	PRN	IBM			162B	IBM Pushes Networking and Research to Catch Rivals in the Cloud
192	SDE	0	TB SC KR MA CS	PRN	GPRO			7B	GoPro Slips as Citigroup Cuts Outlook for Camera Maker
605	SDE	0	ME	PRN	NVDA			11B	ITC Staff Endorses Clearing Samsung, Qualcomm in Nvidia Case
26	SDE	0	TB SC KR MA CS	PRN	S			188B	Fitch Affirms Samsung Electronics at 'A-'; Outlook Stable
2361	SDE	0		PRN	BOX			2B	Box Advances Enterprise Collaboration in the Cloud With Microsoft Office

ERROR: This is where the error message goes.

Wire | NOUE | Web | Embargo

**Super Display - v1.0**

ARO-340

### 340 Aeropostale Needs to Bring Back Shoppers or Go Private: Real M&A

plained | original | web | EDITOR

Aeropostale Inc. lost 95 percent of its value in five years, a **buyout**. Mounting losses and 11 consecutive quarters of price drops have left the retailer's stock price at \$1.95 a share, near a 13-year low. If the price drops further this year than last and only one of more than a dozen retailers to announce a buyout during the back-to-school shopping season, which begins next week, the clothing chain will be in a difficult position.

If the \$155 million retailer doesn't win back customer loyalty and stop losing money in stomaching Aeropostale's challenges.

"What we need to see are certain changes begin to take place," says analyst for Guggenheim Securities, said in a phone interview. "Are there other options out there for us?" A representative for the company says that he feels confident Aeropostale "will survive."

"Back-to-school is coming, and we're so enthusiastic about it."

#### Few LBOs

Aeropostale for years was considered one of the most likely candidates for a buyout when private-equity firms were in buying mode. Top private-equity firms are focused on exiting investments, and those that remain are looking for high-growth opportunities.

For investors still hoping for a buyout offer, there is a bleak revenue forecast for this year, according to analysts. The current stock price is a bargain, but it's not clear if there are more firms than Aeropostale. Earlier this year, Jefferies & Company advised the company to offer a more aggressive LBO analysis because the company is posting operating losses.

#### Sycamore Stake

Sycamore Partners, a private-equity firm known for its work in the retail sector, has a stake in the company.

**Super Headline - v1.0**

Tickers: PG

NI Codes: BFW;200

Headline: P&G says ratings will be supported by brands

**Sent Headlines - v1.0**

2933 Moody's Affirms Procter & Gamble Aa3/Prime-1 Ratings

SENT HEADLINES

\*MOODY'S AFFIRMS PROCTER & GAMBLE AA3/PRIME-1 RATINGS

7/16/15 4:34:05 PM

Search Keywords

Clear

Preset Keywords

- buyout
- discount
- loss
- lost
- million
- stock

...ers or Go Private: Real M&A

...ers. To keep it from falling further, it needs a successful back-to-school season or ... of falling same-store sales have dragged down the teen retailer's shares to ... to below \$1, the stock could be in danger of being delisted. Revenue forecasts look ... an 20 analysts is bullish. Aeropostale Chief Executive Officer Julian Geiger says the ... month, is when the company's turnaround efforts should come to fruition. Timed to ... changing up its collection of merchandise.

...ers, its last best hope may be to find a private-equity firm that sees a way to make ...

... work and gain some traction with shoppers," Howard Tubin, a New York-based ... interview. "If it doesn't, the board's going to have to realistically say, 'What are the ... New York-based Aeropostale declined to comment. CEO Geiger said on a May ... ll be in a position to win" because of the changes the company has made.

...ic about seeing the results that it will bring," he said.

...ost likely leveraged **buyout** candidates in the retail industry – and that was back ... day, though, LBOs of publicly traded companies are few and far between. **Buyout** ... that are buying are eschewing public targets for cheaper, private ones and carve-

...one data point in their favor: Aeropostale is valued at a 90 percent discount to even ... ing to data compiled by Bloomberg. That means if it can stage a comeback – at least ... s. Still, it can be argued that there are more appealing public candidates for **buyout** ... Group's Randal Konik flagged other clothing stores such as Guess? Inc. and Michael ... than 20 percent return to a financial buyer. The analyst left Aeropostale out of his ... rating losses.

...targeting slumping retailers, took a stake in Aeropostale but stopped short of a

Super Info - v1.0

PG Procter & Gamble Company (The)

USD ▲82.35 0.19(+0.23%) Volume 5,579,734

High 82.55 Low 82.10 Open 82.45 Prev 82.15

▼ DES LAUNCH

Apple Inc. designs, manufactures, and markets personal computers and related personal computing and mobile communication devices along with a variety of related software, services, peripherals, and networking solutions. The Company sells its products worldwide through its online stores, its retail stores, its direct sales force, third-party wholesalers, and resellers.

Mkt Cap (USD) 725,140.8M

Shares Out/Float 5,761.0M/5,757.9M

Earnings Release After market 07/21/15

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Headquarters Cupertino, CA, United States

Management CEO: Tim Cook  
CDO: Jony Ive  
CFO: Luca Maestri

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Blackrock (5.67%)

▼ EEO LAUNCH

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EPS GAAP+	\$2.12 (38)	\$1.67 (38)	\$8.62 (38)
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Gross Margin %	40.779 (30)	39.477 (35)	40.291 (35)
FFO Per Share	-	-	-

▼ GUID LAUNCH

ANNOUN.	MEASURE	REPORTED	SOURCE
4/27/2015			
Q3 2015	Sales	468 to 488	Apple Q2 Results
Q3 2015	Tax Rate	26.3%	Apple Q2 Results
Q3 2015	Gr. Margin	38.5% to 39.5%	Apple Q2 Results

▼ DVD LAUNCH

DECL.	EX DATE	RECORD	PAYABLE	AMT.	TYPE
7/23/15	8/13/15	6/13/15	8/13/15	.52 (USD)	Forecast
4/27/15	5/07/15	5/07/15	5/07/15	.52 (USD)	Reg. Cash
1/27/15	2/05/15	2/05/15	2/05/15	.47 (USD)	Reg. Cash
10/20/14	11/06/14	11/06/14	11/06/14	.47 (USD)	Reg. Cash

▼ NOTM LAUNCH

Main competitors are Avon and Colgate-Palmolive.

BN  
BPFV

+

ported by consumer Samsung,

145 CLEAR

SEND

Super Assignments - v1.0

My Assignments

Add Ticker ADD

All My Assignments

- GOOGL (0)
- VZ (0)
- AAPL (0)

Team Assignments

DAL	SC
BOX	FE   SC
IBM	AR
PIH	RT
JOBS	VD
EGHT	WE

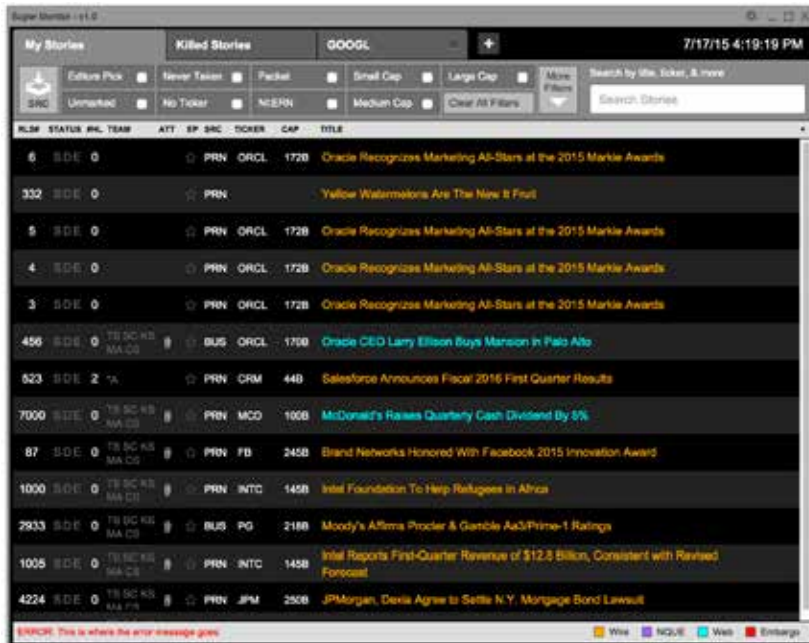
Time-1 Ratings

EDIT NI

BY	TIME
ME-1 RATINGS	ME 16:01:36

# FEATURE WALKTHROUGH MONITOR MODULE

The monitor block is a centralized stream of information from different sources and offers a set of customizable views that can be easily searched and filtered.



Modules are Cool

## Features

### SEARCH

A live search of stories based on any of the columns present in the current monitor, such as title, company ticker, or source. Results are shown instantly in the main table as the user types. Users can also use the search box to quickly open a story by release number.

### FILTERS

Allows editors to refine the information shown on the monitor with on/off checkboxes. The ability to have different tabs with the same sources and different filters gives more flexibility to users and allows them to distill information faster.

### TABS

Tabs allow users to have a set of different views of the monitor. Each tab is customized to have their own sources of information, filters, columns, and search. Tabs can be pulled out to create separate simplified monitor windows and let editors monitor multiple filtered streams simultaneously.

### KILLED STORIES TAB

The Killed Stories tab shows previously killed press items from all tab. Gives the option to quickly make an action based on the killed story, or revive it for reinsertion into the main feed.

### COLUMNS

Columns on the monitor can be customized to suit a variety of use cases and workflows. Users can add, remove and reorder columns on demand to accommodate their current workflow.

### SOURCES

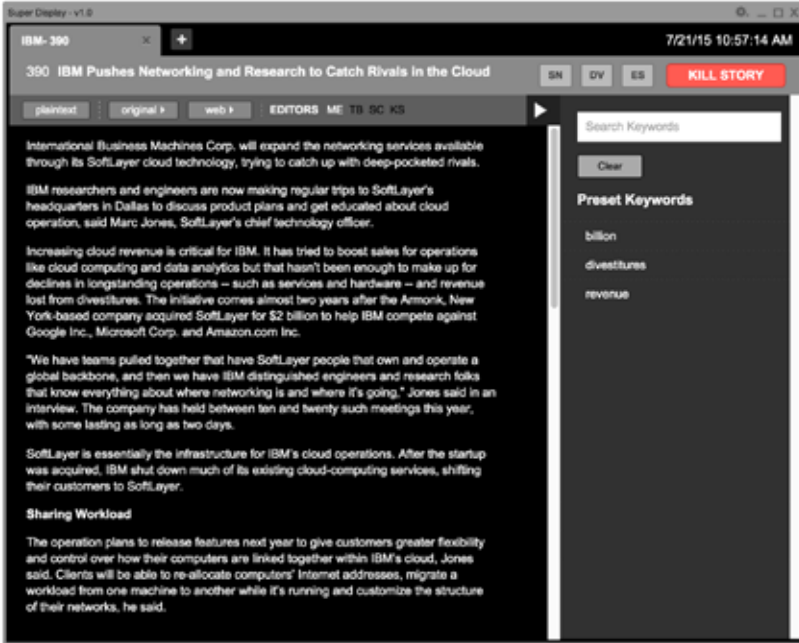
Each tab on the monitor can have different sources of information. Users can customize their monitors with multiple sources including press releases from the wires, NLRT, and NQUE.

## Additional Usage

To extend functionality the monitor can act as a centralized source of incoming information across teams and workflows by integrating additional external and internal sources such as social media or Bloomberg channels.

# FEATURE WALKTHROUGH DISPLAY MODULE

The Display module shows the main content of selected stories, provides search functionality and the ability to input selected text directly into the Headline module.



## Features

### TABS

Multiple display tabs can be created, each tab with different content. Tabs in the display allow editors to quickly switch back and forth between content without losing their place when they need to work on multiple stories at the same time. The active tab is the tab that is currently linked to all of the other modules. When a tab is pulled out of the display, it's content becomes static and can not be changed.

### CONTENT FORMAT

A plaintext button eliminates all media content allowing for quicker scanning. The original button shows content as received in formats such as web content or PDF files.

### ALERTS

Alerts notify the editor that a story has arrived which is labeled with one of the tickers added to the my assignments section of the assignments module.

### SEARCH

Allows for search via phrases or preset keywords. As phrases are typed in the search field, matches in the body of the story are highlighted. Editors can also configure a set of global preset keywords. Found preset keywords for a particular story are shown in the side panel and clicking on them highlights it in the body text.

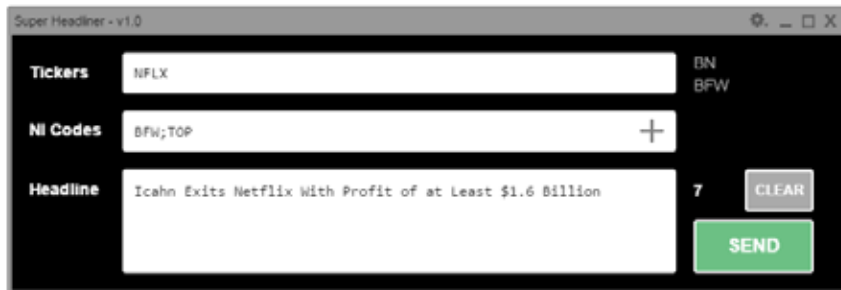
## Additional Usage

The status buttons next to the kill story button can be customized depending on each team's workflow and key markers that indicate if a story is "finished". (e.g. international offices can use English and Local Language buttons to indicate which headlines have been sent).

As the quality and number of automated headlines increase, sections of the displayed text which have been used to form headlines automatically can be highlighted.

# FEATURE WALKTHROUGH HEADLINE MODULE

*Sending headlines to wires is quick and efficient with powerful keyboard shortcuts and a coding generator that allows editors to optimize the way they send headlines.*



## Features

### NI CODE GENERATOR

With the NI Code generator, users can build NI codes via a set of checkboxes they can select from. This allows them to quickly code headlines without having to recall all of the possible codes.

### COMPANY NAME

The headline field includes the shortened name of the company as the first word of a headline by default, saving editors time retyping and compressing the company name.

### CHARACTER COUNT

The first line of the headline field can fit exactly 63 characters of the modern English alphabet. Additionally, a character count shows how many characters they have left. For other language characters (e.g. kanji) that does not fit the first line, a red highlight marks the characters that will get cut off by the character limit.

### PREVIOUS HEADLINES

Using the up and down arrows on the keyboard, users can quickly scroll through their previously sent headlines from the active content. This allows them to have fast access to reuse old headlines as templates.

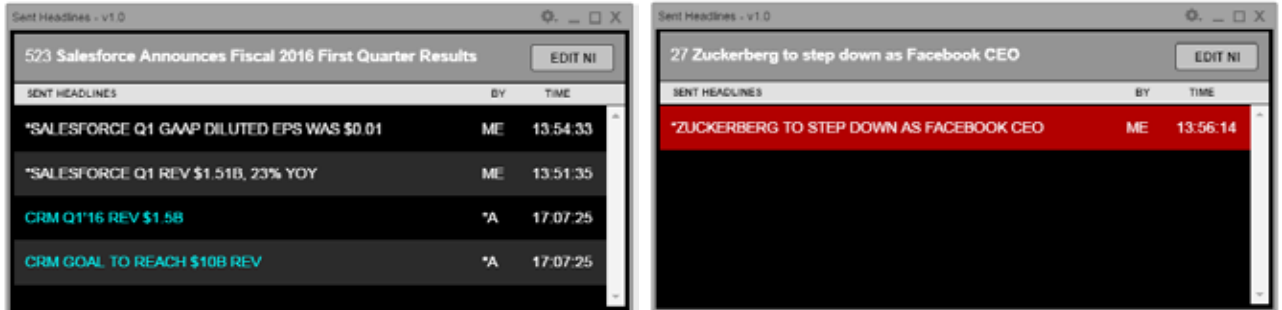
## Additional Usage

Future versions of the headline module should consider integrating a templating module with autofill capabilities (similar to an IDE or text editor) and support for sending multiple bundled headlines simultaneously. A consideration can be given to potentially having a way to unlink the headlining module to make it a standalone for instances where editors need to headline from a sources that are not flowing through the monitor (e.g. the television or a message).

# FEATURE WALKTHROUGH

## SENT HEADLINES MODULE

Based off of content in the active display tab, the module offers fast access to what headlines have already been written to assist in avoiding duplication.



## Features

### HOT HEADLINES

Any headlines marked as hot will be highlighted in red in the Sent Headlines module as a quick indicator to users that the headline they just sent has successfully been marked as hot. This can also help users quickly realize an error has been made if they did not intend to send a hot headline or if an important story has not yet been marked as hot.

### AUTOMATED HEADLINES

In addition to displaying headlines sent by other team members, automated headlines are easily distinguished with a different color and the initials “\*A”.

### EDIT NI CODES

The NI code for all headlines tied to a specific content can quickly be viewed and edited by clicking the Edit NI Codes button.

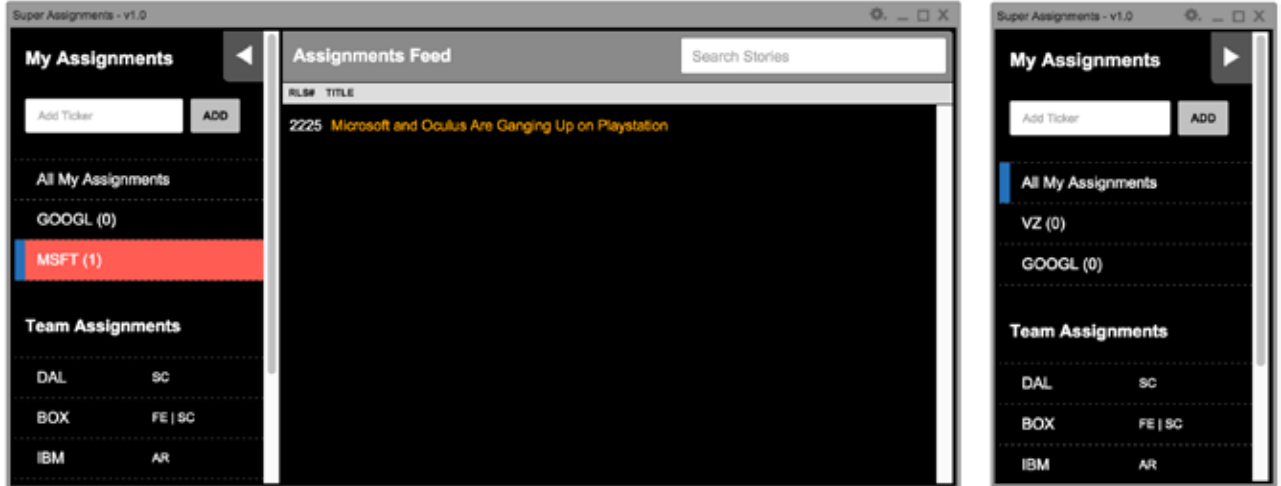
## Additional Usage

Future iterations could include the ability to issue corrects by allowing editing, sending a correct, and deleting old headlines all at once.

# FEATURE WALKTHROUGH

## ASSIGNMENTS MODULE

The assignments module allows editors to manage and receive alerts from their assigned companies, as well as view the team assignments.



## Features

### MY ASSIGNMENTS

Users can easily add and remove company tickers to this list to set alerts when content with the corresponding ticker is received.

### FILTERED VIEWS

In addition to seeing content related to all of their assignments, users can click on specific tickers to filter content specific to that ticker.

### ACTIONABLE ALERTS

When content with any of the tickers on the My Assignments list comes in, a red, flashing bar will appear at the top of the display module with the title of the content. A user can click on the bar to open the content on a new display tab. Additionally, the ticker in the My Assignments list will flash red and the content in the monitor will be highlighted red. (visible on the display on pg. 30)

### TEAM ASSIGNMENTS

Team Assignments shows a list of all the expected company tickers along with the initials of the editors who have been assigned to them. If team members need help, others can quickly click a listed ticker to access a feed filtered by that ticker.

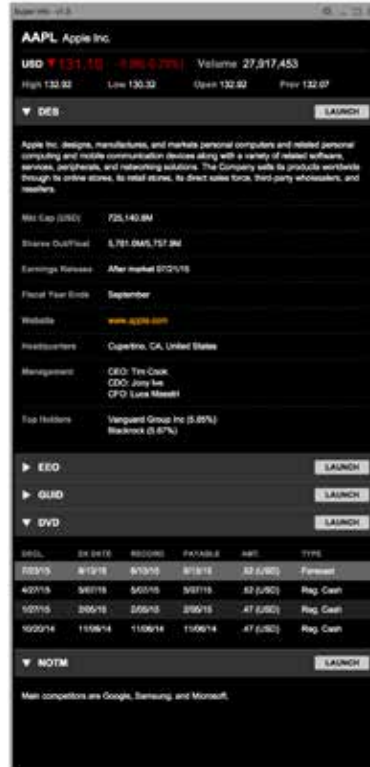
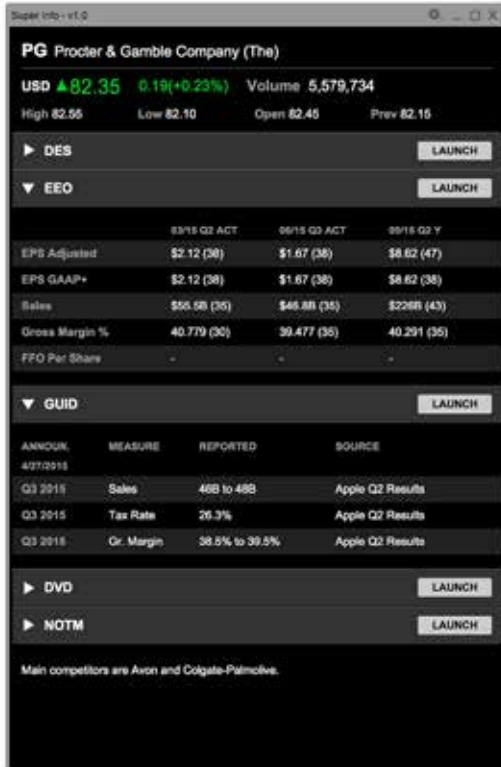
## Additional Usage

A potential feature is the ability for the person in charge of assignments to add tasks to other editors' lists rather than each person having to input their own assignments. Ideally, users will be able to add not only ticker-based assignments, but also by NLRTs, events or keywords. The assignments module could be the basis of a more robust productivity tool that can be used by all the breaking news teams to track progress across teams and stories.



# FEATURE WALKTHROUGH SECONDARY INFO MODULE

A synthesized version of the main terminal functions that are constantly accessed by editors as part of their research. Editors can customize the information shown, copy values to their headlines, and launch the function in the terminal.



## Features

### CUSTOMIZABLE

To accommodate the different workflows of the different teams, users can select which functions they want to integrate to their secondary information to better assist them in their job. Additional panels can be added to display selected portions of other terminal functions.

### CLICK TO ADD

Users can click on values from the secondary information module to directly populate figures into the headlining module.

### TERMINAL ACCESS

Quick access to the terminal functions is available in one click. Clicking the link will allow access to the selected function for the ticker of the currently active story.

### INSTANT UPDATES

The module updates automatically to display information of the active display.

## Additional Usage

A potential feature of the secondary information module is to learn what external content users access the most and dynamically present them with relevant information depending on the content they are working on. Click to Add could be enhanced to populate not only values, but also predefined templates for each figure.



# FUTURE SUGGESTIONS & CREDITS

*Following our research phase, we will be relocating to New York City where we will be working out of Bloomberg's Global Headquarters. Over the course of the summer semester, we will select a vision to pursue and iteratively design an application that will improve the speed and accuracy of the Bloomberg Breaking News team.*

*Top to Bottom: User testing in the NYC Bloomberg offices, The Bloomberg building in NYC, more user testing*

# EXTENDING FUNCTIONALITY SUGGESTIONS FOR THE FUTURE

*We designed our framework to be flexible enough to expand usage in the future. For the short term, we've created a list of possible modules to build out next along with offering suggestions on how to prepare for a future with improved automations. For the long term, we've outlined how those automations will play an expanded role in the newsroom, shifting editors to a more supervisory role.*

## The Near Future

### ADAPT MODULES FOR ADDITIONAL TEAMS

The current design is tailored to the Speed team, but it is made to be flexible. As previously outlined, each module is highly customizable and can be tailored to the needs and workflows of the various teams. We anticipate that teams would customize their modules by roles and preferred workflows so ensuring that BFW can create fills and Social Media can monitor and promote tweets is key.

### ANALYZE DATA FROM MODULES TO ENHANCE AUTOMATIONS

It is becoming increasingly crucial to support automation through machine learning. Two potential ways to bolster automation accuracy and to best utilize automation is by isolating data points that are frequently used (e.g. revenue, earnings, dividend) and by studying patterns of killed stories and stories that are headlined.

By identifying frequently used data points, automations can be improved upon to more accurately headline this information. Furthermore, analyzing what stories ends up in the killed stories tab as well as what stories are headlined, automation can be improved upon by preemptively killing stories deemed unimportant and only showing stories that are relevant.

### EXTENDING FUNCTIONALITY OF CURRENT MODULES

Along with additional modules, extensions can also be introduced as add-ons to existing and future modules. Listed are a few that can be explored.

#### Language

The language extension is an easy way to switch between different languages or to handle multiple languages at once. A user can ideally be able to map out a keyboard or mouse shortcut to quickly switch languages.

#### Embargos

An embargo extension can be added into the headlining module specifically for editors and editors who handle embargoes so that they are able to schedule when headlines or fills should be sent out.

“*So wait ...  
I can plug whatever  
source I want to  
in this thing?  
That's really cool.*”

First Word Editor  
New York Newsroom

“*So wait ...  
I can plug whatever  
source I want to  
in this thing?  
That's really cool.*”

First Word Editor  
New York Newsroom

“*So wait ...  
I can plug whatever  
source I want to  
in this thing?  
That's really cool.*”

First Word Editor  
New York Newsroom



## POTENTIAL ADDITIONAL MODULES

Our modular framework offers a myriad of possibilities for utilization. In addition to the six modules we designed, we suggest exploring the following:

### Backreads

Editors would be able to quickly request a backread (particularly Hot Headlines) by sharing the headline or fill they are working on along with the related press release, story, or tweet.

### Related Stories (CN)

Headlines and news stories based off of the current active press release, story, etc. would be displayed, decreasing time spent seeking out related news and checking to see if the story has already been covered.

### Data Point Tracker

Editors would be able to see which data points have already been headlined based off a specific release (e.g. revenue, earnings per share, dividend, ect.). Once a headline is sent, the module would react accordingly to show which points still need to be covered.

### Market Reaction

A proactive market move occurs when an asset moves significantly without the Bloomberg newsroom releasing a headline or fill about a correlating event. Notifying an editor of this movement functions as an alert that something may have been missed. A reactive market move occurs after an editor has sent a headline for fill, causing an asset to make a significant move. Displaying these market moves assists in both news coverage and allowing an editor to gauge their market impact.

### Templates

Since the format of many headlines and fills are standardized, an editor can save time by having ready-to-use templates that are quickly accessible, customizable, and easy to manage.

### Productivity

Editors would be able to see at a glance what the rest of the newsroom is assigned to cover, and what tasks need to be accomplished that day. A caller or slotter would be able to assign tasks to individual editors and groups of editors based upon an event (e.g. company earnings, natural disaster, etc.) rather than a single press release, tweet, etc. Once any material related to that event manifests, it would then be automatically routed to the assigned editor. The module would also simplify handoffs when passing coverage to international teams at the end of a shift.

## The Far Future

### EDITORS AS MANAGERS OF AUTOMATED TASKS

As technologies like natural language processing and machine learning systems expand and become more accessible, the role of editors will shift into a more managerial role. These advances would allow many daily responsibilities currently handled by editors to be automated. Editors will be responsible for delegating tasks to computers and making sure all tasks have been completed, as opposed to completing the tasks themselves. The role of editors in newsrooms of the future will be to train these systems to automate both content curation and creation, and to ensure they are accurate and reliable.

# OUR TEAM ASCEND



## Stephen Cook

[designbysteve.com](http://designbysteve.com)

Stephen earned a Bachelors of Fine Arts in 2005 from the Maryland Institute College of Art where he specialized in traditional photography techniques. Prior to attending Carnegie Mellon University, Stephen spent five years at Boost Creative, a creative shop in Southwest Florida specializing in corporate branding, print design, and web design/development.



## Mohammed Abid

[moabid.com](http://moabid.com)

Mohammed graduated from Stanford University with a bachelors degree in Economics in 2013. After working as a financial analyst at Apple for a year, Mohammed transitioned to the design field by acting as both a user experience designer for a project at the Stanford d.school and a graphic design intern for Tesla Motors.



## Kaitlyn Sparks

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Originating from Georgia, Kaitlyn moved to Nashville, Tennessee to attend Vanderbilt University where she earned a bachelor's degree with a double major in Computer Science and Psychology. After graduation, Kaitlyn worked at Asurion as a program manager and a software developer.



## Cindy Saroha

[cindysaroha.com](http://cindysaroha.com)

Originally from Indonesia, Cindy moved to the the United States in 2009 to attend the University of San Francisco (USF) and earned a Bachelor's in Psychology. While at USF, she gained professional experience as a research affiliate for the Twins, Adoptees, Peers, and Siblings (TAPS) Lab.



## Tofi Buzali

[tofibuzali.com](http://tofibuzali.com)

Tofi grew up in Mexico City, where he studied Telecommunications and Electronic Systems at Tec de Monterrey. Tofi has exeperience in software development, with professional experience working at the mobile payments startup PayClip.



# CREDITS

## SPECIAL THANKS

*This project acts as our capstone for the Masters of Human-Computer Interaction program at Carnegie Mellon University. Projects are supervised by faculty mentors who guide students through the process of working with industry partners on real-world projects.*

### Special Thanks

#### OUR CLIENT

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#### OUR PARTICIPANTS

We would like to express our gratitude to all of the members of the Speed, First Word, and Social Media breaking news teams across the globe who have been so helpful and willing to take a moment from their busy days to share their knowledge of the processes they follow to create and distribute news.



“ I don't care about *Aunt Agatha*, I'm more worried about her niece who trades exotic derivatives. ”