

DESIGN PORTFOLIO
JOUR3222/DECO3500/7350

PROJECT NAME: News Bubble
GROUP NAME: Bubble Inc.

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1.0 Introduction

All it takes is an idea to change the direction of an entire industry. Traditional news systems, broadcasted via television and newspapers, are becoming less and less relevant to the younger generation of consumers. With more people owning mobile devices and personal computers, news is increasingly being consumed via the Internet and mobile applications. These new methods come with new features, which in turn have benefits and shortcomings. The act of accessing news has become more personalized, as searching the web allows us to pick and choose what to see, and hence what we are exposed to. On top of this, algorithms in search engines use past search details to determine what sort of information to show us, and we have no way of knowing what we aren't being exposed to. Now this is all fine if we're content with our generation's perspective being limited to that which they find amusing or happen to notice on Facebook or their news feed aggregating app. How are the big issues of the world to be solved, however, when this incredible source of information, the web, is used predominantly for cat videos, online shopping and seeing what our friends have been up to on Facebook? What is needed is a global perspective: solid information from a variety of sources, about a variety of issues, stories and happenings around the world.

The younger generation, however, with the advance of technology and the entertainment industry, will want to engage with this content in new and exciting ways. They don't just want to listen or read; they want to experience.

Understanding the mistakes and triumphs of others in the world empowers us to be able to make a positive difference in our society. If we do not know about or understand the issues, how are we to have any chance of solving them?

Bubble Inc. is an agent of change and is ready to conquer this challenge, and our team of technological innovators have developed a product that we believe is capable of effectively addressing these concerns.

1.1 Problem Space

Currently, a situation exists where consumers are not developing a well-rounded news perspective because they are actively able to narrow their news sources and, consequently, their worldviews (Pariser, 2012). Consumers who do not attempt to access news only receive information from sources unavoidable in their daily routines (e.g. internet browsing, conversation). *Bubble Inc.* has a solution to this growing problem. *News Bubble* is an exciting virtual reality experience in the form of an application that presents a world map overlaid

with news stories, accessed using the *Google Cardboard* headset and navigated simply with the motion of one's head and some magnet clicks. The theory is that consumers will be exposed to news items that they would not normally consider, and subconsciously gain an understanding of important topics that they might not elect to view. Virtual reality is an ideal way of combatting overly personalised journalism and a tool for revitalising the storytelling experience. Users will still gain a personalised feel from the immersive experience of consuming the news without actually filtering the news to suit their usual interests.

Furthermore, with virtual reality set to be a potentially game-changing tool for the future of journalism, with the foreseeable opportunity to expose viewers to first-person perspectives (i.e. seeing the story through the eyes of the journalist on the site), *News Bubble* aims to tackle the problem space with a tool that may also be a key future facilitator in the world of news aggregation.

Bubble Inc. has brought to you this exciting virtual experience, immersing you in the action of the world and providing you with a global perspective all in one application.

[2.0 Rationale](#)

Research was conducted prior to project development in order to inform the direction of the *News Bubble* application. This process was essential to gauge the level of public support for the creation of *News Bubble*, to incorporate feedback from potential users and to give *News Bubble* a theoretical foundation and overall purpose.

2.1 Primary Research

2.1.1 User Testing

Qualitative research was conducted to determine consumer desire for the *News Bubble* product. User testing surveys were found to be the most effective form of research gathering. A group representative of *News Bubble*'s target demographic was randomly selected and presented with an electronic form to complete. The form asked the following questions specific to the product and problem space, and encouraged respondents to offer feedback on the *News Bubble* prototype:

- Would you be interested in using this product?
- Would you find it easy to use and navigate?

- From where would you want content to be sourced?
- What social media would you like to see integrated with this product?
- Which map design do you prefer?
- Is the dashboard useful?
- What information tools would you like to access from the dashboard?
- Do you like the video gallery design?
- Would earphones improve or detract from the user experience?
- What attitudes do you have towards a 'save article' icon that allows you to read an article later on computer or phone?
- What would you change about the user interface?
- What issues can you see with the product?
- Other feedback?



Dan and Skye testing our prototype.



Users enjoying our prototype.

2.1.2 Outcome

Answers were collated into groups of similar responses, which allowed the design team to assess which features were popular and unpopular with the sample group. The surveys returned several suggestions that were incorporated into the prototype design. The most common suggestions were:

- The brighter coloured design was preferred out of the two they were shown
- Use elements of Maps 1 and 2 for map design (1: light colour with clear boundaries, easy to read) (2: news is easy to navigate)
- Provide both videos & articles (with save for later feature)
- Optional earphones
- Dashboard as home screen, have button to go back
- Source from major companies
- Include social platforms to connect with other users, especially *Twitter*
- The video gallery was good
- Prefer expanded convex map, so you don't have to move head too much

2.2 Secondary Research

A number of sources were influential in the development of *News Bubble*. The initial idea was spurred by Internet activist Eli Pariser's concept of a *filter bubble*. Pariser argues, in Stray (2012) that the *filter bubble* is synonymous with an anxiety that personalized interfaces on the Internet will ultimately only tell news consumers what they want to hear, hiding all unpleasant but important information. Lavrusik (2010) and Catone (2011) were instrumental in helping to define the problem space, by outlining arguments for the change in news

consumption, including the prominence of the personalised news feed. The article discusses different approaches taken by online companies in addressing this issue, and analyses problems that could arise from personalisation.

It was decided in preliminary discussions that the *News Bubble* application would be required to appeal to journalists and other media producers. There is evidence to suggest that journalists can use technology to disseminate news instead of the user. The author argues “journalists have started exploring the broadcasting capabilities of hands-free wearable technology to capture breaking-news video footage without having to hold and operate a camera [which has] captured the imagination of many”. American cable news network CNN, in May 2014, became the first news agency to embrace this new technology by allowing citizen journalists to submit stories, photos and video content by using *Google Glass* (Media Camp, 2013).

Other resources were also discussed as a method of analysing the key characteristics of successful news applications. Our team was able to assess the strengths and weaknesses of competitors as a way of ensuring *News Bubble* is as fully developed as possible. Grasty (2014) interviews the creator of *Watchup*, a news app and one of the first to be developed for Google Glass in the news space. The main argument is that in a few years waiting for content to load on mobile phone applications will become outdated, making it necessary to develop technology that allows the consumption of content in an immediate way. In terms of understanding the user and the affordances of technology, Mackuen (cited in Resnick, Garret, Kriplean, Munson & Stroud, 2013) found that communicative styles that people adopt are sensitive to context, and thus that interface design can play a dominant role in moulding how receptive people are to taking in new perspectives. With this in mind, it may be possible to create systems that sway people toward more varied exposure. Resnick et al (2013) noted that one possible approach is to provide “diversity-aware news aggregators”. Similarly, Park and Kang (cited in Resnick et al., 2013) found that showing numerous articles about the same news story, divided into sections that focus on different aspects of the event causes people to read more varied news stories than a simple random list.

Another leading factor in the design research is the growing prevalence and early days of virtual reality in journalism and news aggregation. Research by Peña, Weil, Llobera, Giannopoulos, Pomés, Spanlang, Friedman, Sanchez-Vives and Slater (2010) highlight the future possibility of the news consumer entering the story in several forms: as themselves, a visitor gaining first-hand access to a virtual version of the location where the event is unfolding or through the eyes of a character presented in the news story. This emphasises the

future participant's unprecedented access to the visuals and audio, and potentially, the thoughts and feelings that coincide with the news. Peña et al (2010) emphasise the gaming-like experience that accompanies immersive journalism, and its unique suitability for delivering first-person accounts of news stories. This component in the overall research serves to emphasise virtual reality as a potentially valuable tool for 'personalising' or 'humanising' the news without actually filtering it, as well as indicating the possible future nature of journalism practice and news aggregation.

2.3 Technical Research

Considerable research was conducted to find a suitable application design. Virtual reality is a recent technological development and *Google Cardboard* is a new, relatively untested product, making information about both areas limited. As a result, the development process was largely trial and error.

The *Google Cardboard* toolkit, used to create homemade VR headsets, served as a springboard for further research, but its use of the complicated application programming interface *Open Graphics Library* meant it could not be used directly in developing the application.

Unity, a cross-platform game creation system, was found to have the capability to develop and build an application for *Android*. *MiddleVR*, a generic immersive VR plugin, was initially considered a promising tool compatible with *Unity*. Unfortunately, further analysis determined this would require more hardware than currently available on any android device.

Durovis Dive SDK, a *Unity* plugin specifically designed to create a VR experience for mobile users, was discovered through the *Google Play Store*. It was easy to download and implement inside a *Unity* workspace, simplifying development.

GitHub is a repository web-based hosting service, and was used as a resource in implementing magnet clicks to allow users to toggle between different interface options. *GitHub* was similarly chosen for its compatibility with *Unity*.

3.0 Design

News Bubble utilises the *Android* mobile operating system, and is integrated with the *Google Cardboard* smartphone mount to give users a complete virtual reality experience. It is expected that the application will also be functional with the upcoming *Oculus Rift* head-mounted display.

A large virtual world map is created by splitting mobile device screens symmetrically and replicating the image on both sides, allowing users to view and interact by exploring the latest global events.

News items are separated and filtered by country, with the most popular ones displayed above their corresponding region. Users browse these items when they hover over countries. Selecting a country using the magnet clicker directs users to a gallery where they can view all news items associated with that area. A filter menu allows users to sort and separate news categories that align with their interests (e.g. stories from one broadcaster; stories in one category).

3.1 The Design Process

3.1.1 Design Decisions

We have designed three main stages for users to consume news through the *News Bubble* interactive mobile application. The first stage is the world map. Users can browse and select countries from which to receive news. The second stage allows users to select news of personal interest from an archive specific to a region. The last stage enables users to consume saved news articles after disengaging from the virtual reality experience. In order to achieve this process, seven screens and one standard mobile page have been designed to enable maximum coverage and easy usage.

A convex map was designed in the World Map View (WMV) for users to browse each country overlaid with pop-up news windows. There are two reasons behind the convex design:

1. A 3-Dimensional (3D) space is required to enhance the virtual experience, which is not possible with a flat map design
2. Less physical movement is required with a convex design than a 360° globe, putting less strain on the user and allowing them to browse all continents with only slight head movements.

Upon selecting a country, users are redirected to a Dashboard screen that provides facts and information about the country as well as a list of the top five news stories in the region. If this information is not appealing to users, they can exit the dashboard, go back to WMV, and select another country; otherwise they can navigate to the Top Stories screen. The dashboard acts as a buffer, providing quick news updates, statistics and general information without the need for a search bar, while also linking to other screens for further browsing.

Popular news videos are viewable via the Top Stories screen, but not written articles. This is a design choice made with consideration for consumers who want to view important news quickly. It is possible that the concentration required to read articles in the VR headset could cause discomfort or nausea, which is not such an issue with video. A pause button also allows users to stop and start videos at their leisure.

Several screens are used to present news, which allows for a wide scope of information. The Top Stories screen displays the biggest news, but the More Stories screen displays a gallery containing all other news within the selected country. A thumbnail represents each news story, and the listed news is either a video or article. If a video is selected, the user will be redirected to the Single News screen where they can watch the complete video. If an article is selected, the user will be redirected to a Single Article screen where they can read a headline and brief summary.

Both screens allow users to *like* news items, which affects its relevance. The *like* button has two purposes:

1. It adds a social aspect to the application, allowing users to add their ‘stamp of approval’
2. It establishes a ranking system to news stories, which then contributes to the selection of stories on the Top Stories screen.

This design feature encourages users to participate in deciding which news is considered important. The *save* button on the article screens is another design choice made in order to resolve the limitation that complete articles are not viewable with this application. Instead users are able to save full articles to their phone for later consumption. To view these saved items, the virtual reality experience must be closed, after which users are directed to a standard mobile screen.

A *Back to World Map* icon is present above every screen, allowing users to revisit the main map at any time. This was implemented to enable users to quit a country without having to go back to previous screens.

3.1.2 Design Limitations

There are two design limitations of the app due to hardware restrictions:

1. Users are unable to browse articles directly through the application – only graphical content with small summaries and videos. This limitation is necessary for the application to serve its primary purpose: to immerse users in a virtual reality experience that allows for a fun and interactive news venture.
2. Application compatibility with smart phones. *News Bubble* is designed especially for android mobile phones due to the magnet click capability. Unfortunately, not all android phones support this functionality, restricting the use of the app to compatible phones only.

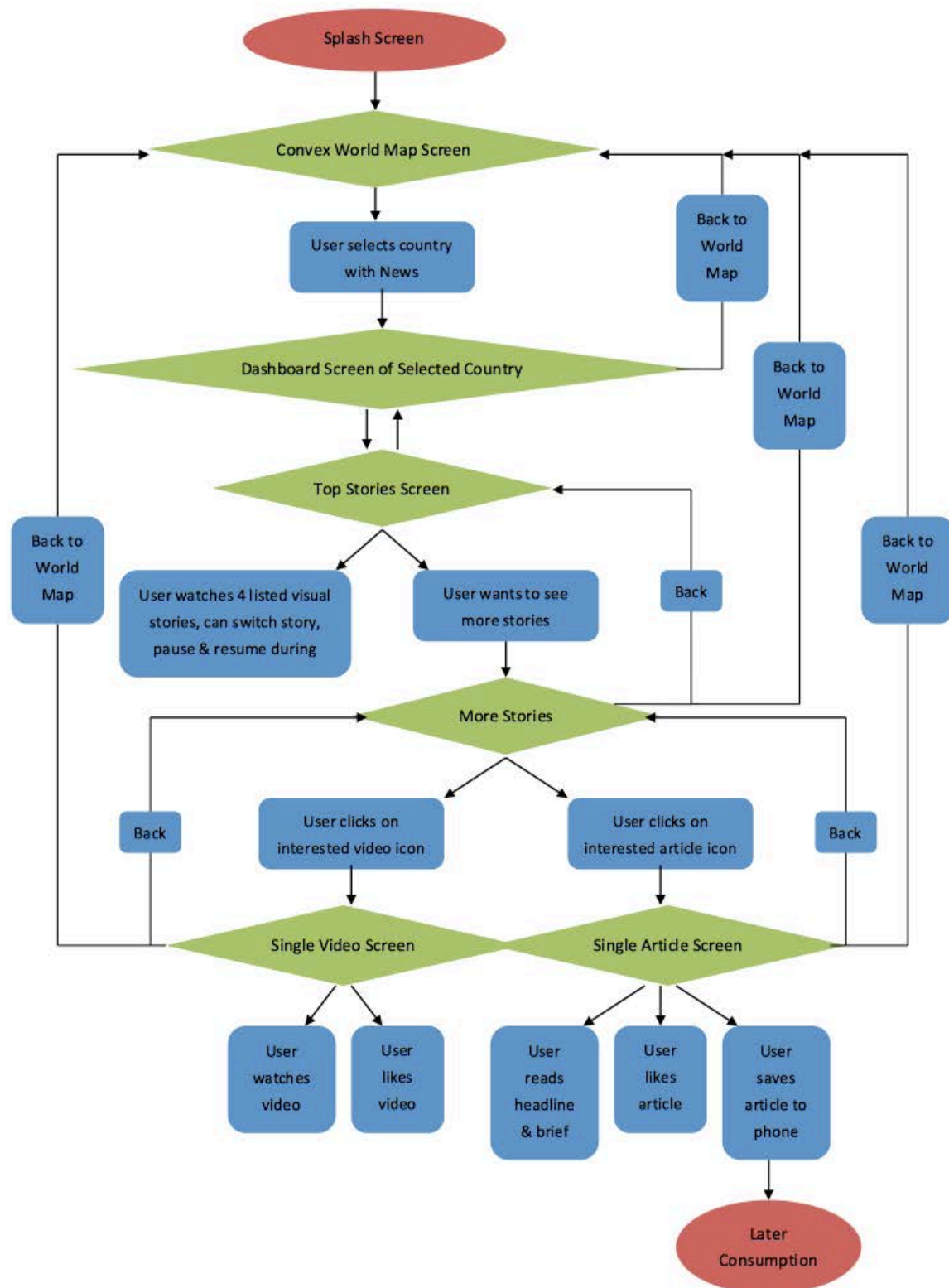
3.1.2 Relevant Theory

We made use of physical computing concepts in order to achieve the final result of our prototype. The hardware used to make our app can be considered a mini cinema integrated with 3D glasses, which allows users to navigate using the motion of their head and some magnet clicks. This is all possible with a cardboard template, some lenses, and a magnet, and is much more engaging compared to the traditional keyboard and mouse, or even touch screen.

News Bubble aims to trigger users' curiosity to find out what is happening around the world, by the visual and immersive way in which the news is presented. The experience will also be exciting for users due to the fact that we have created an unprecedented and novel method of

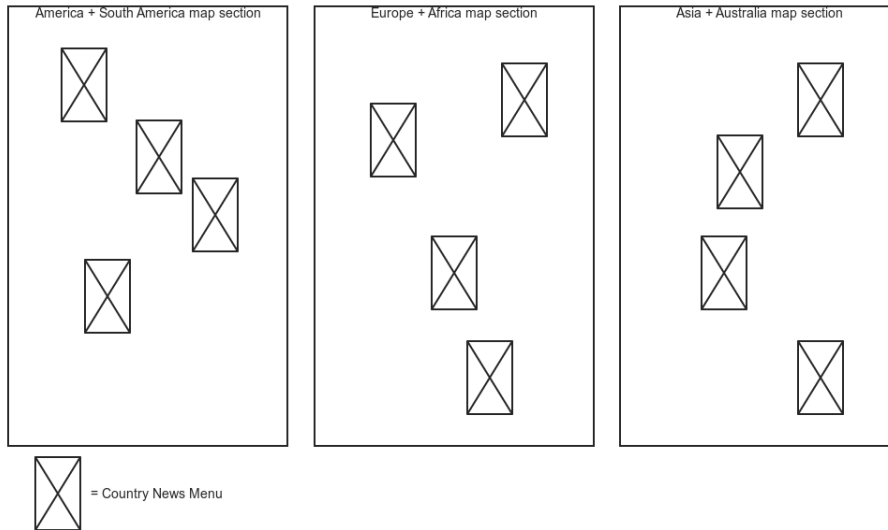
news consumption. Different perspectives are offered on the latest stories, giving users a more thorough understanding while keeping them up-to-date with global affairs.

3.1.3 Screen Transaction Workflow

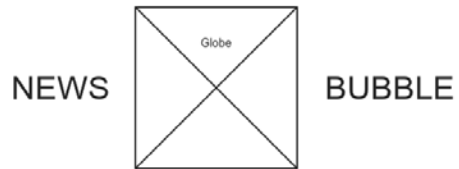


Wireframes

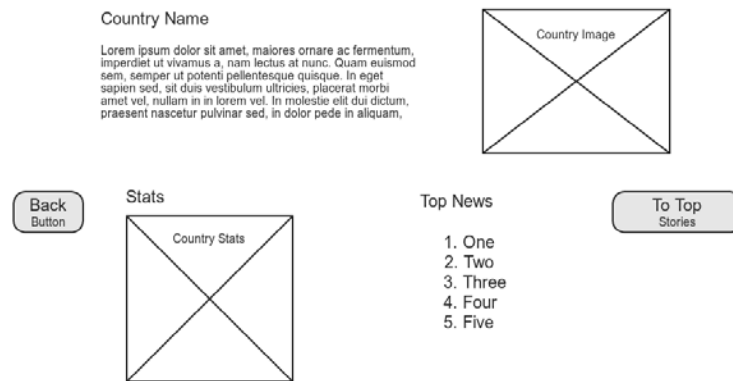
World Map View



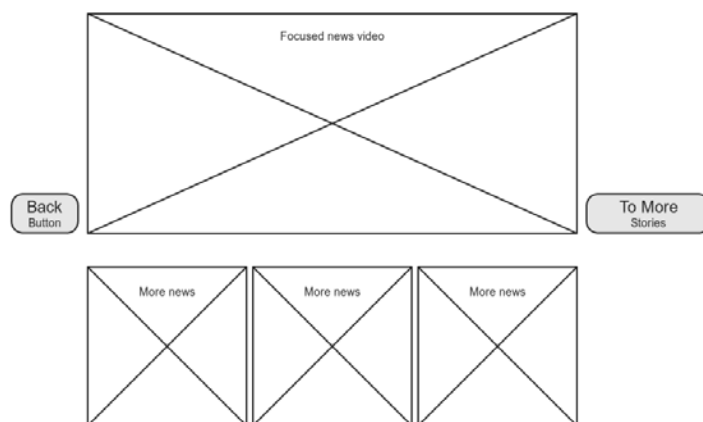
Splash Screen



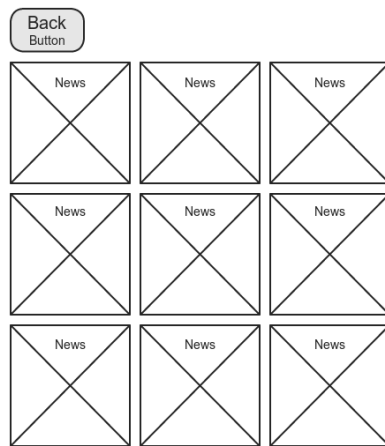
Dashboard



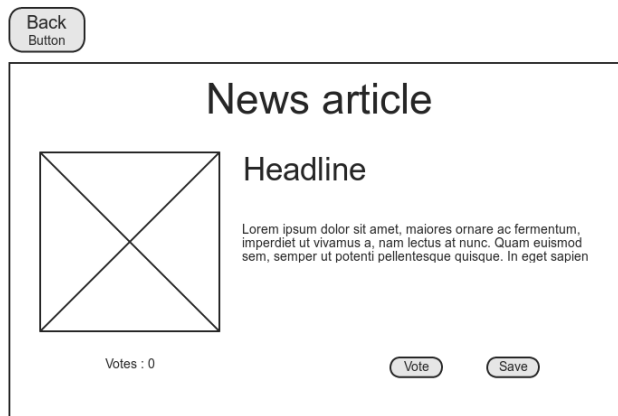
Top Stories



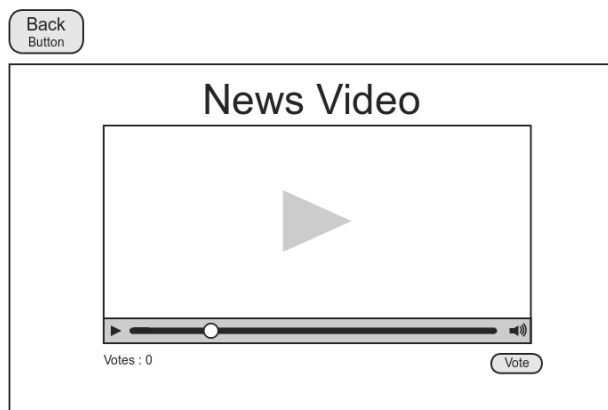
News Screen







Single Article



Single Video



Article View

News Bubble Saved Articles		
	Headline	View Delete
	Headline	View Delete
	Headline	View Delete
	Headline	View Delete

Initial Design Mock-ups

Map Design 1

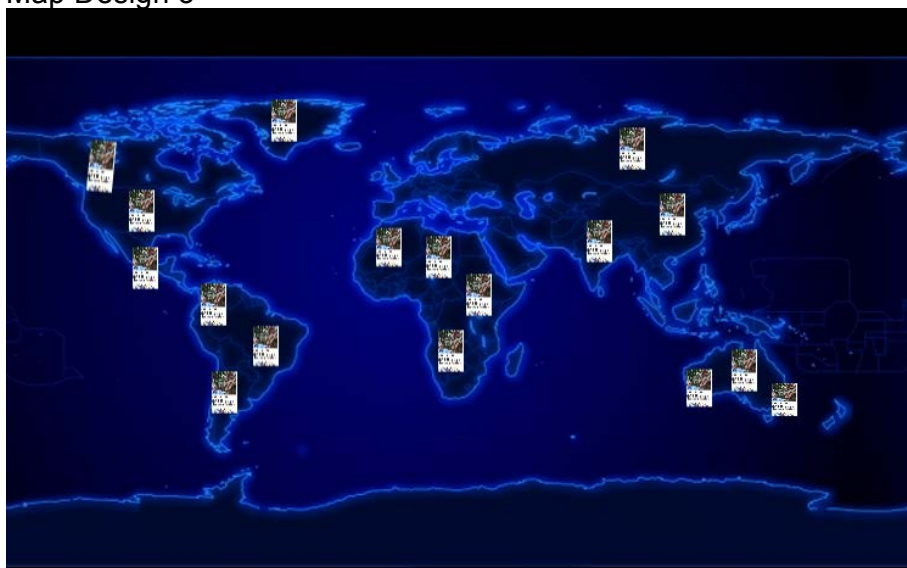


Map Design 2



image source: http://commons.wikimedia.org/wiki/File:World_Map_Blank.svg


Map Design 3



Dashboard

EGYPT

Egypt is a transcontinental country spanning the northeast corner of Africa and southwest corner of Asia, making it an Afro-Asiatic country via a land bridge formed by the Sinai Peninsula.




STATS

Capital :	Cairo
Official languages:	Arabic
National language:	Egyptian Arabic
Demonym:	Egyptian
Government:	Unitary semi-presidential constitutional republic
President:	Abdel Fattah el-Sisi
Prime Minister:	Ibrahim Mahlab
Legislature:	Legislation by presidential decree (Temporarily until the House of Representatives is elected)
Area	
Total:	1,002,450 km ² (30th), 387,048 sq mi
Population	
2014 estimate:	86,502,500[4] (15th)
2006 census:	72,798,000[5]
Density:	84/km ² (126th), 218/sq mi


TOP NEWS STORIES

- News story 1
- News story 2
- News story 3
- News story 4
- News story 5




VIDEOS


TWITTER FEED



Daria Algan @DariaTurkey · 5m
Due to position of mid-east, LIKELY/MIGHT/MAYBE/MAY, #Israel is offering cooperation to #Egypt.



AJELive @AJELive · 17h
BREAKING: #Egypt sentences #MuslimBrotherhood leader Mohamed Badie and 14 others to 25 years in jail | More soon: [aje.me/tww84](#)



Egypt @TheEgypt · 1m
RT: Egypt dominates Arab Championships led by distance sweeps from youngsters - SwimSwam [it.is/YNH/8Q](#) #Egypt


Video Gallery

EGYPT



STATS



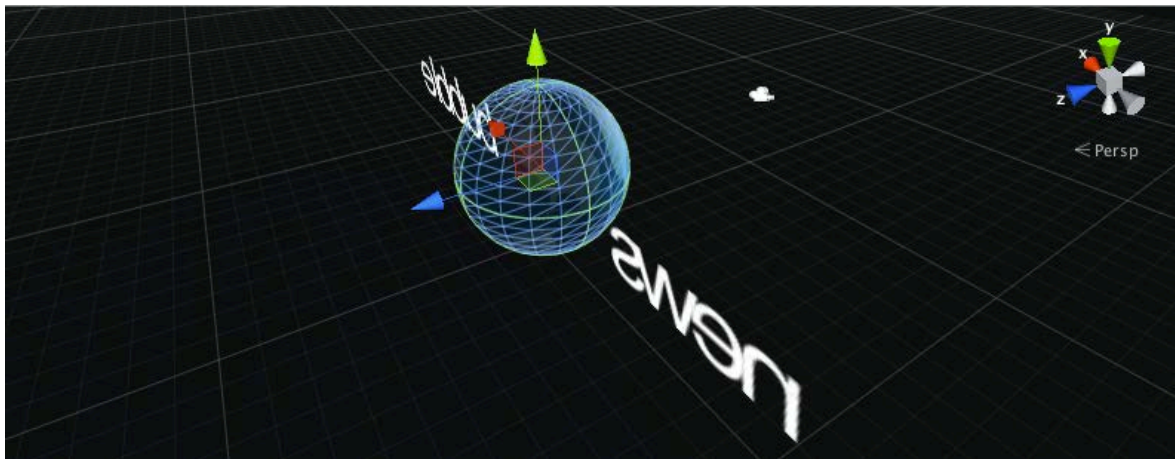



Splash Page

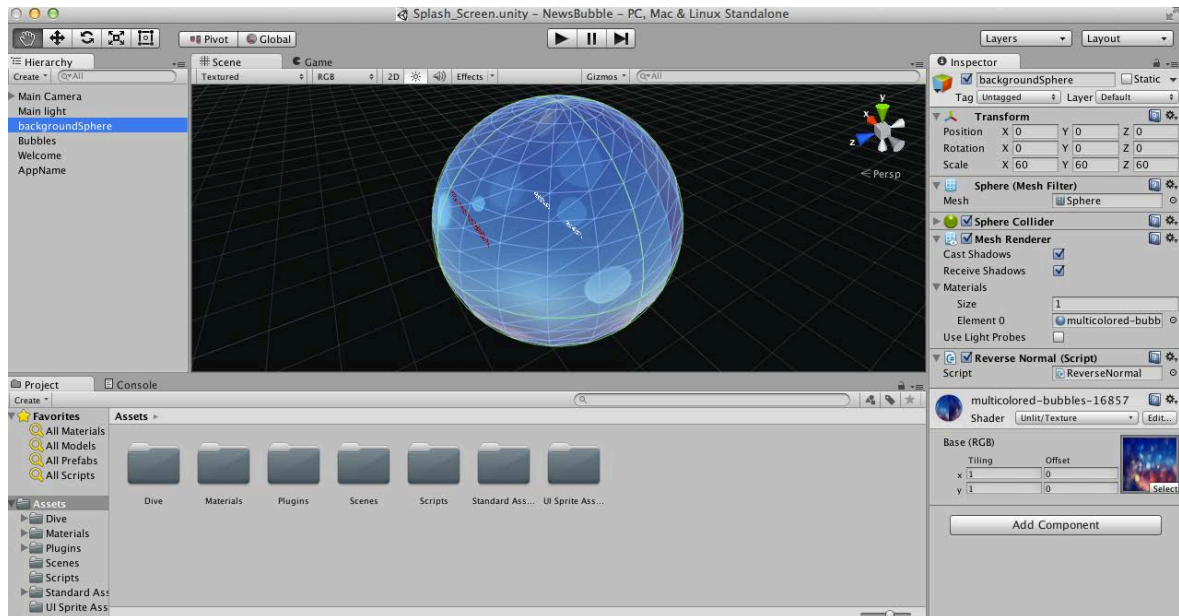
1. Map texture for spinning bubble in logo



2. Spinning news bubble logo



3. Sphere around logo



4. Splash page



World Map View



3.1.6 Visuals: The Final Prototype



AUSTRALIA

Australia landmass of 7,617,930 square kilometres is on the Indo-Australian Plate. Surrounded by the Indian and Pacific oceans, it is separated from Asia by the Arafura and Timor seas, with the Coral Sea lying off the Queensland coast, and the Tasman Sea lying between Australia and New Zealand.



STATS

TOP NEWS STORIES

<Back



Capital	Canberra
Largest city	Sydney
Official languages	None ^{[1] 2}
National language	English ^{[2] 3}
Demonym	Australian • Aussie ^{[2] 4}

1. News story 1
2. News story 2
3. News story 3
4. News story 4
5. News story 5

Top>
Stories

Top Stories



3

4



<Back

More Stories



Google will beat Apple to become the first member of the \$500 billion (\$5.25 trillion) club, a top tech analyst predicted on Friday.



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Like: 13

<Back


Visual News



Like: 7



<Back

News Article



\$1 trillion man ... Google CEO Eric Schmidt could find himself at the helm of the most valuable company in the world.
Picture: AP Photo/Daniel Ochoa de Olza Source: AP

Google will beat Apple to become the first member of the \$US1 trillion (\$1.15 trillion) club, a top tech analyst predicted on Friday.



Saved Articles



ViewDelete



ViewDelete



ViewDelete

4.0 Future Direction

The *News Bubble* prototype has been constructed to showcase the application's basic functions, but there is exciting potential for further development. Ideas discussed but not implemented due to limited time or resources include:

- Work with websites and news companies to provide trusted and varied news sources for consumers.
- A subscription feature that notifies users when a desired news source has an update
- More integration with social media, allowing users to log in and like, share, or tweet opinions, as well as see what other users have recommended.
- A customised *Bubble Inc.* head-set to be manufactured in a variety of colours.
- A more immersive news viewing experience which involves specialised 3D recording equipment on the journalist's side. Multiple cameras could be used to capture footage around the journalist, which can then be viewed by the user turned their head and looking around them while the journalist speaks.

If the *News Bubble* application proves successful, the next step would be for *Bubble Inc.* to employ journalists to produce customised content for *News Bubble* users. There is also no reason for *News Bubble* to remain solely concerned with news and it is our intent that the application could expand to include other media sources beyond news based platforms.

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