

Aalto University
CS-E5610 - Social Media

Pinocchio

Combating Populist Rhetoric on Twitter

by The Social Minions:

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Dec. 12, 2016

Abstract

Populism found new means of spreading in this decade, social media. Several political parties take advantage of the ease of propagation of post-truth information that favor people's emotions over facts. Believing in the power of mass scrutiny, we wanted to tackle this problem by having people, based on sources they provide, determine the truth of information spread over one of the prominent social media channels, Twitter. Hence we ideated and designed a twitter plugin that allows people to determine the truth of a tweet by endorsing it or opposing it, while providing sources to justify their judgement. While our vision is to have a generation that decides based on facts, we try to approach that by providing people with the tool that makes them think and decide for themselves.

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Background

The Political Climate

Our original problem was combatting populism in the media, and how this populism is amplified by shares and conversation in social media. Populism is a difficult phenomenon to define, as it is a big concept with many variables. We resolved to focus on the recent development of “post-truth” politics: facts being ignored in politics in favor of emotional appeals.

The political climate has been tumultuous in the passing year, with upsets like Brexit and the unexpected election of Trump rocking the political and economical climates. Both campaigns were driven by largely non-factual information: PolitiFact (a politics fact-checking website) determined that 70 percent of Trump’s “factual” statements during his campaign fell into the categories of “mostly false”, “false” and “pants on fire” untruths. (Politifact, 2016) The Brexit campaign infamously advertised being able to save £350 million for the National Health Service by leaving the EU, which turned out to be a non-factual statement. (Helm, 2016) Publications like The New York Times and The Guardian have written think-pieces on the issue, which indicates that the phenomenon is increasingly being brought to the public’s attention. (Davies, 2016) (Viner, 2016)

Citizens’ Increasing Distrust of the News

Many countries are experiencing increasing distrust in the media. For example, in the United States of America, citizens’ trust in mass media has fallen to 40% (2015) from 55% (1999). The fall has been sharpest among 18-49 year olds, who had 36% trust in 2015, compared to those over 50, who had 45% trust in 2015. Trust among democrats (55% in 2015) was also higher than among republicans (32% in 2015). The study speculates that the same forces behind the drop in trust in government and US institutions may be behind the drop in trust in media. (Riffkin, 2015)

The forces behind general distrust in institutes are multifold. Increasing automatization and globalization is eroding jobs from the middle and lower class in western countries. The sharing economy has changed traditional business models, and made jobs such as driving a taxi or working at a hotel unstable, through apps like Uber and AirBnB. (Malik, 2016) Job insecurity creates bad feelings, which create a mistrust in the government. Distrust in governmental institutions is easily transferred to distrusting the media, if one feels that the news is biased in one way or another. This paves the way for politicians or journalists with ulterior motives to take advantage of the working class’ fears and vulnerabilities. People turn to populist leaders who promise change, in hopes of changing their situation.

No matter how distrusting people may be of the media, they are willing to trust charismatic leaders, and are still vulnerable to their emotional appeals. People may be more aware that they are being manipulated, but they may not have the skills to effectively shield themselves. People may not be aware of the rhetoric strategies that are being used to influence them. They may even be willing to believe messages that seem convenient for them, however unbelievable (like climate change deniers, ignoring the issue is convenient for business). We want to create a service that

helps people dissect the messages being targeted at them in real-time, within a service they use regularly.

One of the most vulnerable services we identified is Twitter. As Twitter is a fast-paced information channel, misinformation can often be left unnoticed by the user. Politicians are increasingly using this media to contact their voters with emotional appeals (Trump is infamous for his Twitter rants (Shabad, 2016)). We want to create a service that helps users fact-check tweets by politicians real-time.

One of our key problems in implementing our solution is how to remain impartial. Media houses are largely regarded as partisan to either republicans or democrats. We want to seek the truth in a non-partisan manner, and don't want our users to associate our service with a particular political party. Wikipedia rose to our minds as the ultimate non-partisan service, edited and fact-checked by people everywhere. We decided that we would seek to emulate Wikipedia's model: bringing facts to the people, from the people.

The Current Solutions versus Our Solution

Right now, media consumers need to seek out the truth for themselves via search engines. Sites such as PolitiFact and FactCheck.org can be used to check statements made by politicians, on services such as Twitter. This, however, requires dedication and time from the user. We want to remove the required time and dedication investment, and make fact-checking instant, within the service.

The users of our solution will be able to download a plugin onto their Twitter application. This application will highlight tweets made by politicians, with attached fact-checks updated in real-time. Users from all over the world will be able to fact-check tweets, and give them a truth-rating. Truth-ratings will all have to include a source for the information the voter has based their vote on. Votes will be moderated, in order to keep the system unskewed. This system will provide the end user with an instant answer to whether the tweet they are viewing is reliable.

The key parties in our solution are the users (both contributors and non-contributors), Twitter (we will use their API), and of course the politicians. Additionally, the contributors will be using 3rd party media resources to fact-check the tweets. Perhaps we could cooperate with PolitiFact and FactCheck.org, to bring their expertise to Twitter.

Vision for the Future

In the short-run we hope to affect the users. They will receive more reliable information on whether the information the politicians are supplying is true. This will hopefully lead to more informed voting behavior, and more decisions based on actual facts.

In the long-run we could potentially affect the behavior of politicians. If they begin to get called out on the non-truths they are speaking, perhaps non-factual emotional appeals will not pay off anymore, and the world will have more reliable politicians.

In the following sections we will go through the concept, our target user base, business model, societal goals, and limitations in more detail.

Our Concept

Title: Pinocchio Fact-Checker

Platform: Add-on for web browsers (Chrome, Safari etc)

Main Feature: Fact-checking functions, associate Twitter

Additional Feature: Wiki-based community board with archive and discussion.

Business model: non-profit, donations

Goal

There are information and statements everywhere in social media. But how to find whether that is true or not? The main goal of our project is to provide easy access to facts, with a focus of young social media users on Twitter. With intuitive and efficient one-click based application, users can quickly access to various source of information - which help them figure out what is fact-based or false/opinionated statement. This will help people, especially for those who with tackle more into the truth but not sure where to find the source of information, to come up with easier starting point.

How it works


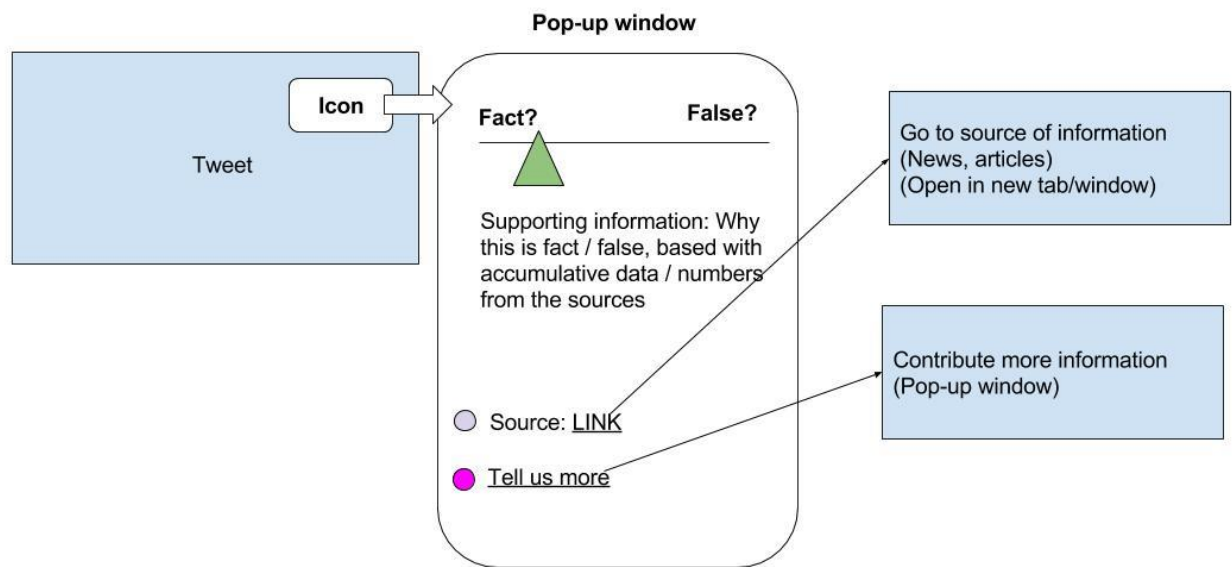
1. Install “Pinocchio Fact-Checker” adds-on on web browser
2. Click the icon  next to the Twitter tweet to open up a pop-up window
3. Check if the Tweet is either fact-based or false
4. Click the arrow to contribute to adding the source of information
5. Click ‘Tell us more’ button and send feedbacks and/or contribute new information

Diagram (Flowchart)

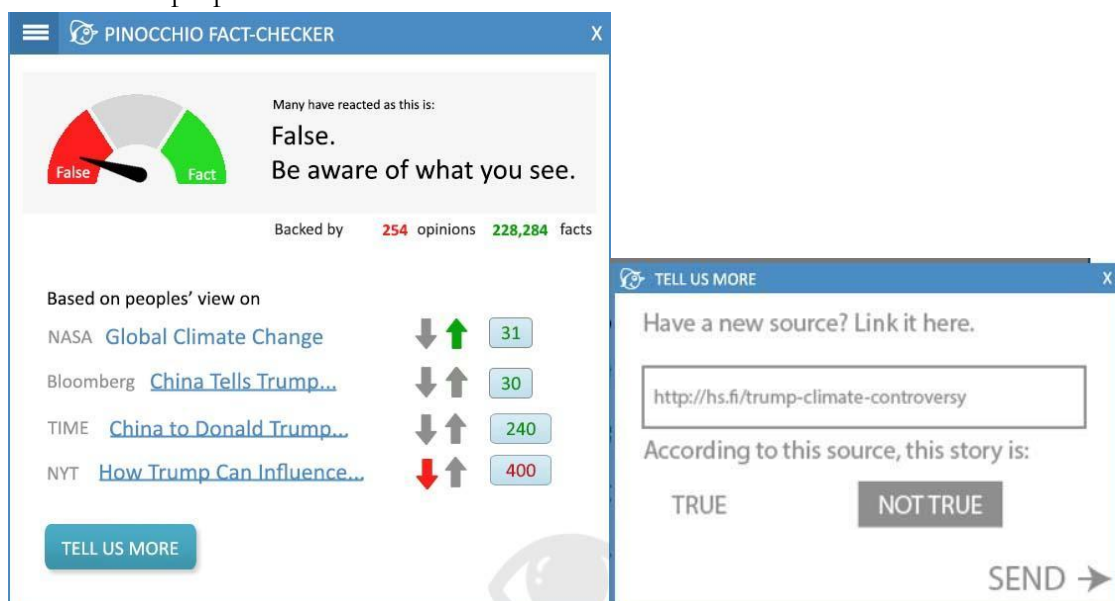


Visual Mock-ups

GUI #1 - Icon



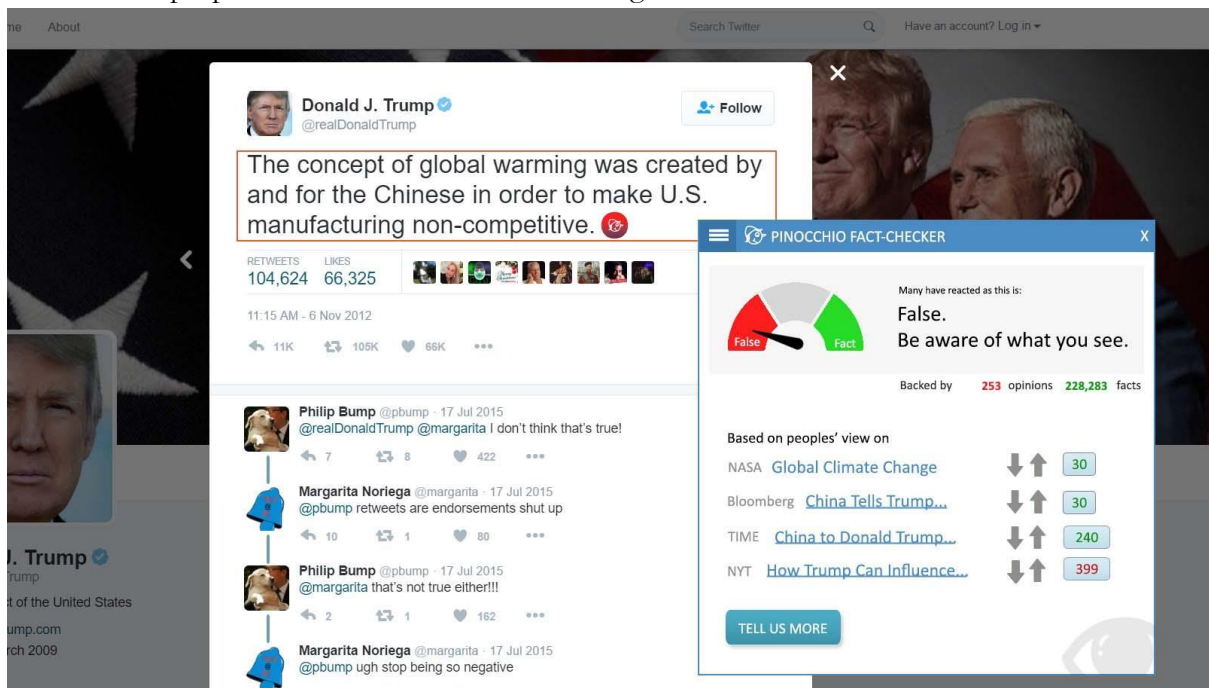
GUI #2 - Pop-up windows



GUI #3 - Pop-up windows in action: After installing the adds-on, before clicking the icon



GUI #4 - Pop-up windows in action: After clicking the icon



GUI #5 -Pop-up windows in action: After the user click “TELL US MORE” button, which asks



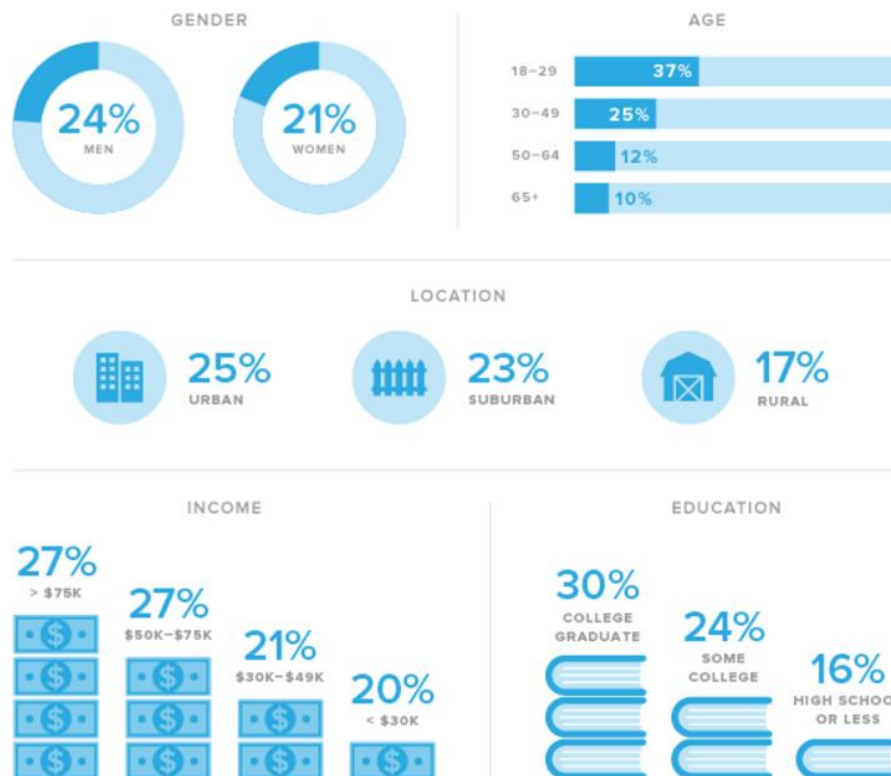
Target Users

Demographics

Twitter has 313 million monthly active users. 82% of these users use the mobile version of Twitter. 79% of Twitter accounts exist outside of the US. (Twitter website, 2016)

37% of adults aged 18-29 use Twitter. 25% of adults 30-49 use Twitter. These are huge proportions of the demographics. Yet, only 12% of adults aged 50-64 and 10% of adults aged 65+ are users of Twitter. Gender is not a big factor, as 24% of men and 21% of women use Twitter (in the US). (Patterson, 2015)

25% of adults in urban areas and 23% of adults in suburban areas use Twitter. Only 17% of adults in rural areas use Twitter. 30% of Twitter users have graduated college, while 24% have some college experience. Only 16% are high school grads or less. People with higher incomes are also more likely to use Twitter, as 27% of adults who make over \$75,000 or between \$50,000-74,999 use Twitter, while 20% of adults who make less than \$30,000 are users. (Patterson, 2015)



Twitter user statistics. Source: Patterson, 2015

Based on this data, a Twitter user is most likely to be from outside of the US, using a mobile version of Twitter, aged 18-29, male or female, living in an urban or suburban area, have at least some college experience and live on a medium to high income. We will focus on the younger demographics first, as it will be easier to target potential advertising at a certain group. Later on we will aim to target older people.

In addition to being young, our initial target users have an interest in politics, and follow politicians and politics related news on Twitter. Donald Trump alone has 17 million followers. 18.2% of Twitter users are 18-24, and 22.2% of them are 25-34. (Statista, 2015) Extrapolated from this, there are at least 7,5 million users in our age bracket, that are interested in following prominent politicians.

Engagement

So how to engage these 7,5 million users? Since we are relying on a Wikipedia-type presence, an explicit and over-the-top advertising campaign may work against us. It may make our service seem like just another corporation looking to make money. The right strategy may be “guerilla advertising”. Guerilla advertising is a unconventional way to promote products or services exclusively on public places with maximum people access and usually with a small budget. Traditional methods such as TV spots or newspaper ads should be avoided.

Helping word spread through the internet would be our primary task. Featuring the service prominently on Twitter (tweeting about it, replying to politicians’ tweets, etc.), would help users

engage it directly on the platform. Forums like reddit are another platform for engagement, as their user base tends to be people who are more closely following the news and politics. This way we would be able to target all 7,5 million users in our target demographic, as the internet is not tied to a certain country or city (and English is understood all around the world). Our forum posts would be written in English, with language that appeals to the younger demographic (slang, points on political issues that mainly interest the young, like the open internet).

As another engagement channel would be the aforementioned guerilla advertisement. This would be specific to a certain city (and in this way, target the urban demographic). In 2001, IBM advertised its new computers with a pre-loaded linux through a multi-million-dollar ad campaign dubbed “Peace, Love, Linux”. IBM spread graffiti art through the streets of San Francisco. “Graffiti has that aesthetic of being an underground, grassroots movement, so that people don’t associate it with the big corporation that it’s coming from”, said Dr. Aurora Wallace, a New York University instructor who studies privatization of public places. (Kenigsberg, 2001) This works well in the case of Linux, as its whole ideology is based on open information and software.

While this seems dishonest in the case of IBM, our service is actually a grass-roots movement, and could apply grass-roots advertising in accordance with our values. A graffiti campaign could be an option, or a harmless cloth advertisement dropped down from the roof of a building on to the side of it (a practice employed by activist organizations like Greenpeace and Amnesty). These advertising strategies would evoke the feeling of social change. These types of advertisements are also more likely to appeal to the younger demographic, who are more accepting of innovation, even in advertisement.

This guerilla advertising strategy would work best in a high-density city, as it would reach the most people this way. The city should also be English-speaking. Following the US election, the atmosphere may be ripe for this type of service. The UK would be an ideal candidate as well. New York and London would be good places to start.

Business Model

Pinocchio is a non-profit organization depending its operation on donations. Nevertheless, it’s worth analyzing the business model through business model canvas elements.

Pinocchio’s key activities are software development, and software and server maintenance. The resources required are talented software developers and servers, these should create the majority of the direct costs for Pinocchio.

The software is completely open source and developed and maintained ‘pro bono’ by the open source community and the original core team of Pinocchio. Given the simple nature of Pinocchio’s logic, the development should be relatively quick and easy.

Modern server infrastructure costs are easily scalable and adjustable to the number of users. All Pinocchio’s server costs are covered with donations, and the servers are scaled up or down based on funds available, optimizing the uptime of the service. If no funds are available, the service is

down. Users who see Pinocchio as useful, would donate if they see the service is down, fundraising campaigns should be ran as necessary.

Given Twitter's ~300 million monthly active users, even with a small fraction of those users, Pinocchio's cost of server upkeep could become huge, and to sustain such costs in the long run, Pinocchio should create a similar donation system such as Wikipedia's¹.

Revenue streams will consist only of donations, selling ads on the page could jeopardize the credibility of Pinocchio's value proposition, by putting under question its neutrality and unbiased view.

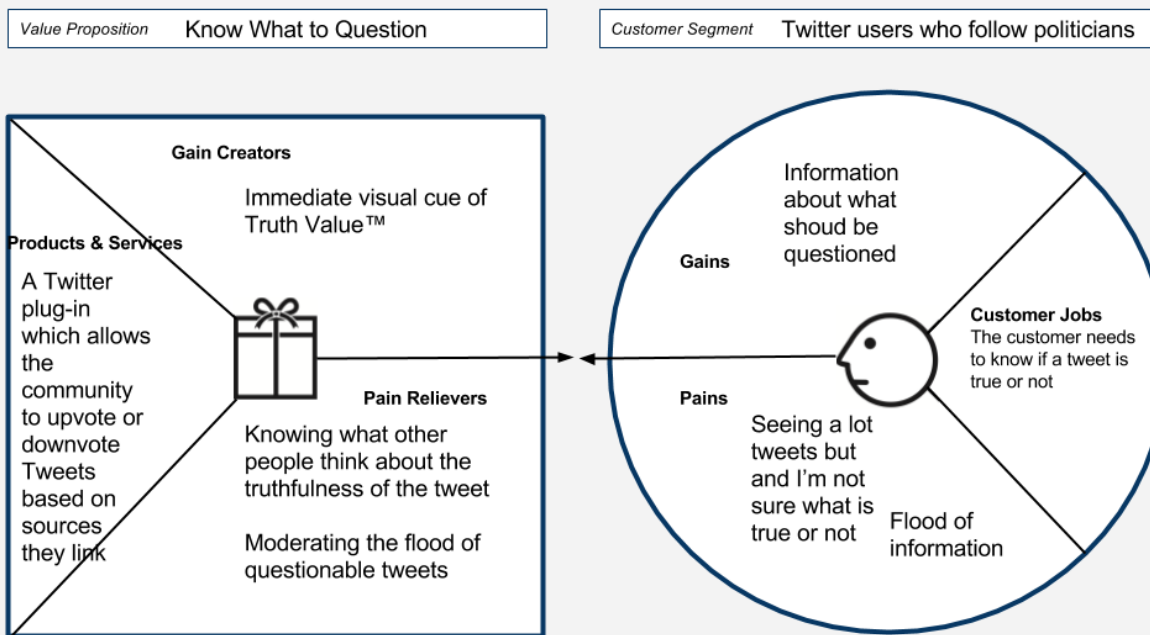
The targeted customer segment is all active Twitter users. Putting money on marketing the non-profit product is non-essential, and Pinocchio will mostly be distributed and spread in social media by guerilla and word-of-mouth marketing. The quality of Pinocchio's service and value proposition should act as drivers for the growth of Pinocchio's user base.

Value proposition

We identified our main value customer segment as Twitter users who follow politicians. These users' Twitter feeds are flooded with tweets that influence their decision making, political views and general understanding of world events. Social media, and Twitter in particular, has created an arena for political figures to enforce their political views with fast, short, messages which are not always fact-checked by their readers. The user faces a problem of too much information and too little time to do fact-checking.

¹ Wikimedia Foundation's yearly server costs ~\$2M, donations in 2015: ~\$72M. (Wikimedia Foundation, 2015)

The Value Proposition Canvas



But knowing if a tweet is true or not is essential for the user to gain a fact-based, rational and objective world view, and e.g. to be able to vote for the most suited candidate in elections. A Twitter user who follows political figures would gain a lot by knowing if a Tweet's is incredible, and should be questioned.

Our product allows a Twitter user to know what to question, by displaying a small indicator of the tweets 'truth-value'. The truth-value is formed collectively by the community with simply upvoting or downvoting the tweet. The user gains a fast visual clue of what how the community rates a particular tweet, which immediately tells the user what other people think about the truthfulness of the tweet. This also helps lessen and moderate the flood of questionable tweets.

The use of pinocchio will also benefit politicians, governments, big media houses, and citizens who don't use Twitter by reducing the spread of 'fake news' or unbacked claims.

Stakeholders

The users of the plugin are not the only stakeholders. It will have an effect on Twitter as well. In the best case scenario, if the plugin gains popularity and is deemed very useful by users, Twitter can benefit and become a beacon of media scrutiny among social media services. This will bring them more media attention, and through this, more users and more revenue.

Politicians and governments are of course stakeholders as well. If a politician has gained popularity by populism, the users of the Twitter plugin may become more aware of their strategies, and less likely vote from them. This has a negative effect on the populist party, and may even have a positive effect on the "non-populist" party (or the party that is not using

populism as actively as a strategy). In the long term, this plugin could potentially generate a difference in the behaviour patterns of politicians, and cause them to use less emotionally manipulative strategies. The same applies to governments, who may use populist propaganda through Twitter to influence people.

Media houses may be affected as well. If a certain publisher of articles gets consistently “not true” votes on the plugin, the users of the plugin may begin to avoid this publisher. This makes them lose readers, and through this, ad revenue. In the long term, this would hopefully generate a change in the behaviours of publishers as well. The company behind the plugin may have to expect negative attention from politicians or media houses who lose audience due to the plugin. Some media houses will also benefit from this, as they will gain back attention from the “click-bait” articles deemed “not true” by the users of the app. They will also gain a valuable tool to battle fake news through Twitter.

Society as a whole is also a stakeholder. More informed citizens and voters are arguably better for everyone, as they make more informed decisions.

Societal Goals

Our ultimate vision is to have a society that thinks and questions everything it encounters, which helps it make better decisions. In the short run, we hope to achieve that by encouraging youngsters on social media to check the tweets’ credibility and make healthier decision whether to follow the source of tweets or not. In the long run, however, we want to include other social platforms, which are becoming a vital source of news.

The people that we are mainly targeting are those who belong to each of the millennial generation and generation Z. They are the young adult social media users who become interested in politics, namely aged between 17 and 35.

Once people start having no tolerance for emotion-based statements on social media, we know we have done a good job. Nonetheless, “good” is hard to quantify, hence we consider a larger user-base to be a good indicator. For instance, the ratio of the people who use the service to those who vote in a campaign can quantify if the service is useful. Still, the number of users does not necessarily mean a factual tool, which is discussed in detail in the next section

We hope to create a ripple effect wherein the effect starts from the people who stop buying into post-truth tweets. This would cause a decrease in the popularity of populist politicians, which in turn affect the politicians, who would no more rely on post-truth-characterized statements to gain acceptance, if they get elected. This also creates a healthier competition between different political parties, solely based on factual arguments.

Societal Limitations

Our solution, of course, subject to a certain amount of limitations. Vital to our solution is to achieve a sufficient user-base, since the content is going to be user-generated. As there already is a wide range of different kinds of plugins and extra features on the market, it might be hard to stand out and gain on trust among the potential users. In order to separate our product from the

others, and above all from the fake ones, we must devote to guerilla marketing and emphasize that our company remains impartial and the service content is fully user-generated. Additionally, the literature on designing information technology proposes that to achieve the trust of customers, the result is technology that accounts for human values in a principled and comprehensive manner throughout the design process, since people trust rather on other people, not the technology (Friedman & al., 2000). This means, we must operate transparently and our aim must be clear to everyone.

Our specific target group are the young adults who are attuned to use social media and are aware of politics. They are a relatively easy group to reach, since they are talented computer users and they are able to question the content on the internet. Moreover, they might be seeking solutions to separate trustworthy sources already.

However, what if we want to achieve other target groups than our initial one in the long run? For example, people who don't know how to use the internet and social media in a proper way, like elderly? They could well be interested in the correctness of the news they read, but firstly they are not necessarily aware of the need of questioning the news, and secondly if they are aware, they don't know what to do about it. This group might be hard or even impossible to reach. Then there are people who don't follow politics or simply don't care about the post-truth tweets. Yet, people who don't follow politics or don't care about it yet, might become interested in our plugin, if there would be enough hype around the theme of populism and our product would have an established position as a reliable wiki plugin.

Since with our service we want to make the fact-checking instant, easy and fast, for our initial users, our solution might still appear too time consuming. It might take time to search for the essential source and propose the truth-value based on that. Additionally, the amount of information and news is so substantial today that it is possible that only the most sensational news would get rated. Even the most passionate people don't have time or interest to rate for every news.

One raising question is: can we eventually guarantee that the news is fact or false or that the fact checker pointer is even leaning to the right direction? Even though we would have a sufficient user base and majority would give their rate based on distinguished sources. It doesn't mean the result would be ultimately right. It's always more or less only suggestive.

Our goals are to affect the behavior of politicians, by making them to realize that it isn't worthwhile to use emotional appeals and secondly, have a society that questions things and makes better decisions based on facts. But how far can we really get with the plugin? How much can our solution really change? What if the effect is the contrary, people stop questioning the things they encounter and only trust on technical solutions like plugins?

Measures of Success

Short-term

One of the greatest indicators that our solution is working in the short-term is the amount of contributors to our service. The service is based on the votes and sources provided by contributors, and will not work without them.

Within the first year of operating, we will probably focus our advertisement efforts within one city. The population of London is 8,7 million. In 2014, 25% of the population in Inner London was aged between 25 and 34. (London's Poverty Profile, 2014) It is safe to assume that 2,1 million of Londoners would be within our initial target demographic of young, urban people. 19% of UK citizens use Twitter actively (Fleischmann, 2015), but it is safe to assume that the percentage is higher among younger citizens, around 40%. This brings our target figure to around 0,84 million.

With a targeted ad campaign, we could hope to reach 0,84 million Londoners within our first year. With word-of-mouth spreading through internet forums such as Reddit, we can hope to bring our user count to around 1 million during the first year.

Of course, users are not the only measure of success. Creating a buzz in the media is essential to spreading the word, and documenting social change. A front-page post on Reddit is a good measure of success in the more underground internet scene. A piece in a magazine like The Guardian would also be a great measure of recognition.

Long-term

A good long-term window of reference would be 5 years. It is fairly reasonable to assume that Twitter will still be in use then. In the long-term, to stay sustainable, we need a good amount of active contributors to keep our information reliable. Wikipedia currently has 523 active moderators. (Wikipedia) Wikipedia began its operations in 2001, and has had 15 years to aggregate this number. Our contributors are similarly checking sources for facts, so the work amount is about the same. In 5 years, we could hope to achieve 150 active contributors, and an additional 200 active voters (who don't link to articles, but vote on the truth value of the articles).

Wikipedia is currently being edited at a pace of 10 edits per second. A good measure of editing speed for us would be how quickly our contributors react to a tweet. A controversial tweet by a prominent politician would have an aggregate of at least 50 truth-votes within 10 minutes (10 minutes because people need time to do research and link adequate sources to their votes).

Twitter has 313 million monthly active users. Our initial target audience of 7,5 million users is a mere 2,4 % of this. This is a very achievable goal, perhaps already within the first 2 years.

Achieving this figure would probably require another targeted ad-campaign (or a few), for example in New York. Campaigns in Asia (South Korea is a good candidate after the recent presidential scandal) would help the word spread globally.

Achieving additional media attention during the first 5 years is also essential. Being written about in The New York Times or the New Yorker would bring our service to the attention of even more users.

The end-all-be-all goal is to generate more informed citizens and an atmosphere of checking information, and not falling for emotional appeals. This is difficult to measure, but will reveal itself in the long-term through election results. When populists are not celebrated but rather doubted, we will have succeeded. Nonetheless, this is difficult to measure, since each human may be susceptible to their own biases in rating whether politicians are populists or not (depending on whether they represent one's own party or not). A way to track this would be to see whether tweets biased republican or democratic (or other opposing party systems) get the same amount of scrutiny. If the contributors scrutinize all parties an equal amount, our service is successful.

Summary

Among the uproarious political climate, with many countries increasing their distrust in the media such as Twitter, people are in constant search for the truth. We wanted to help people view the truth through evidence-based endorsement of factual information spread over twitter. Thus, we allowed people to do that through an open-source twitter plugin. The plugin will highlight tweets made by politicians, with attached fact-checks updated in real-time.

This will hopefully lead to more informed voting behavior, and more decisions based on actual facts. In the long-run we could potentially affect the behavior of politicians.

According to Twitter statistics, we have 7,5 million users in our age bracket, that are interested in following prominent politicians.

Customers will be engaged through Guerrilla marketing, and spreading information as word-of-mouth marketing on suitable internet platforms.

Pinocchio will operate as a non-profit organization. Its funding will rely on user donations. Larger donations from organizations or companies will be accepted with caution due to their possible effect on the perceived neutrality of Pinocchio.

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Appendix A: Lean Service Creation Canvases

Provided by the project supervisors, following are some of the lean service creation canvases that were used for this project in the very early stages. These are by no means final; they get revisited occasionally during the project span.

SOCIETAL GOALS AND LIMITATIONS

Group's goal? <ul style="list-style-type: none">- When people Start making correct decisions based on Facts.- When people become more critical about the news.	How will we know that we have succeeded? <ul style="list-style-type: none">-The number of users.- When we notice that we are making good influence.- Quantifiable impact
The societal problem we are solving: <p>People being influence by populism in social media in such a way tht People donno what sources to trust and are easily influenced by post-truth politics and emotional appeals</p>	
Your group's personal opinions and values? <p>We want people to make Informed decisions</p> <p>To question everything they read Inquisitive and truth-seeking citizens</p>	What restricts us? <p>(Budget, Schedule, Organization, Legal, Current business,...)</p> <p>Technical issues. How to filter information more accurately.</p> <p>People power. Developers to do algorithms.</p> <p>AI</p> <p>If we take the "Made by people for people" approach, it is hard to check what people put so that is a challenge.</p>



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BACKGROUND

- To know where you are

Who or what group your societal problem affects mostly? Who do you want to change? Who are your so-called “end users”?

People who receive news from social media.
People who read the news online.

First is harder

How is this problem being solved now?

People have to fact-check on their own.
Solutions such as politifact.. But these are websites on their own so people have to go and check them actively.

Who should be affected or involved (who are not the people in the box above)?

Politicians, journalists, people who provide information will now be more aware of what information they are giving.

Key institutions, businesses, organizations and communities?

Journalism firms (ones that are indifferent)
Social Activists
Collective intelligence
People who doodle in Wikipedia / People interested in opensource.

Inspiring services:

Politifact
Google Fact Check
Flitto, Korean startup that has crowdsource translation with add-on feature.

Public discussions around the topic:

Climate change
US Elections
Anything in the news that raises controversy
Lately there has been a lot of articles concerning post truth

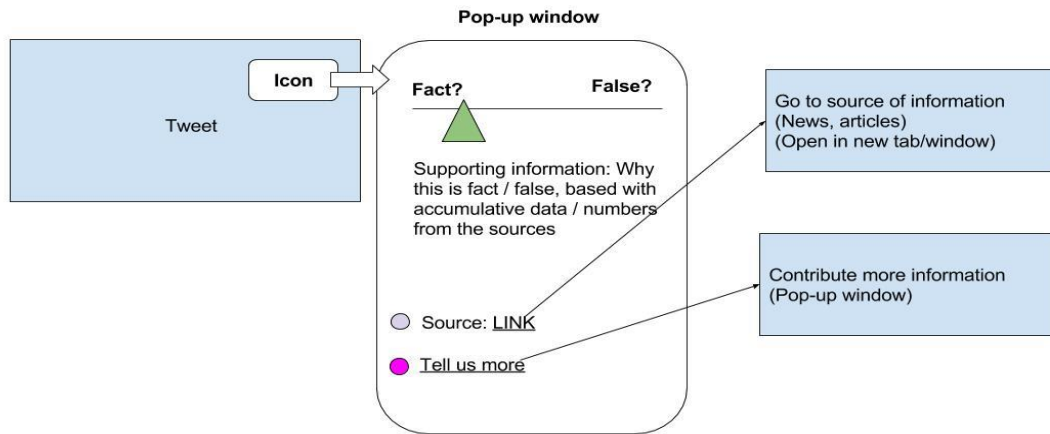


CONCEPT AND VALUE PROPOSITION

Concept name? Pinocchio Fact-Checker

How does it work?

Diagram, process, UI mockups, scenarios, stories, photos, graph... make it visual.
Who are involved and when? People, systems, something else?



Value to the end-user?

Seeing evidence behind facts.
Having more informed judgement and decision.

LOVE THE
PROBLEM
NOT THE SOLUTION

What differentiates it from other solutions to the same problem?

Pinocchio is:
- a plugin (not a separate service)
- community-based

Value to other stakeholders?

- Twitter – More truthful content, more user engagement
- society as a whole – better politics arising from better decisions
- the press – More factual content

Who pays whom?
How much?

Independent bodies donate for us.

What is the revenue model?
Subscription, freemium, advertisement...
Donations. Open-source.
Free to use (free beer), and free to reuse (code to improve on it).

Your first version for the first month? Your MVP?

- The ability to vote up or down a tweet.
- To add a source. (the minimum. This has no real-time or anything)

Your target market for the first month:

Young tweeters.

Potential target market:

Your cost structure
Your main operative costs.

When are you profitable and how?

Your target market for the first year:

Young tweeters.