"I agree": the effect of terms of service design on online user registration

Abstract. Terms of service (ToS) are becoming a ubiquitous part of online account creation. There is a general understanding that users do not bother reading them and do not particularly care about binding themselves into legally enforceable contracts with online service providers. Some services are trying to change this trend with presenting ToS as key points or summaries of each ToS section on a ToS dedicated page. However, little is known how would a presentation of such key points at the time of account creation affect the continuation of user registration. This paper provides an exploratory study in the area. We have offered users to participate in a draft for a prize in exchange for their names and email addresses. For this purpose we have created three different designs of a "sign up" form: a standard one with ToS hiding behind a hyperlink and two with ToS key points presented at the time of account creation with different engagement required. Initial results suggest that ToS key points presented as a list at the time of account creation is no more engaging than a form with ToS hidden behind a link. Moreover, different designs with ToS key points (requiring different user engagement) affect the interaction with ToS, but the actual time spent on ToS is very low.

Keywords. Terms of Service; user engagement; Terms and Condition; Privacy policy.

1   Introduction

It is a common belief that Terms of Service (ToS) are written in a complicated legalese. Most users do not want to spend time on lengthy text just to create an online account. There is an emerging trend of summarising ToS and make them friendlier to read [9]. For example 500px (https://500px.com/terms) and Pinterest (https://about.pinterest.com/en/terms-service) have such ToS as see on **Figure 1**. 500px incorporates also a light-hearted approach as in this example: *"[...] we are not liable. But we may pay you $100 if our server flies into your window."* In the UK it is even mandatory for certain financial services to provide a document containing "key facts" of the terms and the former Financial Conduct Authority (FCA) published "good practice" examples [10]. There is even a crowdsourced service called "Terms of Service; Didn't Read" (ToS;DR)[1] that provides summaries of ToS of other web services

There are different variations of how ToS are presented to users on the web during the registration [2]. Some sites use a "clickwrap" agreement where the user clicks on "I Agree" button after seeing or scrolling through ToS. However, more commonly sites use a so-called "browsewrap" agreement where the terms are buried somewhere

---

[1] Terms of Service; Didn't Read (ToS;DR): https://tosdr.org/

on the site and users are not showed them directly. Users must usually check the checkbox to indicate that they have seen and read the terms even if these were never showed to them. While the "clickwrap" forces users to actively engage with terms (even if just scrolling through), "browserwrap" solutions establish a passive engagement and are never explicitly brought to users' attention [8].
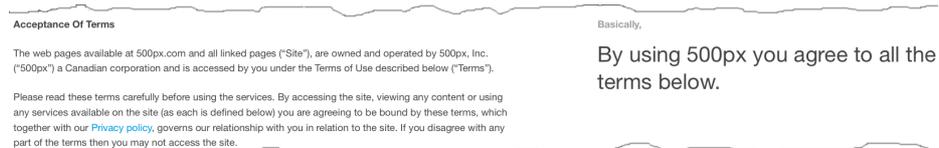

Fig. 1. An excerpt of 500px ToS where on the right side is a summarised version of the ToS section on the left.

There are several reasons why "browserwrap" is so common. When designing a "sign up" form for an online service the designers must make it simple to attract users as the next site is "just one click away". Lengthy text does not contribute to simplicity and is substituted by a link to the terms. Even if the site provides ToS key points, these are not shown to users at the time of account creation and are just available on the ToS page. Some might even argue that ToS are hidden on purpose.

To our knowledge there is no research into how different engagements of users with ToS at the time of account creation affects the users' registration and this paper provides an exploratory study into this area.

2   Related work

There is plenty of anecdotal evidence that many users read or skim through ToS when large sums of money are involved (e.g. buying a house, signing for a mortgage), medical treatment is in question (e.g. before operation), and in similar circumstances [1]. However, on the web many users do not pay much attention when agreeing to terms, as they are usually not drastically disrupting one's life. According to Ofcom an average internet user in the UK visited around 80 unique domains in January 2012 [7]. If users would read ToS on all these domains (10 minutes for a ToS of an average length of 2500 words according to [6]) each one of them would spend on average 13 hours for this activity. It has to be acknowledged that people probably visit mostly the same domains every month and the number of new domain visited each month is lower than 80. Nevertheless, one can spend a significant amount of time reading (or just skimming through) ToS of all newly visited domains.

HCI community has been warning for a long time that the complexity of privacy policies, terms and conditions hinders their readability and presents one of the key usability problems for websites [3, 5, 6]. The calls for transparency, better visualisation and readability have come from academia [5], industry [9], non-government organisations [2], and from government agencies [10]. It has been already observed that a simplified ToS can have an impact on service selectiveness. Researchers have for

example shown that on a list of results of a custom made search engine consumers tend to click on the results whose ToS are ranked as more accessible and readable [8]. A visual version of ToS for mobile phone apps has also contributed to higher selectiveness of apps of whose ToS privacy invasion was scored lower [4]. However, such visual presentations are not engaging as users see just a visual indication of how much a particular ToS invades or might invade their privacy. Moreover, a metric involved in calculating such scores could be exploited.

In contrast with above presented studies and services that present ToS "key points" only a dedicated ToS web page, we incorporated a summarised ToS into a "sign up" form without trying to affect users' inclination towards a service (e.g. not showing how much each key point invades the privacy). Such approach can maintain a certain level of simplicity of a "browserwrap" approach while still engage users with ToS, which is a characteristic of "clickwrap" forms. For this purpose we have built a web page offering users the participation in a draft for tickets for a concert in exchange for their name, surname and email. ToS were presented in three different ways as outlined in the next section.

3   Method

For the purpose of this study we have created three different "sign up" forms: (i) a common "browserwrap" version, (ii) a version containing ToS key points as a bulleted list, and (iii) a variant of the later with one checkbox in front of each summarised sentence. Specifically, we have taken ToS Google is using for a myriad of their services. We have chosen this specific ToS because it is one of the mostly "agreed on" ToS currently online and it is translated in a large selection of languages (including Slovenian we have used in this study). In addition, "Terms of Service; Didn't Read" (ToS;DR) provides summarised key points of Google's ToS that we have used (retrieve 10th of November 2014) in our study and contains 3 positive, and 6 slightly negative (in a sense they somehow invade users' privacy) key points (scale: positive, neutral, slightly negative, negative). ToS;DR classifies Google's terms as C on a scale from A to E. This means that their ToS are neither "good" nor "bad" or as they put it *"The terms of service are okay but some issues need your consideration"*. We have slightly changed the terms by omitting the word Google or replaced it with the name of our institution, and added an additional section covering the research purposes and anonymisation of all data. The terms used are listed as such:

- We keep your identifiable user information for an undefined period of time.
- We can use your content for all our existing and future services.
- This service tracks you on other websites.
- We can share your personal information with other parties.
- We may stop providing services to you at any time.
- We enable you to get your information out when a service is discontinued.
- We post a notice of ToS changes, with a 14-day ultimatum.
- We keep the rights on your content when you stop using the service.
- Partial archives of our terms are available.

- Your information will be anonymised if used for research purposes.

All three designs are visible on **Figure 2** (for the purpose of this paper the forms have been translated into English). First design (left) is a common "browserwrap" implementation. Second one (centre) contains a list of summarised key points of ToS with a possibility to see the expanded related section of the ToS by clicking on the icon by each summarised sentence (one such expanded "key point" can be seen on the form). The third design (right) is a variant of the second with the addition of a check-box in front of each summarised key point. Checking a checkbox results in highlight-ed key phrases of a particular sentence. In all three forms above the "I agree" button is a link to the whole ToS, which open at the bottom of the form as visible on the left form (the length is cut to the height of other to two forms on **Figure 2**). By clicking on "I agree" the participants received an email to confirm its authenticity. In the re-ceived email the link to ToS was again provided for users to visit. By clicking on "I disagree" they were presented with a form asking them why.

Fig. 2. Three different designs of a "sign up" form. Left is a common "browserwrap" form with expanded ToS on the bottom (achieved by clicking on a ToS link above the buttons). In the centre is a form with ToS key points; each point can be expanded by clicking on the info icon in front of it. Right is a variant of the centre version with a checkbox in front of each ToS key point; when checked the key phrases of a particular summary were highlighted.

3.1 Dissemination and participants

We chose a Christmas concert for students organised by a chain of shopping centres. With their consent we created the above described forms. The site was accessible from 28th of November 2014 to 17th of December 2014 for a total of 20 days. The QR code leading to the web page was positioned in a corner of posters advertising the concert two weeks before the event happened. However, the code was not accompa-nied by any text and it occupied just a small part of the poster. The same code and a link to the form were put on the Student organisation's and a few other web sites ad-vertising events in the area one week before the event.

The target population was thus students who for exchange of their name, surname and email address were put in a draft for 30 free concert tickets. The prize itself was not high as the ticket cost just 3€ ($3.25, £2.2). Our belief is that the higher the price (or the added value of a service) the higher is users' willingness to sacrifice their online privacy. With the low price users were thus not inclined to continue with registration if they perceived ToS as too invading or the process too lengthy.

When users visited the site one of the three forms was randomly showed. We logged the time spent on the form, the mouse movements and clicks using the Click-heat software (http://www.labsmedia.com/clickheat) to capture users' engagement with the site and in particular with ToS. At the same time we used Apache logs filtered and summarised by AWStats (http://www.awstats.org/).

4   Results

During the period of 20 days, 340 unique users (excluding spiders, and other foreign IP addresses) visited the web site. Each was presented with exactly one of the three forms (see **Figure 2** and the description in Section **3**). For the purpose of this paper we will use Form 1 (F1) for the form on the left (a common "browserwrap"), Form 2 (F2) for the form in the centre (with TOS key points in a bulleted list), and Form 3 (F3) for the form on the right (with key points highlighted when checked as read). The number of times each form was visited is presented in **Table 1**.

Table 1. Number of visits per form and numbers of how many visitors completed each form.

	Form 1	Form 2	Form 3
Number of times shown by the random alghorithm	166	92	82
Number of times each form was completed	22	8	7
Percentage of completed forms in relation to visits	13.3	8.7	8.5

It can be noted that the distribution of the forms among users is not equal which is contributed to the PHP's random function.

More interesting are the percentages of the forms completed. The numbers show a substantial dropout for all three. However, the dropout for F2 and F3 (forms with summarised ToS) was even higher. This can be interpreted in two different ways: either users were "scared away" by the length of the text they were presented with and the prize was not worth the effort, or they had actually read the key points of terms and were not willing to give up their data for a small prize. Even more interesting is that the percentage of people who completed F2 and F3 is similar even if users completing F3 had to make 10 more clicks – engaging them with ToS more that users completing F2. However, the average time spent on each form is not high (see the left column in **Table 2**): 37 seconds for F1, 36 seconds for F2, and 59 seconds for F3. This suggests that visitors visiting F1 and F2 did not engage much with ToS and did not spend much time reading. Moreover, more users completed F2 under 30s than F1 as more text would make them hurry to complete the form.

Table 2. Times spent on each form and percentage of people completed each form in different time frames

	Average time in seconds to complete	% of those who spent			
		< 30s	30s – 60s	60s – 120s	> 120s
Form 1	39	27.3	54.5	13.6	4.5
Form 2	37	50.0	37.5	12.5	0.0
Form 3	59	14.3	28.6	57.1	0.0

The higher average time spent on F3 is due to 10 additional clicks on checkboxes – this adds 2 second for each checkbox which is enough to skim the associated ToS key point and check it as read. If looking at individual time frames in **Table 2**, visitors who spent between one and two minutes on the form had enough time to skim through the text presented on F2 and F3. Of all visitors only 7 (2%) actually opened the stand-alone ToS page linked from the confirmation email. The visits to ToS integrated into the forms – shown by clicking on the link above "I Agree" button – are explained below. We have not received any email with ToS related questions (the email address was available below the "I Agree button" and in the confirmation email) no one clicked on the "I disagree" button.

Fig. 3. Interaction with the forms. The clicks are visible over the forms – the number of clicks in a particular spot is visualised on a blue-green-yellow scale from low to high number of clicks

The interaction with each form is visible on **Figure 3**. Clicks are shown on a blue-green-yellow scale from low to high number of clicks. On F1 and F2 visitors often clicked on the link above the buttons that revealed the integrated ToS below the form (bordered purple). Interestingly, on F2 visitors rarely clicked on information links by each ToS key point to reveal the related ToS section. However, the F3 shows the op-

posite. Visitors were forced to interact with ToS key points and often clicked on the information icons by the checkboxes to reveal the related ToS section. This is particularly visible by the top key points (bordered orange), while the frequency of clicks waters down with lower key points. One possible explanation for this is that visitors were already overwhelmed with clicking. Nevertheless, roughly 60% of those who completed F3 and 13% of those who completed F1 and F2 (or 24% all together) skimmed through or read ToS to some extent.

5   Discussion

This preliminary study presents the exploratory results into how users interact and engage with summarized ToS into key points at the time of an online account registration. The initial data suggests that summarised ToS is no more engaging than a simple "browserwrap" version that has ToS hidden from the user. Different designs just contribute to different ways of interaction and engagement. Nevertheless, a closer look at the interaction shows that 24% of users who registered for the service at least skimmed through ToS (60% of those completed F3 with most interaction involved).

We admit that this study has several limitations. Firstly, we had some technical glitches that need to be dealt with for the follow up study. One is the randomisation of the form distribution. As mentioned, we used PHP's random function, which resulted in displaying F1 nearly twice as much as the other two. Simply alternating forms would ensure sufficient randomisation as visitors are randomly visiting the site. The Clickheat software was also not recording all clicks, which is due to poor documentation and using default values.

In addition to technical, some methodology limitations were present as well. For this preliminary study we have not conduced any formal interviews. However, we had some informal interviews with people who received the tickets. Those who were presented with forms featuring ToS key points revealed that some looked slightly intimidating. This suggests that the selection of key points from ToS;DR might have contributed to a higher dropout as the forms with ToS key points showed nearly a third as much dropout than the form without. Nevertheless, even the form with not ToS key points experienced 86% dropout. In the future runs of this experiment more interviews need to be conducted to understand this phenomenon in details. The mere presence of 10 sentences (and checkboxes on one form) might be behind some dropout as well since the prize in question was not particularly attractive.

Another limitation is the target population – namely students – that does not represent the general population. Nevertheless, this group of users is very active on the internet and presents a diverse range of students from different study programs including humanities, language studies, education studies, management, mathematics, kinesiology, biology and computer science. We can also assume that students at our university come from diverse social backgrounds and diverse geographical locations (from all parts of Slovenia as well as abroad – around 20% of students are foreigners).

6 Conclusion

ToS key points are a new alternative to lengthy legalise language. However, the web sites are so far listing them only on ToS dedicated pages. In this paper we provide an initial view into how users interact and engage with ToS key points at the time of account creation for an online service. Whilst noting that these results are of preliminary nature, they clearly show trends worth presenting. The main findings reveal a high dropout between users who visited and those who completed the form (as high as 91.5 %) with forms featuring summarised key points having an even greater dropout. The average time spent on each form was also low. Nevertheless, the data suggest that different designs contribute to different engagement with ToS and that 13% of those less engaged to 60% of those most engaged at least skimmed through the ToS text.

The presented study raises some questions such as why so many visitors had left the page. While we have speculated the about possible reasons (too much to read, low priced reward, intimidating ToS key points) we would have to back up this data. We are planning to address these issues in the future runs of the study with qualitative (interviews) and quantitative approach (attracting a larger and more diverse population). The future work includes also the elimination of technical problems of the experiment.

7 References

1. AskReddit (banjomatic): People who read through the Terms & Conditions, did you ever find anything to stop you from accepting, http://www.reddit.com/r/AskReddit/comments/2qs3g2/people_who_read_through_the_terms_conditions_did/.
2. Bayley, E.: The Clicks That Bind: Ways Users 'Agree' to Online Terms of Service. Electronic Frontier Foundation (2009).
3. Fiesler, C., Bruckman, A.: Copyright terms in online creative communities. Proceedings of the CHI EA '14. pp. 2551–2556 ACM New York, NY, USA (2014).
4. Liccardi, I. et al.: No technical understanding required: Helping users make informed choices about access to their personal data. Proceedings of the MOBIQUITOUS '14. pp. 140–150 ICST, Brussels, Belgium (2014).
5. Luger, E. et al.: Consent for All: Revealing the Hidden Complexity of Terms and Conditions. Proceedings of the CHI '13. p. 2687 ACM New York, NY, USA (2013).
6. McDonald, a M., Cranor, L.F.: The Cost of Reading Privacy Policies. A J. Law Policy Inf. Soc. 543, 4, 1–22 (2008).
7. Ofcom: On average, internet users are visiting fewer domains, http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr12/internet-web/uk-4.30.
8. Tsai, J.Y. et al.: The effect of online privacy information on purchasing behavior: An experimental study. Inf. Syst. Res. 22, 2, 254–268 (2011).
9. UXmovement (anthony): Why Every Terms of Service Page Needs Summaries, http://uxmovement.com/content/why-every-terms-of-service-page-needs-summaries/.
10. Waters, D.: Good and poor practices in Key Features Documents. The Financial Conduct Authority (2007).