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# “I agree”: the effects of embedding terms of service key points in online user registration form

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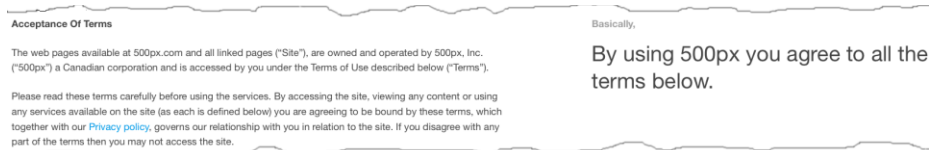
**Abstract.** Terms of service (ToS) are becoming an ubiquitous part of online account creation. There is a general understanding that users rarely read them and do not particularly care about binding themselves into legally enforceable contracts with online service providers. Some services are trying to change this trend with presenting ToS section as key points on a ToS dedicated page. However, little is known how would such presentation of key points affect the continuation of user registration at the time of account creation. This paper provides an exploratory study in this 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 registration forms: a standard form with ToS hiding behind a hyperlink and two with ToS key points presented at the time of account creation with different engagement requirements. Initial results suggest that ToS key points presented just as a list at the time of account creation is no more engaging than a form with ToS hidden behind a link. More text even made several users to complete the registration quicker than the users with the standard form. Moreover, different designs of the ToS key points list requiring different user engagement affect the interaction and reading of ToS key points, but the actual time spent on ToS is very low.

**Keywords.** Terms of Service; Terms and Condition; Privacy policy.

## 1 Introduction

It is a common belief that Terms of Service (ToS) are written in a complicated legalese and that 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 and Pinterest have such ToS, as see on Figure 1. 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) (<https://tosdr.org/>) 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 “browserwrap” agreement where the terms are buried somewhere on the site and not showed directly to the user. Checkboxes are used to indicate that one has seen and read the terms even if these have never been shown. While the “click-wrap” forces users to actively engage with terms (even if just scrolling through), “browserwrap” solutions establish a passive engagement [8].



**Fig. 1.** An excerpt of 500px ToS showing a summarised version of a ToS section on the left.

There is a simple reason why “browserwrap” is more common. When designing online forms the designers must make them simple to attract users and lengthy ToS do not contribute to simplicity. Even if providing ToS key points, these are not shown at the time of creating an account, but are just available on the ToS dedicated page.

To the best of our knowledge there is no research into how different user engagement with ToS at the time of account creation affects the users’ registration, hence, this paper provides an exploratory study into this area. We have created and compared three different registration forms to measure users’ engagement with ToS: (i) a “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.

## 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), medical treatment is in question (e.g. before operation), and in other similar circumstances [1]. However, on the web many users do not pay much attention when agreeing to terms, as repercussions of one’s actions commonly do not drastically affect one’s life. According to Ofcom an average internet user in the UK visited around 80 unique domains in January 2012 [7]. Reading ToS on all these domains (10 minutes for a ToS of an average length of 2500 words according to [6]) would take on average 13 hours. It has to be acknowledged that people probably visit mostly the same domains every month and the number of new domains 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 for long warning that the complexity of privacy policies, terms and conditions hinders their readability and creates one of the key usability problems of website design [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], and that users install mobile phone apps of which ToS privacy invasion visualisation is 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, as they are not provided by actual service owners.

In contrast with such visualisations we simply incorporated ToS key points on a registration form and tried not 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.

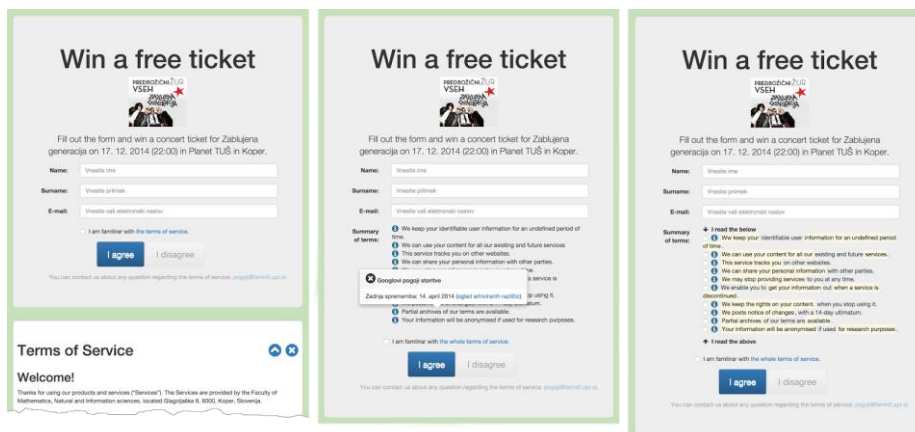
### 3 Method

For the purpose of this study we have created three different "sign up" forms: (i) a common "browserwrap" version, (ii) a version containing a list of ToS key points, and (iii) a variant of the latter with one checkbox in front of each item on a list. Specifically, we have taken ToS Google is using for a myriad of their services (<http://www.google.com/intl/en/policies/terms/>). 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 (retrieved on 10<sup>th</sup> 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 key points of the ToS 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). Form 1 (left) is a common “browserwrap” implementation. Form 2 (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). Form 3 (right) is a variant of the second with the addition of a checkbox in front of each summarised key point. Checking a checkbox results in highlighted key phrases of a particular sentence. In all three forms the link to whole ToS is placed above the “I agree”. Clicking on it results in opened ToS at the bottom of the form as visible on the Form 1 (the length is cut to the height of other two forms on Figure 2). By clicking on “I agree” each participant received an email to confirm its authenticity. In the received 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. Form 1 (left) is a common “browserwrap” form with expanded ToS on the bottom (achieved by clicking on a ToS link above the buttons). Form 2 (centre) is a form with ToS key points; each key point can be expanded by clicking on the info icon in front of it. Form 3 (right) is a variant of the later 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 shopping centre. 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 accompanied 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 a few web sites advertising events one week before the event.

The target population were students who for exchange of their name, surname and email address entered a draft for 30 free concert tickets. The prize itself was not high as the tickets could be bought for just 3€. 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 Clickheat software 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.

## 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): Form 1 (F1) was a "browser-wrap", Form 2 (F2) included TOS key points, and Form 3 (F3) had 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 algorithm	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 %

The last line in the **Table 1** presents 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 though users completing F3 had to make 10 more clicks. The fact that there were more clicks increased ToS engagement of F3 if compared to F2. However, the average time spent on each form is not high (see the left column in **Erreur ! Source du renvoi introuvable.**): 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 if more text would make them hurry to complete the form.

The higher average time spent on F3 (see **Table 2**) is due to 10 additional clicks on checkboxes, which F2 did not require. This contributed to 2 additional second for

each checkbox checked for F3. These 2 seconds are also enough to skim the associated ToS key point and check it as you read. If looking at individual time frames in **Erreur ! Source du renvoi introuvable.**, 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.

**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
<b>Form 1</b>	39s	27.3 %	54.5 %	13.6 %	4.5 %
<b>Form 2</b>	37s	50.0 %	37.5 %	12.5 %	0.0 %
<b>Form 3</b>	59s	14.3 %	28.6 %	57.1 %	0.0 %



**Fig. 3.** Interaction with the forms. The number of clicks in each particular spot is visualised on a blue-green-yellow scale from low (blue) to high (yellow) number of clicks

The interaction with the forms can be seen on **Figure 3**. Clicks are shown on a blue-green-yellow scale from low (blue) to high (yellow) number of clicks. On F1 and F2 visitors often clicked on the link (bordered purple) above the “I Dis/Agree” buttons that showed the ToS below the form. Interestingly, on F2 visitors rarely clicked on information links by each ToS key point. By clicking on these information icons before each key point the related ToS section was revealed. However, the F3 shows the opposite. 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. Users presented with F3 also less frequently clicked on the link above the buttons. One possible explanation is that they were already overwhelmed by 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 summarised 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). Higher engagement can also lead to higher enforceability in the legal terms [2].

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. We used PHP’s random function, which resulted in displaying F1 nearly twice as much as the other two forms. 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. However, these glitches have not affected the study process.

In addition to technical, some methodology limitations were present as well. For this preliminary study we have not conducted 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 no 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. Moreover, when presented with the text and no actual engagement (Form 2), users who completed the registration tended to complete it quicker compared to the form with no text (Form 1).

Another limitation is the target population for the event chosen – namely students. 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, and are aged between 18 and 24. We can assume that generalisation over this age group is reasonable while the results can be thus hardly generalised over whole population.



## 6 Conclusion

ToS key points are a new alternative to lengthy legalise language. However, the web sites are 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 about the 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/](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. 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. 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. 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).