

Objectives

The aim of this project is to create a user based visualization of the usage of their own privacy information. To achieve this we will do the following:

- Experiment with the visualisation of privacy information
- Design a visualisation of a given privacy information dataset
- Perform eye tracking experiments and surveys to evaluate the performance of the visualisation

Introduction

Following the introduction of the European Union's new General Data Protection Regulation (GDPR) companies are required to become more transparent about their data management usage activities towards their consumers. This regulation has the potential to push forward the organisations privacy responsibility and transparency practices further – give access to the organisation's consumer to a portal where they can see in real-time how their data is being used by the organisation.

For such an open, transparent and potential route to gain market competitiveness for an organisation requires the design and deployment of a consumer-focused visualisation platform – the overall objective of this project. This project aims to both help with and evaluate this compliance by creating a user interface that displays a given user's privacy information and if the usage of that data is GDPR compliant.

Designing a visualisation platform requires understanding how a user processes the information. For this purpose, we are aiming to run a limited eye-tracking experiment to establish the best way possible to show a particular information on the screen. The eye-tracking experiment could provide use with a better location selection to display crucial information.

Methods

By implementing both techniques developed for displaying large datasets and commonplace user interface practices we will develop multiple mock user interfaces over the period of this research. These will be tested on volunteers to see how they perform, when used by general consumers and the data gathered will be used in the development of the next set of interfaces.



Figure 1

This figure shows an interface for smartphone that uses a grid system to display a users social media information. Opening a parent category would lead to subcategories and then to a screen which displays all the entries in those sub categories. Users can view all the details of these entries and the privacy issues in compromised entries.

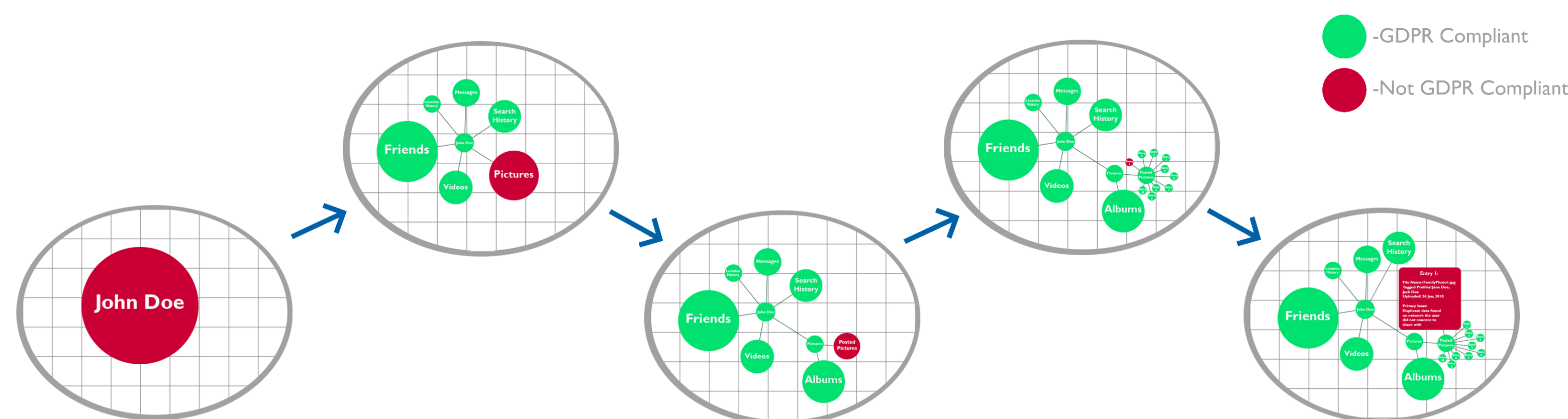


Figure 2

This figure shows a visualisation of a given users social media information that uses a node graph. Nodes are connected to their parent node with a line and their size represent the amount of child nodes attached to them. In this case the child node would represent either a subcategory or an entry in a category. The user can expand a node by clicking on it which will display all the child nodes connected to it. Compromised nodes are clearly displayed and can be navigated to find the compromised entry within them. Expanding an entry would yield its details and if compromised it will also give information as to the privacy issue.

Conclusion

The project objectives is to create an intuitive visualization aid that can help consumers to gain information about how their data being accessed/used. In the changing environment and growing concerns about privacy – such a service will be crucial in gaining consumer trust.

Additional Information

This project is related to the EPSRC funded project "Data to Improve Customer Experience (DICE)". The project is particularly interested in personal data, and is using rail passengers as a specific focus of interest. The overall aims of the project are:

- Understand the role that personal data plays in enhancing the user experience of rail passengers
- To develop technical solutions to data privacy
- To develop an evaluation framework that can be implemented so passengers can understand how their data is used and how they can control and verify its use.

The project started in October 2016, and runs for three years to September 2019. For more information about the project, please visit <http://www.dice-project.org>.

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