Integrating User-Centered Design with the Agile Software Development Methodology for a Cultural Heritage Information System

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Abstract. This paper reports on the findings of a user study on the design ideas for the Sarawak Digital Cultural Heritage Progressive Web App (PWA). The study elucidates the integration of User-Centered Design (UCD) in the Agile software development methodology. Five users were instructed to map their ideas on how they envisioned the application and the features it would have based on a brief description of the system as a one-stop center cultural heritage information for the general public in Sarawak while encouraging conservation and preservation of material culture. The study found that users prefer a simple and pleasing design with an emphasis on visual representation, and a straight forward and intuitive navigation to minimize cognitive load, Further study should explore the effectiveness of the integration of UCD for the Cultural Heritage Information System from the design stage to the evaluation stage.

Keywords: User-Centered Design, Digital cultural heritage, progressive web app (PWA), Agile methodology

1 Introduction

Cultural heritage is subject to the risk of irreversible loss and damage. As a result, over the years, efforts to digitize cultural heritage have become rigorous as a method of preservation and conservation. Heritage is created by collecting and preserving the activities of the Gallery, Library, Archives, and Museum (GLAM) institutions through collective memory processes that focused on memory stores and historical materials [1]. With an aim to ensuring long-term storage of information, digitization could be translated as a means of enabling physical attributes to be transformed into digital resources to be stored in a management system and repositories [2]. Realizing the risks to cultural heritage and the solution of digitization, we aim to develop an information system for the cultural heritage of Sarawak.

Sarawak is Malaysia's largest and most diverse state made up of more than 40 ethnic groups. The Sarawak Government has supported a number of efforts to adopt digitalization for economic growth and, to a large extent, cultural heritage. In an article by Borneo Post Online, the Digital Economy project manager has revealed that as of