

# The Role of U-FADE in Selecting Persuasive System Features



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## INTRODUCTION

Behavior Change Support Systems (BCSS) are systems that combine properties of interpersonal interaction and mass communication with the support of technology to change or alter human behavior or attitude (Oinas-kukkonen, 2013). It originated from Persuasive Technologies (PT) or Captology; which is the use of interactive technology for changing human attitude or behavior to a predetermined one (Fogg 1997). Due to its ability to adapt to individual differences, it is considered to have a greater potential for changing human behavior and/or attitude. This is because, it is capable of employing both animated and non-animated objects to persuaded its user. Thus it has been applied in areas of healthcare (Mateevitsi et al., 2014; Rana & Saleem, 2014), leisure and recreation (Sra & Schmandt, 2013; Tieben, Sturm, Bekker, & Schouten, 2013), energy saving (Emeakaroha, Ang, & Yan, 2012; Wunsch, Stibe, Millonig, & Seer, 2015) Information security (Kegel & Wieringa, 2015; Yeo, Rahim, & Ren, 2009), etc. Nonetheless, BCSS development is faced with a number of challenges and one of the most prominent is that majority of designers fail to use appropriate methods for its design (Wiafe, 2013). As a result, some BCSS applications become obsolete with time[2]. In addition, most of the existing frameworks or design approaches do not provide adequate information that can be used for analyzing and designing applications that address changing needs of users during use

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Recently, the Unified Framework for Analyzing, Designing and Evaluating persuasive systems (U-FADE) was proposed (Wiafe 2013). It incorporated key concepts from existing persuasive design models such as the Functional Triad (B. Fogg, 1998)(Wiafe et al., 2014), the Behavior Wizard (B. J. Fogg & Hreha, 2010)[4], the 3-Dimensional Relationship between Attitude and Behavior (3D-RAB) model (Wiafe, Nakata, & Gulliver, 2014) [1], [2] and the Persuasive System Design (PSD) model (Oinas-kukkonen & Harjumaa, 2009) ADDIN CSL\_CITATION { "citationItems": [ { "id": "ITEM-1", "itemData": { "author": [ { "dropping-particle": "", "family": "Fogg", "given": "B J", "non-dropping-particle": "", "parse-names": false, "suffix": "" }, { "dropping-particle": "", "family": "Hreha", "given": "Jason", "non-dropping-particle": "", "parse-names": false, "suffix": "" } ], "id": "ITEM-1", "issued": { "date-parts": [ [ "0" ] ] }, "title": "Behavior Wizard: A Method for Matching Target Behaviors with Solutions 1. Overview of Behavior Wizard 3. The Need to Better Classify Behavior Types", "type": "article-journal" }, "uris": [ "http://www.mendeley.com/documents/?uuid=8ba74f7f-e3ef-4ef5-83a2-4f19c9f8b4f6" ] } ], "mendeley": { "formattedCitation": "(B. J. Fogg & Hreha, n.d.)", "plainTextFormattedCitation": "(B. J. Fogg & Hreha, n.d.)", "previouslyFormattedCitation": "[5] }, "properties": { "noteIndex": 0 }, "schema": "https://github.com/citation-style-language/schema/raw/master/csl-citation.json" } to address design challenges associated with previous design methods. However, the framework has not been applied in developing any application to ascertain its practicality, although it has been demonstrated conceptually that it provides a more compressive approach for BCSS analysis and design (Wiafe 2013)(B. J. Fogg & Hreha, n.d.).

This chapter therefore presents an evaluation of the Unified Framework for Analyzing and Designing Persuasive Systems using the case of a weight management system. The various

stages of the U-FADE was followed to redesign an existing mobile application known as ObiMo Pet (Wiafe, 2013). The objective was to ascertain whether the framework is capable of facilitating design or enhancing the selection of persuasive system features.

The chapter is presented as follows: the next section presents a background discussion on U-FADE, this is followed by the method adopted for the study, and then the process in U-FADE is used to redesign the existing application. The findings, discussions, future research directions and conclusions are then presented.

## BACKGROUND

Currently, the Unified Framework for Analyzing, Designing and Evaluating persuasive systems (U-FADE) is the only framework that seeks to formalize Behavior Change Support Systems (BCSS) design process with emphasis on the changing needs of users during the change intervention (B. Fogg, 2002)(Wiafe 2013). It comprises analysis of the Persuasion Event, selection of Persuasion Strategy, identification of System Features needed to promote persuasion, Development and Implementation of the persuasive system and the Evaluation of Change (See Figure 1)1. ADDIN CSL\_CITATION { "citationItems": [ { "id": "ITEM-1", "itemData": { "DOI": "10.4018/ijcssa.2013070102", "ISSN": "2166-7292", "author": [ { "dropping-particle": "", "family": "Wiafe", "given": "Isaac", "non-dropping-particle": "", "parse-names": false, "suffix": "" } ], "container-title": "International Journal of Conceptual Structures and Smart Applications", "id": "ITEM-1", "issue": "2", "issued": { "date-parts": [ [ "2013", "6" ] ] }, "page": "6-16", "title": "U-FADE: A Unified Approach To Persuasive Systems Development", "type": "article-journal", "volume": "1" }, "uris": [ "http://www.mendeley.com/documents/?uuid=8279677e-cf51-47d4-a16a-6fccdb5e387e" ] } ], "mendeley": { "formattedCitation": "(Wiafe, 2013)", "plain-

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