# PERSUASION KNOWLEDGE FOR DESIGN COMMUNITY: DESIGN OF PTOOLKIT PROTOTYPE

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**ABSTRACT**. Persuasion knowledge has been used in various disciplines, and now is being utilized by interaction designer for designing persuasive application. Although lots of interactive applications were designed with aims to influence on certain aspects the availability of persuasion knowledge for design community is limited. Therefore, Persuasion Knowledge Toolkit (PToolkit) is designed to make the persuasion knowledge more easily accessible for designer during the design ideation phase. This paper describes the design process of PToolkit prototype in making the persuasion knowledge available for designers.

**Keywords**: persuasion knowledge, design of persuasive application, design, information design, information architecture

## INTRODUCTION:  PERSUASION KNOWLEDGE

Persuasion is a specialized knowledge that has been practiced in various knowledge disciplines. Recently, the use of persuasion has grown in importance especially in the design of interactive application. For examples, users have used an online dietary website to lose weight and change their dietary behavior (Saperstein, Atkinson, & Gold, 2007), a smoking cessation website has helped smokers quitting their smoking habits (Escoffery, 2004) and children was trained to manage their asthma by using an online game (Liebermen, 2001). These applications utilized the theory and principles of persuasion both explicitly and implicitly in order to influence people to behave as intended. The success of persuasion is highly depended on the suitability or correct use of persuasion knowledge that being implemented in the application (Saidin, Macaulay, & Hine, 2012).

Designers that interested or trusted in developing persuasive application require guidance in embedding the influence factor during the design phase.  Persuasive application aims beyond the product usability, which intends user to engage into specific behavior (B. Fogg, 1998).  Although some works in increasing designers' awareness on the needs of persuasion knowledge in designing persuasive application have been started (B. J. Fogg, 2003), (Lockton, Harrison, Holley, & Stanton, 2009), an accessible persuasion knowledge that provides appropriate information and in a timely manner is fairly limited.  Therefore, this paper will describe on how the persuasion knowledge will be made available to the designer during the design ideation phase.

## DESIGNING PERSUASION TOOLKIT (PTOOLKIT)

Persuasion knowledge toolkit (PToolkit) is an attempt to transfer the persuasion knowledge to designers and assist them in the persuasive application design. As the accessible

and appropriate knowledge of persuasion to help designer in persuasive design is quite limited, we were designing a toolkit that contains the complex knowledge of persuasion. Ideally, designers should use this toolkit during the design ideation phase. This tool supposedly inspires designer in their design idea and provide the appropriate persuasion knowledge to them.

PToolkit acts as a tool that will transfer the persuasion knowledge to designer. The design will be based on the model developed earlier which demonstrate ways of designer's thinking in breaking the complex of the persuasion knowledge to be applied in design of persuasive application (Saidin, Macaulay, & Hine, 2011). Refer to figure 1 for the persuasion knowledge transfer model.
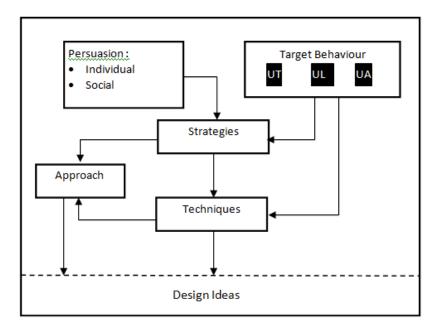


**Figure 1.  Persuasion Knowledge Model**

**Requirement Analysis**

In our early works, we have conducted several interview and workshop sessions for understanding design, designer and design work. This work was necessary in order to gather data and ensure that the PToolkit is design appropriately to meet the needs of designers. At the end of those sessions, we have concluded few most important elements that needed careful attention for making PToolkit usable for designers (Saidin et al., 2011).

(i)    Element of persuasion knowledge should be made obvious and appropriately design.

(i)    The information architecture of persuasion knowledge which is currently complex have to be structured accordingly to make it more accessible.

(ii)   Navigation need to be carefully designed to provide a good user experience and assist learning experience.

(iii)  Interface design should be made user friendly and attractive in order to encourage designer engagement in exploring the possible and appropriate persuasion knowledge.

## Information Architecture

Based on the model as illustrated by figure 1, persuasion knowledge contains three important elements namely target behavior, persuasion strategy and persuasion technique for influence purposes.  Therefore, we were structuring the information on such a way to be more understandable (figure 2).
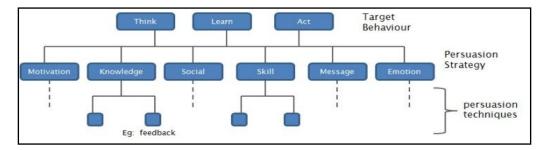


**Figure 2.  PToolkit's Information Architecture**

## Experience Design

The user experience is very important in acquiring user understanding and engagement. PToolkit aims to provide experience for the designer on the availability of persuasion elements that could be useful and appropriate during design ideation.  Navigation and interface design are among design aspects that important in designing experience and interaction.  PToolkit enables designers to navigate at every target behaviors, persuasion strategies and persuasion techniques without confusions.  On the other hand, the design of the interface is focused in providing designers' understanding on the different types of target behavior, persuasion strategy and techniques.  For example, each different strategy is given different color-coding, whereas the target behavior is represented by different symbols.  This is important for the user to map it into his memory and at the same time understood the persuasion element better.

## Navigation Design

The navigation structure has to be made easy for the user not only for navigating but also to understand the structure of the persuasion knowledge.  As stated earlier there are three main elements of persuasion that should be grasped by designers.  To understand and appropriately use the persuasion knowledge designers need to determine the target behavior, followed by selecting persuasion strategies and choosing techniques that suitable for their influences purposes.  Figure 3, depicts the navigation structure of the PToolkit.
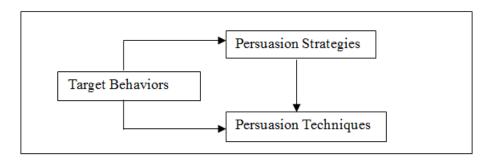


**Figure 3. Toolkit's Navigation Structure**

Therefore, based on the figure 3 navigation structure, PToolkit uses the tab system to allow user (designer) to navigate from target behavior to persuasion strategies and techniques (figure 4) with ease.  The tab system allows user to freely navigate into different elements of persuasion without losing the view of the overall structure of persuasion knowledge.  It serves two purposes in terms of direct and easy understanding of the persuasion knowledge structure and navigation.



**Figure 4.  Tab systems for ease of navigation**

**Information Design**

Persuasion knowledge elements are the core components of the influence factors.  Therefore, it needs to be carefully identified, obviously seen and understand.  Therefore, the information that represents these elements should be designed carefully.

*Target Behavior.*  Target behavior is the goal that designer's want the user to do.  There are three types of target behavior; to change the user's way of thinking (Think - UT), to change user by providing the necessary learning (Learn - UL), and persuade users to act towards a specific behavior (Action - UA).  To allow better understanding, each element will be explained thoroughly but using the simple words.  Additionally, each target behavior is given different symbols (figure 5) to represent its status.
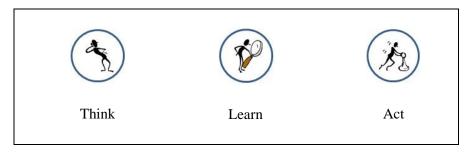


Think          Learn          Act

**Figure 5.  Target Behavior Symbols**

*Persuasion Strategies.*  Persuasion strategy is generally the overall planning of the persuasion attempts.  As there are lots of strategies that overlap among another, it was classified into six important categories. There are persuasion strategies of social, motivation, skill, emotion, knowledge and ability to retrieve messages.  User are able to choose one or combination of this strategy respectively.  Each strategy was explained using simple explanation and the persuasion techniques that appropriate to this strategy is also provided.

*Persuasion Techniques.*  Persuasion techniques act as the process to influence people's attitude and behavior.  In many scenarios, techniques may be grouped into specific strategies but it also able to stand on its own.  Only selected persuasion techniques will be designed in the PToolkit for speeding the development process.  Each explanation is based on four criteria of:

(i)     Direct textual explanation:  This is text based information that explains about the selected strategy or technique.  It was made as simple as possible to allow easy understanding (figure 6).

(ii)    Visual Information: The visual information is provided for allowing better understanding on how strategy and technique were used in various situations (figure 6).

(iii)   Extended information:  Some of the techniques will be supported with the extended information.   It is basically and additional information that allow designers to understand further on how certain persuasion techniques can be used for influences purposes (figure 6).

(iv)    Extended explanation: This is additional information that provides links to other real example in other website or application.  This link will allow designers to further explore about the subject matters (figure 6).

The PToolkit prototype has been designed through few iterative phases.  For each phase, an expert was asked to walk through the application and provide their comments.  Each expert will review on the use of icon, navigation, information display and design, and interface design

The final version of PToolkit Prototype is published with PDF interactive that can be accessed online and offline (downloaded into designers' personal computer).
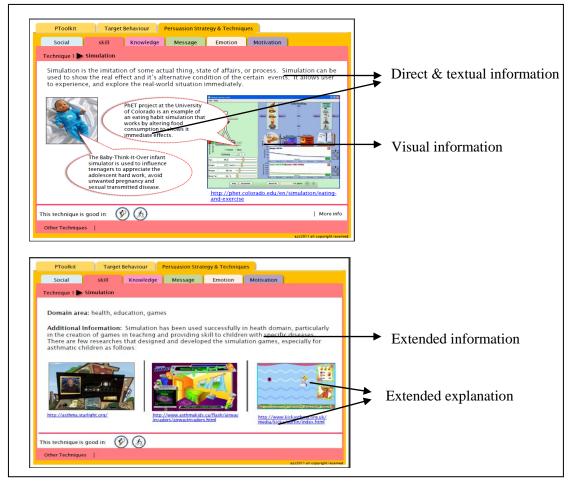


**Figure 6:  Information Design of PToolkit**

**CONCLUSION**

The PToolkit prototype has taken around six-month of design and development time. The challenges of design is ultimately on the aspect that this artifact is design for designer that probably not aware of the need of persuasion knowledge in their design work. Therefore, the design of PToolkit needs to convince designer that the knowledge corpus of persuasion exists appropriately for their perusal. The existing persuasion knowledge that hardly accessible and in theoretical form is now (some of them), can be easily understood and organized in a way that able to help during their design work.

For a start, PToolkit prototype has been used by undergraduate student (multimedia design student), in their design workshop. This workshop was organized for the multimedia design student to design a website (assisted with PToolkit) that encourages people to adopt a healthy living. Initially, it has shown that the PToolkit able to inspire the design idea during the design ideation phase. The information in PToolkit allows them to generate ideas in persuading people to embark into healthier living as was said by some of the students. However, further analysis is still needed to understand the impact of PToolkit as design assistance. We are also planning to give this tool to commercial designers to further evaluate PToolkit as a persuasion knowledge transfer tool.

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