

## **Interest Statement**

### **W3C Workshop on Device Independent Authoring Techniques**

**Candy Wong, Hao-hua Chu, Masaji Katagiri**  
DoCoMo Communications Laboratories USA, Inc.  
Seamless Experience Environment Laboratory  
{wong, haochu, katagiri}@docomolabs-usa.com  
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#### **Contribution**

DoCoMo USA Labs are interested in building device-independent user interface across heterogeneous devices. At present, we are concerning with the web service user interface and the standalone Java application user interface; and we consider devices ranging from PCs, Pocket PCs, to DoCoMo cell phones.

Within our scope of interest, we developed a single-authoring technique for building a device-independent user interface, which can be transformed into different device-specific user interfaces. Our technique is focused on the presentation layout. We believe that presentation layout plays a key role in the usability of web service/application's presentation.

However, in order to generate high quality presentation layout for varies device-specific user interface, authors are required to provide a layout specification for each single device. This requirement demands authors to have thorough knowledge of each device's supported markup languages as well as each device's capabilities. In our proposed method, we try to minimize authors' effort by just requiring a single layout specification from authors. We have tested our technique on different Java profiles, and made several observations from our prototype.

One of our observations is the presentation consistency. All generated device-specific presentations can be totally different or they can be fairly consistent. The extreme case of either approach can highly degrade the usability. We need to conduct further studies to find the balance between the two. There are other observations that are related to deployment of device independence described in the position paper. We would like to share our insight and discuss each observation in the workshop.

#### **Interested discussion topics**

1. We would like to know the required heuristics for transforming a device-independent user interface into "real" device-specific user interface. "Real" device-specific user interface is a user interface that considers the delivery context, user preference, and user acceptance. Missing one of those considerations cannot generate "real" device-specific user interfaces.

Currently, we have found a heuristic, we called it *task preference*, is important for "real" device-specific user interface. This heuristic is described in the position paper; but has not been included in the W3C Authoring Scenario informal draft. We would like to know other required and optional heuristics for generating "real" device-specific user interface.

2. We would also like to discuss the scope of device independence. Definitely, we cannot apply device independence to all kinds of web services and applications, such as on-line games and dynamically generated third-party web pages. We would like to find out the types of web services and applications that can best leverage the advantage of device independence.
  
3. Other than technical issues, we are also interested in cognitive and perceptual issues, which are related to user acceptance of device independence. We all know that the quality of the generated device-specific user interface may not be as high as the quality of the author-implemented device-specific user interface. We would like to know the cognitive and perceptual components that would significantly affect users' acceptance on the generated device-specific presentations.

**Abstract of the position paper “A Single-Authoring Technique for Building Device-Independent Presentations with Minimum Layout Effort”**

One of the biggest challenges in the prevailing web page development is *device heterogeneity*. Currently, devices such as cell phones, PDAs, and PCs are already capable of providing access to the Internet. In the near future, we are expecting other devices such as car navigation systems, braille, etc, to have the same capabilities. As the number of these devices increases, the traditional approach of developing a separate web page for each device becomes *non-scalable*. It would take too much effort for authors to learn different device-specific markup languages and tools, and then to implement and maintain a large number of device-specific web pages of the same web service. To meet this challenge, we propose a single-authoring technique called *ScalableWeb*. It allows authors to build a *device-independent presentation* at design time. The device-independent presentation can be transformed into device-specific presentations at runtime, with a minimum layout effort required from authors.