Editorial

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Biographical notes: Lorna Uden is the Professor Emeritus of IT Systems in the Faculty of Computing, Engineering and Technology at Staffordshire University. Her research interests include technology learning, HCI, mobile learning, activity theory, knowledge management, web engineering, multimedia, e-business, service science and innovation, semantic web, software as a service (SaaS) and problem-based learning.

Welcome to V7N1 of this issue. We have four papers in this issue. The first paper is by Damianos Gavalas and Michael Kenteris entitled 'Evaluation of a web recommender system in electronic and mobile tourism'. Recommender systems are software frameworks that employ a specific type of information filtering technique, aimed at recommending information items or social elements that are likely to be of interest to the user. The paper presents a user evaluation of a tourism recommender system (TRS). The user evaluation follows a structural process to validate the usability of TRS, measuring several quantitative and qualitative attributes. The evaluation has been exercised upon two separate versions of TRS: a typical web recommender system (wTRS) used in the domain of e-tourism, and a mobile recommender system (mTRS) used in m-tourism. The field trials and usability evaluation tests have been undertaken at the municipality of Mytilene, Greece. The usability experiments involved 15 testers. Each usability test session comprised four parts:

a an oral introduction to the scope of the session

b the web platform testing task

c the mobile application on-site testing task

d interview and filling-in of questionnaires.

According to Gavalas and Kenteris, the TRS was evaluated on the basis of a multitude of quantitative (e.g., effectiveness, efficiency, learnability) and qualitative (e.g., user satisfaction, ease of use, comprehensibility, perceived usefulness) criteria based on a combination of evaluation methods (compilation of oral interviews, processing of questionnaires, analysis of video recordings, task completion time measurements, etc). Although the results were positive, further tests are required on POI sites representing a variety of terrain morphology.

The second paper, 'Improving the model view controller paradigm in the web', is by Santiago Robles, Juan Lautaro Fernández, Andrés Fortier, Gustavo Rossi and Silvia Gordillo. According to these authors, the web is no longer a repository of static

data, but a place where information is constantly changing and where the end users are capable of generating the contents themselves. Also, part of the web has gone beyond the idea of web pages to become full-fledged applications where the user can perform almost the same tasks as he would on a 'standard' desktop application. This paper presents Meteoroid, a framework that allows a system running in the server to send information to web browsers without a client request. On top of this functionality, these authors have built a full model-view-controller protocol, allowing the creation of web applications that completely mimic desktop ones.

Meteoroid uses a strict MVC view of web applications, where the model role is played by the application model running in the server and the view-controller role is played by the browser and the web page displayed in the client. By having a communication channel between the server and the web browser, Meteoroid can send events to update the view according to the changes in the model, just as any standard desktop MVC-based application would do. On top of that, a set of web-widgets are constructed to ease the building process of live web applications. It is unfortunate that the only test carried out so far is a chat application supporting 90 concurrent users. Further performance benchmarking, are required to test if the framework can be used in a production server with hundreds of clients working at the same time.

The third paper is by Viorel Milea, Flavius Frasincar, Uzay Kaymak and Geert-Jan Houben entitled 'Temporal optimisations and temporal cardinality in the tOWL language'.

According to these authors, the tOWL language is a temporal web ontology language based on OWL-DL without nominals. The language enables the representation of time and time-related aspects, such as state transitions. The design choices of the language pose new challenges from a temporal perspective. One such challenge is the representation of temporal cardinality. Another challenge consists of optimising the temporal representations in order to reduce the number of axioms.

In this paper, they introduced two novel concepts in the tOWL language: temporal coalescing and temporal cardinality. The first concept, temporal coalescing, ensures a reduction of the proliferation of objects in the knowledge base, while also ensuring that a larger number of temporal queries can be resolved than previously. Temporal cardinality comes to address the limitations of the concept of static (OWL-DL) cardinality when time slices are involved. Rather than focussing on the range of a property, the temporal cardinality introduced in tOWL involves overlapping time slices that may violate a cardinality constraint, such as a company with two CEOs at a moment in time. More empirical studies are needed to verify its effectiveness.

The fourth paper, 'Conformance of navigational behavioural to requirements using animation', is by Joumana Dargham, Rima Semaan and Hamid Mcheick. According to these authors, the design, development, deployment and maintenance of web-based systems have become more demanding, complex and difficult to manage. Problems such as outdated or irrelevant information, difficulties in finding relevant information, difficulties in browsing, slow response, website crashes, and security breaches are common. Web applications require a more extensive and detailed requirements engineering process due to the number of stakeholders involved and to the diversity of the requirements including, among others, requirements on the navigation and on the business processes. Therefore, a thorough requirements analysis is important in the framework of web requirements engineering. Most of the methodologies proposed for the

development of web applications focus on the design phase, but pay less attention to the requirements engineering and more specifically to requirements validation.

These authors have developed a methodology named NRVA in order to validate the navigational requirements for correctness, consistency, and completeness. It is based on the generation of an XML document defining the navigational rules of the application and used as input to the animator. The major objective is to provide a navigation validation technique (or model) that is: effective; easy to use by both the engineers and the stakeholders and able to validate various navigational requirements categories. They argued that the supporting tool not only validates the correctness of the generated requirements, but also it aids the elaboration and enhancement of those requirements through visualisation. Although the results were encouraging, more empirical studies are needed to enable its uses.