

ISSN 1066-2243
Volume 16 Number 5 2006

Internet Research

**A part-themed issue on
internet security**

Guest Editors: Dr Mariemma Yagüe
and Dr Eduardo Fernández-Medina



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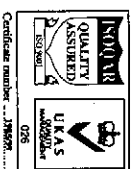
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Diane Heath

ISBN-13 978-1-84663-232-7
ISBN-10 1-84663-232-3
ISSN 1066-2243
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Internet services available worldwide
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Printed by Prehhaus Group Ltd, Schrocca Close,
Moulton Park, Northampton NN3 6HE

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ISSN 1066-2243
Volume 16
Number 5
2006

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Security issues take center stage in this issue of *Internet Research*, where we are treated to four of the top papers from the recent Workshop on Security in Information Systems (WOSIS) held in Paphos, Cyprus. The workshop produced a number of excellent papers related to Internet security and with topics ranging from online data auditing, to real-time grid architectures, to cryptographic protocols selecting the top papers was a difficult task. Many thanks to Dr Mariemna Yague and her WOSIS co-chair Dr Eduardo Fernández-Medina for editing these selected special issue articles.

A precursor to responding to security problems is being able to characterize them effectively and talk about them coherently. In "An ontology-based distributed whiteboard to determine legal responses to online cyber attacks" Peng *et al.* raise a number of engaging problems with quickly formulating legal responses to online assaults. The system they present leverages both the internet's ability to gather attack indicators from many sources, and also distribute the decision process amongst many participants on the team responding to the attack. There is no question that the type of system they discuss will become an essential part in combating online attacks as the field evolves.

A major source of security problems is inter-organizational workflow. In many cases security concerns are addressed after an inter-organizational system is already designed – or worse yet, already in place. Hafner *et al.* present – "SECRET: an extensible framework for the realization of secure inter-organizational workflows". They show how specific security requirements from real inter-organizational scenarios can be addressed through a model-driven approach that results in clear implementation guidelines.

Addressing some of the pressing security concerns of online voting systems is a paper by Eliasson and Zuquete. In "An electronic voting system supporting vote weights" they extend the Robust Electronic Voting System (REVS) to support vote weights while improving system security.

Determining the proper security requirements for a web-services based application must be done systematically. This principle underlies the work of Rosado *et al.* and motivates their development of architectural design patterns in "Security patterns and requirements for internet-based applications". By adapting the use of design patterns to address web-service architectures, this research will undoubtedly help advance the abilities of system designers to meet ever-increasing security needs.

Also in this issue we have an article by Yun *et al.* uncovering both similarities and discrepancies between forms of web log analysis. "On the validity of client-side vs server-side web log data analysis" discusses the results of an experiment in which the web usage of 145 users across multiple machines and websites was tracked on both client-side and server side logging mechanisms. The comparison of the resulting data logs provides valuable insights for researchers who plan to base their analysis on a single type of usage log. Shin's work on "Distributed inter-organizational systems and innovation processes" presents us with a three-pronged case study examining the differences in system adoption and use across three organizations tied together by a common system. The target system in this case is a videoconference link. As the use of IP-based video becomes further integrated with other forms of computer-mediated communication, it will be interesting to see how organizational forms and interactions change as a result.

David G. Schwartz