Review Form: 1st International Workshop on
Services and Infrastructure for the Ubiquitous and Mobile Internet (SIUMI'05)

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WEB MINDS

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In conjunction with the 25th Int. Conference on Distributed Computing Systems (**ICDCS'05**)

Paper Number: #16
Paper Title: Mobile Proxies for Proactive Buffering in Wireless Internet Multimedia Streaming
Authors: Paolo Bellavista, Antonio Corradi, Carlo Giannelli

Reviewer1:

Familiarity Rate your familiarity with the topic	1	2	X	4	
	Novice	Some knowledge	Familiar	Expert	
Significance Technical relevance and practicality of ideas in the paper	1	X	3		
	Not significant	Somewhat significant	Highly significant		
Novelty How original the problem and/or solution method is	1	X	3		
	Not novel	Somewhat novel	Highly novel		
Quality of Presentation Writing and presentation style/accuracy	1	X	3		
	Poorly written	Could be improved	Well written		
Overall Recommendation	1	2	X	4	5
	Strong reject	Weak reject	Weak accept	Accept	Strong accept

Contributions

The authors propose an approach to predict wireless terminal handover in the context of what they call Wireless Internet. Such prediction helps an early migration of a proxy agent, especially to prevent data loss during real-time streaming sessions. Handover prediction can be considered an important topic, since in most cases it supports service continuity, so fostering pervasive computing. The paper is almost well written and easy to read. It clearly shows the underlying concepts and the achieved results.

Strengths and weaknesses

In accordance with the conference topics, the main contribution of this work is of a practical nature. Simulations and real-world experimentations help estimate the achieved degree of improvement. Indeed, the underlying idea is not brand new, and no particular scientific contribution is given.

Detailed public comments

Given the results presented in the paper, a weakness of this work might be the lack of a more complete presentation of the authors' achievements. The reader would expect some more data than a single table synthesizing everything. For example, it would be interesting to know some details about the adopted simulation environment, as well as about the simulation plans. The same holds for, the lack of information about the installation of the proxy in the new environment just after migration (e.g. the latency time before returning fully operational).

In sect. 3.2 the buffer size is dimensioned. In this computation, it does not depend on the media rate, but only on the proxy-client connection capacity. Is it due to the generality of this computation? Wouldn't it be more correct to assume its size equal to:

rebinding-time*media-rate = 2s * 1.0Mbps = 250KB?

In both cases, this aspect should be better clarified.

Reviewer2:

Familiarity 2 Rate your familiarity with the topic	1	2	3	4	
	Novice	Some knowledge	Familiar	Expert	
Significance 3 Technical relevance and practicality of ideas in the paper	1	2	3		
	Not significant	Somewhat significant	Highly significant		
Novelty 3 How original the problem and/or solution method is	1	2	3		
	Not novel	Somewhat novel	Highly novel		
Quality of Presentation 3 Writing and presentation style/accuracy	1	2	3		
	Poorly written	Could be improved	Well written		
Overall Recommendation 4	1	2	3	4	5
	Strong reject	Weak reject	Weak accept	Accept	Strong accept

Contributions

The key contribution is a sound and fully elaborated solution to the problem of adapting services (specifically stream based ones) to the constraints of mobile users. Though I have a concern about that (see later on)

Strengths and weaknesses

This is a very good paper. It introduces a specific problems, proposes a solution to solve it, and evaluates it. Also, it properly relate with related researches in the area, and outlines the specific originality of the proposed solution.

I did not mark "strong accept" simply because I am not expert enough to evaluate the actual degree of originality of the proposed solution.

Detailed public comments

The paper is very good, and easy to understand also from a person who is not really and expert. The only concern I have when reading papers on these kinds of topics is: are we really sure that the resource-constraints issues, on which all the paper is based, is a long-term problem and not a contingent problem of this years? We know that, in two years or so, the band of wireless and UMTS connection will be much higher, and that portable devices will have large HD on them, and will have larger display (or built-in wall projectors). So, will the problem focus of this paper still be a problem in, say, 5 years?

Reviewer3:

Familiarity Rate your familiarity with the topic	1	**2X**	3	4	
	Novice	**Some knowledge**	Familiar	Expert	
Significance Technical relevance and practicality of ideas in the paper	1	**2X**	3		
	Not significant	**Somewhat significant**	Highly significant		
Novelty How original the problem and/or solution method is	1	**2X**	3		
	Not novel	**Somewhat novel**	Highly novel		
Quality of Presentation Writing and presentation style/accuracy	1	**2X**	3		
	Poorly written	**Could be improved**	Well written		
Overall Recommendation	1	2	**3X**	4	5
	Strong reject	Weak reject	**Weak accept**	Accept	Strong accept

Contributions
Alternative approach to proactive buffering of content in streaming applications for mobile applications.

Strengths and weaknesses
The authors present detailed results from experiments which are evaluated and discussed.
Improving the performance of content delivery in mobile networks has been researched intensively in recent years see below. The results would have been stronger if the results were compared to that of related work including a discussion of implications for service delivery in wide area networks (e.g., in 3G and beyond infrastructure (i.e., 3G interspersed with 802.11)).

Detailed public comments
The authors do not cite or discuss but might want to consider other related work “Proxies + Path Prediction: Improving Web Service Provision in (2001) Wireless - Mobile Communications Stathes Hadjiefthymiades, Lazaros Merakos... “ or Improving Performance On WWW Using Path-Based Predictive Caching And Prefetching (2001) Haining Zhang