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## Review

## Rich Mobile Applications: Genesis, taxonomy, and open issues

Saeid Abolfazli<sup>a</sup>, Zohreh Sanaei<sup>a</sup>, Abdullah Gani<sup>a</sup>, Feng Xia<sup>b,\*</sup>, Laurence T. Yang<sup>c</sup><sup>a</sup> Mobile Cloud Computing Research Lab, Faculty of Computer Science and IT, University of Malaya, Kuala Lumpur, Malaysia<sup>b</sup> School of Software, Dalian University of Technology, Dalian 116620, China<sup>c</sup> Department of Computer Science, St. Francis Xavier University, Canada

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## ABSTRACT

Rich Mobile Applications (RMAs) comprise a budding research area receiving increasingly abundant attention from the academic and industrial communities. RMAs are deemed to be a candidate blueprint of future online smartphone applications aiming to deliver high functionalities and rich immersive experience to mobile users. RMAs are still in early stages and comprehensive survey of the domain is lacking. In this paper, we use structuralism and functionalism paradigms to analyze RMAs' origins, trends, and characteristics. RMAs are distinguished from traditional mobile applications and Rich Internet Applications (RIAs). Comprehending the distinction between delivering Rich User eXperience (RUX) in desktop and mobile computers, and the inward similarities and dissimilarities between RMAs and RIAs will facilitate and accelerate the development of rich, smartphone-centric applications. We analyze several problems inhibiting the adoption of RMAs and review corresponding solutions to devise a taxonomy. Our study advocates that the majority of problems stem from the intrinsic characteristics of mobile devices and the heterogeneity in this environment, especially when cloud computing is employed to enhance mobile computing. Several open issues on RMAs' domination and adoption are presented as future research directions.

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## Contents

1. Introduction	2
2. Genesis of RMAs	3
3. RMAs: definition and current trends	4
3.1. Definition	4
3.2. Current trends	4
4. RMAs versus RIAs	5
4.1. RMAs characteristics	5
4.1.1. Rich functionality	5
4.1.2. Rich user interface	5
4.1.3. Immersive interactivity	6
4.1.4. Context-awareness	6
4.1.5. Trustworthy	6
4.1.6. Energy efficiency	6
4.1.7. Crisp response	7
4.1.8. Cross-platform cross-device	7
4.1.9. Ubiquitous functionality and data access	7
4.1.10. Offline usability	7
4.2. Structural comparison of RMAs and RIAs	7
5. Taxonomy of RMA development problems	8
5.1. Processing constraint	8
5.2. Battery constraint	10

\* Corresponding author. Tel.: +86 411 87571582.

E-mail addresses: [abolfazli@ieee.org](mailto:abolfazli@ieee.org) (S. Abolfazli), [sanaei@ieee.org](mailto:sanaei@ieee.org) (Z. Sanaei), [abdullah@um.edu.my](mailto:abdullah@um.edu.my) (A. Gani), [f.xia@ieee.org](mailto:f.xia@ieee.org) (F. Xia), [lyang@stfx.ca](mailto:lyang@stfx.ca) (L.T. Yang).