



Web to mobile Application literature review

Afrizal Munawas – 2111600843 - XM, Afrizal@gmail.com

Magister Ilmu Komputer
Universitas Budi Luhur

Source Information	International Journal of Engineering Trends and Technology (IJETT) – Editor's Issues - 2020	MATEC Web of Conferences 155, 01027 (2018)	Conference: 13th International Conference on Web Information Systems and Technologies (2017)	International Journal of Computing and Digital Systems Hamzah and Mustafa (2020)	International Journal of Computing and Digital Systems, Devotha et. al. (2020)
Research Topic	The Effectiveness of Web Systems and Mobile Applications for their End-Users	EVOLUTION OF MOBILE APPLICATIONS	Progressive Web Apps: The Possible Web-native Unifier for Mobile Development	Testing Approaches for Web and Mobile Applications: An Overview	Framework for Developing Secure Converged Web and Mobile Applications
Methodology	<ul style="list-style-type: none"> - Survey : quant - 200 students from University Sultan Zainal Abidin (UniSZA)- - Based on Krejcie and Morgan method 	Survey : quant -> 850 million people in china	Survey : qual Measurement-comparison of approaches. a. Size of installation b. Launch time c. Time from app-icon tap to toolbar render d. Feature comparison	Survey : qual - Black, white and grey box testing web and mobile apps	Survey : quant & qual - Data Collection from 54 application developers - Borrowed knowledge - Data Collection and Analysis Tools for SeC-WeMA Validation - Framework Design
Findings	The result shows that mobile application is more effective towards the effectiveness of end-user than web systems.	<ul style="list-style-type: none"> - Almost 80% of people are online through mobile devices. Most of these people prefer mobile applications because they are easy in use and perform tasks instantly. - Teenagers contribute a considerable part to mobile communication market. A large proportion of teenagers in Korea (80.6%) and Japan (77.3%) own mobile phones. In China, 48.9% of teenagers aged between 12 and 18 are mobile users. - Mobile phones have changed our world completely . People use them for leisure time, business, and education. Mobile phones are not just mobile phones anymore. People rely on them for video chatting, voice calls, surfing internet, taking pictures, playing games, etc. Mobile phones have become a part of everyday life 	<ul style="list-style-type: none"> - The industry is investing resources into progressive web apps (PWA) and the development of learning material. - The current state of progressive web apps involves a lack of certain hardware and platform APIs and features that only (certain) cross-platform and native apps can access. 	current testing approaches and available tools, which are based on the black, white, and grey box, have been surveyed using four test-key factors. Such a survey assists the software engineers/ developers/ testers in deciding on the needed testing approach/tool. It also highlights the possible ways of preparing test sequences and test cases to be used for the black box white box and grey box testing.	<ul style="list-style-type: none"> - SeC-WeMA framework is easy to follow, from requirement engineering to system testing. - SeC-WeMA is a holistic framework because it has covered all major development stages of web and mobile applications. The framework includes the best security practices in all the stages of web and mobile applications development.
Limitations	This study collected by using primary data and the population is 200 students from Faculty of Informatics and Computing. With the different objectives, this study has to use only one method of data analysis, which is a Pearson Correlation	<ul style="list-style-type: none"> - Need to deep survey which effective and easily to implement and best user experience for end users - Specific types of services by means of mobile application like : a. Browser Access: The applications, which we use through native browser. b. Hybrid Apps – Web: You need to install an application in your device; function of the particular application requires Internet. c. Hybrid Apps – Mixed: You need to install the application in your device and function of the application may require Internet. d. Native Apps: The applications, which are installed in the device. 	<ul style="list-style-type: none"> - There is much potential for PWAs to become a unifier for web-native development without the use of cross-platform frameworks. As an end-user, the PWA installation process becomes more similar to regular apps through new advancements in user experience aspects. Web apps can look, feel and act similar to native, hybrid and interpreted apps 	limit the survey are related to the testkey factors. There are other methods, which should be considered as test-key factors, such as object-oriented models.	there is a need to test the applicability of the some framework on acquired information systems. Some companies do rely on acquired systems and can hardly customize the security features in these systems. So, there is a need of defining guidelines on how security features should be customized in acquired information systems
Areas of feature Research	-Need leverage samples with bigger audience and more method to data analysis, and also more variative object to determine more devices to access web or mobile apps	One of the biggest challenges of mobile application s is their platform capability and limitation. In addition to interesting usability of mobile applications, they have some problems connected with platform and limitations. Need to find best framework to get better UI/UX in mobile platform and can running in varios devices	One can possibly apply research questions from crossplatform, native, and mobile web app development to research on progressive web apps. This results in a vast and existing knowledge base that can be used	more approaches are to be surveyed along with the ones that are in this paper to study the majority of the current approaches.	Need time to demonstrated best framewrok which fit

From literature review we agree almost 80% of people are online through mobile devices. Most of these people prefer mobile applications because they are easy in use and perform tasks instantly. Teenagers contribute a considerable part to mobile communication market. Mobile application has some limitation like :

- Various environment , Operating system and Hardware devices
- Connectivity is often slow and unreliable on mobile devices
- Small Screen Size: In order to provide portability mobile devices, contain very limited screen size.
- Different Display Resolution: The resolution of mobile devices is reduced from that of desktop computers resulting in lower quality images.
- Limited Processing Capability and Power: In order to provide portability, mobile devices often contain less processing capability and power.
- Data Entry Methods: The input methods available for mobile devices are different from those for desktop computers and require a certain level of proficiency.

Beside that security factor is most important parts on mobiles apps because our personal identity and some critical data will embed on mobile device, nowadays most of people convenience to perform transaction from mobile apps.

REFERENCES

- [1]S. Wedi, U. B. Luhur, and S. Widyarto, "Perancangan Aplikasi Pemesanan Makanan Berbasis Android Dengan QR Code," vol. 7, no. 13, p. 5, 2021.
- [2]M. Arif Hussin, M. F. Abdul Kadir, S. A. Mohd Ghazali, S. H. Md Hanafiah, and A. H. Zakaria, "The Effectiveness of Web Systems and Mobile Applications for their End-Users," *Int. J. Eng. Trends Technol.*, pp. 148–152, Oct. 2020, doi: 10.14445/2315381/CAT13P224.
- [3]A. Phongtraychack and D. Dolgaya, "Evolution of Mobile Applications," *MATEC Web Conf.*, vol. 155, p. 01027, 2018, doi: 10.1051/mateconf/201815501027.
- [4]A. Birrn-Hansen, T. A. Majchrzak, and T.-M. Grnli, "Progressive Web Apps: The Possible Web-native Unifier for Mobile Development," in *Proceedings of the 13th International Conference on Web Information Systems and Technologies*, Porto, Portugal, 2017, pp. 344–351. doi: 10.5220/0006353703440351.
- [5]Z. Hamza and M. Hammad, "Testing Approaches for Web and Mobile Applications: An Overview," *Int. J. Comput. Digit. Syst.*, vol. 9, no. 4, pp. 657–664, Jul. 2020, doi: 10.12785/ijcds/090413.
- [6]N. Devotha et. al., "Framework for Developing Secure Converged Web and Mobile Applications," *Int. J. Comput. Digit. Syst.*, vol. 9, no. 2, pp. 167–177, Jan. 2020, doi: 10.12785/ijcds/090203.

