

Mobile Application Development for Cruise Tourism  
Entwicklung mobiler Applikationen in der Kreuzfahrttouristik

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## 1. Introduction

In course of the advancing digitalization there is a greater demand for more efficient information technologies to support all types of business processes and requests. Under the keyword “digital revolution”, many processes will be further developed in order to have a positive and significant influence on the respective company (Urbach, et al., p.1 ff., p.10). In order to remain competitive as a company under the pressure of digitalization, it is important to have digital solutions in form of offering software solutions. The implementation of such solutions under the influence of “digital natives” demands for a continuous adaptation and further development of existing software development processes.

With more than 2700 new applications (apps) per day in the App Store, the battle for user attention is bigger than ever. Far more than 2 million apps are now crowding into both Google Play and the Apple App Store (Ott, 2018, p. 1). In times where applications on smartphones exist for nearly everything, there should also be an app for the passengers of cruises not only to personalize the cruise adventure and support the passenger before and during the cruise but also to bind the tourist on the cruise company. Mobile applications are particularly known for offering consumers entertainment and partial added value. In companies, apps are primarily used for mobile communication as well as marketing and sales. Nevertheless, constant further development and technological progress will enable companies to expand their areas of application in the future (Aichele, Schönberger, 2016, p. 1).

Since not only the tourism sector is growing but also the cruise industry, it is very important for companies to catch the customers on the cruise and potential customers with special offers. An exclusive application would be appropriate for going after the people’s interests. To satisfy the customers’ needs, companies make use of generated content to improve and personalize the offers (Guzzo et al., 2013, p.656).

The cruise tourism is regarded as the biggest growth market in the tourism industry (Wood, 2000, p. 346). There was a drastic increase from 1.4 million passengers in 1980 to 8.5 million passengers in 1997 and the numbers continued to grow to 15 million passengers in 2006 (Wood, 2000, p. 349). The cruise industries greatest increase (21%) was from 2011-2017, in 2017 there were already around 26.6 million cruise

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passengers, a global economic impact of \$126 billion and the numbers are expected to grow even further (CLIA, 2017). Even after the disaster of the Costa Concordia (2012) the growth could not be stopped.

Cruises can be seen as a holiday of freedom and the fascination of shipping ever since. In addition, the digital market is growing, data collection is increasing and all kind of data is collected through tracking technologies.

### 1.1 Motivation & Relevance

The current research in the cruise sector takes place in three different major areas which are tourism destinations, passenger behavior on the ship and the cruise impact on the environment. This work about mobile application development combines different areas. Mobile application development in cruise tourism is an understudied topic, that is why this study aims to investigate the impact of new developing technologies in the cruise sector. On the one hand the motivation for this work emerged from the interest in the cruise industry, on the other hand from the emerging difficulties with the interfaces into the classic development environment and the identified research gap in this area. The aim of this paper is to develop the interfaces between the cruise sector and mobile applications.

### 1.2 State of research

There are already applications for cruising on the market from companies like “Mein Schiff” (TUI Cruises), “AIDA Cruises”, “Costa Kreuzfahrten” (Costa Cruises), “Carnival HUB” (Carnival Corporation), “Cruise Norwegian – Vacation, Plan& Connect” (NCL), “Royal Caribbean International” and “Celebrity Cruises” (Royal Caribbean Cruises), “Disney Cruise Line Navigator” (Disney), just to mention a few of them. All of them were found in the Google Play store and are free of charge.

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### 1.3 Procedure

This paper, which comprises five chapters, is organized as follows: Section one includes the introduction with the motivation and the relevance. The research question will give an outlook on the aim of this work. Chapter two starts with theoretical foundations defining application development and the cruise tourism sector. In the methodological part, a compact insight into the basic principles of the Grounded Theory Method (GTM) is given and the author then describes the course of her own research process: the approach to the unfamiliar methodology, the history of the topic identification and conceptualization. The initial assumptions and attitudes will be reconstructed and also their change. The approach to data collection as well as the transcription and coding work will be described. In the review the topic will be summarized and discussed. Central motives are analytically worked out from data and categorized into essential content headings. Furthermore, the limitations will be outlined and a short outlook will be given. After that there will be some recommendations for actions for the mobile application development. In the end there is a conclusion with implications and further research needs.

### 1.4 Research Questions

The aim of the work is presenting and synthesizing critical success factors of mobile application development in the cruise tourism sector to better meet the needs of the cruise customers and raise their satisfaction. Therefore, the relationship between cruise operators and (potential) passengers will be examined. The research topic also includes the observation and identification of market trends to meet the demands and needs of potential passengers. Another important point concerning the consumers characteristics is his technology acceptance of mobile services. By means of the Grounded Theory Method and Webster & Watson and a literature review the aim is to identify specific requirements for the mobile application development. Grounded Theory (GT) requires researchers to explore a topic without first defining parameters as researchers' bias might hinder the emergence of theory from data. But the research question could be:

Which success factors are important for the mobile application development in the cruise tourism sector?

## 5. Conclusion

This study investigates the current state-of-art on mobile applications by means of a Systematic Literature Review (SLR). During SLR several studies are searched and selected from online data sources to answer the research question. The main findings of the survey resulted in providing essential requirements which will be relevant for developing a mobile application in the cruise tourism sector. The study revealed that especially the developing cruise passengers' image must be taken into account when developing a mobile application. It is important to consider several points in the applications design and handling concerning the passengers age. The analysis shed also light on how important the environmental impact of cruises is and how maybe the application could be a help or an improvement for this problem.

The proceed analysis illustrated the importance of people's technological knowledge und their acceptance to work with technical improvements. A cruise application could include many technical innovations like remote control, having the room key included in the app and therefore it would be important for the passengers to be opened up for innovations and trends and to be willing to work with those.

Cruise liners can achieve greater economic development depending on the intentions of passengers to cruise with them again and recommend them. Cruise tourism suppliers need to adapt to customers wishes and pay attention to their needs. Especially when developing an application its important for companies to notice customers technology acceptance and to take care of their problems and difficulties working with the app. The literature review incorporates technological and social factors of mobile app development in combination with the cruise tourism sector. This study expands the literature by presenting and synthesizing critical success factors of mobile app development in the cruise tourism sector. Practitioners can use and discuss our presented results for mobile application development in practice.

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## 5.1 Implications for research and practice

The presented research has several implications for practice and research. From an applied perspective, this research shows implications for helping developing a mobile application in cruise tourism and examines success factors for implementation. The results suggest that cruise companies should implement strategies that improve the experience and emotions of passengers. A mobile application for the passengers to use binds them to the company and improves their cruise experience on the one hand. On the other hand, it also improves marketing plans and developing advertising strategies and social networks that increase the familiarity of tourists with the cruise liner. Regardless of where the cruise industry will develop over the next few years, these new development strategies must be the focus of every cruise company. In order to be successful in the long term, shipping companies have to awaken the people's desire for wanting to travel again. Companies have a wide range of options at their disposal for this purpose. In any case, there are numerous visions for the future of cruises, the feasibility of which will sooner or later become apparent. Because of the huge increasement in the cruise market and the growing numbers of passengers it should be a focus to concentrate on the technological development and support through applications. Especially with regard to selling cruises in the future, there is still a lot potential for the industry to include more application systems into their business.

Recommendation for further literature research: It turned out that the database google scholar offers free of charge a very high fund of elaborations by the different authors, which are offered in other databases partly liable to pay the costs. Accordingly, it is recommended to use the named database for further literature studies before placing a fee-based order.

## 5.4 Outlook and Further Research Needs

Developments in recent years have shown that the cruise ship is becoming a destination itself and that fewer and fewer guests leave the ship for shore excursions. A possibility for the future could be a cruise without shore leave where the ship spends all its time at sea or the cruise ship not leaving the port at all. (cf. DasErste.de 2010, p. 2). The newest trends in technology especially in application must be closely observed and followed through. Even after the disaster of the Costa Concordia (2012), the growth of the cruise ship sector could not be stopped. Best practice is to avoid negative publicity concerning the potential misuse of data while taking as much benefits as possible from the use of the available technology. However, it seems obvious that the future of cruising looks bright.

Further, special offers like taking a look on the cabins and the equipment, the facilities, furniture & features on the ship via video recording could be a future possibility to take a better look and have a better perspective & imagination before the cruise for a clearer idea what to expect on the boat and what to book. Moreover, there needs to be a comparison of the literature findings with already existing mobile applications in the cruise tourism sector which means a high practical relevance for cruise companies.

Future research could also address the issues of reputation and familiarity, in other cultural contexts to analyze possible variations that affect passengers' intentions. Moreover, cost is not necessarily the major concern in building a mobile application for cruise passengers. Mobile Applications will be used if they prove to be the best technology or at least an improvement in the user experience for the customers. In the next years, questions like user requests and how to satisfy customer needs will occupy the society and especially the companies, which have access to more personal information due to their connection via app than they would have otherwise. Also, it allows a direct and instant communication between provider and consumer. Finally, it's the challenge for mobile application developers to develop a successful, due to a detailed testing phase, well-accepted app.