Der Einfluss von mobilen Informationssystemen auf das Verhalten von Touristen: Resultate einer Feldstudie

The impact of mobile information systems on the behaviour of tourists: Results from a field study

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Zusammenfassung:
Mobile Informationssysteme sollen einem Touristen helfen eine Stadt gemaess seinen Interessen zu erleben. Sie können z.B. helfen Sehenswürdigkeiten abseits der touristischen „Trampelpfade“ zu finden. Aus der Perspektive des Destination Management soll eine breitere Verteilung von Touristen in der Stadt erreicht werden. Dabei ergänzen mobile Informationssysteme traditionelle Informationsquelle wie gedruckte Karten, Reiseführer oder Beschilderung. Die wichtigste Frage ist: „Wie stark verändert ein mobiles Informationssystems das Verhalten des Touristen?“ Falls es einen quantitativ signifikanten Einfluss gibt stellt sich die Frage: „Welche Funktionen und Eigenschaften haben den groessten Einfluss?“ Diese Fragen werden quantitativ und empirisch in einem Feldversuch im August in Görlitz untersucht. Dazu werden an eine Kontrollgruppe von Touristen GPS Empfänger verteilt. In den beiden folgenden Gruppen werden MDAs mit GPS Empfängern ausgegeben. Alle drei Gruppen werden dann alleine die Stadt erkunden. Die erste mobile Applikation stellt die Attraktionen in einer Karte dar und der Tourist kann multi-mediale Informationen zu jeder Attraktion abrufen, während die zweite Applikation die allgemeinen Interessen des Touristen erfasst, die Attraktionen bewertet, eine Tour berechnet, die Ausführung derselben durch Navigationsanweisung unterstützt und den Tourplan falls notwendig an das aktuelle Verhalten adaptiert. In allen Gruppen werden einige Basisdaten, z.B. zur Vertrautheit mit einem Computer, die Positionen während der Stadterkundung und die Zufriedenheit nach Abschluss der Tour erfasst. Zusätzlich werden in den beiden Gruppen mit Applikationen die Interaktionen, z.B. Klicks, gespeichert. Diese Daten werden analysiert und verglichen um den Einfluss von mobilen Informationssystemen auf das Verhalten von Touristen im Rahmen einer mehrstündigen Stadterkundung zu bestimmen.

Abstract:
Mobile tourist guides shall help tourists to discover sights off the beaten tracks and therewith spread them over the destination more equally. Mobile information systems complement more traditional means of information provision, e.g. printed maps, guide booklets or simply signage at the destination. The most important question is: “What’s the impact of mobile information systems on the behaviour of tourists?” In case of a quantitatively significant impact the next question is: “Which features of a mobile information system are most influential?” These questions will be studied in a field study with real tourists in the city of Görlitz in August. A control group will receive a GPS logger. The following two groups will receive MDAs with GPS receivers. All three groups will explore the city on their own. The first mobile application displays the attractions in a map and enables the tourist to request multi-media information about each attraction. The second application elicit the generic preferences of the tourist, ranks the attractions, computes a tour, support the execution via audio navigation instructions and adapts the tour plan as necessary. For each group some basic data will be collected before the tour, e.g. computer literacy. During the tour the positions will be logged completely and after the tour a questionnaire will gather data

about, e.g. the satisfaction with the experience. For the two groups using a mobile application the entire interaction history will be logged too. The spatial behaviour and interaction logs will be analysed to determine the impact of a mobile information system on the behaviour of tourists during a multiple hour city tour.

Summary

Our field study in the summer 2005 indicates that most tourists stay within a small area of the city during their visit. The hope is that mobile information systems can provide information readily, which would enable a tourist to enjoy a destination to its full potential. The purpose of the field study in August 2006 is to study the impact of two kinds of mobile information systems on the behaviour of tourist during a city tour limited to a couple of hours. The following table shows the three groups used for this analysis. Each row lists one of the main features of a mobile information system. Tourist represented by the first column will receive a GPS logger, but otherwise will rely on their personal preparations, paper maps, tourist guides or simply signage to select attractions, define a tour and find the way to the next attraction. The Explorer displays all attractions in a map and lets the user pick an attraction to gain further information. In the right most column you find the Dynamic Tour Guide (DTG), which takes a much more active role by eliciting the generic preferences (see 1), ranking of the attractions and computing a tour plan for a given time period including a visit to a restaurant. The tourist can modify this personalized tour plan by adding or deleting elements of the tour plan. A routing will be computed for the tour plan, displayed in a map and the tourist will receive navigation instructions to find each attraction. As the tourist approaches an attraction the functionality of the DTG is identical to the Explorer, since the tourist is notified and multi-media information is presented about the attraction.

	Traditional Sightseeing	Explorer (pull)	Dynamic Tour Guide (DTG) (push)
Elicitation of preferences	No	No	Yes
Ranking of attractions	No	No	Yes
Tourplan	No	No	Yes
Tourmodification	No	No	Yes
Routing	No	No	Yes
Navigation instructions to next attraction	No	No	Yes
Touradaptation	No	No	Yes
Map	No	Yes	Yes
Notification of attraction	No	Yes	Yes
Audio Information	No	Yes	Yes
Pictures	No	Yes	Yes
Videos	No	Yes	Yes

Table 1 Features available to the three control groups

For each group basic data is collected before the tour starts, e.g. age, computer literacy. At the end of the tour, when the tourist returns the equipment, they are asked about the satisfaction in general. Tourist who took a mobile application are additionally asked about the satisfaction with certain features, e.g. “Where the navigation instruction helpful or rather confusing?” and how much value they would assign to such an application.

The methodology described in (2,3) will be applied to turn positions into walking speeds, which then point to visited areas and associated activities. It might be that a mobile information system leads to a different and potentially more satisfying set of activities. In case of the DTG the results will determine the role of a tour plan. It might be that the original tour plan after adaptation to the real walking speed is nonetheless only a starting point, since tourists spontaneously decide to visit

different attractions. In such a case continuous tour adaptation is very important. Or a majority of tourists might just execute most of the tour plan even in the hedonistic environment of tourism and thus validating the anthropomorphic design of an “Electronic Tour Guide”. The Explorer is a much simpler application and thus significantly easier to use leading to a potentially higher level of satisfaction, but a significantly more limited set of attractions. In such a case destination management might still favour the DTG, since it projects a bigger and more interesting destination to the tourist. On a more detailed level the results will determine the importance of tour modification. May be many tourist don’t want to modify a tour by adding or removing attractions given the challenges of using a mobile application on a screen with 4% of the pixels of a standard PC.

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