

Jarvis: A Behavioural Experimentation Platform

Kartik Muralidharan, Swetha Gottipati, Rajesh Krishna Balan, Archan Misra
Singapore Management University

ABSTRACT

With the advent of smartphones, one has access to large amount of highly contextual data making possible several context aware services that weren't before. As a result customers are driving demand for context-enriched content derived from the nexus of information, social interactions, mobility and the cloud. Context-enriched content is nothing but the information, data and other content, ranging from articles to advertising to applications that is based on the user's context and is served to whatever media the recipient is using to interact with that content.

As a result, the earlier push paradigm, wherein marketers would push print and electronic communications based on historical reference data to their customers and prospects has now been replaced. Today people want to pull information about a company's products and services that is valuable to them at that moment [5]. Whatever company they are interacting with has to react accordingly and immediately with content based on the recipient's context. The context here being, relevant facts about current conditions that are true in the moment but may not be in the future. Common examples include location, date and time, and other variable characteristics (the person is talking on a phone, visiting a website using a tablet, communicating via instant message, and so on).

Early discussion of context-aware applications has focused on mobile personal devices. The context was derived from sensors in the device and processed on the device [4]. Personal devices, indeed, are highly contextual, monitoring personal surroundings (such as location, movement, sound) using built-in sensors and employing applications designed to respond in real time to changes in personal situation [3]. However, as mobile applications become more advanced and more relevant for business, the information generated in the mobile devices becomes available to back-end business applications. The personal context that was originally confined to a mobile device becomes available as input to larger enterprise applications and tools. An example of this in play is Google Now [1], an intelligent personal assistant (available for Google's Android operating system) that combines data from users' accounts and sensor data from mobile phones to provide suggestions. For example, it combines the data from Google Calendar and other context such as the location of the user's next appointment along with the time, traffic data and current location to advise the best time to travel.

However, to enable this computing paradigm there is a pertinent need to understand the mapping between the 3 W's - What to send, Whom to send it to and When to send it. Attempts in the past to create this mapping for the mobile user [4, 5], revolved around an offline understanding of mobile user-context. What is missing is a forging of this mapping in real time to infer what user context is truly relevant for a given content. Further, there will be a need to determine the granularity of the user context needed for a useful intervention.

I present Jarvis - an experimentation platform that would allow an understanding of user context in real time-through well crafted experiments - and provide users with enriched and usable content, functions and experiences based on the recipient's current context.



Figure 1: Intervention Engine UI

The figure shows a screen-shot of the Intervention Engine. It allows retailers to specify the contextual scenario in which they want to target their potential customers. A key aspect of the engine is that, it not only intervenes customers based on the specified context but also collects implicit feedback post the intervention, allowing retailers to potentially rethink their strategy.

In the poster we will highlight two aspects of Jarvis. 1) The ease of mapping a variety of user context to content. 2) The ability to target potential customers across different scenarios.

REFERENCES

- [1] <http://www.google.com/landing/now/>.
- [2] Dey, A. K., Wac, K., Ferreira, D., Tassini, K., Hong, J.-H., and Ramos, J. Getting closer: an empirical investigation of the proximity of user to their smart phones. Proceedings of the 13th international conference on Ubiquitous computing, UbiComp '11. ACM, 2011.
- [3] Falaki, H., Mahajan, R., Kandula, S., Lymberopoulos, D., Govindan, R., and Estrin, D. Diversity in smartphone usage. Proceedings of the 8th international conference on Mobile systems, applications, and services, MobiSys '10. ACM, 2010.
- [4] Froehlich, J., Chen, M. Y., Consolvo, S., Harrison, B., and Landay, J. A. Myexperience: a system for in situ tracing and capturing of user feedback on mobile phones. Proceedings of the 5th international conference on Mobile systems, applications and services, MobiSys '07. ACM, 2007.
- [5] Roxane Edjlali, Nick Jones, J. T. E. Effects of mobility on information management. Technical report, Gartner Report, Aug 2012.