SciFly - Customised Flyers on Demand

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Aim: To demonstrate how the delivery of information can be improved beyond lists of search results by reasoning about the context of a user's interaction and adapting both the content and presentation accordingly.

Methods: SciFly is a demonstration system that generates customised flyers about CSIRO's research in Information and Communication Technologies, based on user-selected areas of interest. It has been designed to operate as a touch-screen information kiosk, but also has a web-interface to allow remote, browser-based interaction.

In response to a user nominating their areas of interest, SciFly dynamically gathers and assembles relevant content into a flyer. SciFly also adds relevant contact information, web links and higher level context, all of which is tailored to support the information presented. This process is controlled using the flexible planning capabilities of our Myriad delivery platform (see Paris et al. [2] for details).

The automatically generated flyers are modelled on existing manually authored flyers. These manual flyers are professionally authored and pre-printed in bulk, and as such are static and expensive to update. To inform the content and presentation of our automatically tailored flyers, a corpus analysis of human-authored flyers was performed to understand both their structure and content. This knowledge is encoded in the rules that configure the Myriad planning engine, which controls both the retrieval and delivery of information.

The assembled information for each flyer is structured according to the rhetorical relations that exist between segments of text, as described by Mann & Thompson [1]. Importantly, SciFly does not just present pre-configured content, but dynamically adjusts the amount and detail of content based on the range of topics selected, the structure of the information to be presented and the constraints of the delivery medium. In particular, the rhetorical structure information allows SciFly to ensure that the information presented remains coherent and consistent even when adapted to the available space and different output devices.

Results: SciFly simultaneously prints and emails the tailored flyer to the user, along with a condensed, plain text summary of the flyer in the body of the email message. Thus users receive information relevant to their interests, the presentation of which is adapted to suit the different output devices. Specifically, users can receive a:

- **Double-sided paper flyer** as a physical flyer for immediate perusal;

- **PDF document** for electronic delivery and later reference; and

- **Plain text summary** for mobile device access.

We are in the process of evaluating the value of both the coherence and content tailoring within SciFly.

Conclusions: The algorithms and ideas embodied in the SciFly application demonstrate how the delivery of information can be improved beyond the ranked lists of results that are common in many search engines when more is known about the context of a user's interaction. In this case the context reasoned about includes user preferences, likely task and the delivery device.

References

[1] William Mann and Sandra Thompson. Rhetorical structure theory: Toward a functional theory of text organization. *Text*, Volume 8, pages 243–280, 1988.

[2] Cecile Paris, Keith Vander Linden, Matt Post and Shijian Lu. Myriad: An architecture for contextualized information retrieval and delivery. In *AH2004: International Conference on Adaptive Hypermedia and Adaptive Web-based Systems*, pages 205–214, 2004.