Report on the KDD2000 Panel
Personalization and Data Mining: Exploring the Synergies

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There has been much interest developed recently in personalization both in the industry and academia as witnessed by several Personalization Summits (the latest being held in November 2000 [1]) and by the publication of a recent Special Issue of CACM on personalization [2]. Personalization companies focus on building customer profiles, providing recommendations to the customers and delivering personalized content and other services. However, there is still no consensus reached in the industry and academia what personalization really means. To address this issue, the Panel Chair asked several personalization experts to provide their views on what personalization means to them, discuss possible connections between personalization and data mining, and examine how data mining can contribute to personalization and vice versa.

The panel consisted of Paul Hagen from Forrester Research, Ronny Kohavi from Blue Martini, John Riedl from University of Minnesota and Net Perceptions, and David Zimmerman from YOUpowered. The slides of their presentations and other pertinent information about the panel can be found at www.acm.org/sigs/sigkdd/kdd2000/Panel-Personalization.htm.

In his presentation, Paul Hagen identified three main functions of personalization applications: provision of personalized services to the customer, ability to sell him or her products in a personalized way, and the support for 1-to-1 marketing. He then argued that the key for successful personalization applications is the ability to build rich profiles of customers and ability to deliver personalized content through the use of content management systems and controlled vocabularies. He also maintained that today's personalization applications are still immature in the sense that they support "point" applications and focus only on a single marketing channel, mainly the Web. In contrast to this, 40.9% of on-line buyers use 2 or more and 14.5% use 3 or more channels. Therefore, forward-looking personalization applications should be able to

- utilize multiple marketing channels, such as the Web, catalogs, and "brick-and-mortar" stores;
- deal with multiple constituencies, such as end-customers, business partners, and employees;
- address different functions, such as marketing, sales, and service.

Paul also argued that personalization applications should be "smart" in the sense that they should support rich profiles of customers and provide proactive services to them.

Ronny Kohavi opened his presentation by stating that personalization is a continuous process of collecting data about the user, creating a data warehouse for analyzing this data, mining the data from this warehouse, building customer segments based on the mining results, and taking appropriate actions targeted towards these segments. He also maintained that personalization applications should modify the interaction process with the customer and should not be limited to the Web but should spread across multiple "touchpoints," such as call centers, brick-and-mortar stores, and e-mail. Ronny also identified different goals of personalization that include

- making customer interactions easier;
- increasing sales by better targeting customer needs;
- saving customer time (he gave an interesting example from Seybold's book [3] of how Motorola customers come to the site, buy products and exit without wasting any time);
- increasing loyalty and reducing churn.

He also provided various examples of personalization services ranging from greeting customers by name, to remembering their last shopping basket, shipping address and credit cards, to changing home page image and the links. Finally, he presented his personal challenge to the personalization and data mining communities: personalization applications should be developed in such a way, that the business users should be able to understand the analysis results and define appropriate personalization actions on their own without any help from the experts.

John Riedl started his presentation with providing interesting statistics based on real-world personalization applications and then focused on the future recommendation applications. He maintained that, in contrast to yesterday's personalization applications, consumers will really be in control in the future applications. Marketers will no longer be able to talk consumers into the deals, control marketing campaigns, and manipulate consumers in various other ways. He gave various examples supporting this point. Finally, he presented the following personalization challenges:

- scalability and real-time performance
- incorporating rich data
- support for consumer-centered recommendations
- development of methods that connect recommenders to marketers.

David Zimmerman started his presentation by defining personalization as the science of using personal information to uniquely tailor products, content and services to an individual. Moreover, he categorized personal information into

- PII: personally identifying, such as name, e-mail, and mailing address;
- Non-PII: information that does not identify the individual, such as behavioral data, imputed data, etc.

He maintained that successful personalization applications require a high degree of PII, hence an inherent conflict between personalization and privacy. Furthermore, David outlined major requirements of permission-based data mining systems maintaining that they must:

- Be designed from the ground up to utilize enterprise-wide privacy models and protocols;
- Be opt-in;
- Provide mechanisms for informed customer consent;
- Provide several opt-out options, such as a) no data mining of consumer data; b) data mining for internal use only; c) data mining for both internal and external uses.

These presentations were followed by several questions from the audience. As a result, several themes emerged from the panel, such as:

1. personalization is a process of collecting and using personal information to uniquely tailor products, content and services to an individual;
2. successful personalization applications should utilize multiple marketing channels, deal with multiple constituencies and with different functions, such as marketing, sales and service.
3. personalization applications have different goals, such as
    - making customer interactions easier;
    - increasing sales by better targeting customer needs;
    - saving customer time;
    - increasing loyalty and reducing churn.
4. in contrast to yesterday's personalization applications, where marketers would talk consumers into buying products and manipulate them in various other ways, personalization applications of tomorrow will empower the customers by putting them in control of the buying process. Marketers will no longer be able to talk consumers into the deals, control marketing campaigns, and manipulate consumers in various other ways.

REFERENCES

[1] Personalization Summit, San Francisco, CA, November 12-14, 2000.

[2] *Communications of the ACM*, 43(8), August 2000. Special Issue on Personalization.

[3] Seybold, P. B. and Marshak, R. *Customers.com: How to Create A Profitable Business Strategy for the Internet & Beyond*, Random House, 1998.