Chapter 76

Improving CRM 2.0 through Collective Intelligence by Using CBIR Algorithms

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ABSTRACT

CRM 2.0 is a business philosophy whose purpose is to involve the customer in the business in order to provide value of mutual benefit. CRM is supported by two main elements: a technological platform and social features; in this chapter both elements are covered. An overview of different Content Based Images Retrieval (CBIR) algorithms, with the aim to develop Web 2.0 applications for improving CRM 2.0 by using Collective Intelligence is introduced. The result of applying Collective Intelligence is an improvement in the services offered, useful for maintaining an inter-functional integration among processes, the people, and the area of marketing to increase customer satisfaction. It is also useful for identifying tendencies and to proactively conceive new business strategies.

With the implementation of CBIR paradigms and Collective Intelligence into Web 2.0 application, CRM 2.0 can be improved by providing a new strategy for presenting products or services. This integration materializes a link where customers have the ability to enrich their search before the purchase; to effectively compare products, and to clarify their preferences. Finally, it is important to underline that the proposed integration represents a decision support in the feedback phase of CRM.

INTRODUCTION

CRM 2.0 is defined as a philosophy and business strategy, supported by a technological platform, a set of business rules and social features whose purpose is to involve the customer in a conversation in order to provide a trustworthy mutual benefit in a transparent and commercial environment. This definition has two important features:

1. An organizational philosophy focused on building proactively the customer's preference, resulting in a higher consumer retention rate and a bigger profit margin; and
2. A business strategy based on a radical change of the strategic orientation for a company, supported by a technological platform and social features.

These two components are covered in this chapter which provides an overview to develop Web 2.0 applications using Collective Intelligence and identifying the proper CBIR algorithm to search and compare products in CRM 2.0 improving the customer's decision making.

In the Web 2.0 users are service supplier, this allow users to share knowledge and experience through the use of different technologies. The Collective Intelligence is the key component into Web 2.0 applications. In essence, Web 2.0 impacts on CRM 2.0 when the users participate and interact becoming "pro consumer". The information that the users consume and produce is converted in intelligence through the use of collective intelligence techniques. The result of applying Collective Intelligence is an improvement in the services offered, maintaining an inter-functional integration among processes, people and the area of marketing to increase customer satisfaction, identify tendencies and to proactively conceive new strategies.

As proof-of-concept, a travel agency is presented by using CBIR algorithms and collective intelligence to improve CRM 2.0 identifying the most selected round-trips, hotels, and airlines. This system combines the main features of a recommendation and reputation system by using social tagging, also known as folksonomy.

IMPROVING CRM 2.0 THROUGH COLLECTIVE INTELLIGENCE BY USING CBIR ALGORITHMS

CRM and Collective Intelligence

The Customer Relationship Management (CRM) is a business strategy that aims to ensure that every interaction with the customer is managed in an appropriate manner, generating sales of products in all possible cases seeking to obtain relevant and consistent data, regardless of the communication channel we use. CRM 2.0 is defined as a philosophy and business strategy, supported by a technological platform, a set of business rules and social features whose purpose is intended to involve the customer in a conversation in order to provide a trustworthy and mutual benefit in a commercial and transparent environment (Greenberg, 2008).

This definition has two important features:

1. An organizational philosophy oriented to increase the customer's preference, which produces a higher consumer retention rate and a bigger profit margin; and
2. A business strategy that aims to facilitate radical adaptation to the market supported by a technological platform and social features.

These two components are covered in this chapter presenting an overview of different Content Based Images Retrieval (CBIR) algorithms, in order to develop Web 2.0 applications for improving CRM 2.0 by using Collective Intelligence. In the Web 2.0 users are also service suppliers; this allows users to share knowledge and experience through the use of different technologies. Web 2.0 represents the evolution from traditional ap-

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