IT Tools Supporting Public Relations Campaigns

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1. THE ROLE OF INFORMATION IN PUBLIC RELATIONS

One of the most important economical theories recently is the theory of information asymmetry. As Arrow and Akerlof independently indicated (Arrow 1963; Akerlof 1970) the common situation on the market is that one party is better informed than the other. Due to this phenomenon, dubbed information asymmetry, markets can deteriorate and even disappear. A detailed analysis of the importance of information in economy has been proposed by Stiglitz (Stiglitz 2000).

Research in the fields of economics and PR is clearly indicating that proper information is crucial in order to make the most appropriate business decisions e.g. during PR campaigns even minor decisions made may largely influence the outcomes. Moreover, recent research indicates that Internet contributes to reduction of information asymmetry (Levitt i Dubner 2005). In general, the influence of information technology on information overload and information asymmetry has been analysed by Kriebel and Moore (Kriebel i Moore 1982).

At the same time we are facing an overburdening growth of the number of reliable information sources on the Internet (Klapp 1986; Feather 1998). The basic assumption of awareness of all available alternatives and ability to assess all possible outcomes clearly cannot be met anymore (Balcerowicz 1997).

1.1. PR Process

PR campaign is a process that consists of a set of activities which in turn should lead to fulfilling PR aims such as creation of attitude towards the organization, providing effective corporate publicity, formation of image of the organization (Wojcik 2001).

In-depth analysis of stages of Public Relations campaign leads to one important remark – stages 1., 2. and 6. are strongly related to collecting, processing and analysing information from different sources. These phases are often referred in the literature as research phases (Stacks 2002):

2. IT TOOLS

There are many Information Technology tools that can help in running efficient PR campaigns. Here, we focus on three groups of such tools: information retrieval and filtering tools, information aggregation tools, and information integration tools. They are mostly to be used in the research phase of PR campaigns, where efficient access to relevant information is especially important.

2.1. Information Retrieval and Filtering Tools

Information filtering (IF) is a constant process that enables acquiring documents that match user preferences. In opposite to it, information retrieval (IR) is about finding documents that are relevant to user query in collection of documents. However, there is one common idea in both processes. Both approaches need documents as well as user needs to be properly described. These descriptions may be viewed as certain contexts that are taken into account when analysing documents.

2.1.1. Contexts for Information Filtering

Context is defined as information characterizing situation of a person, place or object, that cooperates with user or application (Dey and Abowd 1999). There are several types of contexts described in the literature: computing context, physical context and user context (Schilit 1995), human factors and physical environment contexts (Schmidt et al. 1999).
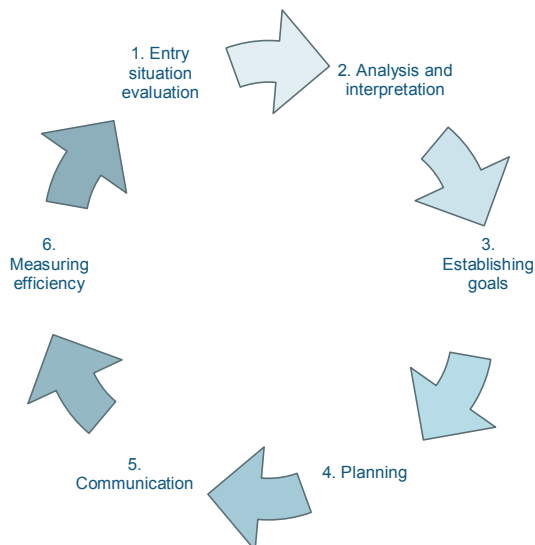
In order to be able to provide user with information that matches each of type of context documents need to be properly described (i.e. indexed). Therefore, the following methods of documents' indexing were differentiated:

- Cognitive indexing - providing description of documents subject e.g. real estates, vehicles, etc. In other words cognitive indexing is about assigning categories to a document.
- Time indexing - identifying all dates that the article is relevant for. However time indexing is not only about extracting dates from a given document – it's also about identification of verb forms and reference date of an article.
- Geographical indexing - discovering all geographical places mentioned in a document and assigning the document to right place in hierarchy of geographical places.
- Proper names indexing - this context is connected to all organization product or person names that appear in the document content.

2.2. Information Aggregation Tools

The information extracted from numerous sources needs to be put together. In data and information integration systems it is usual to integrate the extraction results, which includes identifying data that refer to the same real world entities,

Figure 1. Public relations campaign

normalizing it, equalize the measures, format etc. and remove redundancies. This is, however, hardly possible or even not desired for content aggregation. While data integration tries to find corresponding entity descriptions and remove duplicate information, content aggregation just brings the information together. Content is subjective in nature and therefore it may be important to retain this subjectivity and preserve the meta-information about the source. We hypothesize that application areas of data integration and content aggregation are separate. While the former is limited to bringing together the information about the same or similar entities from different sources, the latter can be applied to gather information of less homogeneous nature.

Information aggregation is a concept that has not been very well researched so far. There are very few scientific publications regarding this concept. One and most significant of the few is a research work of Stonebraker and Hellerstein (Stonebraker i Hellerstein 2001). They define the term content integration to refer to the integration of operational information across enterprises. The authors understand content as semi-structured and unstructured information, and content integration deals with sharing such information. Stonebraker and Hellerstein describe a Cohera Content Integration System, helpful in content integration, which consists of the following components: Cohera Connect, providing browsing and DOM based wrapper generation functionality, Cohera Workbench for content syndication, and Cohera Integrate for distributed query processing.

Application areas of information aggregation technologies may include news aggregation from multiple sources, in order to be able to compare different sources. However, what is really necessary is a simple solution, since there is already a wealth of approaches that did not receive deserved attention, probably due to their complexity.

2.3. Information Integration Tools
The main problem with accessing data nowadays is that the sources are dispersed, they are not searchable and the process of obtaining data may be tedious. All these issues are tackled with information integration technologies.

A typical data source on the Web exposes some forms to ask queries – examples would be search form on the main Amazon.com page or similar forms found on governmental census bureaus' pages. These forms are very often of limited functionality and they differ from source to source. Moreover, when we get the results, they come in the form of a Web page, which is not very convenient for manipulating data or comparing them. The purpose of information integration tools is to overcome these issues, to ease obtaining the data and manipulating them. They provide single interface for posing queries (or even allow to automatically query) and gather data in unified, ready for reuse form.

Information integration has several steps that have to be performed before data sources can be used:

- source description – each of the sources to be accessed needs to be introduced to the system, showing its structure, access means and special features
- integration – after all the sources are introduced, they have to be integrated to be seen under single view – this step allows later on to ask a single query that will be forwarded to all the sources without the need to query each of them separately.
- query translation – this activity occurs each time the query is posted – it has to be automatically translated for each source
- extraction – data is gathered from Web pages delivered by the source. It is crucial for this step that it is exact and robust – no garbage is gathered and all what is required is extracted.
- consolidation of the results – the final step includes merging the results from all the sources and presenting them to the user.

With the advent of such tools it is possible to monitor any Web enabled data source, track changes or periodically obtain relevant information necessary to guide PR activities.

3. SUMMARY AND CONCLUSIONS
For different types of content that appears on the Web, different accessing techniques have to be applied. When user likes to receive information about certain product, in certain period of time, for a specific location, he should use a browser that enables him to search for information depending on contexts.

When PR analyst likes to monitor web pages of his business partners or opponents, he should use some content aggregation tools. However, sometimes there is a need to compare business offers of a group of real estate sellers – then the best idea would be to use information integration tools that enable user to integrate data coming from various Internet databases.

IT tools supporting organization of PR processes enable employee-time savings and at the same time improving the quality of information that PR analysts are supplied with. Moreover, the tools enable accessing information sources that are otherwise hard to browse (internet databases) or information that is difficult to find in a certain limit of time (because of its overload).

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