Industry Foresight with Scenario and Scanning Agents

Submitted by Prof Christer Carlsson, 18.12.2001, IBA E

Problem
Strategic management needs planning 3-5 years ahead, sometimes 10-15 years ahead in order to foresee and prepare for changes, which may have a dramatic impact on both the industry and corporate survival and success. Forecasting methods are not up to the task of tracing the origins of and forecasting disruptive changes. Instead, various qualitative methods have been used, which in many cases are not more advanced than educated guesswork. In order for the qualitative methods to work data is needed, and some methods to process and make use of the data in a systematic way, which may be a challenge with qualitative data. Often time is of essence and a thorough analysis carried out over several weeks is not possible.

Solution
IAMSR has developed a “family” of scanning and scenario agents, which work as a collaborative multi-agent system from a hyperknowledge platform. The system works from both a corporate intranet and from a mobile platform. The multi-agent system works with profiles of the events, which may become milestones in the development of an industry or some customer market, and searches for “weak signals” in (mostly commercial) data sources on the Internet, collects the information and stores it in pre-defined categories in a data warehouse. The system can easily handle hundreds of data sources, it works in the background and can be operated on a 24/7 basis (even if much less frequent runs often are quite sufficient).

Status and results
The multi-agent system is in operation with several corporate partners in the paper and pulp, the steel, the basic metals and the energy and heat industries. The agents appear to collect profiled information with quite a good success rate, which even is comparable to the material collected by professional market and industry intelligence operations. The added benefits of the multi-agent system is speed and cost: the time spent for collecting comparable material is less than 1% of the time spent by professional intelligence operations, and as the commercial data sources charge for use per time unit, there is a corresponding significant reduction of cost.

Adaptivity and portability
The foresight system adapts to new material in the data sources, i.e. it does not collect material already retrieved a second time. It also adapts to changes in the updating routines of the data sources. The system is portable to several user environments and recognizes its new environment before starting to operate. In terms of the EUNITE levels of adaptivity the foresight system is of Level I/II.

More information