

# OLAP query suggestion and discovery driven analysis

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**Abstract.** Interactive analysis of datacube, in which a user navigates a cube with a sequence of queries to find and understand unexpected data, is often tedious. To better support this process, we propose in this paper to connect two techniques proposed earlier in this domain. These techniques are, on the one hand, discovery driven analysis, that guides the user towards regions of the cube they will find of interest, and on the other hand, query recommendation, that takes advantage of what the other users did during former analyses. Benefiting from these techniques we propose a framework for recommending OLAP queries to the user by taking into account what previous users found of interest and the explanation they worked out.

## 1 Introduction

**Context** Interactive analysis of a data cube has often be described as a tedious process whereby users interactively navigate a cube by launching a sequence of queries over a datawarehouse, what we call an analysis session (or session for short) in the following.

In a typical session, one of the queries detects something surprising and then the subsequent queries are used to navigate the cube to explain what has been detected. But designing these subsequent queries is often difficult since the user may have no idea of what part of the cube he should navigate.

To cope with this, Sarawagi et al. proposed in Sarawagi et al. (1998) and subsequent work new operators to guide the user towards unexpected data in the cube or to propose to explain an unexpected result. We remark that these operators are applied only on query results and they do not take into account what other users might have discovered.

On the other hand, in Giacometti et al. (2008) it is proposed to consider what other users did during former sessions on the cube to suggest (or recommend) a query to the user. But in this work no emphasis is put on what former users may have found interesting.

**Problem** In this present paper, we propose to bridge the gap between these two domains, that is to answer the question: How to suggest to the user queries that lead him to interesting parts of the cube, by taking advantage of what other users found interesting?

**Contribution** To answer this question, we propose a framework for recommending OLAP queries that is based on the following principle: