SURVEY ON MEDIATION SYSTEMS FOR INTEGRATION OF HETEROGENEOUS DATA

A thesis Submitted in Partial Fulfillment of the Requirements for the Master’s Degree in Computer Science

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January 2010

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Introduction

The goal of a data integration system consists in offering a uniform interface to provide access to a collection of distributed data sources, which can be heterogeneous, autonomous and dynamic. The most important advantage of a data integration system is that it enables users to specify what they want, rather thinking about how to obtain the answers.

Research Problem

Several mediation systems were developed to resolve integration of heterogeneous information source this research is aimed to investigate these mediation systems and provide a comprehensive comparison between them, the comparison is based on a set of attributes including integration approach, Virtual or Materialized, integration model, query language, Mapping specification, Mapping generation, data sources, internal representation and external representation.
Research Objectives

General Objectives:
- To investigate mediation systems include TSIMMIS, MOMIS, MIX, SIMS, e-XML according to specific criteria.

Specific Objectives:
- To compare some of the mediation systems depending on the criteria such as approach to data source modeling,

approach to data integration (Virtual or Materialized), integration model, query language, Mapping specification, Mapping Generation, data sources, internal representation and external representation

To discuss the comparison in terms of characteristics that are corresponding and different
Research Scope

This research is concerned mainly to the investigation and comparison of mediation systems Namely (TSIMMIS, MOMIS, MIX, SIMS, e-XML). The comparison includes integration approach, Virtual or Materialized, integration model, query language, Mapping specification, Mapping generation, data sources, internal representation and external representation.

Research Methodology

In this research, well survey of database integration issues, investigating the mediation system theoretically and compared between them.

The methods of research development will be conducting according to the workflow process as illustrated in next slide.
Phase 1
- Survey of integration issues

Phase 2
- Investigation of mediation systems

Phase 3
- Comparison of mediation systems

Phase 4
- Discussion of comparisons and Results

Results & Discussion

Several mediation systems were compared namely: TSIMMIS, MOMIS, MIX, SIMS, e-XML. Different architectural aspects of these systems are taken into consideration namely: type of data sources, internal representation, external representation, Integration approach, etc. Most mediation systems overcome the problem of hard-wiring the mappings into the wrappers by using some specific mapping language e.g., there is the MIX uses XMAS, while TSIMMIS has MSL (Mediation Specification Language).
### Comparison of Mediation System

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<th>Systems</th>
<th>Approaches to data sources modeling</th>
<th>Approaches for data integration</th>
<th>Integration Model</th>
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<td>TSIMMIS</td>
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<td>OEM</td>
<td>Lorel</td>
<td>MSL</td>
<td>Provided by the mediation engineer</td>
<td>structured and unstructured</td>
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<tr>
<td>MOMIS</td>
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<td>ODMI3 /ODL13</td>
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<tr>
<td>MIX</td>
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<tr>
<td>SIMS</td>
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</tbody>
</table>

### Recommendations

- There are several mediation system uncovered like Agora, AutoMed System.
- The mediation systems presented are published between 1990 and 2002.
- There are other features uncovered like speed and security of each system.
- Download any source of mediation systems and implement.
Conclusion

- with regard the approach to data source modeling most of mediation used the GAV.
- all systems used the virtual approach in approach to data integration.
- XML has become the standard for represent, convert and exchanging data on the Internet and on intranets in the enterprise.
- query language may differ from one data integration system to another. The researchers often choose a query language corresponding to the data model.

- the internal presentation most of mediation system used the relation database except MIX system used XML.
- both GAV and LAV have some drawbacks that overcome by GLAV but most of mediation system used GAV.
سبحان رَبِّكَ رَبِّ الْعَزَّةِ غَفُورٌ سَحِيفُونَ وَسَلِىٰ العَالَمِينَ لَهُ الْمُرْسَلُونَ وَالْمَسْأَلتُونَ