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AGILE BUSINESS INTELLIGENCE SOLUTIONS FOR INTEGRATING LARGE VOLUMES OF DATA

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CONTENT

SUMMARY

The present paper begins with an in-depth analysis of the current state of research in the field of Business Intelligence, with a particular focus on the challenges encountered in the integration and modeling of large volumes of data. In the initial phase, data was collected using both qualitative and quantitative methods, such as surveys and interviews, with the goal of understanding current practices, actual industry needs, and expert perspectives on data solutions. Based on these insights, parallel implementations of Business Intelligence solutions were carried out to highlight the differences between various models and architectures used in practice.

Building upon the conclusions of this exploration phase, the research proposes agile architecture for data modeling and integration, centered around the use of Large Language Models. A validation model was developed to assess the quality and coherence of the data models generated by Large Language Models based on a clearly defined set of rules. The primary objective was to evaluate the extent to which the generated models comply with established standards and whether they can be effectively reused in the design stages of Business Intelligence solutions, while reducing manual and repetitive modeling tasks.

To test the applicability of the proposed architecture, a functional application prototype was developed, integrating Large Language Models into the data modeling process. This prototype was tested on various datasets and using different model versions, with a focus on robustness, flexibility, and ease of integration into existing BI workflows. The results support the potential of using Large Language Models as complementary tools within modern data architectures, offering an agile framework for the rapid and adaptive development of analytical solutions.

Keywords: *Business Intelligence, Agile Architecture, Data Modeling, Large Language Models, Automated Data Integration.*