



// DIGITALIZATION



MANAGING REAL ESTATE RISK

_using NLP as a Game Changer

Implementing a Value-Driver-Oriented Real Estate Risk Management

Real estate has always been an extremely dynamic and volatile asset class that is strongly linked to macroeconomic parameters. Now more than ever, financial institutions must come to terms about what buildings – both direct investments and loan collateral - are worth in a world reshaped by the pandemic. Specialist Employees typically have a clear idea of the real estate risks on the level of single objects or object ensembles. But they don't have the bigger picture: A portfolio view of the overall real estate risk exposure!

To bridge the gap, ifb has developed a holistic approach incorporating value and risk drivers on portfolio level and across real estate classes. It innovatively uses Natural Language Processing (NLP) with its power to automate the conversion of unstructured appraisal data into structured data, allowing to perform state-of-the-art real estate risk reporting including simulations and scenario analysis



A Natural Language Processing (NLP) combines linguistics, computer science and machine learning to analyze and process natural language. For example, information is extracted systematically and automatically from large unstructured volumes of text - spoken or written.



MODEL

ifb uses an integrated real estate value-risk model to develop a micro-, and risk-driver-oriented environment to perform scenario analysis.



TRANSFORM

ifb automatically transforms unstructured information within real estate appraisals into structured data ready to use for modeling..



REPORT

ifb applies a reporting template to support the risk management process.

Turning Unstructured Data into Relevant Information across Portfolios

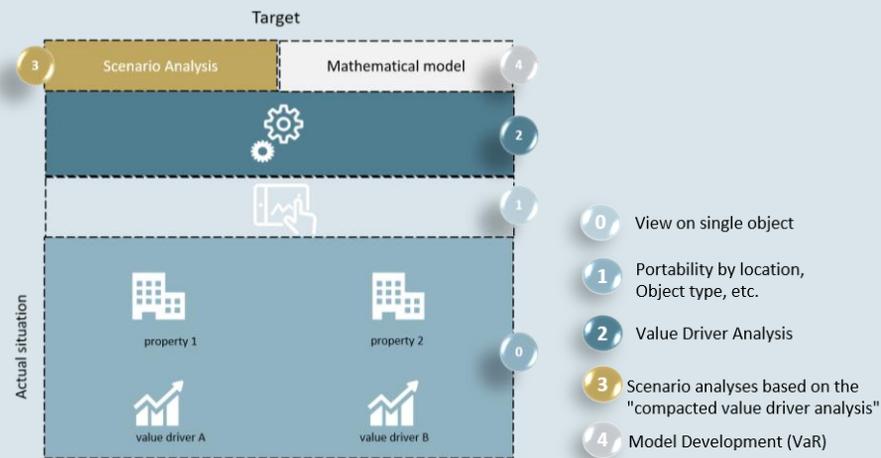
ifb's integrated approach relies on structured data describing the objects and their risk drivers to be used for simulations and scenario analysis. But how to get it?

The expertise of the responsible employees is typically high at property level including the micro-environment and property specifics. At portfolio level, differentiation is established by location and asset type, at best. Yet, value-driver-oriented real estate risk management looks deeper into risk sources by analyzing existing tenant or potential user structures.

The data needed is rarely available at first sight. Thus, we apply NLP as an innovative game changer. It automatically captures paper-based appraisal data on properties and turns them into analyzable information across portfolios - thereby being key to a most time- and cost-effective implementation of an integrated micro-based risk modeling

ifb's Approach

ifb has developed a four-stage approach for risk-adequate measurement of real estate exposure.



Phase 1 - Portfolio View: Key figures combined on a portfolio basis ensure transparency and help to identify concentrations in the portfolio.

Phase 2 - Value drivers: An extended analysis identifies important value drivers and results in a clearer view of interdependencies.

Phase 3 - Scenario Analyses: Analyzes the effects on other key figures of bank management.

Phase 4: Model Development: This final phase, aimed at quantitatively oriented institutions, develops a model for calculating credit risk taking into account correlation assumptions between LGD and PD or other modeling assumptions.



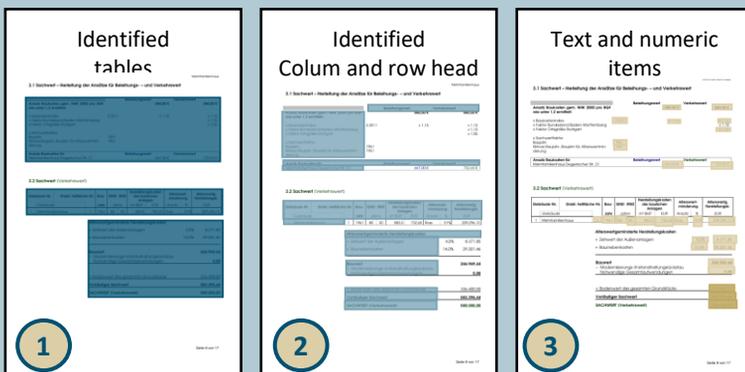
We provide support in the implementation and operation

- Implementation approach
- Tools for the operational implementation of NLP

Challenge Data Retrieval

Any real estate risk starts with collecting the relevant data. This process can be manual, but it can more efficient if NLP is used to automate the data collection process.

The three-step Identification Process (Real Estate Appraisals)



The Identification process works in three steps:

Identification of tables in the appraisal document.

- 1) Use of column and row heads to determine how to interpret them (table classification) and the kind of table.
- 2) Identification of text and quantitative Information inside the table by using the table classification from the previous step.



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