

Research

CBOLABS is a Research & Development (R&D) firm for Investment Management (IM) and Business Management (BM). The research is both theoretical and empirical, and guided by an open and abductive approach with no paradigmatic restraints. Research goals are inherently more important than the means.

CBOLABS R&D services are always performed independently from any and all academic and other institutions. Still, the CBOLABS Research & Developments can be contracted by clients and structured as joint-projects with external parties.

The Methodological Focus: CBOLABS research inquiries primarily involve analyses of leading paradigms and existing theory, with their key models and algorithms. The chosen perspective is always how theory is applied in practice. Identified critical shortcomings, dysfunctions and other anomalies are evaluated in terms of direct effects and indirect consequences. The research is foremost a search for methodological inventions and performance improvements - in generic terms, or for specific market segments and different decision-making contexts.

Research findings and methodological discoveries are reviewed globally against existing patents and new applications. If and when there is sufficient value in terms of technical improvements from the critical research claims, the discoveries are transformed into new patent applications, in cooperation with leading patent and Intellectual Property (IP) law firms.

KEY AREAS OF INVESTMENT MANAGEMENT RESEARCH:

The CBOLABS Investment Management (IM) research-focus is the global capital market and the importance of new Information & Communication Technologies (ICT) and Artificial Intelligence (AI) for the future of finance theory, including methods and models in a less biased and more open international trading and investing environment.

- **Equity Valuation Methods:** The starting point for CBOLABS research on methodological improvements in equity valuation is the confirmation of stock-markets inherent inefficiency, accepting the realities of liquidity dynamics and reflexive investor behavior. The separation of trading prices and intrinsic values - trading versus holding – is the axiomatic foundation to all CBOLABS investment research. In contrast to Modern Portfolio Theory, where the phenomenon of portfolio synergy by diversification is recognized and claimed, while still believing in stock markets being efficient with random pricing.
- **Comparative Investment Analytics:** The future of IM is all about relevant comparisons of selected investment objects by time factors. Equity performance differs by time and historic data for equity analysis also differs by time. Within such trading decision-making contexts, traditional equity analyses are insufficient. The data-transformation of price series to algorithm-based comparative investment analyses, including the target exit already when buying, is a fundamental change to the activity of trading. Such IM-methodological changes are at the center of this project.
- **Global Macro and Portfolio Modelling:** The combination of macro economics and finance is the basis of global portfolio modelling. The needs for segmentation methods of multi-factors are basic to any such endeavor and the differences between universal and contextual concepts, are basic to designing outperforming quant-models that can be successfully applied live in practice. The structure and algorithms of such model-development processes, including early warnings and risk management in a borderless global stock-market, is the starting-point for this research.
- **Smart-Beta Indexing:** The separation of Beta and Alpha has many drawbacks and, in many cases, it makes finding outperforming models and portfolios more difficult. Smart-Beta-models exist and can be exploited, which is the focus for this CBOLABS research that seek to find outperforming indexes, which are based on algorithms that pick their own universe of alternative stocks to buy and hold.
- **Non-Gaussian Distributions and Fat-Tail Statistics:** The drawbacks of traditional statistics, including Bayes algorithms, is obvious to any financial quant analyst. The importance of time differs and timing is a reality for all analysts and fund managers decision-making. Today it is well known that tails are more important than averages. Exactly this fact is the basis for CBOLABS futuristic statistics

methodology research – how to discover new forms of statistical analyses that is more fit in a non-standard reality and investment practice.

KEY AREAS OF BUSINESS MANAGEMENT RESEARCH:

The CBOLABS Business Management (BM) research-focus is the conceptual framework for strategic management and organization theory. The objective is to transform management consultancy and management training, by exploiting Information & Communication Technologies (ICT) and Artificial Intelligence (AI) through the automation of advice and simulation techniques.

- **Natural Driving Forces in Business Organizations:** The basis for CBOLABS BM is the first principle and concept of Natural Driving Forces (NDF) in business organizations. The proposition is that all possible strategies and all organization structures of the firm and corporations are NDF and can always be presented and analyzed in such terms. These dynamic forces explain the key positions and factor-relations of both single businesses and diversified corporations. They are critical to any and all executive decision-making situations. The NDF framework and how it can be transformed into AI-modular training schemes for management and serve as a robotic advisor to training consultants, is the focus of this project.
- **Artificial Intelligence for Advice on Corporate Strategy and Structure:** The NDF concept can be transformed into contextual advice on business and organization development, including corporate strategy and structure. Change-points can be identified based on the NDF and this knowledge has major consultative content for any business organization, Board of Directors and executive team, which is the focus of this research. The project's main objective is to transform the BM-findings through machine learning techniques into a Q&A-communicating interface for platform clients.