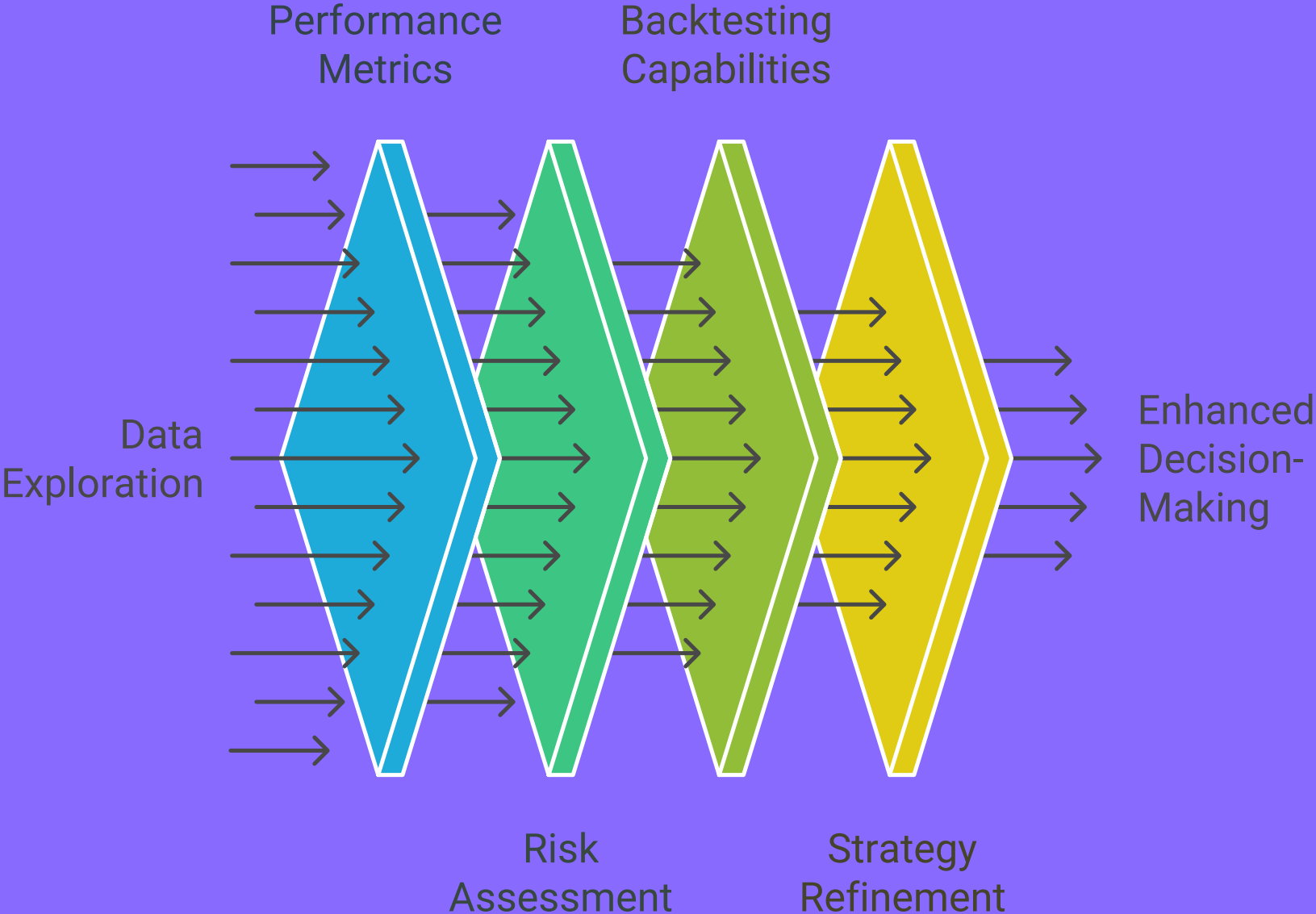


A Power BI Analytics Platform for Evaluating and Optimizing At-the-Money Trading Strategies

Abstract

This paper details the design and implementation of a **Power BI-based analytics platform** dedicated to the **evaluation and optimization** of **algorithmic trading strategies**, with a particular focus on **At-the-Money (ATM)** strategies. The platform enables **interactive** and **comprehensive** data exploration, incorporating powerful **performance metrics**, **risk assessment tools**, and **backtesting** capabilities. Through an **intuitive interface**, traders and researchers can **visualize** trading performance, **analyze** key metrics, and **refine** ATM strategies in a **data-driven** environment. Empirical insights reveal that this platform significantly enhances **decision-making** by providing deep visibility into **profitability**, **risk-reward** profiles, and **strategy stability**.

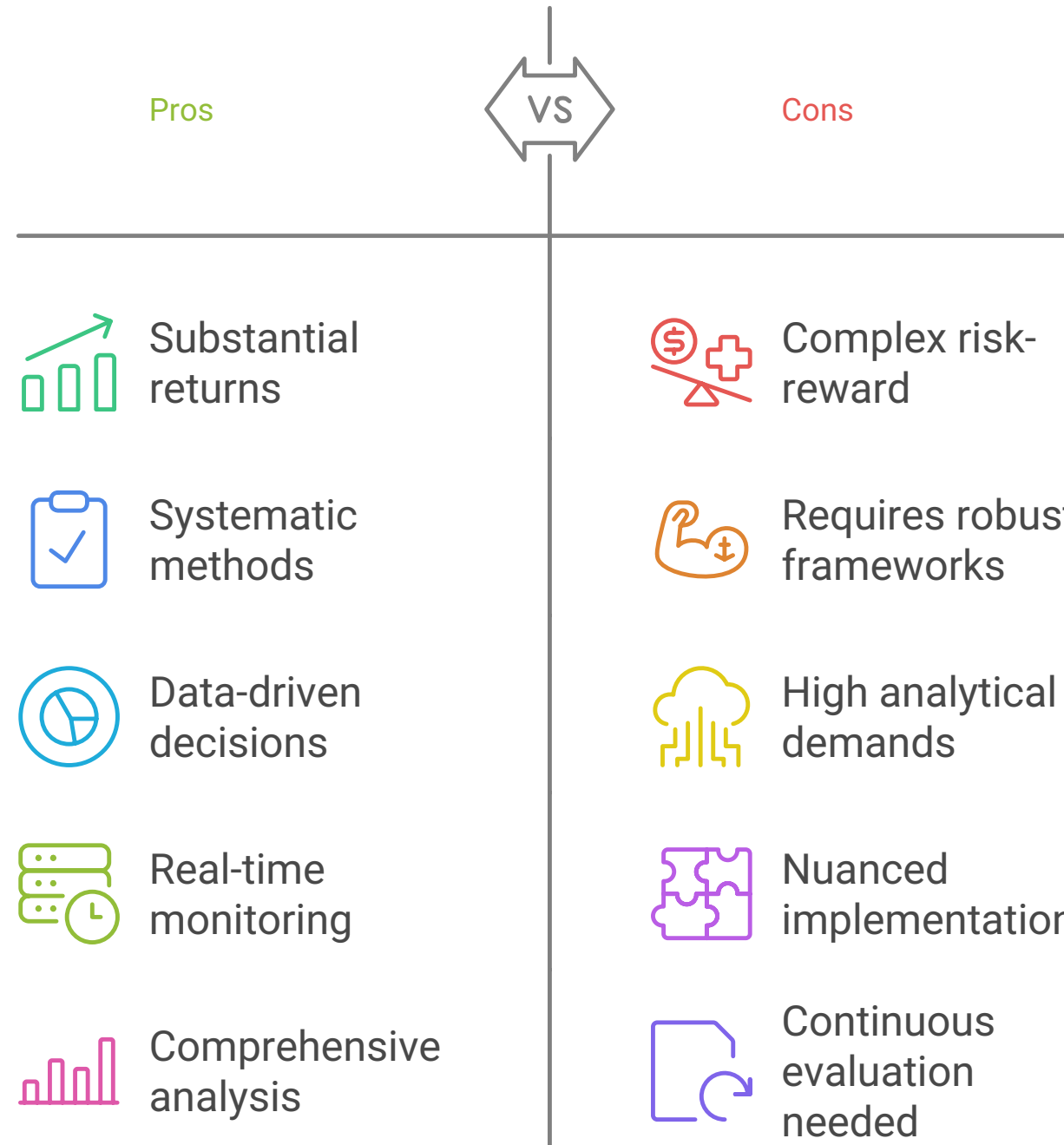
Refining ATM Trading Strategies



1. Introduction

Algorithmic trading has become a **cornerstone** of modern financial markets, empowering traders with **systematic, data-driven** methods for decision-making. While these strategies can yield substantial returns, they also necessitate **robust** analytical frameworks for **development, evaluation, and real-time monitoring**. The **At-the-Money (ATM)** strategy—trading at or near the **strike price** of derivatives—represents a crucial approach in **options** and **futures** markets, often involving nuanced risk-reward considerations.

At-the-Money Trading Strategy



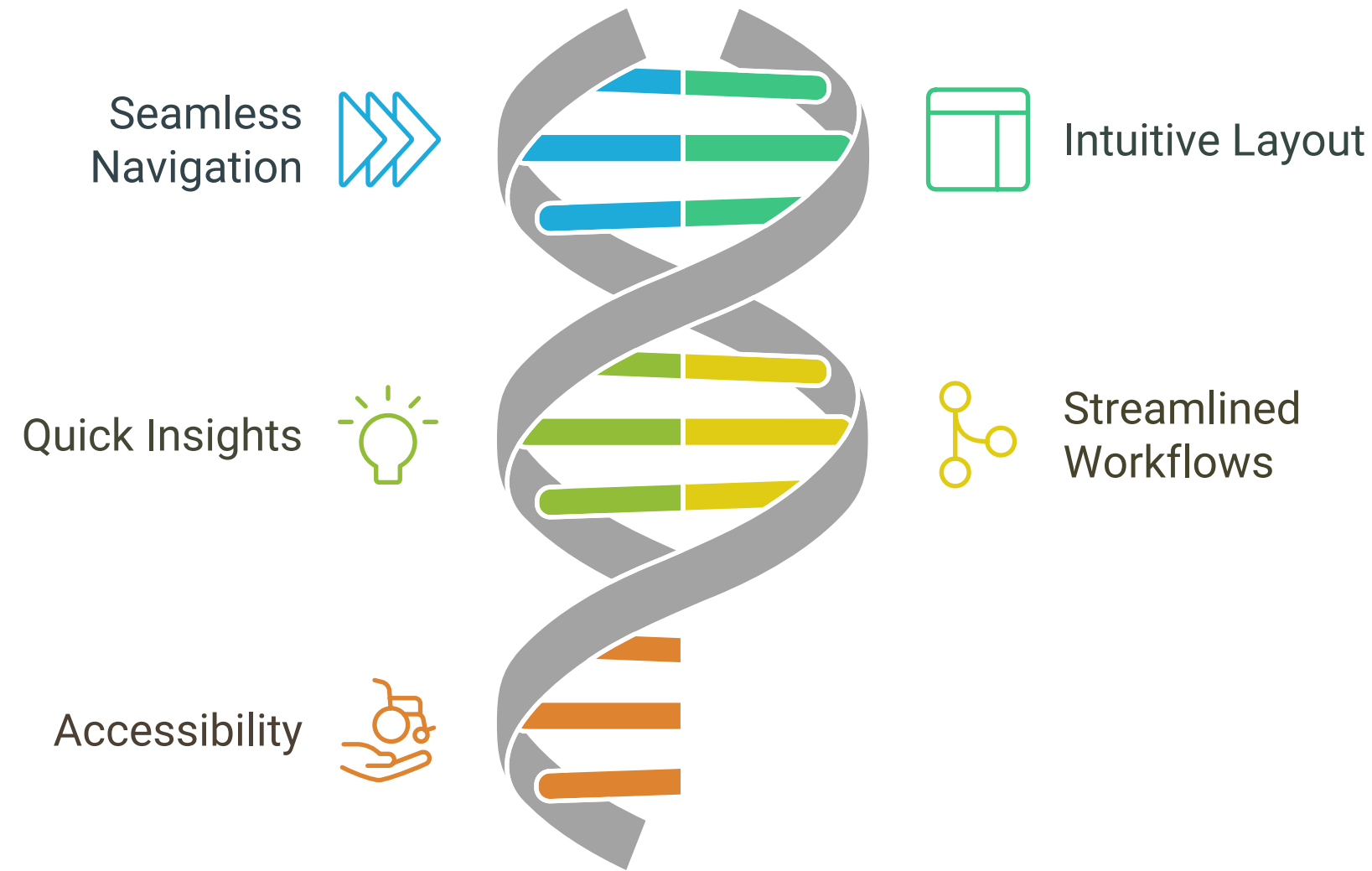
To address the growing need for **advanced, user-friendly** analytics tools, this paper presents a **Power BI** platform designed for **in-depth** trading strategy analysis. By **focusing** on an ATM strategy, we **demonstrate** how the platform's interactive dashboards, comprehensive performance metrics, and **backtesting** engine guide traders in making **evidence-based** optimizations.

2. Platform Design and Features

****2.1 Interactive Dashboards****

The Power BI platform features a **dashboard-centric** architecture, enabling users to **seamlessly** navigate between different data views—such as **overall performance, daily trading activity**, and **asset-specific** breakdowns. This **intuitive** layout fosters **quick** insights and **streamlined** workflows, ensuring that even complex performance metrics remain **accessible** to users of diverse technical backgrounds.

Power BI Dashboard Architecture

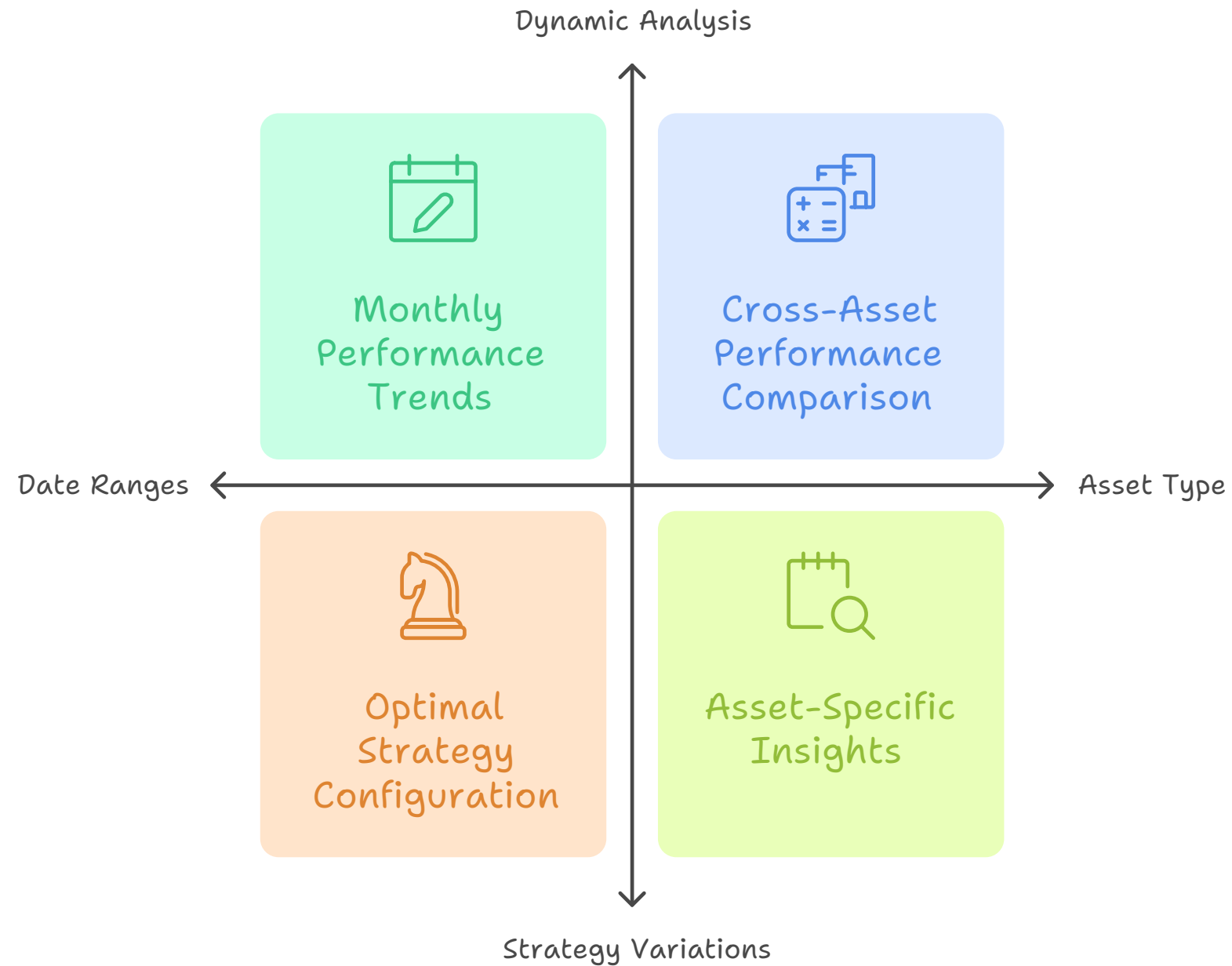


2.2 Filtering Capabilities

Filtering forms the core of the platform's **dynamic** analysis. Users can focus on:

- **Date Ranges:** Narrow down periods of interest (e.g., monthly, quarterly, year-to-date) for targeted analysis.
- **Asset Type:** Filter by specific assets (e.g., indices, equities, commodities) to compare **cross-asset** performance.
- **Strategy Variations:** Contrast different parameter settings or **ATM** strategy variations to **pinpoint** which configuration yields optimal results.

Filtering Capabilities in Trading Strategy Analysis

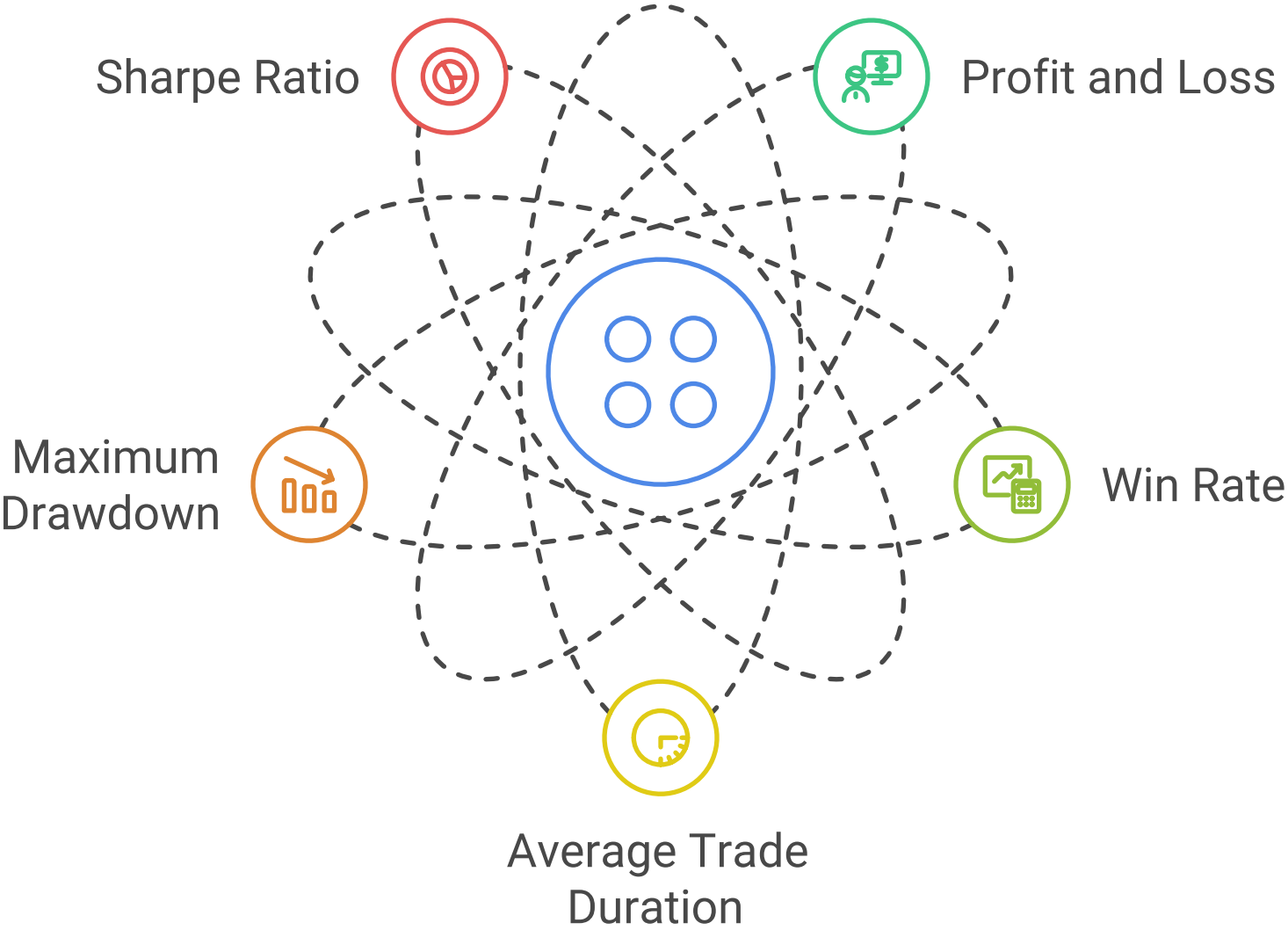


2.3 Performance Metrics

The platform calculates and presents a **range** of quantitative metrics, critical for **holistic** trading strategy assessments:

1. **Profit and Loss (P/L)**: Monitors both **aggregate** and **per-trade** profitability.
2. **Win Rate**: The percentage of **profitable trades** over a given period.
3. **Average Trade Duration**: Helps users gauge **time in market** and potential **opportunity costs**.
4. **Maximum Drawdown**: Tracks the **worst-case** capital decline from a peak, guiding **risk management**.
5. **Sharpe Ratio**: Evaluates **risk-adjusted returns**, crucial in comparing multiple strategy configurations.

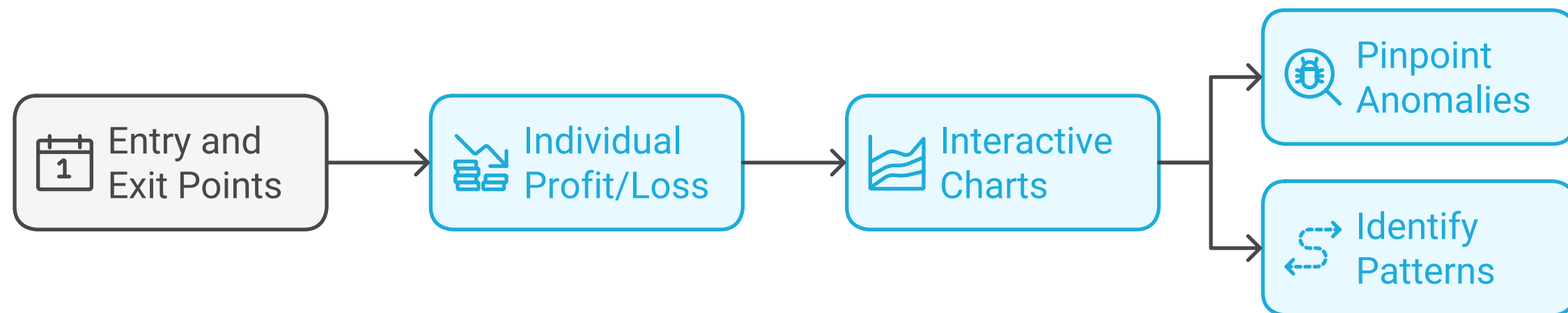
Comprehensive Trading Strategy Metrics



2.4 Granular Trade Analysis

To **drill down** into specific **trade-level** details, the platform offers **interactive** tables with:

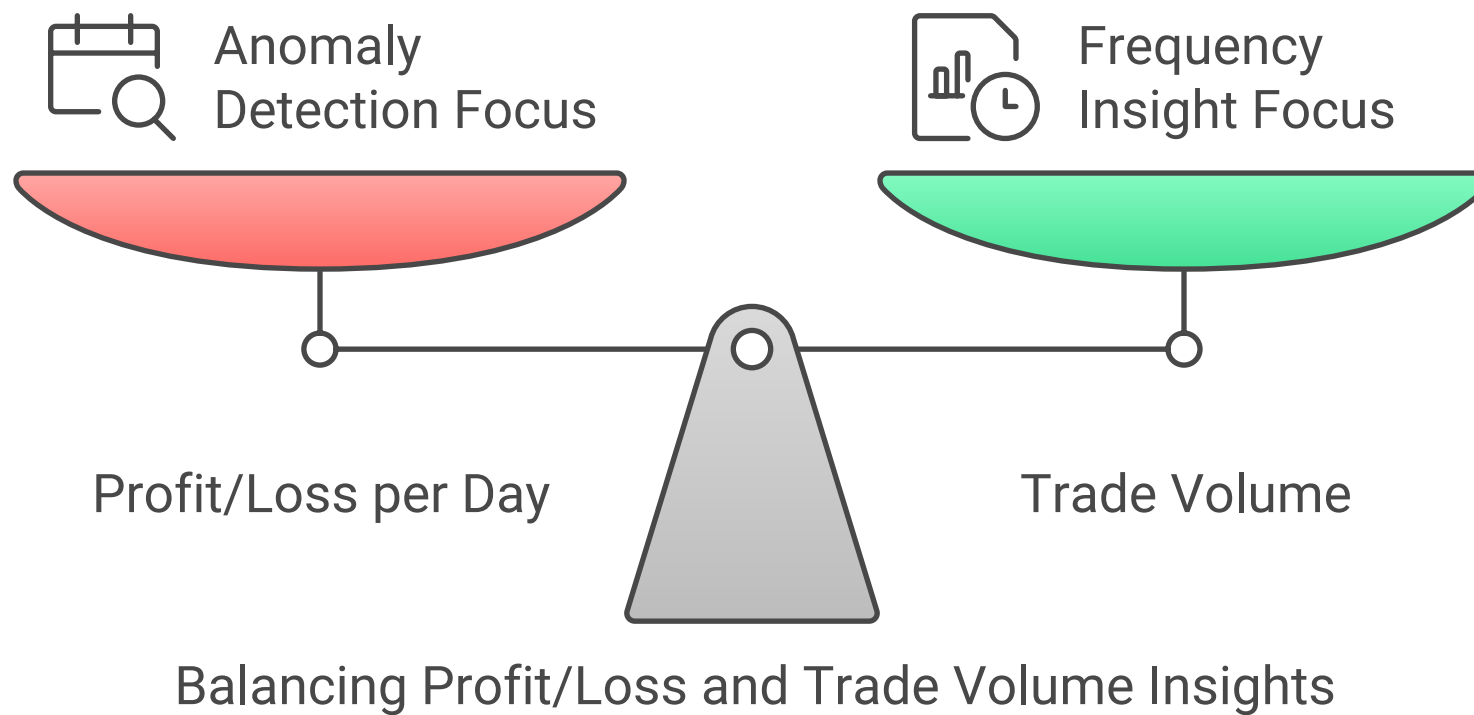
- **Entry and Exit Points:** Clear timestamps marking the **lifecycle** of each position.
- **Individual Profit/Loss:** Highlights how much each trade contributed to **overall** performance.
- **Interactive Charts:** Show time-series fluctuations in **unrealized** and **realized** gains or losses, enabling traders to **pinpoint** anomalies or identify **patterns** in trade outcomes.



2.5 Daily Trading Activity

A specialized **daily performance** report enumerates:

- **Profit/Loss per Day:** Allows **temporal** performance segmentation, spotlighting anomalies (e.g., unusual losses on specific days).
- **Trade Volume:** The number of **executed trades** per day, providing insights into **trading frequency** and potential **overtrading**.



2.6 Asset-Specific Analysis

In multi-asset environments, the platform can **isolate** results based on the **asset type**, allowing for a more granular understanding of how different assets perform under the ATM strategy. This feature enables traders to identify which assets yield the best results when employing ATM strategies, thus facilitating more informed trading decisions.

Which asset type yields the best results under ATM strategies?

Asset Type A

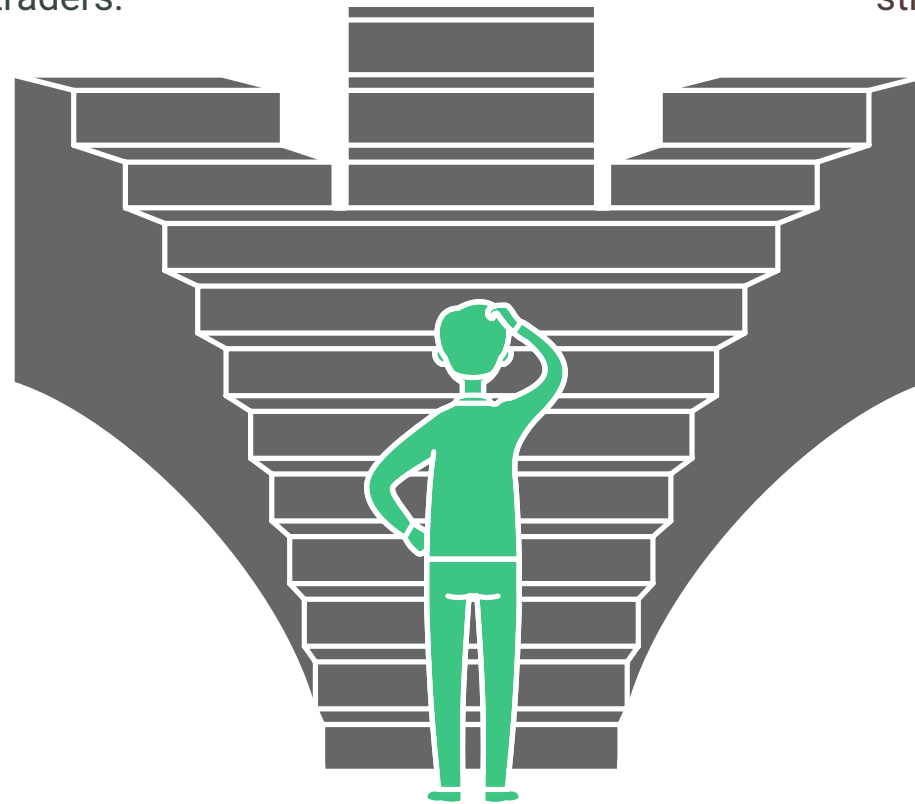
Provides high returns under ATM strategies, making it a preferred choice for traders.

Asset Type B

Offers moderate returns, suitable for balanced trading strategies.

Asset Type C

Shows lower performance, less favorable for ATM strategies.



3. Conclusion

The Power BI-based analytics platform represents a significant advancement in the evaluation and optimization of ATM trading strategies. By providing a comprehensive suite of tools for performance analysis, risk assessment, and backtesting, the platform empowers traders to make informed, data-driven decisions. As algorithmic trading continues to evolve, the integration of such analytical frameworks will be crucial in navigating the complexities of financial markets and enhancing trading efficacy. Future work will focus on expanding the platform's capabilities, including machine learning integrations for predictive analytics and further enhancements to user experience.

Enhancing ATM Trading with Power BI

