Introduction to WealthBench:

The Premier Wealth Management Platform

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RiskMetrics Introduction

The RiskMetrics is the world's leading provider of risk management research, data, software, and education. RiskMetrics is best known for leading the development of transparent risk estimation methodologies and easy-to-use software tools. RiskMetrics creates and supports benchmark risk management products for a variety of clients segments including asset management, banks, private wealth management, hedge funds, and pension funds. RiskMetrics analyses and services span a broad range of markets including equities, bonds, commodities, foreign exchange, futures, options, derivatives, structured products, interest rate products, and credit products. Our coverage includes 4.5 million active global securities, 200 countries, 220 exchanges, 11,000 global benchmarks, and over 700,000 market data series updated every business day. Spun-off from J.P. Morgan in September 1998, RiskMetrics is a rapidly growing cutting-edge financial analytics, technology and data company creating innovative products that are well-recognized standards in the global financial markets. Today, thousands of financial institutions, multinationals, fund managers, and investors worldwide benefit from RiskMetrics' benchmark products.

RiskMetrics' applications and online services make risks "transparent" and enable our clients to understand portfolio risk using open, well-documented methodologies that have been tested by demanding, global institutions. As the roles of investment banks, exchanges, and hedge funds rapidly evolve; risk is increasingly being spread amongst the myriad of players in the markets – RiskMetrics is providing the technology that helps market participants stay informed.

Our mission is to be the leading risk information provider to institutions around the world. One clear goal dominates – to deliver the risk management solutions demanded by risk managers around the world. To meet this challenge, we have established a unique, multifaceted approach to risk management:

- **Methodology:** We create and promote transparent, industry-standard methodologies for risk management.
- **Data:** We acquire process, add value and provide easy access to, all required data and analyses.
- **Systems:** We develop and support practical software solutions for implementing effective risk-management techniques.
- **Education:** We increase the overall level of awareness and understanding of risk management and its methodologies through education, communication, and publication.

These mission statements strongly reflect RiskMetrics rich heritage and risk-management roots. Today RiskMetrics is the largest independent risk management company in the world.

WealthBench™ Introduction

WealthBench is a web-based investment planning platform used globally by relationship managers and investment advisors to assess portfolio risk, optimize asset allocations and create comprehensive client proposals. WealthBench helps financial advisors deliver sound investment advice and recommend appropriate products and services.

WealthBench allows financial advisors to:

- Analyze client's current investments and financial goals.
- Select the best long-term asset allocation tailored to a client's risk tolerance.
- Select the investment products that best implement a client's long-term strategy.
- Create an easy to understand analytically based client proposal.

WealthBench Key Features

Unlike typical wealth management applications, WealthBench focuses on risk management in addition to asset allocation. WealthBench provides institutional quality portfolio-level risk analysis. Unlike many other applications in this space, WealthBench provides portfolio-level statistics built from the ground up; building from the individual security level. Using the absolute risk of each security and its cross-correlation with all other securities within the portfolio, WealthBench provides a level of risk transparency rarely seen by clients.

WealthBench also performs *multi-period, simulation-based portfolio optimization,* which creates optimal asset allocations best suited to meet client goals over an extended multi-year period. This proprietary methodology accounts for all relevant variables such as taxes, turnover, cash flows, goals, capital market assumptions and asset class constraints.

At the institution level, WealthBench allows firms to configure a unique yet consistent, standardized interface across its advisor base. Client configurable components include: asset class schema, incorporation of firm security master and client holding feeds, Capital Market Assumptions, Model Allocations and firm sponsored recommended lists. In addition to its configuration and integration features, WealthBench, allows each firm to customize its own client proposals with professional-quality graphics.

In addition, WealthBench can be further configured to deliver custom solutions for clients in various geographic locations with different capital market assumptions, tax rates, currencies, and multi-lingual capabilities. Moreover, WealthBench can deliver analyses according to the experience levels of each financial advisor. As financial advisors gain more experience or transition to higher-net worth clients, they can leverage their WealthBench training and expertise and gain access to more functionality within a consistent framework.

WealthBench Value-Added Features

WealthBench's web-based ASP (Application Service Provider) architecture preserves client's IT resources and insures that all services are up to date along with 24 X 7 technical support, physical and electronic security, support for business continuity, and flexible working. Its suite of analytical modules is explicitly designed for seamless integration into your institution's intranet and/or internet infrastructure, freeing institutions from maintaining disparate analysis tools that do not communicate with each other.

Apart from managing and analyzing client risk and wealth, WealthBench helps private banks by:

- **Attracting New Clients:** By utilizing institutional-quality methodologies, customized with a company's proprietary research. WealthBench can help will grow assets under management.
- **Building Client Relationships:** By providing proactive, informed advice and reporting that is timely and actionable; tailored to each client's specific risk tolerance, return objectives, and financial goals.
- **Increasing Productivity:** By leveraging technology to analyze data, in an enterprise or single user environment, WealthBench allows advisors, brokers, and relationship managers to spend less time aggregating data and more time advising clients.

The WealthBench Workflow

WealthBench's workflow guides investment advisors through the process of planning, processing and projecting wealth. This workflow provides an integrated approach to financial and investment planning:

- **Understand:** The investment planning process begins by understanding and developing a client's complete financial picture. WealthBench helps financial advisors answer questions such as: What are your clients' investment objectives and goals? When would they like to retire? Have they begun saving for their children's education? How much do they wish to invest? How is their money invested? Are their investments consistent with their appetite for risk?
- **Analyze/Evaluate:** Advisors can conduct an exhaustive analysis of a client's current portfolio not only at the asset class level but also at the individual security level. Advisors can measure client risk in both normal and abnormal market conditions (For instance, WealthBench stress tests analyze how a client's portfolio would perform if historical events like Black Monday or the September 11th occurred in today's investment environment). Advisors can easily analyze the benefits of portfolio diversification and the effect of making selected changes to a portfolio from a risk and return perspective.
- **Formulate Strategy:** WealthBench provides advisors with optimal asset allocation strategies. WealthBench optimizes at the asset class level using your firms' discretionary asset class assumptions. WealthBench provides both a traditional mean-variance optimization technique as well as its own proprietary multi-period, simulation-based routine. In addition to the optimization route, advisors can use model allocations provided by your firm or its Investment Policy Committee.
- **Implement:** Once an appropriate asset allocation is determined, an advisor can fulfill asset allocation recommendations with suitable products. Firms may provide model portfolios and/or recommended lists of individual products from which advisors can choose appropriate products. Current WealthBench clients use it to recommend everything from simple equities and mutual funds to sophisticated structured products.
- **Present:** WealthBench generates presentation-quality reports on current and proposed portfolio allocation, financial planning, wealth projections, cash flows, portfolio revenue flows, risk analysis and a host of other analytical data. These professional reports are multilingual, extremely flexible and custom built to represent your firm's brand.
- **Review and Monitor:** WealthBench's portfolio analysis tools, reports and daily updates of portfolio positions keep advisors abreast of changing market conditions. Firms that also subscribe to RMG's Risk Suitability Monitoring service gain the added benefit of satisfying regulatory needs while proactively monitoring portfolios for adherence to investment policies and client suitability requirements.

Risk Management

WealthBench measures client risk and helps you manage it. It helps your clients navigate the uncertainty of the financial markets with insightful, powerful risk analysis and risk management tools. WealthBench's comprehensive reports detail financial allocation, summarize risk characteristics of a portfolio and highlight risk concentrations. WealthBench Risk Reporting features include:

Multi-Goal Planning & Asset Allocation Optimization

WealthBench's proposal generation system allows advisors to use sophisticated Monte-Carlo techniques in order to demonstrate to clients the possible future paths of their wealth. Taking into consideration such items as income, living expenses, goals or other liquidity needs, taxes, constraints as well as an individual tolerance for risk, WealthBench can generate a comprehensive analysis for clients using proposal generation.

- **Risk Statistics:** Assess the risk of individual positions, accounts and portfolios using market standard statistics such as Standard Deviation, Value-at-Risk or RiskGrades. (The RiskGrade™ statistic is a standardized measure of volatility, and therefore allows an apple to apples direct comparison of investment risk across all asset classes and regions).
- **RiskImpact™:** Highlights the marginal contribution each individual position represents to the total risk of the portfolio. A great measure to expose hidden risks in a client's portfolio.
- **Expected Loss:** A Value-at-Risk-based statistic allows one to quantify the average worst case loss a portfolio may suffer over a given period of time. This measure will can help quantify a client's appetite for risk.
- **Diversification Benefit:** Quantify the level of diversification in a portfolio to explicitly highlight the value of your firm's recommendations.
- **Stress Testing:** Calculate in real-time the potential effects of stress events and market shocks on the value of a client's portfolio to identify potential hedging strategies and to help clients set sensible exposure limits.
- **Pre-Trade Analysis/What-If Analysis:** Determines the effect of hypothetical trades on a portfolio's expected and historical risk and return.

Proposal Generation

Proposal Generation components include:

- **Risk Profiling:** WealthBench's Risk Tolerance Questionnaire can be customized to conform to firm policy. It Incorporates firm scoring algorithms and mapping into Investment Objectives.
- **Cash Flow Planning:** Detailed cash flow entry allows flexibility to model almost any scenario. Cash flow planning can be holistic or targeted scenario driven within the WealthBench platform.
- **Asset Allocation Method:** WealthBench supports the following asset allocation methods:
    - Firm sponsored model allocation
    - The ability for advisors to define their own allocation
    - Traditional mean-variance optimization
    - Proprietary RiskMetrics multi-period, simulation-based optimization

- **Comparison Analysis:** WealthBench provides the ability to compare a client's current situation to the optimal allocation and up to two other alternatives. WealthBench provides comprehensive analysis for validating the alternatives including:
    - MPT statistics
    - Efficient frontier
    - Monte-Carlo simulated wealth projection
    - Probability of achieving goals
    - Detailed cash flow audit report
    - Historical back-testing and stress-testing

Investment Selection and Analysis

- WealthBench allows advisors to fulfill asset allocations with actual products. The following methods are available for selecting products:
    - Firm sponsored model portfolios
    - Firm sponsored recommended lists
    - Advisor created favorite lists
    - Incorporate product fact sheets
    - Select products available from the full universe of securities including equities, mutual funds, exchange traded funds, bonds, options, commodities, managed accounts, structured products, etc.
    - WealthBench provides comprehensive analysis for the fulfilled portfolio.

Client Reports

WealthBench produces essential client communications with actionable results. Using WealthBench's portfolio and risk management analysis, advisors can clearly present an institution's investment advice and build clients confidence. Advisors showcase their advice through personalized communications with WealthBench's flexible reporting.

Client communications and reporting are enhanced with WealthBench's analytical features. Quantitative measures of portfolio risk show clients where they stand relative to their target investment strategies. With Monte Carlo Wealth Projection, advisors can present side-by-side comparisons of a clients' projected wealth (from his or her existing investments) against an institution's recommended portfolios. Monte Carlo simulation techniques provide complete forecasts of the distribution of your clients' future wealth, with the ability to properly model: Stochastic asset class returns, stochastic inflation rates, tax and transaction-related costs. What-If analysis summarizes the detailed implications of portfolio rebalancing trades and new investments under consideration.

RiskMetrics Group can work with you to customize WealthBench's PDF reporting templates, which can be used as standalone reports or as additional sections to your current reports. Multilingual reports can be used to provide global solutions for client proposals. Firm-branded, presentation quality reports are ready and available for advisors to present to clients.

- Fully customized for content and style
- Dynamic content control
- Multi-lingual
- User editable executive summary and notes
- Integrated analytics

WealthBench Implementation

RMG's WealthBench clients are guided through their implementation by a dedicated team of RiskMetrics experts. Implementation Managers, together with Account Managers, Research Professionals, Technical Professionals and Operations Professionals, work with RMG clients at every stage to ensure data feeds and customizations are handled accurately and efficiently.

Available RMG client implementation features:

- Customize aspects of the interface, such as colors, logos, styles and content
- Segment users by service tiers or groups of different functionality
- Create one (or more) datasets (refer to the datasets section below for more details)
- Customize questionnaire and scoring algorithm to match your firms standards
- Set up an asset classification structure for all users
- Create report template[s] for users
- Turn on/off specific functionality globally or for specific user segments
- Create multilingual reports
- Currency customization
- Integration of data feeds for instrument and client portfolio data
- Select relevant market data for use in the application
- RiskMetrics covers over 70 global exchanges and has an extensive database consisting of data coverage from leading providers of equity, mutual fund, fixed income, commodity, interest rates and futures
- Select relevant models for valuing client positions
- RiskMetrics has developed risk models to handle most investment vehicles.
- Single sign-on integration with your firm's application

Datasets

Datasets are unique data assumptions used by WealthBench. Datasets can include application settings such as capital market assumptions, asset allocations, and tax rates. One or more active datasets can be created within WealthBench. With proper entitlements, advisors can select which dataset to use for a given Client/Prospect or for a given proposal. Your institution can use the dataset feature to customize WealthBench for clients in different geographic locations, using different capital assumptions, and different tax rates.

The following is a list of the main items RMG clients can modify within a dataset:

- Capital market assumptions
- Correlation matrix
- Model asset allocations
- Model portfolios
- Asset class constraints
- Questionnaire scoring algorithm
- Asset class benchmark indices
- Tax rates
- Turnover rates

Market Data

Market Data refers to the prices, returns, currencies and yield curves used by the analytics engines to calculate market values, volatilities and correlations of Client holdings.

WealthBench provides integrated access to RiskMetrics Group data services – a source of clean, consistent data for improved risk management. Our open time series database architecture means you can easily incorporate your institution's unique financial product offerings.

RMG manages over 700,000 time-series across the global equity, fund, currency, commodity and fixed income markets. Coverage of all Equity Exchanges, US Mutual Funds, FX Spot Rates and Generic Yield Curves are included in the standard WealthBench implementation package. Additional fees apply for access to optional data sets: TIPS, Issue Specific Bond Curves, Mortgage Curves, Futures and other Mutual Fund markets.

While a majority of the market data can be provided by RMG; proprietary data can be sent via RMG’s pass-through service for additional fees.

Instrument Models

Financial advisor’s can set-up positions for the following securities directly into WealthBench: bonds, cash holdings, equities and equity options. WealthBench supports the following financial instruments through back end feeds and can access over 70 instrument models for more complex financial instruments:

- Amortizing bond
- Bond
- Bond option
- Cash
- Equity
- Equity option
- Money market
- Bond future
- Commodity (spot)
- Commodity future
- Commodity future option
- Commodity option
- Convertible bond
- FRN
- Fx forward
- Fx option
- Instrument
- Inflation indexed bond
- Mortgage backed security

ASP Application Connectivity

In order to support WealthBench as an ASP (Application Service Provider) application, client sites must be connected to RMG over the internet or a dedicated line to ensure secure file delivery. RMG clients decide which method to use and work with RMG to document the necessary details.

WealthBench uses the HTTPS protocol, a 128-bit encrypted connection. Users can access the WealthBench site over the Internet or through a dedicated line. In either case a browser that supports 128 bit encryption is required.

WealthBench ASP software runs on servers managed by RiskMetrics Group that are located remotely from the client site, and made available for client use using a “software as a service” model. Users access the full interactive functionality of the hosted risk management applications using an Internet Explorer browser.

The key design and service objectives for ASP Hosted Applications are:

- **Security of client data:** The security is designed to ensure client data is confidential.
- **High availability:** Redundancy and fault tolerance have been engineered into the system, and there are implemented disaster recovery options.
- **Site performance:** The site provides fast analytic responses through distributed processing and multiple analytic servers.

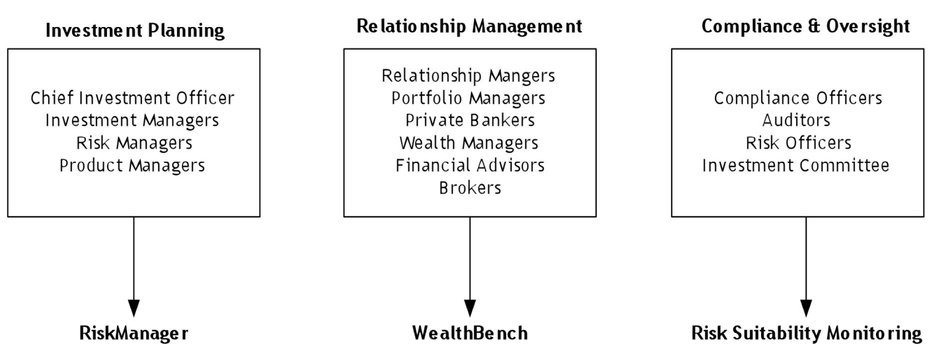
Total Wealth Management Solution

Using RiskMetrics Group products, clients can specify risk based investment policies and proactively monitor risk. Apart from WealthBench, RMG’s wealth management solution includes:

- **RiskManager™:** A web-based or client installed application that allows Investment Management professionals to meet all of their firms risk management requirements. Risk-Managers combines all the methodologies, technology, and data required to help companies make more informed financial decisions and effectively meet their business objectives.
- **Risk Suitability Monitoring:** Provides documented industry standard methodology to ensure compliance, allowing you to proactively manage your firm's regulatory obligations. Risk Suitability Monitoring services are designed for those with fiduciary and risk management responsibilities for client portfolios. This nightly service ensures suitability by checking that all of your clients' portfolios are within their risk tolerances as specified in your Investment Policy Statement process.

The illustration below summarizes the different components of RMG wealth management solutions.

RiskMetrics Group Wealth Management Solutions



WealthBench™ Specifications Summary

Risk Management

- Portfolio level risk and return analysis
- RiskGrades™ daily updated security specific measures
- Standard deviation, VaR and other risk measures
- Diversification benefit
- Expected Loss™ downside risk measure
- RiskImpact™ security specific marginal risk
- User defined event risk analysis for market shocks

Multi Goal Planning & Tax Optimization

- Extensive goal planning, cash flow and liquidity needs modeling
- Fully cash flow granular analysis engine
- Monte Carlo simulations for wealth forecasting
- Stochastic modeling of asset class returns and inflation
- Treatment of concentrated and/or restricted positions
- Client specific portfolio rebalancing assumptions
- Customizable asset returns modeling
- Client specific optimal asset allocation
- Customizable asset class constraints
- Customizable risk profiling
- Administrative toolkits for management of statistical inputs
- Taxable, tax deferred and nontaxable accounts
- Client specific tax rates

Portfolio Construction

- What if analysis for hypothetical trades
- Industry sector analysis
- Returns based and holdings based style analysis
- Customizable recommended lists
- Customizable security returns modeling
- Customizable policy and client specific constraints

Data Coverage

- Database of over 700,000 securities time series for over 30 countries
- International equities
- Mutual funds and unit trusts
- Fixed income
- Foreign currencies
- Options and derivatives
- Customizable for Alternative Investments
- Customizable for structured products

Reporting Statistics

To create a complete picture of the client's financial status, WealthBench provides the following reporting statistics:

- Expected return
- Expected standard deviation
- Historical standard deviation
- Historical VaR (value at risk)
- Expected yield
- Sharpe ratio
- RiskGrade™ (represents the overall market risk of an asset or portfolio)
- XLoss
- Diversification benefit

Reports and charts include

- Wealth Projection graph
- Income Generation Graph
- Goal Probabilities Table
- Cash Flow Report and Graph
- Risk/Return
- Risk Map
- Cumulative Performance, Annual Performance and Best / Worst Performance
- Historical Risk

Technology

- Application Service Provider (ASP)
- XML interfaces via TCP/IP
- 128bit encryption over SSL
- Customizable, webbased graphical user interfaces
- Data exports to client reporting (e.g. PDF)
- Portfolio uploads via text import or client feeds
- Scaleable server configurations based on load demands
- Fully redundant hardware