

Textiles	\$118.00	\$162.60	37.80%
Wool	\$191.00	\$191.38	0.20%
Fur	\$208.00	\$264.58	27.20%
Sateen	\$217.00	\$244.34	12.60%
Silk	\$199.00	\$216.11	8.60%
Cotton	\$172.00	\$173.03	0.60%
Flax	\$109.00	\$151.07	38.60%
Others	\$789.00	\$935.75	18.60%
Electric power	\$722.00	\$877.95	21.60%
Others	\$602.00	\$746.48	24.00%

Projected sales of main products in 2013



PERCENTAGE IMPACT ON THE SECURITIES MARKETS



Share of market activity



Changes in the activity of the active and passive market is uncertain: Established positive trends in various market segments.

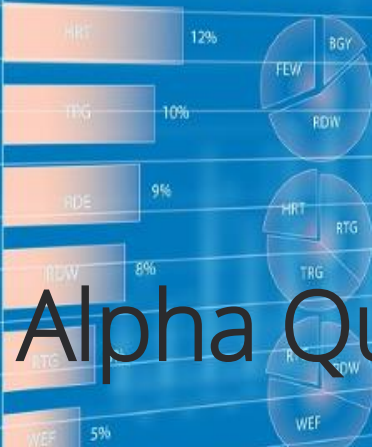
Distribution marketing participation in the securities market.



PROJECTED SALES GROWTH DYNAMICS



Distribution of the securities market key players



	TYU division	FRT division
HRT	25	550
DW	65	3
TRG	24	4
RTG	254	60
WEF	784	145
HRT	453	784

INDEX

PERCENTAGE IMPACT ON THE SECURITIES MARKETS

PROJECTED SALES GROWTH DYNAMICS

PROJECTED SALES GROWTH DYNAMICS

# Alpha Quantum Quantamental



# Alpha Quantum

Quantitative. Innovative. Artificially Intelligent.  
Researched. Alpha.

*The Alpha Quantum Way.*



## Our solutions

Quantamental, Specialised Digital Assistants, Portfolio Optimiser, Risk Management, Alpha Wealth Robo Advisor, News Analytics

Website: [www.alpha-quantum.com](http://www.alpha-quantum.com), Email: [info@alpha-quantum.com](mailto:info@alpha-quantum.com)

# Alpha Quantum Quantamental

- Alpha Quantum Quantamental is an innovative solution for financial analysis, valuation and ranking of companies and a backtesting platform for quantitative strategies.
- It can be used in a wide variety of companies: mutual funds, hedge funds, wealth managers, insurance companies and pension funds.
- Our solution allows clients to conduct financial analysis of companies, including generating sophisticated automated reports and provides versatile discounted cashflow valuation tools.
- Our ranking methodology based on z-score offers in-depth analysis of benchmarking and trends in companies and sectors. It also provides one of our cornerstone alpha generating strategies.
- Quantitative strategies can be based on multifactor models, pricing models, rankings, DCF valuations, news analytics models or their combinations.

# Features

## Financial analysis



- Support for over 30 financial ratios and indicators in categories of profitability, activity, solvency, liquidity, growth and returns
- Automated generation of sophisticated and complex reports which include segments of financial analysis, valuation, ranking and news analytics
- Many different types of automated reports – value investing, credit risk and others

## Valuation



- Discounted cashflow valuation (DCF, FCFE model)
- Estimate of stock intrinsic value distribution with DCF Monte Carlo simulation
- Support for many different scenario classes for projection (historical, customised). Versatile sensitivity analysis of DCF valuation
- Bulk generation of DCF results as an input to further analysis and for quantitative investment strategies

## Ranking



- Ranking based on z-score of over 20 different financial ratios and indicators
- Composite ranks based on many weighting schemes
- Many tools for time analysis and comparisons
- Sophisticated regression and other analysis between rankings and stock returns
- The cornerstone for a class of alpha generating quantitative investment strategies

## Backtesting



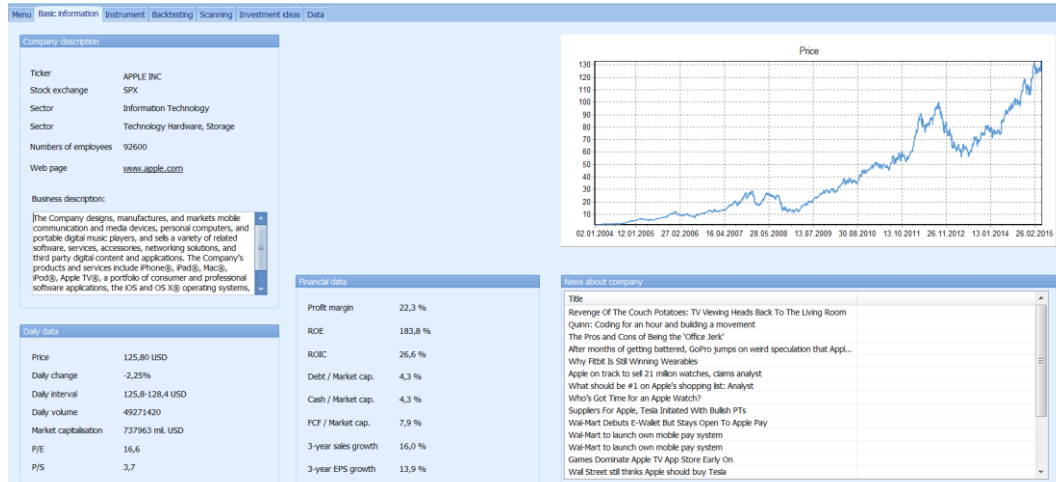
- Powerful framework for backtesting and research of quantitative strategies
- Sophisticated analysis and statistics for backtesting results with over 20 performance and risk quantities (sharpe, sortino, etc.)
- Quantitative strategies can be based on multifactor models, pricing models, rankings, DCF valuations, news analytics models or their combinations
- Automation and API connections with broker solutions

## Charting

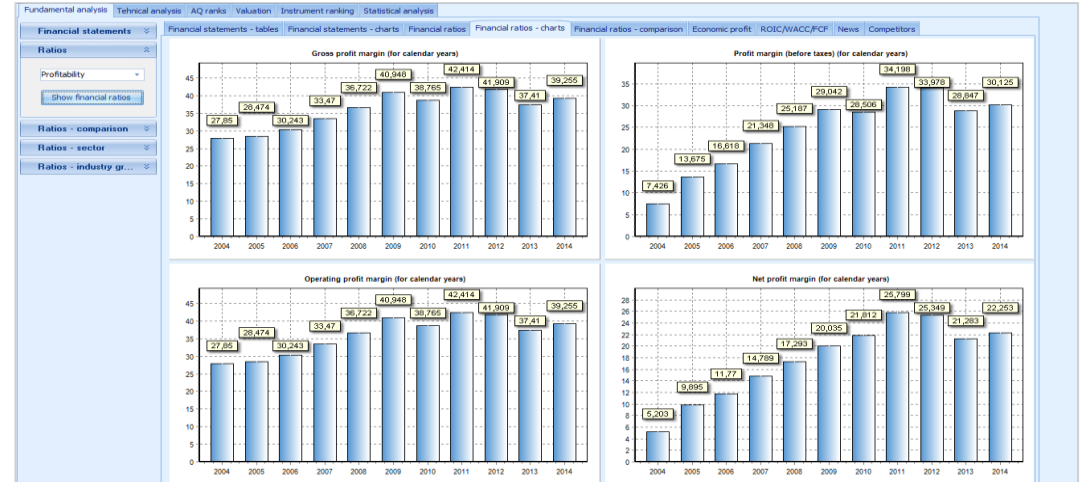


- Many chart styles (including Bars, Line, Candlesticks, Point & Figure, Renko)
- Support for many standard technical signals and indicators, including Bollinger bands, MACD, RSI, stochastic, momentum, volume oscillator
- Automatic algorithmic recognition and drawing of standard technical patterns, including double top/bottoms, wedges, triangles. Support for bulk scanning.

# Financial analysis



Basic information about selected company



Support for over 30 standard and proprietary financial indicators

**Fundamental analysis** | **Technical analysis** | **AQ ranks** | **Valuation** | **Instrument ranking** | **Statistical analysis**

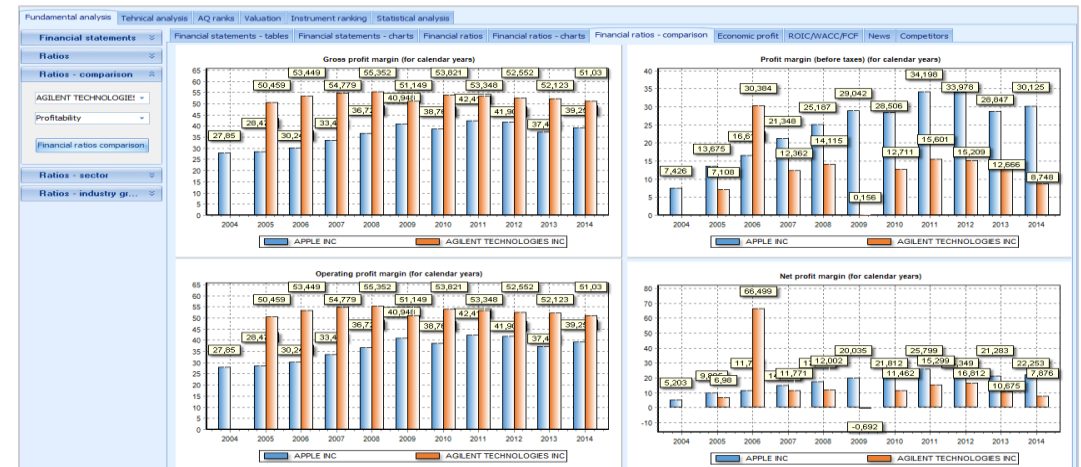
**Financial statements** | **Financial statements - tables** | **Financial statements - charts** | **Financial ratios** | **Financial ratios - charts** | **Financial ratios - comparison** | **Economic profit** | **ROIC/WACC/FCF** | **News** | **Competitors**

**Ratios**  
 Drag a column header here to group by that column

**Ratios - comparison**  
**Ratios - sector**  
**Ratios - industry group**

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Kaznik	Vrsta kaznika											
Assets turnover	Activity	1,0	1,1	1,1	1,0	0,9	0,9	0,9	0,9	0,8	0,8	0,8
Accounts receivable turnover	Activity	11,3	12,2	12,8	14,4	17,7	15,1	12,7	14,3	14,2	12,3	12,0
Inventory turnover	Activity	45,2	47,5	47,6	40,4	62,2	47,9	52,8	59,6	65,8	51,3	53,2
Fixed assets turnover	Activity	9,4	8,0	7,4	8,3	5,1	2,3	1,8	1,5	1,3	1,2	1,1
Return on equity	Return	17,5	42,0	53,0	68,2	91,1	104,4	144,7	236,2	243,2	180,1	183,8
Gross return on assets	Return	29,0	32,5	32,2	32,3	33,4	35,5	34,1	39,1	35,2	28,9	29,9
Return on assets	Return	5,4	11,3	12,5	14,3	15,7	17,4	19,2	23,8	21,3	16,4	17,0
Current Ratio	Liquidity	2,6	2,4	2,3	2,6	2,4	2,5	1,8	1,6	1,5	1,5	1,1
Accounts payable turnover	Liquidity	5,6	5,6	5,3	5,2	8,3	7,2	5,3	7,0	6,2	5,9	5,3
Cash ratio	Liquidity	2,0	1,7	1,6	1,9	1,7	1,9	1,1	0,9	0,8	0,8	0,4
Quick Ratio	Liquidity	2,3	2,0	1,8	2,1	1,9	2,1	1,4	1,1	1,1	1,0	0,7
Gross profit margin	Profitability	27,9	28,5	30,2	33,5	36,7	40,9	38,8	42,4	41,9	37,4	39,3
Operating profit margin	Profitability	27,9	28,5	30,2	33,5	36,7	40,9	38,8	42,4	41,9	37,4	39,3
Net profit margin	Profitability	5,2	9,9	11,8	14,8	17,3	20,0	21,8	25,8	25,3	21,3	22,3
Profit margin (before taxes)	Profitability	7,4	13,7	16,6	21,3	25,2	29,0	28,5	34,2	34,0	28,8	30,1
Long term debt/Net working capital	Solvency	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,6	3,3
Long term debt/Equity	Solvency	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,8	1,3
Equity/Assets	Solvency	0,3	0,3	0,2	0,2	0,2	0,2	0,1	0,1	0,1	0,1	0,1
Long term debt/Assets	Solvency	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,1

Standard financial ratios



Comparison of financial ratios between companies

# Valuation

Fundamental analysis | Technical analysis | AQ ranks | Valuation | Instrument ranking | Statistical analysis

DCF projection | DCF projection | DCF result | DCF Monte Carlo | DCF sensitivity analysis

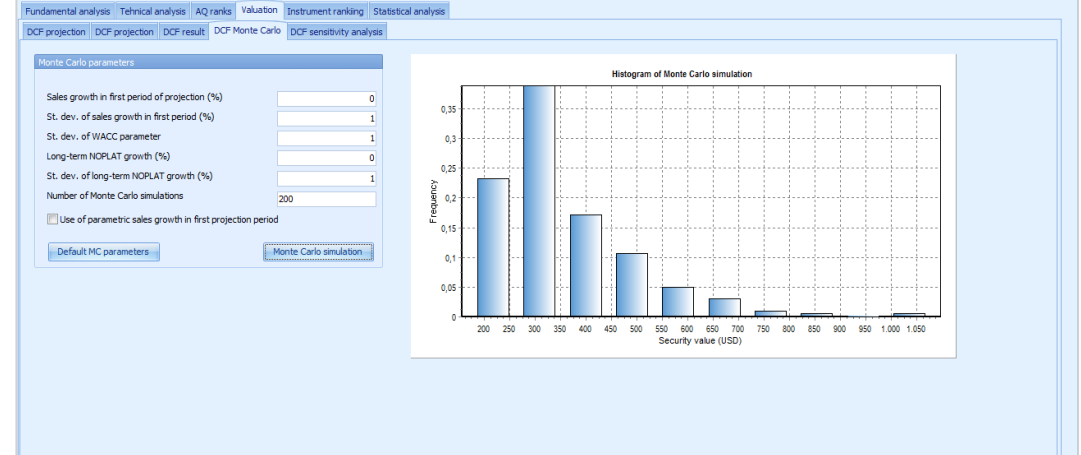
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Item	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sales	9.763,0	16.190,0	20.689,0	27.885,0	38.941,0	46.708,0	76.283,0	127.841,0	164.687,0	173.992,0	199.800,0	220.262,5	242.820,7	267.689,1	295.104,4	325.327,5
Cost of Revenue	7.044,0	11.580,0	14.432,0	18.552,0	24.641,0	27.582,0	46.712,0	73.618,0	95.668,0	108.902,0	121.368,0	135.830,3	149.741,4	165.077,1	181.983,5	200.621,3
SGA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
RD	495,0	594,0	714,0	844,0	1.178,0	1.416,0	1.959,0	2.612,0	3.633,0	4.795,0	6.606,0	6.676,4	7.360,1	8.113,9	8.944,9	9.861,0
Depreciation	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Other Operating Expenses	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Cash and Cash Equivalents	2.475,0	4.150,0	7.159,0	9.162,0	7.236,0	7.609,0	10.734,0	10.310,0	16.154,0	14.077,0	19.478,0	19.646,7	21.658,8	23.877,0	26.322,4	29.018,2
Short Term Investments	3.973,0	4.557,0	4.710,0	9.286,0	18.411,0	17.187,0	16.243,0	19.846,0	23.666,0	26.634,0	12.985,0	24.015,9	26.475,5	29.186,9	32.176,1	35.471,4
Total Inventory	156,0	244,0	303,0	499,0	396,0	576,0	885,0	1.236,0	1.455,0	1.222,0	2.283,0	2.601,6	2.868,0	3.161,7	3.485,5	3.842,5
Prepaid Expenses	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Other Current Assets	853,0	1.880,0	2.865,0	4.680,0	6.924,0	4.870,0	10.038,0	14.499,0	19.475,0	23.314,0	31.948,0	32.267,0	35.681,8	39.336,2	43.364,8	47.806,0
Gross property plant equipment	1.352,0	1.547,0	2.200,0	2.531,0	3.997,0	4.886,0	8.635,0	12.340,0	23.214,0	29.280,0	40.747,0	40.998,4	45.197,2	49.826,1	54.939,0	60.554,6
Accounts Payable	1.737,0	2.896,0	3.885,0	5.366,0	4.715,0	6.511,0	14.301,0	18.221,0	26.398,0	29.588,0	38.001,0	39.674,7	43.737,9	48.217,4	53.155,5	58.599,5
Accrued Expense																

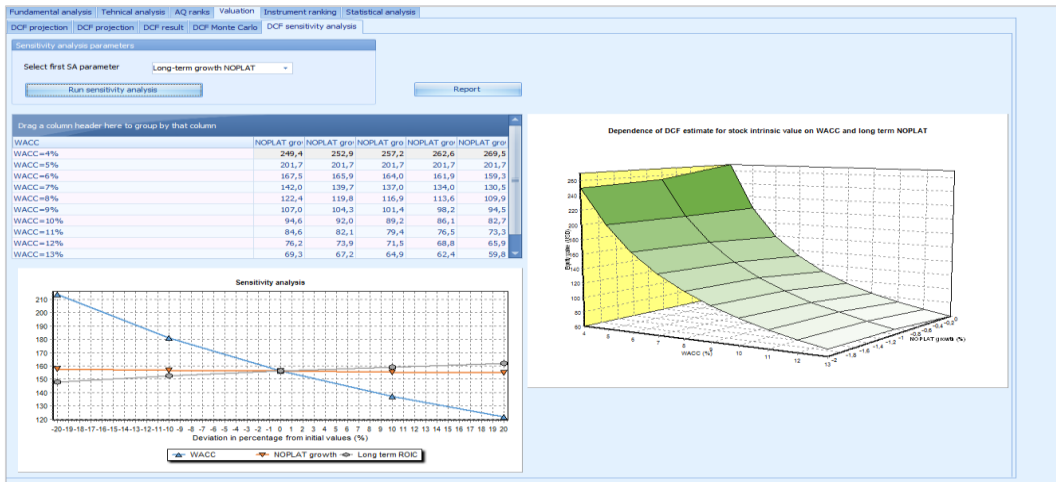
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Item	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NOPLAT	2.610,4	3.602,0	5.517,9	8.529,3	11.511,5	17.947,8	33.547,1	42.500,9	39.191,8	46.686,9	50.541,3	55.717,4	61.423,7	67.714,4	74.649,4
Depreciation	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Change in working capital	1.420,0	2.079,0	1.686,0	-4.315,0	1.053,0	841,0	-3.571,0	1.485,0	-1.859,0	762,0	-352,3	36,2	39,9	44,0	48,5
Capex	195,0	653,0	731,0	1.066,0	989,0	3.649,0	3.705,0	10.874,0	6.074,0	11.459,0	251,4	4.198,8	4.628,9	5.102,9	5.625,6
Free cash flow	995,4	871,0	3.100,9	11.778,3	9.469,5	13.457,8	33.413,1	30.141,9	34.976,8	34.465,9	50.642,2	51.482,4	56.754,9	62.567,5	68.975,3

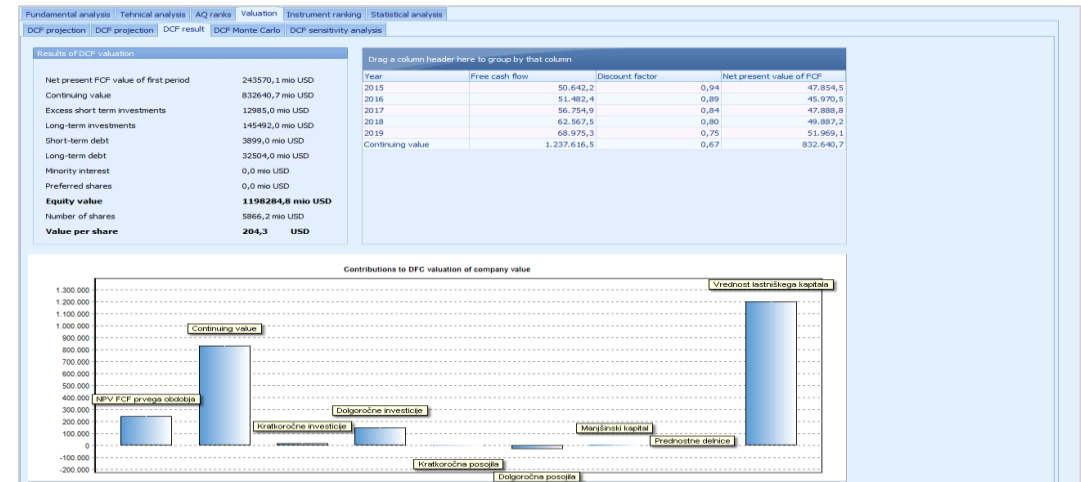
Projection of financial quantities for DCF



Monte Carlo simulation of DCF estimate



Sensitivity analysis for DCF



Value attribution for DCF estimate



# Charting



Chart for selected stock

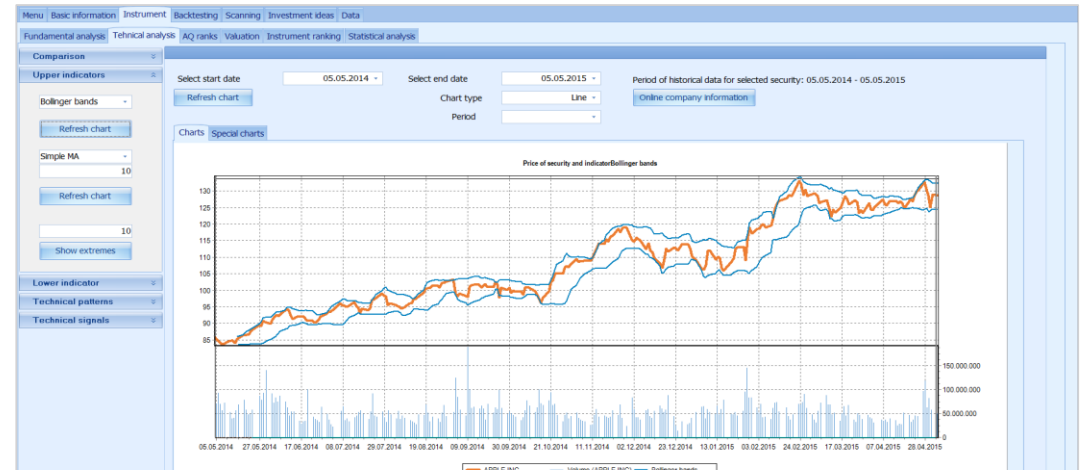
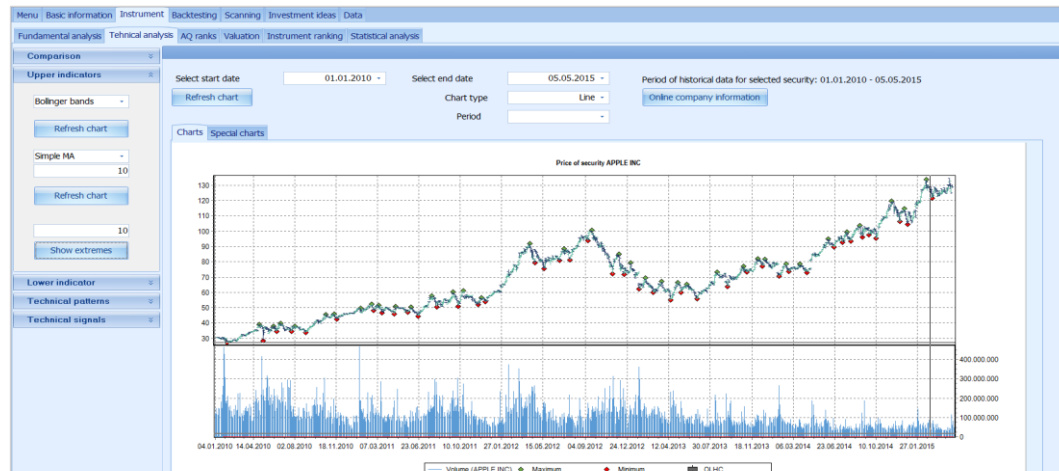
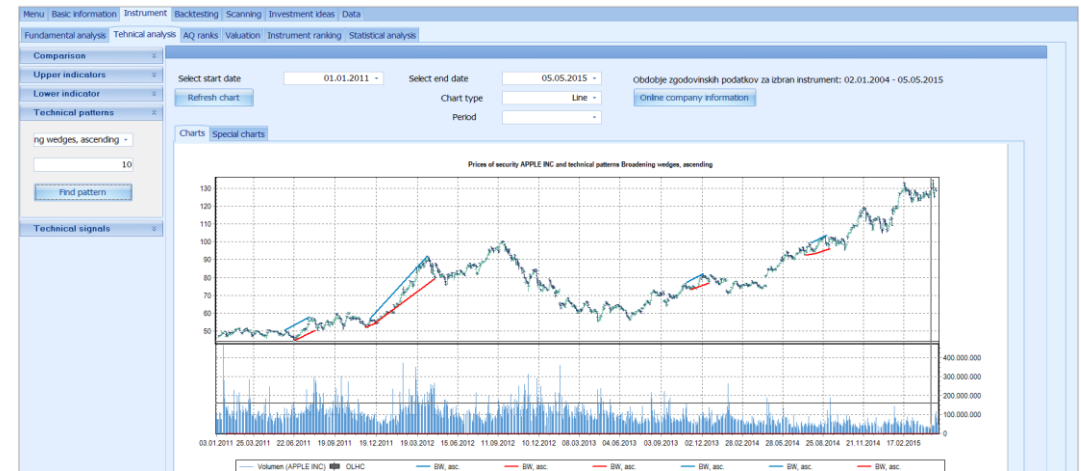


Chart for selected stock and Bollinger bands

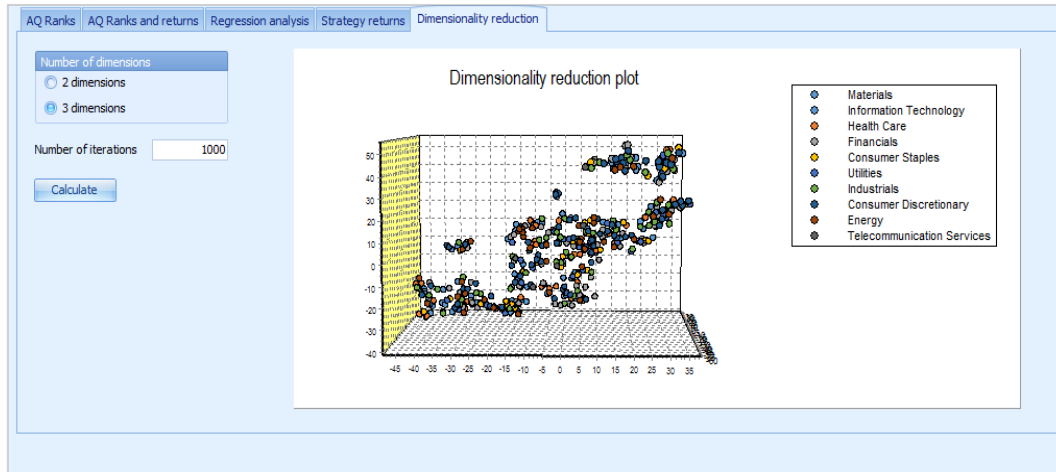


Value extremes for trend lines

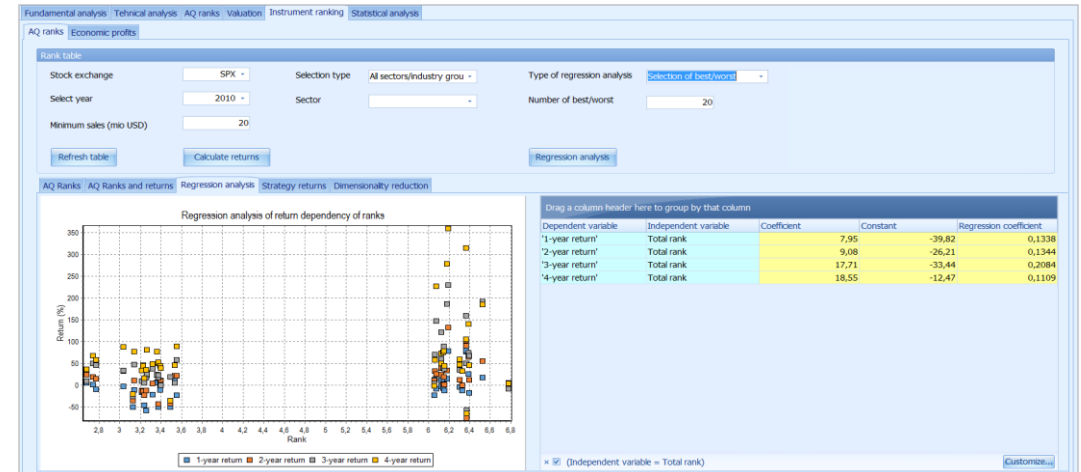


Algorithmic recognition of pattern broadening wedges

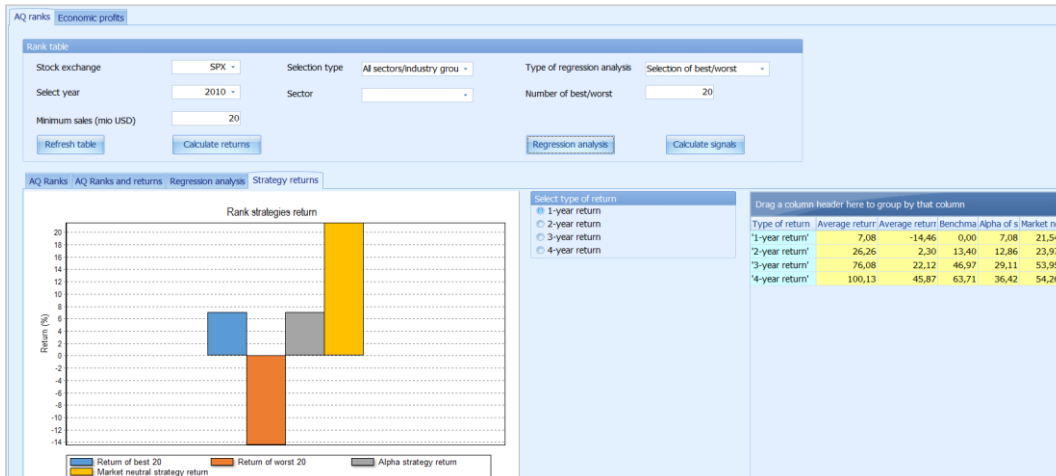
# Ranking



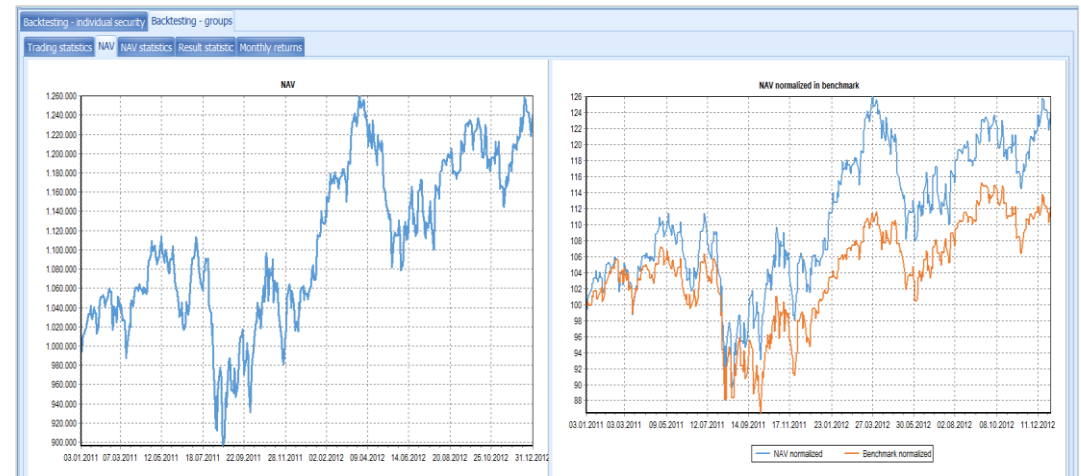
Company rank analysis with dimensionality reduction



Regression analysis



Strategy return



Performance of a rank strategy



# Quantitative strategies

Menu Basic information Instrument Backtesting Scanning Investment ideas Data

Trading models Multifactor models Rank models

First type of trading models

Individual security or group?  
 Individual security  
 Group

Select security or class  
 Select security type Stocks  
 Select security APPLE.INC  
 Take into account liquidity criteria

Entry management  
 Select entry model Trend follow model  
 Moving average first period 50  
 Moving average second period 100  
 Number of days 50

Calculation period  
 Start date  
 End date

Other model parameters  
 Transaction costs (%) 0,2  
 Slippage (%) 0,02  
 Price type Close

Exit management  
 Select exit model Trailing stop loss - Long  
 Multiplier ATR 2  
 Periods to ATR 10

Vista pools  
 Long positions only  
 Short positions only  
 Long and short positions

Select interval for data  
 Start year  
 End year

Entry, exit management definition

Backtesting - individual security Backtesting - groups

Statistics Chart of buy / sell signals

Returns	Arithmetic	Compounded	Trading statistics
Winning percentage	37,84%	37,84%	Number of trades 74
Average positive return	3,62%	38,57%	Average length of trade 16,42
Average negative return	-1,97%	-39,19%	Expectancy per trade 0,09%
Average return	0,15%	1,31%	Expectancy per trade (annualized) 1,31%
			Average number of trades / year 4,1

Trade list Closed trades list

Drag a column header here to group by that column

Ticks	Entry date	Price on entry	Exit date	Price on exit	Return	Return_Ann	Number of trading days
EUREX_FDAX	30.01.1998	4.467,81	06.03.1998	4.670,34	4,53	53,16	26
EUREX_FDAX	10.03.1998	4.899,76	24.04.1998	5.230,47	6,75	61,65	34
EUREX_FDAX	20.05.1998	5.529,64	28.05.1998	5.470,46	-1,07	-31,91	7
EUREX_FDAX	04.06.1998	5.672,95	16.06.1998	5.637,91	-0,62	-15,81	9
EUREX_FDAX	26.06.1998	5.933,02	24.07.1998	6.060,92	2,16	28,90	21
EUREX_FDAX	05.01.1999	5.288,61	14.01.1999	5.170,90	-2,23	-50,51	8
EUREX_FDAX	03.05.1999	5.408,87	11.05.1999	5.205,12	-3,77	-74,62	7
EUREX_FDAX	17.06.1999	5.468,50	28.06.1999	5.329,85	-2,54	-55,18	8
EUREX_FDAX	02.07.1999	5.570,23	21.07.1999	5.498,68	-1,28	-20,62	14
EUREX_FDAX	08.11.1999	5.686,48	25.11.1999	5.783,75	1,71	35,37	14
EUREX_FDAX	26.11.1999	6.018,61	05.01.2000	6.728,66	11,80	161,53	29
EUREX_FDAX	17.01.2000	7.323,08	26.01.2000	6.901,88	-5,75	-84,29	8
EUREX_FDAX	04.02.2000	7.416,28	14.03.2000	7.742,99	4,41	46,95	28
EUREX_FDAX	07.01.2002	5.270,57	15.01.2002	5.104,15	-3,16	-68,21	7
EUREX_FDAX	07.03.2002	5.343,23	04.04.2002	5.310,19	-0,62	-7,12	21
EUREX_FDAX	03.06.2003	3.046,69	02.07.2003	3.199,43	3,70	51,12	22
EUREX_FDAX	08.07.2003	3.356,87	07.08.2003	3.319,58	-1,11	-11,43	23

Statistics and generated trades

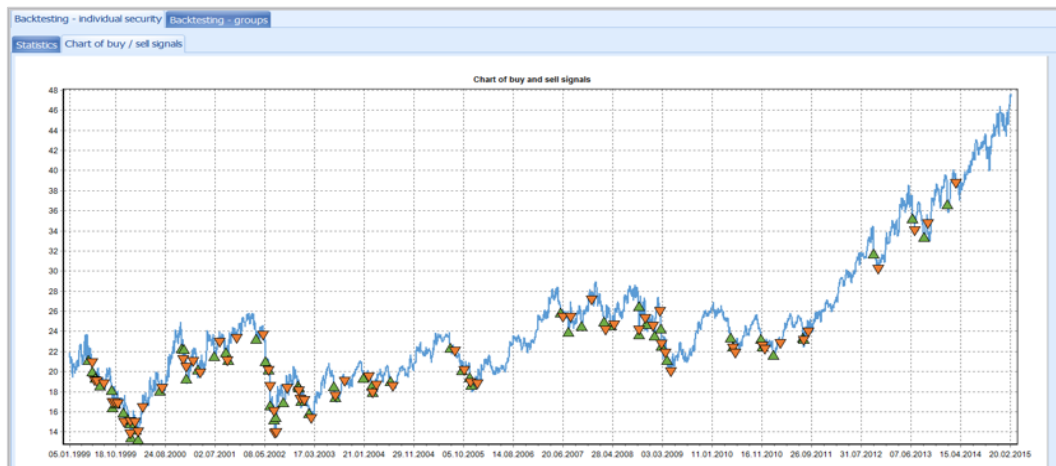
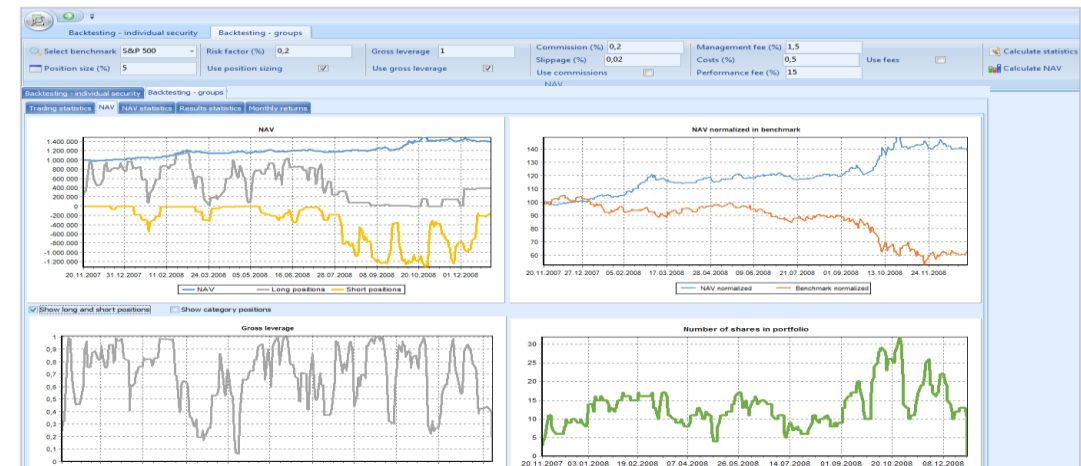
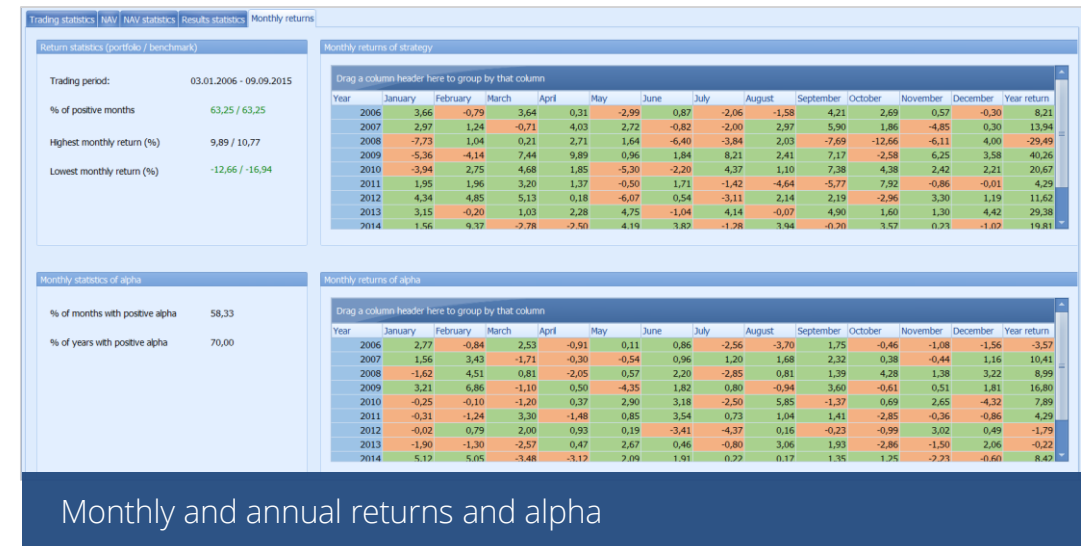
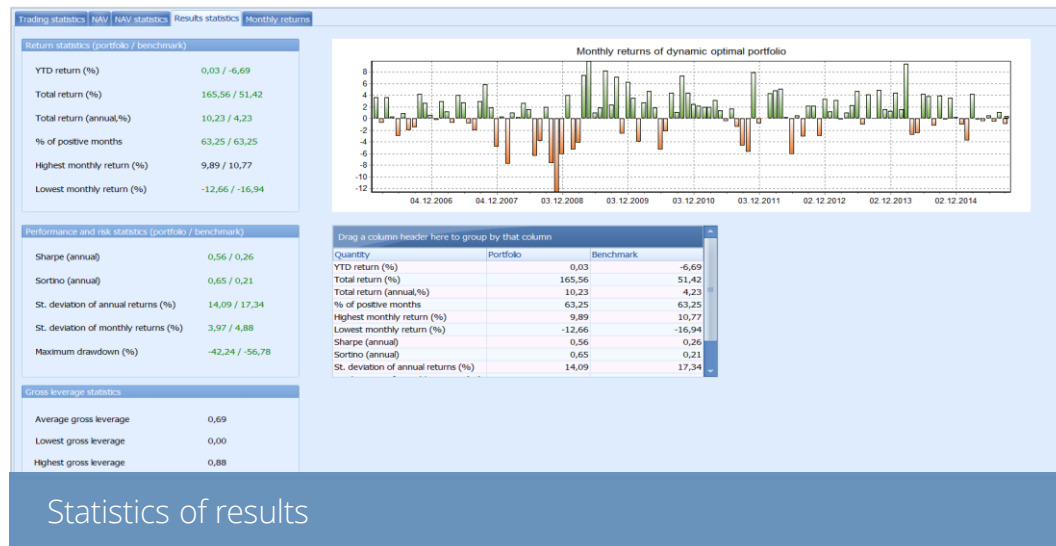
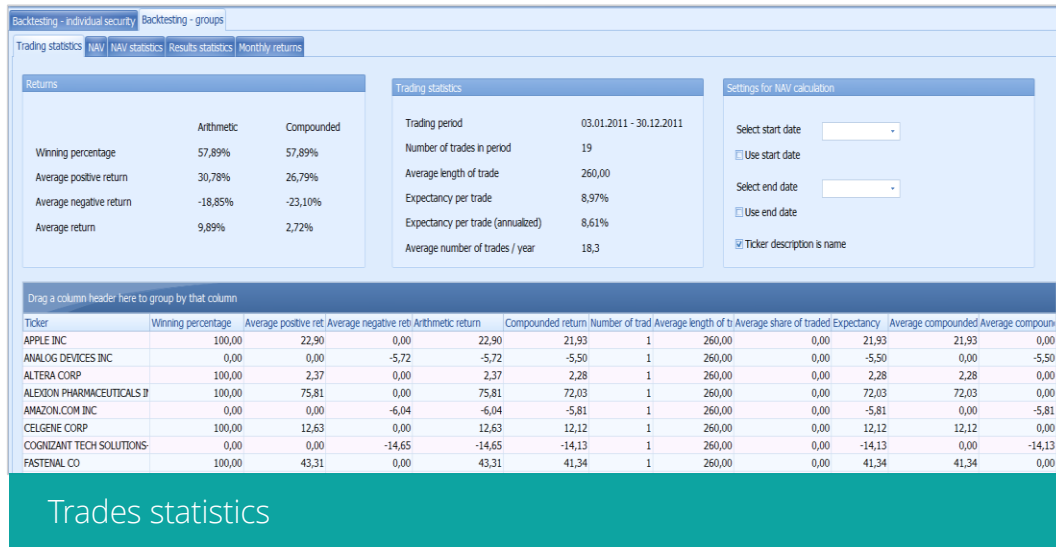


Chart of buy/sell signals



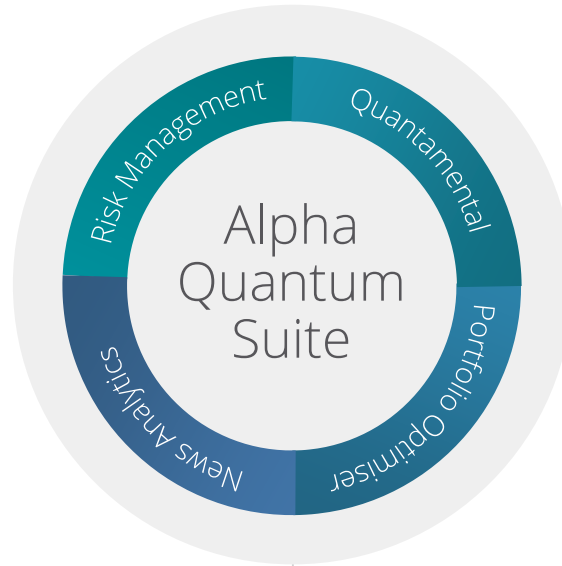
NAV, long short positions, leverage, positions number through time

# Quantitative strategies



## Vision

We offer a complete and integrated platform for asset management, ranging from risk management, analysis, valuation and ranking of companies, portfolio optimisation, asset allocation, versatile backtesting of strategies and analysis of news.



## The Alpha Quantum Way

**Quantitative.**  
The core of our philosophy.

**Innovative.**  
The main source of alpha returns.

**Robust. Researched.**  
The cornerstone of our solutions is stability.

**Alpha.**  
The consequence.

### Alpha Quantum Risk Management

Main features of risk management solution are VaR methods, stress testing, pre-trade risk management and risk attribution. They also include limits monitoring, regulatory compliance and performance measurement.

### Alpha Quantum Quantamental

Innovative solution for financial analysis, valuation and ranking of companies. Comprehensive and versatile platform for researching, backtesting and using quantitative strategies based on fundamental, pricing, news analytics and other data.

### Alpha Quantum Portfolio Optimiser

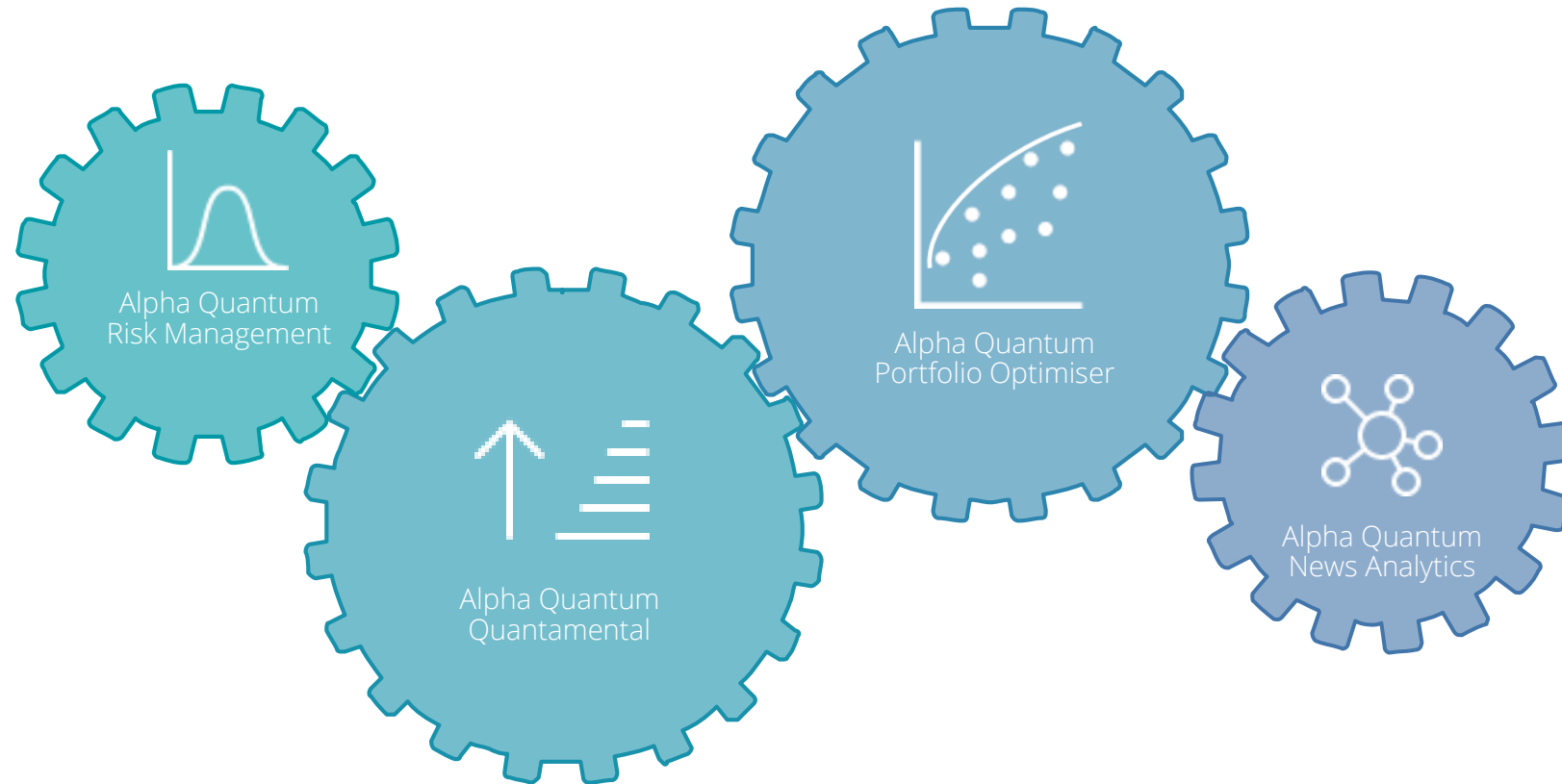
Sophisticated solution for portfolio optimization and asset allocation with a wide array of features which support many different applications, investment products and form a platform for automated asset management services.

### Alpha Quantum News Analytics

Platform for scanning, annotating, storing and analysing in real time data from news, blogs, social media and other sources. Tools for identifying and analysing macro and sector trends. Sentiment scoring methodology. News analytics signals for quantitative trading strategies.



# High integration and interconnectedness of solutions in Alpha Quantum Suite



# Alpha Quantum

Quantitative. Innovative. Artificially Intelligent.  
Researched. Alpha.

*The Alpha Quantum Way.*



## Our solutions

Quantamental, Specialised Digital Assistants, Portfolio Optimiser, Risk Management, Alpha Wealth Robo Advisor, News Analytics

Website: [www.alpha-quantum.com](http://www.alpha-quantum.com), Email: [info@alpha-quantum.com](mailto:info@alpha-quantum.com)