

Artificial Intelligence for Genuine Performance

Asset management services for financial institutions.

Visolvía provides automated asset management services for financial institutions. The services are delivered by the platform Visolvía TradeRunner and based on Visolvía's research within Artificial Intelligence (AI).

Services based on AI for other applications

Asset management is an extremely challenging application well suited for the Visolvía AI-technology, but there are several other examples of suitable applications e.g. Digital & Neural Marketing.



Who we are

Partnering with Visolvía means support from highly experienced and innovative R&D resources; together the four cofounders have over 100 years of passion for science, algorithms, signal processing and software development.



- **Anders Widgren, Managing Director, Founder** Long experience from signal processing, wireless & embedded systems for e.g. smart and assistive technologies.
- **David Hallgren, Chairman, Partner** B.Econ. Experience as manager at Swedish government offices e.g. the Swedish National Economic Crimes Bureau.
- **Hans Carlsson, Board member, Partner** Ph.D. Professor at Lund University, Department of Economics, re-search in Mathematical Economic Models.
- **Magnus Carlsson, Executive VP, Cofounder & Partner** Ph.D. Computer Science. Lifelong passion for science. Very experienced in algo, crypto and artificial intelligence.
- **Stefan Widgren VP System development, Cofounder & Partner** DVM. M.Sc. Chemistry, technical math, programming.
- **Magnus Stengärde, Cofounder & Partner** M.Sc. Independent IT-consultant developed e.g. the Handelsbanken fund Web/IT system working for New Media in the 90's

Who we serve

Financial asset management services

Visolvía is targeting the following type of professional customers

- National and private pension funds.
- Mutual funds and Hedge funds
- Financial institutions that provide managed accounts for clients.
- Financial institutions that have internal proprietary trading.

Optimization technologies for other applications

Visolvía is also interested to establish partnerships related to e.g.

- Digital & Neural Marketing: Optimization related to Marketing, PR and Media.
- Insurance and credit risk analysis.
- Supply chain and process optimization.

Who our partners are

Visolvía is delivering trading signals to several leading financial institutions and has partnerships also within other applications.

Datafeed: All trading signals are based on data delivered by Thomson Reuters.



THOMSON REUTERS

Packaged products such as as e.g, TRS or funds available via the DB Select platform.



Innovative Marketing and Design services by [T.V.T swissconsult gmbh](#)



Media: New applications under development together with [NobleMedia.TV](#)



Digital & Neural Marketing: [algoBUZZ.com](#) for AI related to Marketing, PR and Media.



Algo development tools: [Treetop Capital](#), a provider of algorithmic tools and services.



Services

Visolvía provides professional B2B type financial services

- Trading signals for e.g. prop trading.
- Single or multi-asset as well as short or long positions.
- Most markets and assets e.g. equity, FX, commodities.
- Asset management for e.g. managed accounts, funds and structured products.
- Expert consulting related to innovation, AI and algorithmic R&D.

The Visolvía TradeRunner system

- Implements Artificial Intelligence (AI) using totally unique technologies related to Neuroeconomics.
- Automatically generates and constantly updates trading models/signals.
- Optimizes for the desired risk level, turn-over rate, max DD etc.

Usage

The Visolvía services can be used for proprietary trading or for asset management products such as Structured products, Managed Accounts, Total Return Swaps and Funds. Positions can be long only or long-short in single markets or multi-asset. Supported asset classes include e.g. equity, raw materials, commodities, Forex and real-estate.

Trading Signals

Visolvía provides financial institutions with trading analysis services that are based automated reports, so called trading signals. The signals are delivered electronically by the automated system Visolvía TradeRunner. The signals specify which financial instruments to sell or buy and size of positions in order to reach e.g. the targeted risk level.

Packaged financial products

Via partners Visolvía can supply its services in the form of readily packaged financial products such as e.g. Structured products, Managed Accounts, Total Return Swaps and Funds.

Business model

Financial services

Visolvía's business model for asset management services is based on a combination of

- performance fee &
- low fixed fees.

Applications outside Finance

For applications outside Neuroeconomics and Finance the business model is to share optimization savings.

Start-ups

Visolvía is also interested to become partner in joint ventures e.g. setting up of new funds or start-ups based on AI-technology or other advanced innovation.



Benefits

- **Genuine Performance** Historic simulations as well as real track records suffer from the fact that there is simply no way to know what the future performance will be. In addition simulations often tend to be much more optimistic compared to the live performance.
At Visolvía we still believe that our historic simulations over 10+ years can serve as a valuable indicator of the future potential. It is because at Visolvía we have taken every possible measure to ensure that our back-testing results are as relevant and reliable as possible, that it shows what we like to refer to as Genuine Performance.
- **Back-testing** Visolvía can deliver its genuine performance back testing in the form of charts and reports or as data files, please contact Visolvía to request information for the type of market and application you are interested in.
- **Quick to market** As a Visolvía partner you are quickly able to introduce new concepts and launch new products even when you are lacking in-house resources.
- **Economy** Outsourcing to Visolvía means that you can minimize your own organization. In addition Visolvía's business model is based on performance fees in combination with low fixed fees taking both your and our margins into consideration. Visolvía is able to offer this attractive business model because we believe in our services and because of the synergies that come from serving multiple customers using a highly automated system.
- **Customization** As a partner to Visolvía you are, together with us, designing a tailor made offering to suit the requirements of both you and your clients. And your solution will be unique; since all customers have different requirements and key performance indicators there is virtually no risk that services for different clients will be competing with each other.

Setting the new standard for algorithmic trading services

- Turnover rates ranging from days up to about a year.
- Frequency depending on preferences and what the asset management is to be optimized for.
- Customization per client, even per end-client e.g. for truly individually managed accounts.
- The AI technology is self learning and adaptive to changes in the market conditions.
- Quick to market with new products and concepts.

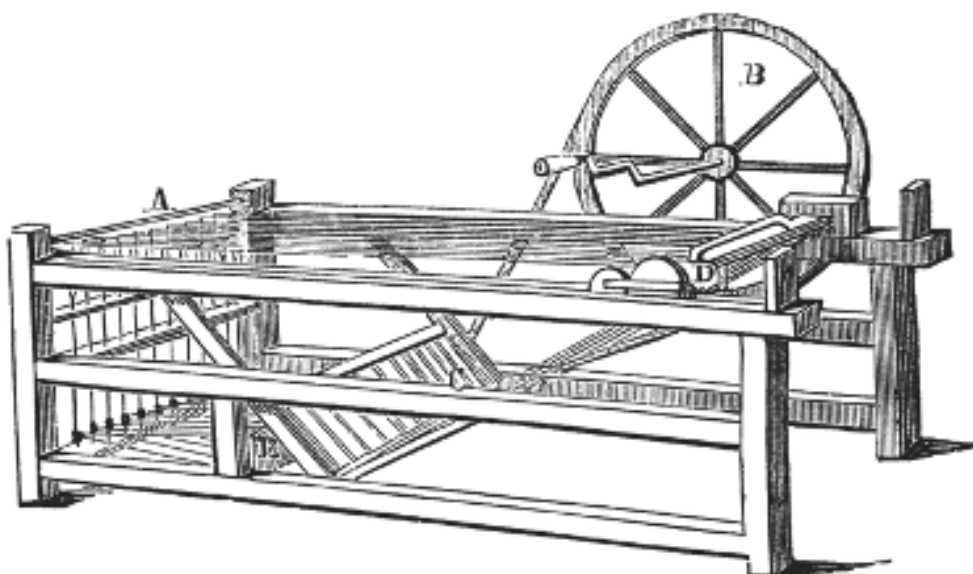
Uniqueness

Unique features of the Visolvía technology:

- **Neuroeconomy:** Artificial Intelligence is used to detect the psychology of the market.
- **Artificial Intelligence** instead of humans in the loop enables **long term back-testing**.
- Possibility for **extremely low trading frequency**, down to once per year on an average.
- **Genuine Performance;** low frequency trading **minimizes back-testing uncertainties**
- **The same** completely unique technology and system for **all markets and assets**.

What it's not

- Not just Technical Analysis (**TA**) or Fundamental Analysis (**FA**), but elements of both, sometimes referred to as **fusion technology**.
- Not just analysis of single financial instrument, but **parallel analysis of multiple sources of underlying information**.
- **Not just an algorithm, but a complete system** of technologies which automatically develops constantly updated models.



The Spinning Jenny; a 250 year old example of machines replacing humans.

The competition

"Stuck in Half Manual mode"

Most (all other?) algorithmic asset management products are very similar: An R&D department continuously develops what they refer to as algorithmic systems, usually a combination of proprietary as well as common TA-methods that are tweaked to correlate with the current market situation.

Typically these algorithms can show performance during 0-36 months, but used over longer time they don't add value. The developers therefore need to continue to develop algorithmic systems and the asset managers constantly need to decide which ones are to be used for the actual asset management.

With the traditional algorithmic methods one can say that asset management has gone from selecting financial instruments to selecting algorithms. Unfortunately there is little evidence to support that it is easier than other forms of asset management, it requires quite a few extremely skilled and experienced human resources to be success over time.

In any case, note the limitation that **because of the manual R&D and selection process it is actually not possible to backtest the long term performance of the total portfolio.**



The Visolvía technology

"Fully Automatic mode"

Visolvía's research within the areas of machine learning, signal processing and Neuroeconomics has resulted in totally unique technologies for Artificial Intelligence (AI) that have been incorporated into the financial IT-system Visolvía TradeRunner. The system is using AI both to produce new algorithms and to select which ones to use for the portfolio. Visolvía TradeRunner therefore replaces both the R&D department and the human decision makers required to operate the traditional algo-trading products.

Removing the humans in the loop makes it possible to carry out long term back-testing of asset management portfolios. And to ensure that uncertainties are kept within known limits Visolvía focuses its research on very low frequency trading systems.

Visolvía's technology is constructed from some basic elements that are able to filter information and make decisions at the same time; there is no need to separate these functions. The elements are of a few different types with somewhat different roles, but they all share a similar construction. The elements are interconnected and arranged in clusters, which in turn are connected in higher level clusters and so on. Thanks to the architecture Visolvía TradeRunner can process large amount of data in parallel. The system automatically adjusts how much weight it should put on different sources of information and how elements and connections should be configured for a certain task. The way it deals with decision making is a bit fuzzy rather than precise, but the system is able to use its idle

time to plan strategies that can be acted on very quickly when needed.



Slowly but surely: half a billion years of proven neural technology.

Neurotechnology

In some aspects the Visolvía technology reminds of biological neurons and how they are combined and used in nature, but the technology is not of the type of neural network technologies described in computer science literature. The principles are completely different and unlike traditional neural network computer technologies the Visolvía technology is extremely immune to overtraining and unknown states. Presently Visolvía TradeRunner is implemented using software on standard computer servers, but the basic elements could in principle be implemented in a number of different types of technologies, e.g. optical for extremely high speed computational power, or for other applications (such as complementing smart materials for e.g. intelligent clothing or biometrics) using organic chemistry for simplified mass production.

Future applications

The Visolvía AI-technology is extremely well suited is for applications involving automated decisions and optimization, example areas:



Digital & Neural Marketing

Analysis within Marketing & Media using e.g. clicks, buzz, twitter, blogs, crawler and bot data, see algoBUZZ.com.

- Measurement of impact and effectiveness of PR & marketing activities.
- Optimization of PR & marketing, signals for when to increase or reduce marketing efforts.
- Selection of the best set of media content to be used by media channels to improve ratings.
- Various gaming applications.

Credit and insurance

- Insurance risks modeling and optimization.
- Automated warnings within credit risk assessment.

Pharmaceutical, medical etc

- Neurological interfaces and analysis of biometrics.
- Assistive technologies within applications for handicapped and dementia type disorders.

Production, supply-chain, process optimization

- Currency and raw-material hedging.
- Sales forecast improvement, resource allocation, lead-time, scrap etc.
- Production process yield.

Computer technologies and architectures

- Self configuring, self programming and self repairing computer systems.
- Organic building elements and platforms, bio-computing.
- Radically increased computational speed using new type technology platforms.

Frequently Asked Questions (FAQ)

What is algorithmic trading?

An algorithm is simply a systematic method. To buy shares on Mondays and sell on Fridays could be considered to be an algorithmic trading method, but normally mathematical calculations or statistics are involved. Algorithmic trading can be based on e.g. some form of Fundamental or Technical analysis.

What is Fundamental Analysis (FA) and Technical Analysis (TA)?

FA is when the value of a share is calculated using models based on financial figures and performance indicators. TA is a form of algorithmic method that looks at e.g. price curve shape and statistics for a financial instrument to find the best timing to sell and buy. However, the traditional form of TA, that looks at a single instrument and that one can find e.g. built into various trading applications on the web, doesn't add any value in itself.

What do you mean "TA doesn't add value"?

Visolvía has studied this carefully and found that some of these TA-methods do increase the standard deviation and risk, a form of leverage that will increase the return if one makes the right bets. However, measured over long time there is no commonly known TA-method that can be shown to improve the risk adjusted return (what is referred to as Sharpe in finance and Signal to Noise ratio in engineering).

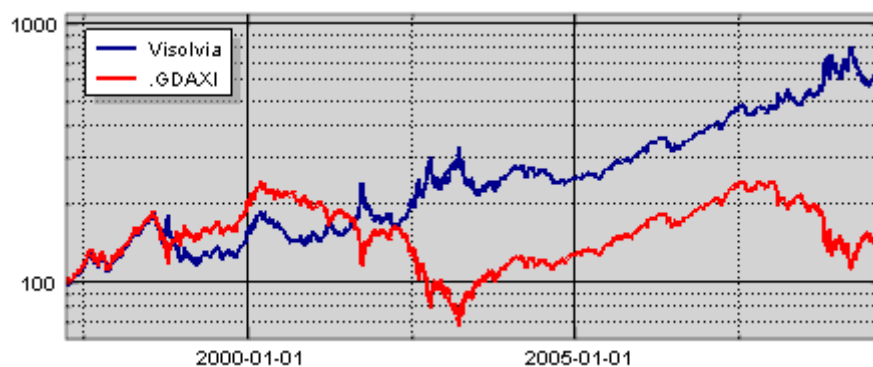
The logical reason should be that there simply isn't enough information in the price and volume information of a single financial instrument to create the market advantage required to make a profit after spreads and overheads, especially not if the method is common knowledge and used by lots of traders. One can't rule out that some traders increase their success using TA, it might be that they are able to add their own experience and intelligence, but the point is that such manual decisions can't be back-tested and demonstrated in simulations.

Why are the Visolvía demo systems on the web so slow?

It is to make it as easy as possible to follow and to reduce the information leakage regarding how the technology works. The Visolvía trading systems in use today have turnover rates ranging from a week to a year. Most providers of algorithmic trading technologies have been competing with increasingly faster systems, but at Visolvía we have even made a point out of going in the opposite direction.

Demo information & description

The charts shown in the Real Time demo include out of sample back-tested results since 1998 and all figures are net of trading costs and typical fund fees. The reports include typical key performance indicators used for funds and calculated according to "[Morningstar's Performance Measures](#)" by Professor Emeritus William F. Sharpe.



The above chart "**Cumulative backtested return**" shows accumulated return for the Frankfurt DAX index with Visolvía traded result in dark blue with the DAX in red for comparison. In this type of logarithmic chart a constant return over time will show up as a straight line. To simplify and make it easier to understand the demo is set up with a very a low trading frequency and positions are in separate indices and not individual shares. Positions are 100% long or short except when positions change; rebalanced is during a full week to minimize influence on the market. This is visualized in the below "**Net exposure**" chart which plots net exposure in % during the last 12 years, as can be seen in this example the positions change on an average once per year.

