Why Your Algorithm Will Fail

Reason 6: Using Old Technology

Let's talk about one of the most iconic inventions ever -

The toaster.

You may not recognize this bad boy, but it was all the rage over a century ago.

When the toaster was invented in 1893, people were **amazed** at its capabilities. For the first time, people thought "wow, now I can toast my bread without watching!" which was quite impressive, given the current technological state. Their new cutting edge toaster technology **solved a problem**. Fast forward to today, and now we have toasters which solve all kinds of problems that the initial design didn't - they pop up when the timer is done, toast your bread to a pre-defined level of toastiness, or bake pizzas through giant conveyor belts for commercial businesses...

We even have bluetooth-enabled smart toasters that play music and take verbal commands! The point is, toaster tech has evolved since the 19th century, alongside every other area of tech -

Traders' tech is no different. From the early 1900s until now, market speculation technology has evolved quite a bit. We are far and beyond the early days of hand-jamming Dow theory calculations while shouting "Buy!" and "Sell!" on the busy floors of the Chicago Mercantile Exchange. Nowadays, we tend to trade from the comfort of our own homes, with the convenience of smartphones, or with the ultra-convenience of automated algorithms that require little upkeep - enabling you to literally trade while you sleep.

Unfortunately, many traders aren't quite up to date with the advancements made in the last few years. Some are stuck in 2005, back when "Hollaback Girl" by Gwen Stefani was a Billboard Top 100 hit song. This was also the year MetaTrader 4 came out. Feel old yet?

MetaTrader 4 was cutting-edge technology when it came out - just like our 1893 model toaster. But, as markets evolve and edges diminish, we face new problems as traders: *We have to compete with advances in technology that eat up more and more of that juicy liquidity.* The good news is, if you are one of the traders who utilize newer tech, you have a comparative advantage over those that don't, which brings me to the next point -

In trading, there are 3 ways to make money:

1. Outrun the market.

2. Outsmart the market.

3. Scam other traders.

Option 1 isn't viable for retail traders. High frequency institutional traders spend *millions* on the infrastructure required to execute trades at the microsecond level. For all intents and purposes, their edge comes from outrunning the markets.

Option 3 is morally reprehensible. You should never take money from people unfairly. If you do, you weren't raised right. <u>End of story.</u>

That just leaves Option 2: outsmart the market. Since this is the most viable option for retail traders, we have to create **solid trading models** to have any chance of non-random success. In order to do this, we need to use reasonably solid technology that allows us the freedom to do what we do best: <u>generate ideas that make money.</u> Peaches and cream, right? Right.

<u>**But**</u> **-**

Just how *do* we create **solid trading models?** This all leads back to the question **"what are your technological capabilities?"** Think about it - to create solid trading models, you should be designing your back test environment to mirror live trading ***as closely as computationally possible.*** Otherwise - quite frankly - you're just wasting your time. **<u>If you don't simulate a live environment in your back tests, you are personally ensuring that all your back test results are perfectly meaningless.</u>**

You know all those disclaimers about past results not being indicative of future performance? These are necessary because traders so often fail to create accurate back test conditions, it's **inevitable** their trading systems **fail**. Once you understand how important this is, you can't unlearn it.

<u>You need to design your back test environments to reflect live trading conditions. Staple it to your forehead if you need a reminder. It's that important.</u>

To that end, our "Hollaback Girl" MT4 trading platform totally fails at simulating suitably complex back test environments. It just doesn't have the capabilities required to generate a **solid trading model.** For example, what do you do when you want to test a strategy on multiple symbols on MT4? *Test each one in series and average the results in Excel?* Well, that's a *convenient* way of doing things, but also **completely inaccurate.** These results are meaningless because averaging doesn't account for the profit/loss timelines, which **will** play a huge part in your live trading. You don't get to fast forward a few years and average your results in real life.

Now, imagine trying to simulate multiple assets, multi-currency exposure management, multiple timeframe analysis, news avoidance, session filtering, floating spread values and commissions (which are totally ignored in the MT4 strategy tester) in your Excel spreadsheets.

Yeah - never gonna happen. It's neither possible nor feasible. Especially with MT4's **slow, single core technology.** So again, **your back test results are completely meaningless if you're not simulating a live trading environment.**

You could go through the nightmare of trying to square the circle with MT4, or you could just use a platform that supports complex back test simulations, plug in the correct values, and get a consolidated output of all those variables in a **single pass.**

So why on Earth wouldn't you?

And no, MT4 is not going to get better. Here is a quote from the MetaQuotes team explaining why:

> *"The architecture was designed under the limitations of a different time, due to which it is no longer possible to implement new features that should meet nowadays' increased requirements of the industry or the brokers' and traders' demands."*

(Source: https://www.babypips.com/news/forex-mt4-mt5-platform-20180116)

RIP, MetaTrader 4. There is a light at the end of the tunnel, though.

Introducing: MetaTrader 5.

Contrary to popular belief, MT5 was *not* meant to be an explicit upgrade for MT4 in its design. Instead, it was meant to introduce more versatility, speed, and reliability as

a standalone intermarket platform. It does, however, happen to solve many of the problems we encounter with MT4:

- It has a 64-bit, **multi-threaded** strategy tester, making it optimal for data processing based on your computer's specs. <u>What's the point of having the latest and greatest processor if MT4 just disrespects it by utilizing just one core?</u>

- MT5 enables you to test/trade up to 21 different timeframes *at the same time*, which allows for far more technical diversity than MT4.

- It has a built-in economic calendar, which enables you to access relevant news information directly from the terminal.

- The MT5 strategy tester allows you to configure commissions according to broker-specific settings. It also allows for floating spreads, **which reflect a live trading environment.** MT4 forces you to use fixed spreads, **which do not.**

- The MT5 strategy tester allows for true multi-symbol testing. If you're using a multi-symbol EA, it will line up the history and track the profit/loss timeline across all symbols in real time. **No averaging - just precision.**

- The multi-symbol feature allows for complex functions such as exposure management and triangular hedging.

In the "Doing Things Manually" article, we explored why replacing your brain with technology is necessary for accomplishing massive logical tasks. Well, understand this: *old* **tech** is suboptimal compared to *new* **tech** for the same reason **your** *brain* is suboptimal compared to *any* **tech** - **it just can't solve problems at the same level.** We know that solving problems as a trader means more money in your account, so it's easy to see why we should be looking to upgrade whenever we can.

In the words of popular astrophysicist Neil deGrasse Tyson:

> *"Ever since the Industrial Revolution,*
> *investments in science and technology have proved*
> *to be reliable engines of economic growth."*

Thanks, Neil. In a nutshell, the push toward MT5 is increasing - and rightfully so. The benefits are just too good, and the costs of not having them are just too great. So, what can we do to prepare? If you're like most MT4 users, your favorite EAs and indicators are coded in MQL4 and are therefore not backward-compatible with MQL5. If you're not interested in learning coding, or you'd just like some structure to start out with, there's a tool that should make your life a lot easier: **a massive EA builder for MT5.** The best part? **There is zero coding required to use it, but you can adapt your own code to it if you wish. It's the Swiss Army Knife of advanced EA builders.**

Introducing: <u>Stochastic Market Analysis Reticulation Technology</u>, or SMART, by Traders Tech.

SMART literally means "technology which captures and interconnects random market data."

Pretty cool, right? SMART represents a new class of technology available for the MetaTrader platform, and it allows you to take advantage of the best features MT5 has to offer. As such, this program was created in the interest of simulating **the most flexible, realistic back test environments possible.**

Some features of SMART include:

- **Concurrent multi-symbol operations.** Test/trade up to 72 symbols at once, with profit/loss timelines accounted for in real time.

- **Fully customizable indicator logic options.** Explore hidden possibilities you may not have before, including slope, convergence, zone-based logic, and more. Everything is assignable to Entry, Confirmation or Exit logic.


- **Intuitive custom indicator integration.** Seamlessly test/trade your own custom indicators with all the logic options available in its class.

- **Advanced performance metrics.** Evaluate systemic performance with metrics such as Pearson's Coefficient of Correlation (R) or CAGR/Mean Drawdown.

- **News filtering.** Avoid news on a time/priority basis. This function keeps your optimizations clean and works alongside multi-symbol operations.
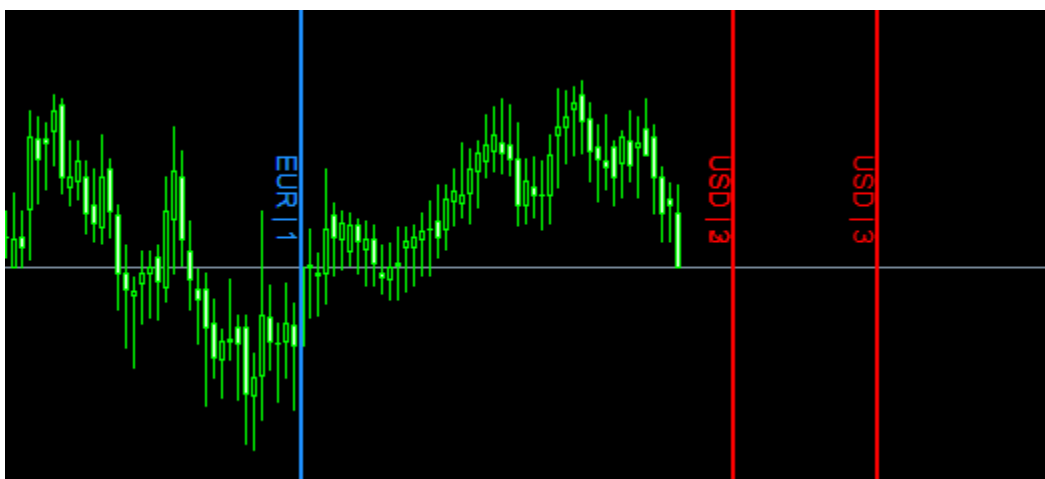
- **Multiple timeframe analysis.** Integrate multiple timeframe confluence into your systems with any timeframe offered by MT5.

- **Seasonality filtering.** Hone your system's edge by taking advantage of session, weekday, or month-based performance. This function filters and displays trading times based on your preferred settings.
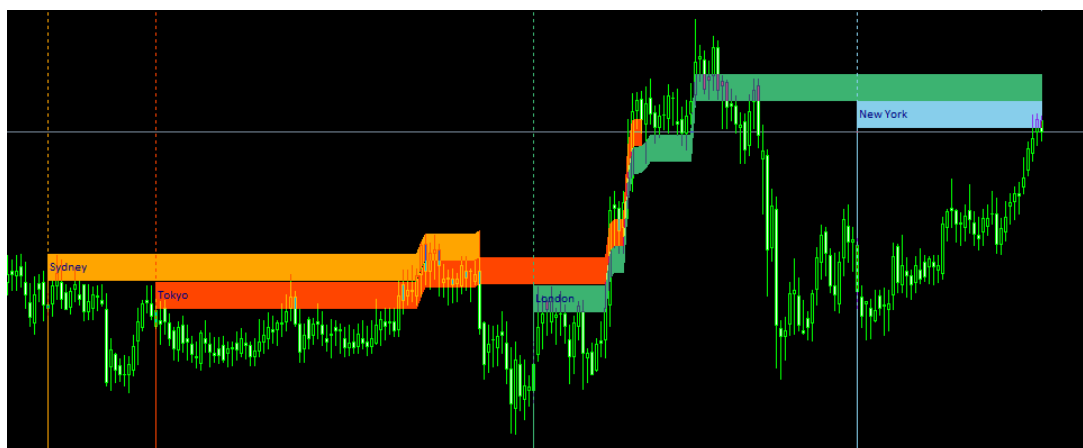
- **Spread filtering.** Conserve your account balance by trading at the best prices available from your broker. This value can be defined based on fixed points or a percentage of price for each and every symbol selected.

- **Currency-specific exposure management.** Never find yourself over-exposed again. Tune into your strategy's maximum allowable exposure or avoid correlation altogether.

- **Flexible risk management.** Customize your SL/TP placement, position size method, scale in/out metrics, trailing stops, and more.

☐ ---	
☐ | Stop Loss Settings |	
☐ ---	
☐ SL Method :	None ⌄
☐ SL Method Period :	None
☐ SL Method Timeframe :	ATR (%)
☐ SL Value (% or Fixed) :	Std Dev (%)
☐ Move SL To Breakeven :	Synthetic Range (%)
☐ Move SL To Breakeven Value (% or Fixed) :	Price (%)
	Points (Fixed)
☐ ---	
☐ | Take Profit Settings |	
☐ ---	
☐ TP Method :	None
☐ TP Method Period :	14
☐ TP Method Timeframe :	current
☐ TP Value (% or Fixed) :	250
☐ Move TP To Breakeven :	false
☐ Move TP To Breakeven Value (% or Fixed) :	100

- **NNFX rules.** All NNFX rules are included as optimizable inputs. Push NNFX to its limit with quantitative testing.

- **All features work in back testing and live trading.** Yes, even news filtering. Remember, reproducing a live environment should be the standard. Enough said.

     Moving to another platform can be quite daunting, so the SMART development team has set up a community Discord channel for MT5 support and collaboration. You can try going at this alone, or you can take advantage of the structure available to you. The choice is yours.

Join the SMART Traders Discord group:

https://discord.gg/5Wq8pKSPzT

SMART is available at:

https://smarttraderstech.com/

A closing statement:

While advanced technology is a **great** hedge against evolving market conditions, you need to understand that it won't solve all the other reasons an algorithm will fail alone. Instead, realize that upgrades in technology should help you perform the most important part of trading more efficiently, which is *why your algorithm will succeed -* **doing the work.**

As you strive to become a better trader, you will become sharper, wealthier, and more experienced. You will find new ways to use your tools, which will allow you to refine your systems to increasingly simpler levels. Back testing is a complex science, but systemic simplification should be your goal. Never forget that.

Evolve your trading.

Aaron V.