# Infi-flux

In this document, we will be discussing the basic concepts, tools, and algorithms required to build an investment/trading strategy. This document gives a generic flavor of how one can go about building an investment/trading strategy using fundamental and technical analysis and this may not cater to your style of investing, please design one of your own. This document is for informational and educational purposes only. We urge you to build your own trading/investing strategy that suits your style of investing. We are going to use the term GSB in the whole document to refer to generic strategy building. This document is framed in the same format as that of the story tools documentation which Question and answer format. So, without further ado, Let's begin.

So, what are the variables that one needs to be aware of while building a GSB for investing /trading?

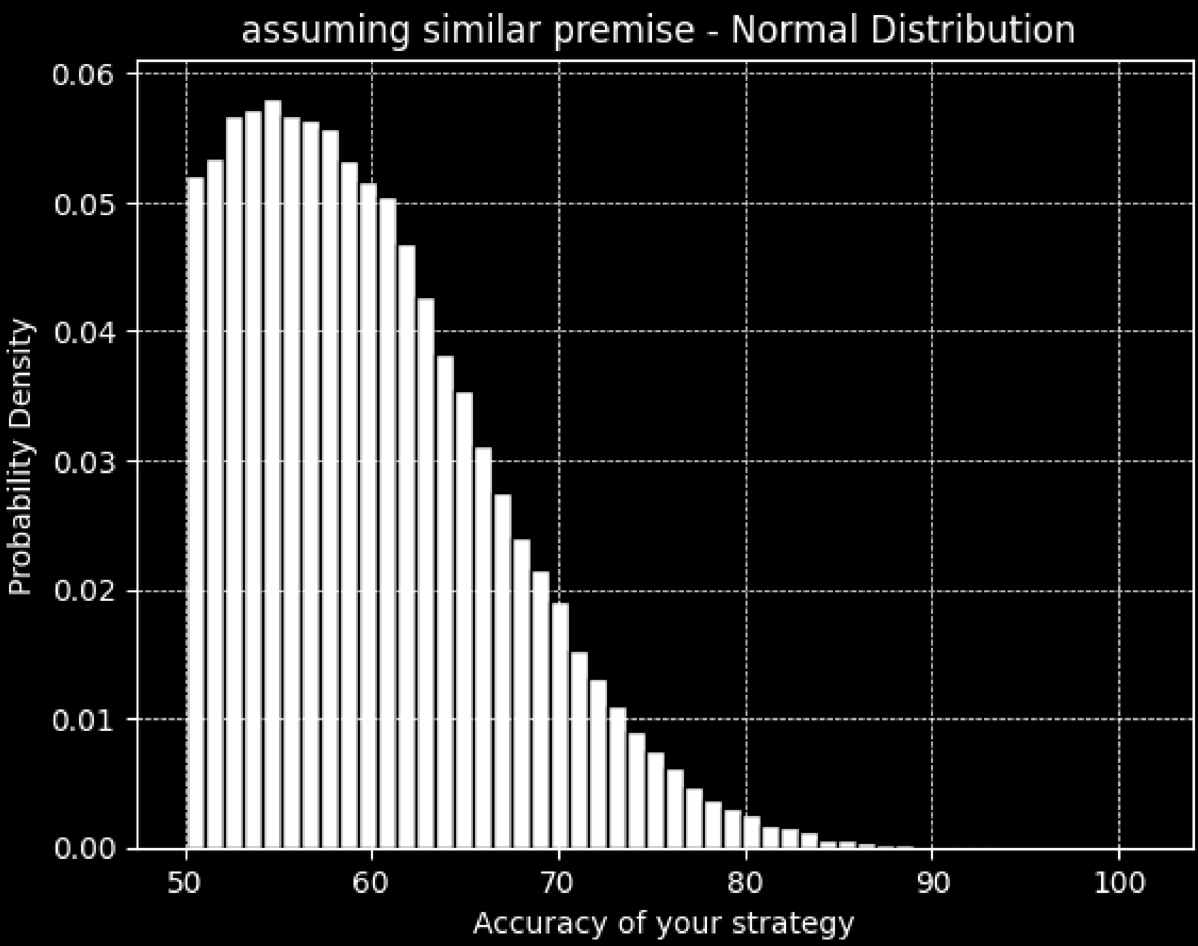
Answer: This document GSB is placed in the core market analysis [CMA] which is phase two of G-BIA ~ Generic basic investment architecture mentioned in the document named summary of our guide section. There is a diagram that summarises the entire flow of the investment process as generic as possible. According to the diagram, CMA is in phase 2 and takes input from phase 1. The list that we are going to mention is going to consist of some variables from phase one and other variables as well to build a generic investment Strategy. The following are the variables.

- Phase 1 Preliminary market analysis inputs
    - Financial Goals
    - Type of instruments
    - Type of investor
    - List of Instruments
    - Market/instrument Potential – Game of Curiosity
    - Budget
    - Generic risk management excluding position sizing
        - Systematic risk
        - Unsystematic risk
        - Managing the above risk
        - Ignore this point if only one instrument selected
            - Portfolio management
                - Fractions of the total Budget need to be allocated to different instruments
    - Investment vehicle
    - Number of hours dedicated to analysis from the day-to-day routine
- Phase 2 Core Market Analysis:
    - Type of Investor
        - Fundamental
        - Technical
        - Both
        - Algo trader
        - Etc…
    - Number of Trades
    - Deciding Conditions for Entry and Exit signals.
        - Duration or
        - Based on the concepts an investor uses
            - Based on technical analysis

            - Based on Fundamental analysis
            - Based on Experience
            - Etc ……
    - Calculating Accuracy Metrics for the above Entry and exit signal
    - Forward test to confirm the accuracy of live market data
- Phase 3 Testing and Optimization:
    - Calculating and optimizing the average risk-to-reward ratio from the entry and exit signal calculated in phase 2
    - Position Sizing: Calculating the Leverage requirement using Kelly Criterion for our strategy
        - The required variables that are required for Kelly are as follows
        - Probability of Success of our Strategy ~ Accuracy
        - Reward: Payout for wining
        - Risk: Payout for loosing
        - Getting the Kelly fraction:
            - If f < 1: no leverage required
            - Else if f > 1: Caution, it says to use leverage for your strategy.
                - Our opinion on using leverage is please make Damm sure the strategy accuracy is what it is on live market data.
                - If it's not, your entire budget, and market capital may be wiped out. Watch out for the constant market evolution as the accuracy may shift its goalpost in a matter of seconds.
                - Hence exercise confidence interval in terms of calculating Kelly fraction and downplay your accuracy
                - The fancy word for this is Sensitivity analysis
    - You now mostly have everything for a complete basic investment strategy. If there is anything left, will be added in the future. We humbly request you to subscribe to our new letter in the Guide section of our platform Infi-flux – infiflux.com
    - BACK TESTING: Run your entire strategy through backtesting software and simulate the entire process/strategy you are going to perform in financial markets
    - FORWARD TESTING / Paper trading / manual checking: Test your strategy in live market data using paper / fake currency to be more sure.
- Phase 4: Investing and Monitoring: The above three phases are designed to minimize losses and maximize the chances and probability of user / new as well as well-established investors being successful and profitable in the long run.
    - Keep tabs on all the variables that are concerning to deciding position sizing
        - Regular check on delta/change in accuracy of the strategy
        - Regular check on delta/change in Optimized risk – reward ratio
        - Recalculate the position sizing to maximize the growth rate of the strategy in the long run
    - Keep check for Divergence: strategy not working the way that it should.
        - Causes might be some assumption gone wrong in one of the above processes.
        - Another reason may be the evolution of the market itself causing changes in one of the above variables discussed in three phases.
        - Practice and revisiting may help you to recognize in which phase there has been alteration.

- One of the main reasons for coming up with the Generic Basic Investment Architecture G-BIA was to keep track of the long list of variables that could change at any moment in time because of the evolutionary nature of Financial Markets.

Before closing this document, there are a few concepts that we would like to discuss. Folks stress to improve and optimize the accuracy of their investment strategy. If a group, set of folks are asked to come up with the strategy, and if we plot a histogram based on accuracy, in our opinion the graph would look something like the following image if we keep some variable constant throughout the group.




We simply plotted a normal distribution from 0-100 with a mean of 55, the standard deviation of 10 and cut the graph in half which we are trying to approximate the real-world scenario. The graph is an approximation just to give an idea. There are very few firms out there that could claim high accuracy of their investment strategy, most of them do not disclose the conditions of the strategies. There might be many reasons, one of which is to have an edge in the market and to protect their edge in the market. The question is whether there is a necessity to have a high-accuracy investment strategy? The answer is that it depends. Investors should not solely depend on the metrics of accuracy. Mostly, it’s the combination of accuracy and Risk-reward Ratio. One can win with a low-accuracy strategy with a high risk-to-reward ratio mathematically. This kind of strategy requires few wins, that overshadow losses by a huge margin, discipline, and patience might be the key. When it comes to types of investment strategy, we can try to define the following to be profitable in the long run:

- High risk-to-reward ratio with low accuracy~hit rate of the strategy
- High accuracy is always preferred.
- One cannot know the exact risk-to-reward ratio and accuracy. But we can approximate them.
    - Many ways to approximate, one of which is average.
    - This approximation will help you determine position sizing that will help you maximize your end capital growth rate in the long run

But before we start to discuss that, we believe the most important question that an individual needs to ask is what does the accuracy of an investment strategy practically mean? And what does it practically mean to increase the accuracy of the strategy? In summary, the practical definition of Accuracy is as follows.

The practical definition of the accuracy of an investment strategy. The accuracy of an investment strategy denotes the degrees to which that strategy can predict price movements for the chosen instrument existing in a particular Financial market that aims to capitalize on those price moments and simultaneously caters to your style of investing. In summary, accuracy is a metric that states the degrees of your understanding to which you as an investor can predict/understand the reason behind the price movements for the chosen instrument existing in a particular Financial market that aims to capitalize on those price moments and simultaneously caters to your style of investing.

We have mentioned in the story and tools document, that investment is about collecting the list of variables that cause the change in the supply and demand dynamics inside the Financial markets. And accuracy of your investment strategy is the metric of how much you have understood the changes caused in the supply and demand dynamics by these variables and we have also stated that the list of these variables is never-ending as financial markets are forever evolving.

One more topic before we close this document. An investor should understand the limitations associated with the type of investor that you want to be. For example, fundamental, technical analysis, etc. Fundamental analysis is usually for long-term investment strategies whereas technical analysis is for short-medium term investment strategies. This implies a huge difference in considering the above variables required to build a strategy. Like the number of trades. The number of trades In fundamental analysis is far less compared to the number of trades placed in technical analysis. Other variables are also affected. Like time commitment, market liquidity, news events, market current sentiment, need for alteration to the strategy, trading cost, and the change in risk-reward caused by sudden moments, and etc.

We have covered the generic basic essence of building an investment strategy from scratch, a system that keeps up with the dynamic changes in the market, simultaneously evolving, and optimizing your strategy, and discussing some related dialogue with the related discussion. We hope you learned something new in this document. We once again request you to subscribe to our new letter to get the latest updates related to documents like this and the platform itself as we intend to improve, correct any errors, and add more content to this document.

References: No references. This document is our Opinion. It’s subjective, may contain errors.

We have created a notebook that has a generic implementation of this document for informational and educational purposes. And tried to understand the workings of the investor’s ecosystem itself. Please have a look

***https://colab.research.google.com/drive/1ZbNM__Xd1YNq1j5dfro2oJif6C3bal8l?usp=sharing***

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***https://colab.research.google.com/drive/1ZbNM__Xd1YNq1j5dfro2oJif6C3bal8l?usp=sharing***

Hope this helps

Thank You

Be careful

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