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Introduction: How to Make Money with Trading Systems

Every minute more than 150 Million Dollars change hands in the electronic index futures markets like the e-mini S&P and e-mini NQ. You can win or lose thousands of dollars in a few minutes; the futures markets can make you rich in a few weeks or months or wipe out your account with no mercy.

If you want to compete in the "game of games" and play against the best traders in the world, then you need to get ready. Too many gamblers are entering the arena without any plan or strategy, completely unprepared, and that's why they lose.

Trading a system will dramatically increase your chances to succeed in trading, because it eliminates many reasons why unprepared traders fail.

In this eBook we want to give you important information that will help you to make money with trading systems. In the **first chapter** you will learn how to develop a profitable trading system. If you don't plan to create your own system you might want to skip this chapter. The **second chapter** shows a sample trading system that we developed using the steps we presented in the first chapter.

In the **third chapter** you will learn about the 10 Power Principles of Successful Trading Systems and how you can use them to find a profitable trading system or how to evaluate your own system. The **forth chapter** shows an example how to apply the 10 Power Principles on a specific trading system.

In the **fifth chapter** you will learn tips, tricks and other important information you **must** know if you want to be a successful system trader.

Enjoy your new eBook!

And if you have any questions, please do not hesitate to contact us at info@rockwelltrading.com or call 1-866-467-0747 or 1-312-224-8306.

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How to Develop a Profitable Trading System

In this chapter we will explain to you how to develop a profitable trading system in five steps:

Step 1: Select a market and a timeframe
Step 2: Define entry rules
Step 3: Define exit rules
Step 4: Evaluate your system
Step 5: Improving the system

Let's take a closer look at these steps.

Step 1: Select a market and a timeframe

Every market and every timeframe can be traded with a system. But if you want to look at 50 different futures markets and 6 major timeframes (e.g. 5min, 10min, 15min, 30min, 60min and daily), then you need to evaluate 300 possible options. Here are some hints on how to limit your choices:

- Though you can trade every futures markets, we recommend that you stick to the electronic markets (e.g. e-mini S&P and other indices, Treasury Bonds and Notes, Currencies, etc). Usually these markets are very liquid, and you won't have a problem entering and exiting a trade. Another advantage of electronic markets is lower commissions: Expect to pay at least half the commissions you pay on non-electronic markets. Sometimes the difference can be as high as 75%.

- When you select a smaller timeframes (less than 60min) your average profit per trade is usually comparably low. On the other hand you get more trading opportunities. When trading on a larger timeframe your profits per trade will be bigger, but you will have less trading opportunities. It's up to you to decide which timeframe suits you best.

- Smaller timeframes mean smaller profits, but usually smaller risk, too. When you are starting with a small trading account, then you might want to select a small timeframe to make sure that you are not overtrading your account.

Most profitable trading systems use larger timeframes like daily and weekly. These system work, too, but be prepared for less trading action and bigger drawdowns.

Step 2: Define entry rules

Let’s simplify the myths of “entry rules”:
Basically there are 2 different kinds of entry setups:

- **Trend-following:** When prices are moving up, you buy, and when prices are going down, you sell.
- **Swing-trading:** When prices are trading at an extreme (e.g. upper band of a channel), you sell, and you try to catch the small move while prices are moving back into “normalcy”. The same applies for selling.

In my opinion swing trading is actually one of the best trading styles for the beginning trader to get his or her feet wet. By contrast, trend trading offers greater profit potential if a trader is able to catch a major market trend of weeks or months, but few are the traders with sufficient discipline to hold a position for that period of time without getting distracted.

Most indicators that you will find in your charting software belong to one of these two categories: You have either indicators for identifying trends (e.g. Moving Averages) or indicators that define overbought or oversold situations and therefore offer you a trade setup for a short term swing trade.

So don’t become confused by all the possibilities of entering a trade. Just make sure that you understand **why** you are using a certain indicator or **what** the indicator is measuring. An example of a simple swing trading strategy can be found in the next chapter.

Step 3: Define exit rules

Let’s keep it simple here, too: There are two different exit rules you want to apply:

- Stop Loss Rules to protect your capital and
- Profit Taking Exits to realize your profits

Both exit rules can be expressed in four ways:

- A fixed dollar amount (e.g. $1,000)
- A percentage of the current price (e.g. 1% of the entry price)
- A percentage of the volatility (e.g. 50% of the average daily movement) or
- A time stop (e.g. exit after 3 days)

We don’t recommend using a fixed dollar amount, because markets are too different. For example, natural gas changes an average of a few thousand dollars per day per contract; however, Eurodollars change an average of a few hundred dollars a day per contract. You need to balance and normalize this difference when developing a trading system and testing it on different markets. That’s why you should always use percentages for stops and profit targets (e.g. 1% stop) or a volatility stop instead of a fixed dollar amount.

A time stop gets you out of a trade if it is not moving in any direction, therefore freeing your capital for other trades.

Step 4: Evaluate your system

The first figure to look for is the **net profit**. Obviously you want your system to generate profits. But don't be frustrated when during the development stage your trading system shows a loss; try to reverse your entry signals. On our website www.rockwelltrading.com you already learned that trading is a zero sum game: So if you are going long at a certain price level, and you lose, then try to go short instead. Many times this is the easiest way to turn a losing system into a winning one.

The next figure you want to look at is the **average profit per trade**. Make sure this number is greater than slippage and commissions, and that it makes your trading worthwhile. Trading is all about risk and reward, and you want to make sure you get a decent reward for your risk.

Take a look at the **Profit Factor (Gross Profit / Gross Loss)**. This will tell you how many dollars you are likely to win for every dollar you lose. The higher the profit factor the better the system. A system should have a profit factor of 1.5 or more, but watch out when you see profit factors above 3.0, because it might be that you over-optimized the system.

Here are some more characteristics you might want to consider besides the **net profit** of a system:

- **Winning percentage**
  Many profitable trading systems achieve a nice net profit with a rather small winning percentage, sometimes even below 30%. These systems follow the principle "Cut your losses short and let your profits run". However, YOU need to decide whether you can stand 7 losers and only 3 winners in 10 trades. If you want to be "right" most of the time, then you should pick a system with a high winning percentage.

- **Number of Trades per Month**
  Do you need daily action? If you want to see something happening every day, then you should pick a trading system with a high number of trades per month. Many profitable trading systems generate only 2-3 trades per month, but if you are not patient enough to wait for it, then you should select a system with a higher trading frequency.

- **Average Time in Trade**
  Some people get really nervous when they are in a trade. I have heard of people who can't even sleep at night when they have an open position. If that's you, then you should make sure that the average time in a trade is as short as possible. You might want to choose a system that does not hold any positions overnight.

- **Maximum Drawdown**
  A famous trader once said: "If you want your system to double or triple your account, you should expect a drawdown of up to 30% on your way to trading riches." Not every trader can stand a 30% drawdown. Look at the maximum drawdown the system produced so far, and double it. If you can stand this drawdown, then you found the right system. Why doubling? Remember: your worst drawdown is always ahead of you.

- **Most consecutive losses**
  The amount of most consecutive losses has a huge impact on your trading, especially when you are using certain types of money management techniques. Five or six consecutive losses can cause you a lot of trouble when using an aggressive money management.
  In addition this number will help you to determine whether you have enough discipline to trade the system: Will you still trade the system after you have experienced 10 losses in a row? It's not unusual for a profitable trading system to have 10-12 losses in a row.

Step 5: Improving your system

There is a difference between “improving” and “curve-fitting” a system. You can improve your system by testing different exit methods: If you are using a fixed stop, try a trailing stop instead. Add a time stop and evaluate the results again. Don’t look at the net profit only; look also at the profit factor, average profit per trade and maximum drawdown. Many times you will see that the net profit slightly decreases when you add different stops, but the other figures might improve dramatically.

Don’t fall into the trap of over-optimizing: You can eliminate almost all losers by adding enough rules. Simple example: If you see that on Tuesdays you had more losers than on the other weekdays, you might be tempted to add a “filter” that prevents your system from entering trades on Tuesdays. Next you find that in January you had much worse results than in other months, so you add a filter that enters trades only from February – December. You add more and more filters to avoid losses, and eventually you end up with a trading rule that I saw recently:

*IF FVE > -1 And Regression Slope (Close , 35) / Close.35 * 100 > -.35 And Regression Slope (Close , 35) / Close.35 * 100 < .4 And Regression Slope (Close , 70) / Close.70 * 100 > -.4 And Regression Slope (Close , 70) / Close.70 * 100 < .4 And Regression Slope (Close , 170) / Close.170 * 100 > -.2 And MACD Diff (Close , 12 , 26 , 9) > -.003 And Not Tuesday And Not DayOfMonth = 12 and not Month = August and Time > 9:30 ...*

Though you eliminated all possibilities of losing (in the past) and this trading system is now producing fantastic profits, it’s very unlikely that it will continue to do so when it hits reality.

Conclusion

Developing a trading system can be tricky, but it’s by far not as complicated as many vendors make you think. In the following we will present you a simple trading system that we developed using these steps.

A Sample Trading System

Step 1: Selecting a market and timeframe

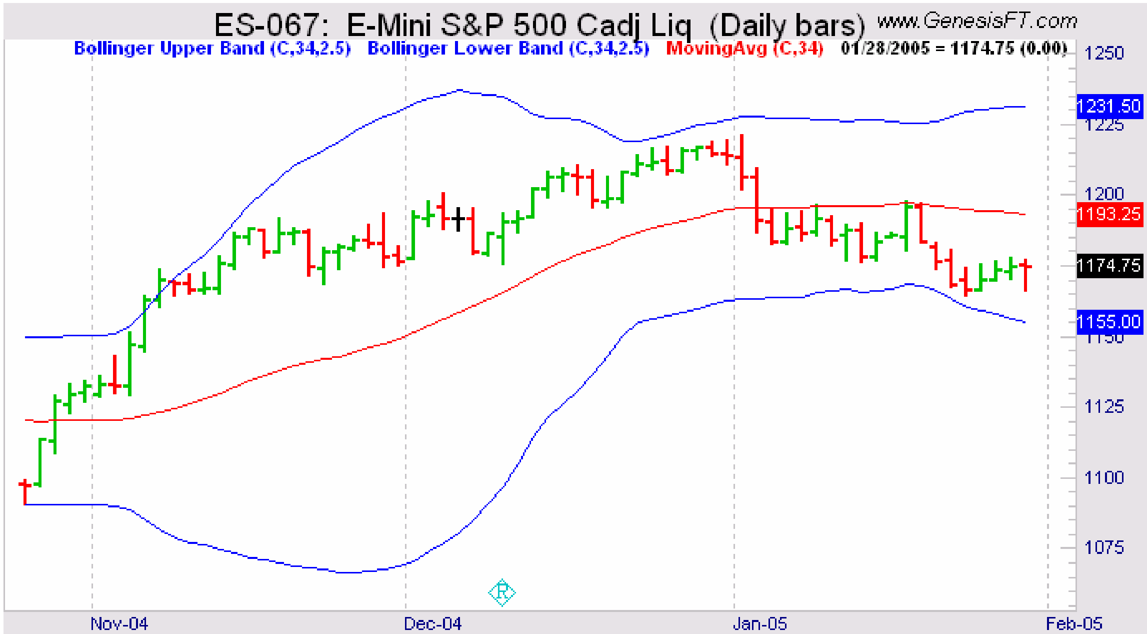
One of the most popular markets these days is the e-mini S&P, and that's not without a reason: It's a 500 company index. One of the largest in the world and that means you have excellent and consistent liquidity, superb volatility, tremendous leverage and no uptick rule. It's a truly bi-directional market that shorts just as easily and safely as going long. It's a fully electronic market, offering all the advantages of electronic contracts.

We decide to trade the market intraday, i.e. we will enter and exit a trade on the same day, because we do not want to expose our position to the risk of holding it overnight.

Step 2: Define entry rules

In my opinion swing trading is actually one of the best trading styles for the beginning trader to get his or her feet wet. That's why we decided to use a swing trading approach in this example.

Many traders are familiar with the concept of "Bollinger Bands": Bollinger Bands consist of a centerline and two price channels, one above the centerline and one below. The important thing to know about Bollinger Bands is that they contain up to 95% of the closing prices, depending on the settings.



In the chart above you see the red centerline and the blue price channels. There are only 2 days in the beginning of November when prices close outside the Bollinger Bands.

We are using this knowledge to create a very simple entry rule:

- Sell when prices move above the Bollinger Bands and
- Buy when prices move below the Bollinger Bands.

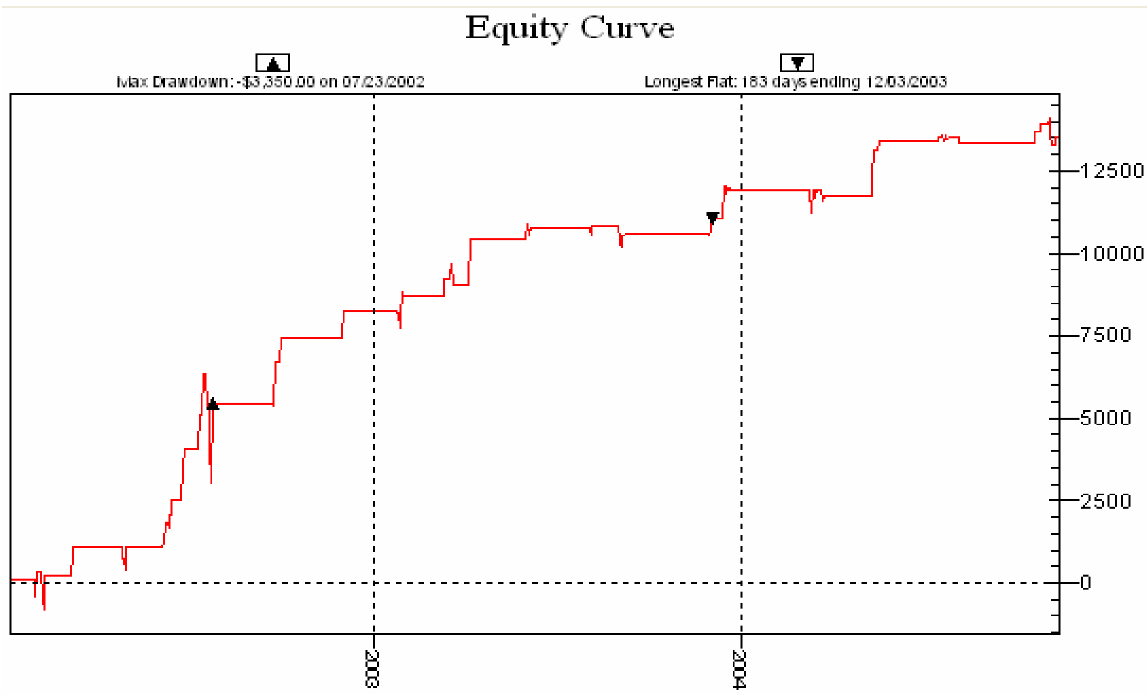
The idea is that prices will move back into the Bollinger Bands by the end of the day.

Step 3: Define exit rules

Let’s start with a very simple exit rule:

- Exit the trade at the close of the same day.

Below is the equity curve of the last 2 years. The first results are encouraging.



Step 4: Evaluate your system

The **Net Profit** of this simple trading system is $13,525.

The **Average Profit** per trade is $149. Even if we deduct $20 for commissions and slippage we still have a net profit of $129 per trade.

The **Profit Factor** is 2.20.

The **Winning Percentage** is 66% and the **Maximum Drawdown** at the end of the day is only $2,775, though we have to suffer an **Intraday Drawdown** of $5,250.

The next step is to test the robustness of the system. Therefore we will vary the parameters we are using for the Bollinger Bands to make sure that we haven't curve-fitted the system. If the system produces similar results when we vary the original parameters by 15%, we haven a quite robust trading system.

Originally we tested the system with a setting of 34 for the Moving Average and 2.5 for the Standard Deviation. The table below shows the results of the system when using a Moving Average between 29 and 39:

Mvg. Avg.	Win%	Net Profit	Profit Factor	Avg Trade	Max Drawdown
29	55.60%	$11,875	1.97	$120	($3,325)
30	52.20%	$10,138	1.84	$110	($3,350)
31	55.10%	$9,575	1.8	$108	($3,363)
32	56.40%	$11,575	1.99	$123	($3,438)
33	54.30%	$10,975	1.96	$119	($3,425)
34	59.30%	$13,525	2.2	$149	($3,350)
35	59.30%	$14,288	2.24	$157	($3,325)
36	54.70%	$12,288	2.06	$143	($3,313)
37	55.20%	$11,200	1.96	$129	($3,275)
38	54.10%	$11,113	1.94	$131	($3,225)
39	54.70%	$12,438	2.04	$145	($3,150)

As you can see, none of these figures change dramatically when varying the parameters.

In the next step we run the system on different markets to make sure that we haven't optimized the system for a single market.

We test the system on 5 different markets:

Symbol	Net Profit	Profit Factor	Avg Trade	Max Drawdown
DAX	$34,013	1.63	$279	($6,350)
e-mini Nasdaq	$10,930	2.08	$107	($1,490)
e-mini S&P	$15,488	1.91	$134	($3,350)
EuroStoxx	$6,010	1.43	$49	($2,180)
FTSE	$8,900	1.55	$65	($4,010)

The **net profit**, **average trade** and **max drawdown** are substantially different, but the **Profit Factor** seems to be quite stable. The reason for this distorted picture is the different value of these five markets. In the next table we look at the **Average Profit** and the **Max Drawdown** as a percentage of the net profit:

Symbol	Net Profit	Profit Factor	Avg Trade	Max Drawdown
DAX	$34,013	1.63	0.82%	-19%
e-mini Nasdaq	$10,930	2.08	0.98%	-14%
e-mini S&P	$15,488	1.91	0.87%	-22%
EuroStoxx	$6,010	1.43	0.82%	-36%
FTSE	$8,900	1.55	0.73%	-45%

Now we see a different picture: Only the **Max Drawdown** differs quite a bit depending on the market, but the remaining figures are rather stable.

It seems that we developed a robust trading system that will perform well in real market conditions and on several markets.

Step 5: Improving your system

We try to improve our system by adding a stop loss:

Stop Loss in %	Net Profit	Profit Factor	Avg Trade	Max Drawdown
0.2	$675	1.1	$7	($2,013)
0.4	$2,625	1.27	$29	($2,575)
0.6	$2,000	1.17	$22	($3,388)
0.8	$3,538	1.27	$39	($2,550)
1.0	$5,513	1.43	$61	($2,763)
1.2	$5,863	1.44	$64	($2,650)
1.4	$5,238	1.38	$58	($3,013)
1.6	$4,225	1.28	$46	($3,438)
1.8	$6,600	1.49	$73	($3,850)
2.0	$7,513	1.57	$83	($4,288)
No stop	$13,525	2.2	$149	($3,350)

Notice that the system performs best without a protective stop loss.

Another interesting test is to increase the duration of the trade: The original rules said that we exit the trade at the end of the day. The following table shows the results when we add x days:

exit on x. day	Net Profit	Profit Factor	Avg Trade	Max Drawdown
0	$13,525	2.2	$149	($3,350)
1	$16,338	2.43	$268	($3,863)
2	**$17,450**	**3.12**	**$371**	**($2,775)**
3	$13,300	2.15	$324	($3,925)
4	$6,425	1.72	$195	($2,650)
5	$10,938	2.2	$342	($4,263)
6	$7,025	1.63	$242	($5,875)

If we exit on at the end of the 2nd day after entering the market, we increase the **net profit** and decrease the **Max Drawdown**. That's the kind of improvement we are looking for.

As a last step we test these settings on the five markets again to ensure that we haven't curve-fit the parameters to only one market:

Original settings (exit on the same day):

Symbol	Net Profit	Profit Factor	Avg Trade	Max Drawdown
DAX	$34,013	1.63	$279	($6,350)
e-mini Nasdaq	$10,930	2.08	$107	($1,490)
e-mini S&P	$15,488	1.91	$134	($3,350)
EuroStoxx	$6,010	1.43	$49	($2,180)
FTSE	$8,900	1.55	$65	($4,010)

Modified settings (exit on the close of the 2^{nd} day after entering):

Symbol	Net Profit	Profit Factor	Avg Trade	Max Drawdown
DAX	$52,288	2.31	$934	($7,238)
e-mini Nasdaq	$17,738	2.63	$328	($2,775)
e-mini S&P	$8,100	1.76	$153	($1,680)
EuroStoxx	$6,290	1.86	$140	($1,580)
FTSE	$8,460	1.57	$139	($5,270)

We can see a dramatic improvement in the other markets, too.

Conclusion

We started with a very simple idea and defined two easy entry rules.

Applying the simplest of all stops (exiting at the end of the day) we received a system with a nice performance. We tested the system with several parameters and on several markets to make sure that we haven't curve-fitted the system to a certain parameter set or market.

Then we tried to improve the system: While applying a stop loss did not increase the system's performance, the increase of the time in the trade was very successful: We increase **the net profit by 30%** while **decreasing the max drawdown by 17%**. Applying these new rules to the other markets we noticed a dramatic **increase of all figures** in all markets.

The 10 Power Principles of Successful Trading Systems

In the following we will present you the **10 Power Principles for Successful Trading Systems**, which will help and support you to find a profitable trading system, whether you are developing one yourself or think about buying one.

We develop up to 25 trading systems every month and we test every one against the 10 Power Principles for Successful Trading Systems that we developed and refined over the last couple of months.

Only the systems that meet our high standards and fulfill these principles are the ones that we are willing to trade with our own money. Now you can use these Power Principles to find trading systems with a high probability of success, by simply applying the following principles.

Principle #1: Few rules - easy to understand

It may surprise you that the best trading systems have less than 10 rules. The more rules you have, the more likely you "curve-fitted" your trading system to the past, and such an over-optimized system is very unlikely producing profits in real markets.

It's important that your rules are easy to understand and execute. The markets can behave very wild and move fast, and you won't have the time to calculate complicated formulas in order to make a trading decision. Think about successful floor traders: The only tool they use is a calculator, and they make thousands of dollars every day.

Principle #2: Trade electronic and liquid markets

We strongly recommend that you trade electronic markets because the commissions are lower and you receive instant fills. You need to know as fast as possible if you are filled and at what price, because based on this information you plan your exit.

You should never place an exit order before you know that your entry order is filled. And when you trade open outcry markets (non-electronic) you might have to wait a few minutes before you receive your fill. By then the market might have already turned, and your profitable trade turned into a loser.

When trading electronic markets you receive your fills in less than one second and can immediately place your exit orders. Trading liquid markets you can avoid slippage, which will save you hundreds or even thousands of dollars.

Principle #3: Make consistent profits

You should always look for a trading system that produces a nice and smooth equity curve, even if in the long run the net profit is slightly smaller. Most professional traders prefer to realize small profits every day instead of windfall profits every now and then. If you trade for a living, you need to pay your bills from your trading profits, and therefore you should regularly deposit profits in your trading account.

Making consistent profit is the secret of successful traders!

Principle #4: Maintain a healthy balance between risk and reward

Let me give you an example: If you go to a casino and bet everything you have on "red", then you have a 49% chance of doubling your money and a 51% chance of losing everything. The same applies to trading: You can make a lot of money if you are risking a lot, but then risk of ruin is very high. You need to find a healthy balance between risk and reward.

Let's say you define "ruin" as losing 20% of your account, and you define "success" as making 20% profits. Having a trading system with past performance results let you calculate the "risk of ruin" and "chance of success".

Your risk of ruin should be always less than 5%, and your chance of success should be 5-10 times higher, e.g. if your risk of ruin is 4%, then your chance of success should be 40% or higher.

Principle #5: Find a system that produces at least five trades per week

The higher the trading frequency the smaller are the chances of having a losing month. If you have a trading system that has a winning percentage of 70%, but produces only 1 trade per month, then 1 loser is enough to have a losing month. In this example you could have several losing months in a row before you finally start making profits. And how do you pay your bills in the meantime?

If your trading system produces five trades per week, then you have in average 20 trades per month. Having a winning percentage of 70% - your chances of a winning month are extremely high.

And that's the goal of all traders: Having as much winning months as possible.

Principle #6: Start small - grow big

Your trading system should allow you to start small and grow big. A good trading system allows you to start with one or two contracts, and then increasing your position as your trading account grows. This is in contrast to many "martingale" trading systems that require increasing position sizes when you are in a losing streak.

You probably heard about this strategy: Double your contracts every time you lose, and one winner will win back all the money you previously lost. It's not unusual to have 4-5 losing trades in a row, and this would already require to trade 16 contracts after 4 losers! Trading the e-mini S&P you would then need an account size of at least $63,200, just to meet the margin requirement. That's why martingale systems don't work.

Principle #7: Automate your trading

Emotions and human errors are the most common mistakes that traders make. By all means you have to avoid these mistakes. Especially during fast markets, it is crucial that you determine the entry and exit points fast and accurately; otherwise, you might miss a trade or find yourself in a losing position.

Therefore you should automate your trading and look for a trading system that either already is or can be automated. Automating your trading makes it free of human emotion. The buy and sell operations are all automatic, hands-free, with no manual interventions and you can be sure that you make profits when you should according to your plan.

Principle #8: Have a high percentage of winning trades

Your trading strategy should produce more than 50% winners. There's no doubt that trading systems with smaller winning percentages can be profitable, too, but the psychological pressure is enormous. Taking 7 losers out of 10 trades and not doubting the system takes great discipline, and many traders can't stand the pressure. After the sixth loser they start "improving" the system or stop trading it completely.

Especially for beginners it is a big help to gain confidence in your trading and your system if you have a high winning percentage of more than 65%.

Principle #9: Look for a system that is tested on at least 200 trades

The more trades you use in your backtesting (without curve-fitting), the higher the probabilities that your trading system will succeed in the future. Look at the following table:

Number of Trades	50	100	200	300	500
<>Margin of Error	14%	10%	7%	6%	4%

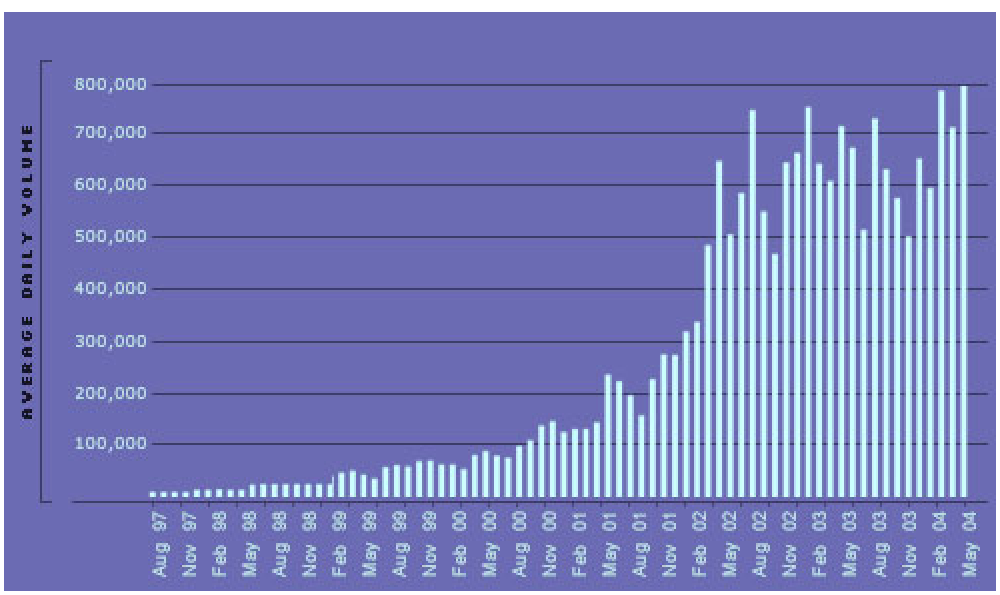
The more trades you have in your backtesting, the smaller the margin of error, and the higher the probability of producing profits in the future.

Principle #10: Chose a valid backtesting period

I recently saw the following ad: "Since 1994 I've taught thousands of traders worldwide a Simple and Reliable E-Mini trading methodology".

That's very interesting, because the e-mini S&P was introduced in Sep 1997, and the e-mini Nasdaq in June 1999, so none of these contracts existed before 1997. What kind of e-mini trading did this vendor teach from 1994-1997???

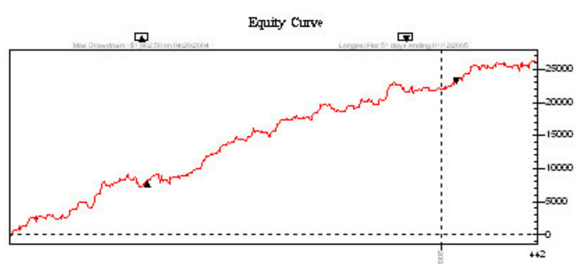
The same applies to your backtesting: If you developed an e-mini S&P trading strategy, then you should backtest it only for the past 2-4 years, because though the contract existed since 1997, there was practically nobody trading it (see chart below):

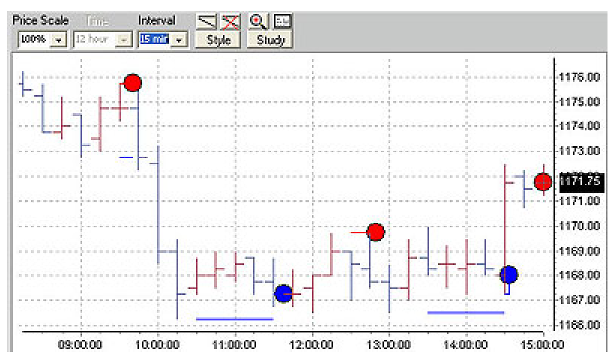


How to apply the 10 Power Principles – An Example

In the previous chapter you learned how to separate the scam from good working trading systems. By applying the 10 Power Principles of Successful Trading Systems you will easily identify trading systems that work and those that will never make it.

In the following you will see how we applied the 10 Power Principles to our e-mini S&P day trading system “CoinCollector”:

#	**Power Principle**	**System: CoinCollector**
1	Few rules - easy to understand	Four simple rules - easy to understand and execute.
2	Trade electronic and liquid markets	Trades the e-mini S&P - a fully electronic market and one of the most liquid markets in the world. Average daily volume: more than 1.2 Million contracts.
3	Make consistent profits	Smooth equity curve with small swings.  Click here for current results
4	Healthy balance between risk and reward	We calculated the "risk of ruin" and "chances for success" for a $10,000 account size. **Account size**: $10,000 **Ruin**: Losing $2,000 (=20%) in the next 2 months **Success**: Making $2,000 (=20%) in the next 2 months **Risk of ruin: 2.8%** (smaller than 5%!) **Chance of success: 65.3%** (23x bigger than risk of ruin!)
5	Produce at least five	**CoinCollector** produces in average 2 trades per day,

	trades per week	i.e. 40 trades per month. Therefore chances of having a losing month are extremely low. In fact, CoinCollector had only one losing month in 2004, and the loss in that month was only $275.
6	Start small - grow big	**CoinCollector** can be traded with only 1 contract. The suggested minimum account size is $6,000. It's scalable, because we are trading the e-mini S&P, one of the most liquid markets in the world. Therefore we can easily trade 5, 10 or even 20 contracts and increase our contract size as our account grows.
7	Automate your trading	We automated **CoinCollector** using Strategy Runner. This software displays entry and exit signals and trades them automatically (see picture below).  Red circle: Sell Order Blue circle: Buy Order
8	Have a high percentage of winning trades	**CoinCollector** has a winning percentage of 70.2%.
9	Test your strategy on at least 200 trades	**CoinCollector** was tested on 600 trades, reducing the margin of error to less than 4% and therefore making it very robust.
10	Chose a valid backtesting period	**CoinCollector** was tested over different time periods to ensure the validity of the testing results and to maximize the probability of success.

Tips, Tricks and Important Information You MUST Know

In the following we will present you some tips, tricks and other important information you **must** know if you want to be a successful systems trader. These information was taken from our blog that we publish on our website: http://www.rockwelltrading.com/blog/

How often should you evaluate a system?

In the first week of April 2005 the CoinCollector produced 7 trades for a total profit of $125. Of course seven trades are not enough to evaluate the system's performance. For statistical valid conclusions we need at least 40 trades. So let's take a look at the past 40 trades (March 7th to April 8th):

Summary - All Trades

Overall			
Total Net Profit:	$1,575	Profit Factor ($Wins/$Losses):	**1.65**
Total Trades:	40	Winning Percentage:	**67.5%**
Average Trade:	$39	Payout Ratio (Avg Win/Loss):	**0.80**
Avg # of Bars in Trade:	10.68	Z-Score (W/L Predictability):	-1.1
Avg # of Trades per Year:	561.9	Percent in the Market:	41.0%
Max Closed-out Drawdown:	-$938	Max Intraday Drawdown:	-$1,188
Account Size Required:	$4,751	Return Pct:	**33.2%**
Open Equity:	-$300	Kelly Ratio:	0.2666
Current Streak:	2 Wins	Optimal f:	0.38

Winning Trades		Losing Trades	
Total Winners:	27	Total Losers:	13
Gross Profit:	$3,988	Gross Loss:	-$2,413
Average Win:	$148	Average Loss:	-$186
Largest Win:	$588	Largest Loss:	-$713
Largest Drawdown in Win:	-$425	Largest Peak in Loss:	$325
Avg Drawdown in Win:	-$108	Avg Peak in Loss:	$56
Avg Run Up in Win:	$184	Avg Run Up in Loss:	$56
Avg Run Down in Win:	-$108	Avg Run Down in Loss:	-$404
Most Consec Wins:	7	Most Consec Losses:	3
Avg # of Consec Wins:	3.38	Avg # of Consec Losses:	1.86
Avg # of Bars in Wins:	9.44	Avg # of Bars in Losses:	13.23

And here are the results from January 1st, 2004 until March 4th, 2005:

Summary - All Trades

Overall

Total Net Profit:	$24,725	Profit Factor ($Wins/$Losses):	**1.56**
Total Trades:	698	Winning Percentage:	**70.2%**
Average Trade:	$35	Payout Ratio (Avg Win/Loss):	**0.66**
Avg # of Bars in Trade:	10.14	Z-Score (W/L Predictability):	2.5
Avg # of Trades per Year:	599.9	Percent in the Market:	53.3%
Max Closed-out Drawdown:	-$1,963	Max Intraday Drawdown:	-$2,225
Account Size Required:	$5,788	Return Pct:	**427.2%**
Open Equity:	$0	Kelly Ratio:	0.2525
Current Streak:	1 Losses	Optimal f:	0.63

Winning Trades		**Losing Trades**	
Total Winners:	490	Total Losers:	208
Gross Profit:	$68,750	Gross Loss:	-$44,025
Average Win:	$140	Average Loss:	-$212
Largest Win:	$1,238	Largest Loss:	-$1,150
Largest Drawdown in Win:	-$588	Largest Peak in Loss:	$625
Avg Drawdown in Win:	-$92	Avg Peak in Loss:	$74
Avg Run Up in Win:	$165	Avg Run Up in Loss:	$74
Avg Run Down in Win:	-$92	Avg Run Down in Loss:	-$425
Most Consec Wins:	19	Most Consec Losses:	4
Avg # of Consec Wins:	3.06	Avg # of Consec Losses:	1.30
Avg # of Bars in Wins:	7.12	Avg # of Bars in Losses:	17.27

As you can see, the results of the past 40 trades perfectly match the expected results:

	Expected (past 700 trades)	Realized (past 40 trades)
Winning Percentage	70.2%	67.5%
Average profit	$35	$39
Profit Factor	1.56	1.65
max Drawdown	$1,963	$938

Should I override the strategy?

Friday, April 08, 2005

Today was a perfect day to test your discipline:

We went long at 1190.00 and the reversing order was placed at 1192.25. Prices moved up to 1192.00 and reversed. One hour later we tried to reverse at 1191.00. Again prices moved up to 1190.75 and reversed. Two times we missed our profit goal by one tick.

Should we change the strategy?
or
Should we manually override the strategy when something like this happens?

Doing any of this is like opening Pandorra's Box: Let's say you start lowering your profit goal by one tick. Of course you will be instantly rewarded, because the number of winners would increase. Next week you might experience the following situation: Your stop is hit and you are taken out of the trade, but then the market turns and takes off and you are missing a nice winner. What now? You start moving your stop a little bit further away and again you are instantly rewarded: The number of losers decrease.

One week later you experience a similar situation and you continue "finetuning" your system by slightly moving down your profit goal and minimally increasing your stop loss. And very soon the winning system that you once had turns into a losing one, because your losses are much bigger than your profits.

I have seen it many times: A trader backtests his system over 700 or maybe even 1,000 trades and then "finetunes" it after the first 5 trades. This doesn't make sense: If you have a sound logic why your system should work then it won't need "finetuning" after 5 trades.

You should evaluate your system periodically, but instead of curve-fitting your system's parameters you should ask yourself: "Does the logic of the system still apply?"

If you have a trend-following system and markets are trading sideways, then "optimizing" the system parameters won't help: It's the wrong market condition and the market is just not right for your system.

Exercise discipline: If your system worked well over 1,000 trades, and you have a sound logic and didn't curve-fit the system, then you should not override the system or "finetune" it after only a few trades.

Understanding "Winning Percentage"

Our trading system **CoinCollector** has a winning percentage of 70%.

What exactly does that mean?

It means that the probability of having a winning trade is 70%, i.e. it is more likely that the trade you are currently in turns out to be a winner than a loser.

Does that mean that when you trade 10 times you will have 7 winners? - No!

It means that if you trade long enough (i.e. at least 40 trades) then you will have more winners than losers, but it does not guarantee that after 3 losers in a row you **will** have a winner.

Let me give you an example:
If you toss a coin then you have 2 possible outcomes: head or tail. Probabilities are 50%, i.e. when you toss the coin 4x then you should get 2x head and 2x tail.

But what if you tossed the coin 3 times and you got 3 times "head"?
What are the probabilities of "head" on the next coin toss?
50% or less?

If you answered "less" than you fell for a common misconception. The probabilities of getting another "head" is still 50%. No more and no less. But many traders think that the probabilities of "tail" are higher now because the three previous coin tosses resulted in "head". Some traders might even increase their bet because they are convinced that now "tail is overdue". Statistically this assumption is nonsense and a dangerous and many times costly misconception.

Let's get back to our trading example: If you have a winning percentage of 70% and you had 9 losers in a row, what are the probabilities of having a winner now? - It's still 70% (and therefore there's still a 30% chance of a loser).

It's important that you understand this concept!

What it takes to be a winner

Recently I received the following email:
"Hi Markus, CoinCollector rocks today! Thanks for your encouragement to patiently wait. It's been a painful wait, but now it pays off. "

What happened? - Well, today our trading strategy CoinCollector made $1,100 in profits on a single contract.

Reading this email reminded me about an article for sports coaches I found a couple of weeks ago. It's called the "Four Characteristics of a Winner", and in my opinion these characteristics apply to successful traders, too. Here they are:

1. A winner knows what it means to be a winner.
2. A winner must set high goals.
3. A winner is disciplined.
4. A winner has strong motivation.

Especially the latter two characteristics are extremely important when trading a system. They make the difference between a winner and a loser.

The customer who sent me the email today started trading the CoinCollector on March 28, 2005. In the first week after his start he went into a $300 drawdown. He started questioning the strategy and thought about changing it. But he maintained his perspective and discipline and continued trading the strategy according to the rules.

In the second week of his trading the strategy really tested his patience by producing another $200 loss. Nothing unexpected, but the trader thought about stopping the strategy. I don't know for sure, but he might have considered buying the next system.

Now, in his third week of trading, his patience and discipline paid off: Yesterday and today the strategy produced some very nice winners, and is now perfectly in sync with the expected results as you can see from the performance report below (results between 03/28/2005 and 04/12/2005):

Summary - All Trades

Overall			
Total Net Profit:	$825	Profit Factor ($Wins/$Losses):	**1.49**
Total Trades:	24	Winning Percentage:	**62.5%**
Average Trade:	$34	Payout Ratio (Avg Win/Loss):	**0.89**
Avg # of Bars in Trade:	11.08	Z-Score (W/L Predictability):	-0.3
Avg # of Trades per Year:	547.9	Percent in the Market:	26.0%
Max Closed-out Drawdown:	-$938	Max Intraday Drawdown:	-$1,125
Account Size Required:	$4,688	Return Pct:	**17.6%**
Open Equity:	-$238	Kelly Ratio:	0.2052
Current Streak:	2 Wins	Optimal f:	0.20

Winning Trades		Losing Trades	
Total Winners:	15	Total Losers:	9
Gross Profit:	$2,513	Gross Loss:	-$1,688
Average Win:	$168	Average Loss:	-$188
Largest Win:	$525	Largest Loss:	-$425
Largest Drawdown in Win:	-$425	Largest Peak in Loss:	$163
Avg Drawdown in Win:	-$103	Avg Peak in Loss:	$40
Avg Run Up in Win:	$209	Avg Run Up in Loss:	$40
Avg Run Down in Win:	-$103	Avg Run Down in Loss:	-$389
Most Consec Wins:	3	Most Consec Losses:	3
Avg # of Consec Wins:	2.50	Avg # of Consec Losses:	1.80
Avg # of Bars in Wins:	9.27	Avg # of Bars in Losses:	14.11

As you can see the system is right on target: The average profit is back to normal, and so is the winning percentage and the profit factor.

Within **just two weeks** the system normalized itself. That's exactly what we expect from a robust trading system.

It takes motivation and discipline to trade a strategy, but if are patient you will eventually be rewarded. The system will adjust itself and produce the expected results.

These four characteristics make the difference between a winner and a loser:

1. A winner knows what it means to be a winner.
2. A winner must set high goals.
3. A winner is disciplined.
4. A winner has strong motivation.

Keep this in mind when trading a system.

Maintain Your Perspective

A few days ago I received an email:
"I have been following your strategy CoinCollector for the past two weeks, and it seems that the strategy is down by $360. Did your strategy stop working?"

When trading a system you need to maintain a long term perspective. In the past two weeks the system made 14 trades. That's definitely not enough to judge the performance of a system.

Trading a system means playing a number's game: You need to place at least 40 trades before you can look at the performance of the system. Most traders only evaluate their performance once a month and try to have as many profitable months as possible. Hedge Funds evaluate their performances quarterly or yearly. If you look daily at the results of a trading system it will drive you crazy.

Sure, nobody likes going through a drawdown. But losses are part of our business and you need to deal with them. The famous Richard Dennis once said: "**It is totally counterproductive to get wrapped up in the results. You have to maintain your perspective. Being emotionally deflated would mean lacking confidence in what I am doing. I avoid that because I have always felt that it is misleading to focus on short-term results.**"

Many traders focus on short term results and lose their perspective. That's why they fail: They experience a loss or a bad week and shop around for the next system. And while the trading system they just abandoned is recovering from the drawdown, the new trading system might produce first losses, and they start looking for the next system.

They are like the dog chasing many rabbits: At the end of the day he's totally exhausted and didn't catch a single one.

Maintain your perspective!