Revolution Capital Management, LLC

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| General Information | | | | | |
| FIRM | Revolution Capital Management, LLC  \*Not SEC Registered\* | | | Firm Founded | December 2004 |
| Strategy Inception | May 2007 |
| ADDRESS | 520 Zang Street, Suite 209  Broomfield, CO 80021  (720) 496-0940 | | | | |
| Summary | | | | | |
| Investment Strategy | | | The Alpha Program is a fully-diversified, short- to medium-term program that utilizes a multi-strategy pattern-recognition methodology that attempts to identify price dislocations or certain statistical behavior.  It targets a long-term correlation of 0.5 to trend-following indices. | | |
| Investment Thesis | | | Choppy markets marked by lack of direction or longer term trends could provide a solid backdrop for Revolution’s short and intermediate term trading strategy. | | |
| Reference Strategy | | | Alpha Program | | |
| Expected/Target Return | | | 10% | | |
| Expected/Target Vol | | | 12% | | |
| Strengths | | | Solid research and modeling infrastructure as a result of large existing Mosaic Fund in partnership with DUNN Capital.  Quant-driven team with long track record. | | |
| Weaknesses | | | Alpha strategy is small and HAMF would be the largest institutional investor.  While team is very sharp and experienced, they lack trading background. | | |
| Good/Bad Environment | | | Good: The program is expected to do well when trends are moderate as well in choppy markets.  Bad: The trading systems work less well in environments when the volatility of volatility is high or in extremely choppy markets. | | |
| Peer Group | | | Managed Futures | | |
| Portfolio Fit | | | Revolution could provide the managed futures strategy with exposure to short and intermediate term trading strategies through an experienced and established firm. In addition, the Alpha program has historically been less correlated to most trend followers and less or negatively correlated to the fund of funds index and domestic and global equity markets. | | |
| Sizing Considerations | | | No sizing issues or capacity constraints are evident at this time.  Revolution recommends a minimum account size of at least $5M. | | |
| Capacity | | | Capacity for the Alpha Program is estimated to be $4 billion.  They note that at very large AUM levels, they may begin to lose the ability to modify positions without incurring significant slippage losses. They are actively pursuing mitigation strategies. | | |
| *IC Concerns* | | | Since the program focuses on short and intermediate term time frames, there was concern there could be overlap with existing funds. After quantitative and qualitative analysis, we’ve determined that the strategy is differentiated and will be complementary to the existing managers in the strategy. | | |
| Business | | | | | |
| Team | | | Revolution has five full time employees and one associated person, whose responsibilities are broken down as follows:  Rob Olson: Operations, trading, compliance, and software development  Mark Chapin: operations, research and development, trading and infrastructure  Michael Mundt: Risk, portfolio monitoring, compliance, marketing  Jeff Perini – software developer/programming  Geoff Dix – software, programming, research  Jim Curley, associated person - Marketing/Sales (representing Alpha, GSI and Mosaic)  There has been no significant team turnover.  The team started the alpha strategy as a domestic trend following program in January 2005 and morphed into a pattern recognition program in August 2006. Altegris began raising money through SMAs for RCM in 2007, hence the inception of the strategy/program. | | |
| Mark Andrew Chapin, *Principal* | | | Mark’s primary focus is the development of short-term trading methodologies for RCM. Mark received his Bachelor of Science degree from Clarkson University in 1997 and his Masters of Science degree from the University of California at Berkeley in 1999. Both degrees are in mechanical engineering. Mark has an extensive background and also a strong interest both in algorithms and also their implementation in numerical code. Mark was employed by Seagate Technology, a hard-disk-drive company, between June 1999 and July 2007, where he worked on advanced concepts in the head/media department. He currently holds twelve U.S. patents in the area of disk-drive head/disk mechanics and has co‐authored several peer-reviewed journal articles. Mark has been registered with the NFA as an Associated Person since 6/11/2008 and has been a listed Principal of RCM since 10/10/2005. Age: 37 | | |
| Michael David Mundt, *Principal* | | | Michael’s tasks primarily consist of model development, business/marketing, and coordinating RCM’s overall business and trading strategy. Michael’s background is in engineering and applied science. He received his Bachelor of Science degree in Aerospace Engineering from the University of Colorado in 1989. He was awarded a Ph.D. in Aerospace Engineering in 1993, also from the University of Colorado; his thesis involved the exploration of chaos and turbulence in simple weather/climate models. After the completion of his academic studies, Michael transitioned into the technology industry. He was employed by Seagate Technology (a hard-disk-drive company) as an engineer specializing in computational fluid mechanics between March 1998 and July 2007. He currently holds nineteen U.S. patents in the area of disk-drive head/disk mechanics. Michael has been registered with the NFA as an Associated Person since 12/27/2004 and has been a listed Principal of RCM since 12/27/2004. Age: 44 | | |
| Theodore Robert Olson, *Principal* | | | Rob oversees the architecture and development of the hardware and software computing infrastructure at RCM. Rob received his Bachelor of Science degree in Aerospace Engineering at the University of Arizona in 1989. He received his Master’s and Doctorate degrees in Aerospace Engineering at the University of Colorado in 1992 and 1996, respectively. Rob was employed at Raytheon Technology, an aerospace defense contractor, from June 1996 through June 2006. His primary job duties included code/software development, data analysis, and the development of statistical algorithms to process high-frequency, real-time data. Rob is familiar with a wide range of computing languages (e.g. Fortran, C, C++, Java), operating systems (e.g. Windows, Linux, Unix, Mac OS X), and application software (e.g. Perl, Matlab, Tcl/Tk). Rob has been registered with the NFA as an Associated Person since 6/19/2008 and has been a listed Principal of RCM since 9/02/2005. Age: 45 | | |
| Ownership and Compensation | | | The firm is equally owned by the three principals and has been since inception. There are no plans for further ownership changes.  None of the principals have outside business interests or conflicts.  The three partners do not earn a base salary although each receive a guaranteed payment amount each year. Any residual income is distributed to employees as bonus or re-invested in the firm. Non-partners are compensated through a base salary and discretionary bonus. | | |
| Business Experience | | | The team has been running Revolution since inception and has experience building a team and infrastructure successfully. | | |
| Reference Checks | | | Harry Ploss, Managed Futures Worldwide, The Ploss Family Office, Addison, TX. Mr. Ploss runs a book of 25 CTAs for a family office outside of Dallas TX and has been an investor in the Alpha strategy for “several” years and before RCM teamed with DUNN. He first invested with RCM because he thought the strategy was different and believed Michael Mundt was talented and decided to hire him. When RCM launched Mosaic with DUNN, Ploss considered investing but the minimums were too high for his fund at the time. Ploss believes the Alpha strategy is quite different than trend following and also trades a lot in interest rates. Ploss has been disappointed with recent performance but has been disappointed with managed futures in general. Given the recent sharpe ratio of the fund, he does not think he would invest with them today. When asked if he was considering redeploying into other opportunities, he said he is always looking for new opportunities but performance hasn’t gotten to the point where he’d pull money. Ploss currently has $2.5M (of the Program’s 16.8M). We asked Mr. Ploss about his diligence process and in particular the auditor the firm uses for the Alpha Fund. Ploss said he does not trust audits and is why he invests through SMAs. However, he did indicate that published performance of the program is consistent with statements and records.  Linda Chu, Operations and Accounting, ISAM LLC, New York, NY  Ms. Chu works in the operations department of ISAM, which had an account traded by Revolution (Alpha model). While Ms. Chu could not comment on the investment team or strategy (other than they were easy and friendly to work with), she was able to verify that ISAM had reconciled monthly returns for their account with the Alpha Fund published numbers. She confirmed that these numbers were always consistent and there was never a discrepancy. | | |
| Litigation | | | None | | |
| Offices | | | Broomfield, CO is the primary office and RCM maintains a Chicago Office in name only where Jim Curley is located. The establishment of this office is to meet NFA guidelines and the firm does not run any operations out of this location (141 W Jackson, Ste 3520, Chicago, IL 60604). | | |
| Assets | | | Assets under management as of May 1, 2012:  Alpha: 17.3 million  Mosaic\*: 914 million  GSI: 18.4 million  TOTAL: $949.7 million    \*Note that economics are split 50/50 with Dunn Capital for Mosaic Fund assets. | | |
| Investor Base | | | Investor base of the Alpha Program is approximately:  Private Pools: 10%  Individual Accounts: 80%  Institutional Accounts: 10%  Employees account for 50% of the assets in the Alpha Fund (~$1M) | | |
| Systems | | | All systems are proprietary and run on Apple hardware. Systems were all built internally and the firm utilizes broker reporting systems in certain circumstances to reconcile client accounts. The team utilizes Nagios, an opensource software that tracks all servers and systems in real-time. The systems are monitored by employees 24 hours a day and an assigned team member is designated “on-call” each week. | | |
| Disaster Recovery | | | Documents: critical hard-copy documents are stored at the main office in a locked enclosure. Critical electronic documents (both originals and copes of hard documents) are stored on a secure, remote, commercial site using RAID5/6 array ([www.codesion.com](http://www.codesion.com)). DVD copies of documents are made periodically. Backup status is reviewed and maintained at least once per month, and more frequently as necessary.  Data: data is stored at the main office on a RAID6 array. Data is also archived on a RAID1 array at a location distinct from the main office. The firm maintains two servers offsite in Chicago at 7 Ticks technology consultants. | | |
| *Concerns* | | | While the team has a track record of more than 5 years, the key partners all have math and engineering backgrounds and lack trading experience. We believe the track record coupled with extensive programming experience offsets this lack of trading experience. | | |
| Service Providers | | | | | |
| Legal | | | Justin Konrad and Brendan Chatham of Hutchinson  Black and Cook LLC (Boulder, CO)  921 Walnut Street, Suite 200, Boulder, CO 80302,  Phone: 303-442-6514, konrad@HBCboulder.com. [5 years] | | |
| Accounting/Audit | | | Accountant:  Ramin Karimi of JBSK CPAs (Longmont, CO)  Phone: 303-651-3626, ramin@jbskcpas.com. [5 years]  Auditor:  Joseph Mazza, CPA of Compliance Supervisors Inc. (New York)  Phone: 732-335-5740, jmazza@compliancesupervisors.com. [5 years] | | |
| Brokers | | | Various depending on client selection.  Trading Desk:  Kett Carr of Financial Consortium International LLC  141 W. Jackson, Suite 3520, Chicago, IL, 60604  Phone: 312-726-4939, kett@fcillc.com. [3 years] | | |
| Administrator | | | JBSK (accountant) reconciles on monthly basis but do not have an independent administrator. | | |
| *Concerns* | | | The firm does not have an independent administrator since most clients in the Alpha strategy maintain SMA’s. In addition, the auditor used by RCM is not a “big five” auditor that is widely known. Therefore, we conducted our own due diligence on the firm and learned the following: Compliance Supervisors Inc (CSI) is a boutique auditor that focuses on futures and commodity managers. Joe Mazza is a CPA, a member of the AICPA and was formerly a compliance auditor with the National Futures Association (NFA). Conversations with Mr. Mazza provided comfort that he is qualified to audit and the numbers provided to us are verifiable and accurate. In addition, several references provided were able to confirm that the numbers used in our analysis matched their returns. Due to the predominance of separate accounts in the managed futures business, it is not uncommon for CTA’s to use smaller auditors given that the separate account holder is responsible for their own audit. | | |
| Investment Process | | | | | |
| Investment Philosophy | | RCM believes that news can cause nearly‐instantaneous adjustments in market prices (per the efficient market hypothesis, or EMH). However, real news/information is rare. The remainder of the time, markets generate their own dynamics. In this regime, patterns in prices can and do arise (in contrast to the EMH). With a rigorous systematic, statistical approach, these price patterns can be targeted by trading algorithms. | | | |
| Investment Process | | When RCM originally was devising the Mosaic fund they researched many models over a range of indicators and time scales. They then broke this universe into non-trend and more trend-like models in an effort to create a fund that would be relatively independent of trend models and thus be complimentary (and marketable). That was the genesis of the Mosaic fund, which makes up the bulk of the fund’s assets today. Up until 2006 the Alpha system was more of a traditional trend-following system. It wasn’t until August of 2006 that RCM adopted the current set of models that drive the strategy today. Given that the firm had research on several models that had moderate correlations to trend following as a part of the development of the Mosaic program, these models subsequently became the basis for the Alpha fund. Many of the same concepts are used across the funds but given the higher correlation of the Alpha fund models to trend-following, there is no direct overlap between models in Mosaic and models in Alpha. Other than some tweaks made in 2009 where RCM “refined the protocol” by making incremental changes to generalize the models slightly to be effectively traded across all current models. The strategy has largely been unchanged for many years.  Models  The seven primary models that make up the Alpha fund today are different variations of the same trend reversion model. In its most basic sense, the trend reversion model is designed to look for corrections in trends and to put on positions in anticipation of a resumption of the original trend. In researching the strategy RCM had many variations of this model, most of which were relatively highly correlated to one another and thus had less benefit including in the same program. The seven models identified today are the result of filtering through the various iterations and removing idiosyncratic issues. The models are summarized below:    All models run across 34 markets. Each of the Trend Reversion models and are driven by different indicators of price level versus trend versus steepening of the trend. All reversion models can be actively traded at any given time. Models 3 & 4 work in conjunction to provide a conditional trend/counter trend indicator and the trend model is used as an extreme hedge versus the countertrend program.  Below is a current breakdown of risk allocation across the different model time frames:    Risk allocation levels are reviewed twice per year and are changed once per year.  Trend reversion is unique in that it will not participate in a gradual trending market the way a trend-following model would, nor does it put on a position in anticipation of the exhaustion of a trend the way a counter-trend strategy would. It will participate in a portion of a trend should a trend break down and assumes that the trend will ultimately resume. As a result, the trend revision strategy participates only in a portion of a trend and will have only modest correlation to trend-following over time. The strategy is expected to have a 0.5 correlation to trend-following (measured by monthly Barclays or NewEdge CTA performance) over the long term but may be as low as 0 or as high as a 0.8 correlation to trend-following in the short and intermediate term (less than two years). The holding period “sweet spot” for the strategy tends to be in the 3-40 day period, which is a shorter time period than the average for the underlying trends (normally 100 to 150 days or more) and, again, has the effect of lowering but not completely eliminating the correlations to trend-followers.  Trade Allocation  To enter a trade, the models will look for deviations of a trend, and based on their proprietary signals, enter into a trade when the signals indicate that this trend will ultimately resume. Each model has different signals over different time frames and are each based on different metrics (shapes of the trend, typically determined by prices and transformations of prices through calculus – first derivative is slope, second derivative is curvature – and statistics) that will often lead to scaling into the same trade (with a trade defined as a position in a market). Signals will create an “entry region” whereby a position is taken. Trades will close when ether 1) the position leaves the predetermined region, either as a profitable trade or a loss, or 2) the position doesn’t leave the region over a defined period of time, thus signaling a lack of resumption of the trend. There are no explicit stops based on losses, per se, but rather expectations that will be met, not met or not met in a specific time period. Often models will be adding to positions in the face of losses as opposed to reducing exposure.  Each of the models has a particular weight within the system that was determined from the outset based on the constraints and objectives of the fund. Each day each model may generate a trade signal and each of the signals will be weighted and aggregated. The max aggregate signal that can be created will fall between -1 to +1, creating the maximum strength of a signal. The models are often times offsetting each other and a historically high strength number would be a 0.3. Position size is then a function of the strength factor times the account AUM (or trading level) and divided by the volatility of the market being traded. The maximum margin to equity constraint set at the portfolio level is 25% and the average margin to equity is around 8%. All models apply the same to all markets, although some models have historically performed better in some markets vs others. The full listing of the 35 markets is listed in the markets section later in the report.  Trade Execution  Trading is outsourced to Financial Consortium International (“FCI”) in Chicago. Note that Jim Curley, an associated person of RCM, owns FCI. RCM previously traded through UBS before moving to FCI for better execution and service. They receive no compensation for directing trades through FCI and routinely monitor the street for best execution as dictated by the NFA. All trades are entered at the end of each trading day – in the afternoon for Asian markets and evening for U.S. and European markets. Daily price data is received by RCM’s database, parsed, and then run through the models to generate signals and trades. Trades are then automatically transmitted to FCI via encrypted excel spreadsheet and saved on a dedicated RCM server located at FCI. From there, all trades are entered into FCI’s algorithmic trading model and executed. Trades are entered as a percentage of volume and will most closely track a VWAP over certain time periods. Trades are then allocated using the average price system (“APS”) to equalize fills across accounts. Random fills are utilized when APS-ing is not available. All trades are then sent to brokers for each account and to RCM which will automatically reconcile. RCM’s plan is to have the entire process fully automated by year-end. Slippage is also analyzed and monitored continuously over different time periods.  Research  Revolution continually works on improving models and adding time scales. They are currently in the process of rolling out intra-day trading models. These models are being tested in the Mosaic program currently and are expected to be active in the Alpha program starting June/July 2012. The intra-day models are meant to address the following issues: mitigate negative skew, provide additional protection on the downside (when markets are trending down), improve year-over-year consistency.  Manager’s Edge  RCM has a clear edge in its programming and software development capability. In addition, the firm appears to have found a niche strategy in systematic trading that utilizes trend reversals and pattern recognition versus trend following. Although team members are not traders by background, the ability to program models and analyze output for research and development purposes sets them apart from other CTAs. In addition, the traction the firm was able to get through the Mosaic program has allowed them to build an extensive and impressive infrastructure. | | | |
| Risk Management | | Mundt is the primary risk manager and reviews trading positions during each trading day. In addition, Mr. Mundt showed us the software that tracks trading positions versus the historic data driven models and shared his desktop where he reviews real-time exposure levels created by each trade.  The ideal market environment tends to be one of frequently interrupted trends, or said another way, more choppy markets within a longer term trend. The fund will not participate in strongly (or smoothly) trending markets (returns expected to be flat) and is most susceptible to large losses in strongly reversing markets, particularly if the models indicate that the trend was expected to continue. As such, large shocks and market panic, which is often times the best market for trend-followers, are very challenging for the strategy. In an effort to reduce losses, RCM has portfolio level checks, in addition to position sizing level tools (volatility adjusting position sizing), which are designed to mitigate losses. The primary tool is a signal that is generated based on shorter term correlations across markets. The risk tool is binary in that if correlations reach a particular level (considered high but not given) the system will de-lever the portfolio by 55%. Once correlations drop below a level, trading level will resume to the 100% level. The increase in exposure can happen no sooner than three trading days.  In addition, the team utilizes Nagios, an opensource software that tracks all servers and systems in real-time. The systems are monitored by employees 24 hours a day and an assigned team member is designated “on-call” each week. | | | |
| Trade Example | | Below is an example of a trade in the Australian dollar. As seen in both the chart and graph, the model generates a signal that increases in strength as a trend begins to reverse. As the signal increases, the long position size increases. As that reversal ends, the signal strength is highest and thus the largest position size of the holding period is established. The model loses money as the position is put on, but ultimately makes money after the reversal and resumption of the trend. At that point, the signal strength is zero and the model exits the position.      In the example below, a short-term trade in gold is displayed that ultimately was exited at a loss. An upward trend in the price of gold reversed and the signal strength in one of Alpha’s models increased and a position was initiated. The reversal continued and the signal became stronger but did not resume the trend until the signal strength lessened and the trade lost money after only recovering a portion of the initial loss. | | | |
| *Concerns* | | None at this time. | | | |
| Portfolio | | | | | |
| Securities | | 100% exchange traded futures | | | |
| Position Sizing | | Each model generates trade signals and each of the signals will be weighted and aggregated. The maximum aggregate signal that can be created will fall between -1 to +1, creating the maximum strength of a signal. The models are often times offsetting each other and a historically high strength number would be a 0.3. Position size is then a function of the strength factor times the account AUM (or trading level) and divided by the volatility of the market being traded. The maximum margin to equity constraint set at the portfolio level is 25% and the average margin to equity is around 8%. | | | |
| Sectors | | Stock index, foreign currency, fixed income and commodities | | | |
| Markets | | Agriculturals  Soybeans, Wheat, Soybean, Oil, Coffee, Cotton, Sugar, Live Cattle, Feeder Cattle, Lean Hogs  Energies  Crude Oil, Heating Oil, RBOB Gas  Stock Indices  S&P, CAC, DAX, FTSE, Nikkei, Hang Seng, SFE SPI 200  Non-US Interest Rates  SFE 3-Year Bond, Long Gilt, BOBL, Bund, Schatz  Currencies  Australian Dollar, British Pound, Canadian Dollar, Swiss Franc,  Mexican Peso, Japanese Yen  US Interest Rates  10-Year Notes, 2-Year Notes  Metals  Gold, Copper | | | |
| Exposures | | They will not be invested in all markets at all times. If the program is not invested in all markets, margin to equity will be lower; risk is not shifted to other markets. | | | |
| Liquidity | | Daily | | | |
| Days to Liquidate Entire Portfolio | | 1 Day | | | |
| Pricing | | All contracts are exchange listed with readily available market prices. | | | |
| *Concerns* | | None at this time. | | | |
| Partnership Terms: | | | | | |
| Minimum Investment | | $5,000,000 | | | |
| Redemptions | | Daily | | | |
| Subscriptions | | Daily | | | |
| Fees | | 0% Management fee, 25% performance fee | | | |
| High Water Mark | | Yes | | | |
| Lock Up | | None | | | |
| Concerns | | None | | | |
| PERFORMANCE ANALYTICS | | | | | |
| Comment on performance or any footnotes needed when considering performance of the fund  The Alpha model has generated 10.8% annualized return since inception with approximately the same 10.6% return for a simplified return per unit of risk measure of almost 1.0. The program has done this with no correlation to the S&P 500 (0.00) and a 0.53 correlation to the Barclay CTA index, in-line with its target correlation. The program had a difficult performance year in 2011 due to long-term trendiness in markets with less reversals and “choppiness” but has performed much better YTD in 2012 as markets have become choppier. Not surprisingly, the program’s best year came in 2008 as short and intermediate models were able to capitalize on wild swings in the market and did so despite a panic-driven drawdown in equities during the Fall. | | | | | |