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BUSINESS HEALTH CHECK-UP

Case Study

Company Studied:

COMPANY:
Long Term Capital Management

OVERVIEW:
The following Case Study addresses an amazing Company called "Long Term Capital Management" (LTCM). This is a fascinating story of big time business and the ignored impact of the omnipresent timeless, Ten Early Warning Signals. These Signals can be controlled and converted into profitable success or perilously ignored at the risk of losses and eventual failure.

DATE PREPARED:
July 4, 2007

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Who knows a company better than its Key people?

Nobody does! The collective knowledge of Key Personnel, if properly focused and channeled, can be an omnipotent Profit Improvement force for Top Management in their Profit Improvement efforts.

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CASE STUDY PREFACE

During our three decades of "hands on" Business Survival Consulting" assignments we would constantly push to improve Client profitability. Profit Improvement in one form or another is, of course, the foundation of a successful turnaround.

During this process we clarified and expanded upon three axioms that, to a greater or lesser degree, are generally unknown and/or certainly under utilized in the quest to improve corporate profitability in American Business. These three axioms are:

AXIOM ONE: "Key People Know"

Who knows a company better than the key people in a company? Nobody does! The collective knowledge of key personnel, if properly focused and channeled, can be an omnipotent Profit Improvement force for top management in their Profit Improvement efforts.

AXIOM TWO: "Crisis Avoidance and/or Crisis Correction" constitutes the basic operating environment of most "for profit" companies.

In its most simple approximation, 20% of Businesses are generally crisis free. The next 60% of Businesses are involved in a series of minor and/or serious crises most of the time. The remaining 20% of Businesses are generally moving from one survival crisis to another survival crisis all of the time.

Crisis control is an on going integral component in the operation of a business. Whether it's crisis management before or after a crisis, it is usually a minor to critical crisis factor that must be considered and overcome to achieve profit improvement.

Attempt to objectively look at your company. Is it totally crisis free, usually involved in minor to serious crises or struggling from one survival crisis to another all of the time?

This slope is a slippery slope indeed! Area 1) is a good place and it has traction. It's relatively easy to stay in Area 1). Companies in this Area constantly strive to

improve profitability. They have the time and strength to focus on Profit Improvement as the preferred method of crisis avoidance.

Area 2) becomes more of a slippery slope the closer the company gets to Area 3). Companies in Area 2) above the fulcrum try to improve profitability while attempting to resolve mostly minor and some serious crises which are time consuming and distracting. Companies below the fulcrum invest most of their time and strength in attempting to resolve mostly serious and some minor crises which are distracting to the point of limiting Profit Improvement activity.

Area 3) is home to very slippery footing. There is precious little tolerance for error. Most of the time and strength of Area 3) companies is devoted to business survival crises. Profit Improvement activity in area 3) companies is basically non-existent.

AXIOM THREE: "The Ten Early Warning Signals"

Over the years we repeatedly observed that the problems encountered by our clientele generally consisted of interrelated combinations of ten basic factors.

These interrelated combinations varied with each client company in structure and intensity. However, rarely would our analysis indicate problems of crisis proportions which fell outside of this ten point matrix. Therefore, we eventually concluded that most business crisis situations are preceded by actions or events which are actually definable "Early Warning Signals."

A brief/working definition of each Early Warning Signal is as follows:

#1 – PERSONAL PRESSURE – Business is loaded with personal pressure…sometimes mild, sometimes severe. I lost my first business during the early 1960's. The pressure was extreme. During my 30-year Crisis Management Consulting career Personal Pressure was usually obvious at the upper management level of my clientele. It usually manifests itself in unrealistic denial of situational severity.

#2 – FINANCIAL CONFUSION – Sometimes it occurs innocently. But it always occurs. Worldcom, Enron, Computer Associates, Long Term Capital Management, Penn Central Railroad, General Motors, Ford, etc. Financial Confusion is omnipresent in American Business. This fact negatively impacts profits and inhibits measurable profit improvement.

#3 – ADMINISTRATIVE CONTROL – When corporate leaders are not in control who is in control? Sometimes no one is in control! Management theoretically confers with and executes in accordance with the direction of the Board of Directors. Lots of potential profit disruptive potential with this structure. So, who controls a company if the Administrative (Management & The Board) doesn't? Key and mid-Management people…that's who! These Key people usually have the answers if properly challenged and focused.

#4 – MARKET CHANGES – Markets can change significantly almost without warning. Profits can be decimated and worse, companies can simply disappear.

#5 – “THE PETER PRINCIPAL” – This Early Warning Signal is not self explanatory on its face. “The Peter Principle” is a book, written by Dr. Laurence J. Peter and Raymond Hull. The main point of this book is that “good people eventually rise or are promoted to their respective level of incompetence.” And Dr. Peter and Mr. Hull have a powerful point with their theory. This situation is a definite profit blocker.

#6 – SALES FAILURE – Nothing in business starts until something is sold. Enough sales to operate profitably is a basic component of most business models. Insufficient sales opens the door to corporate failure due to lack of profitability. As sales go – so goes the company, all things being equal.

#7 – INTERNAL POWER CONFLICTS – Accounting Vs Sales, Distribution Vs Finance, Management Personalities Vs Management Personalities, Partners Vs Partners, Directors Vs Management etc…are the equivalent of profit cancer. Internal Power Conflicts are anti-profit improvement.

#8 – HOSTAGE SYNDROME – The first time this Early Warning Signal hit me for what it was occurred in St. Johnsville, NY. My Client was hostage to a Bank who insisted that my Client hire a full time CPA to complete monthly financial statements. This same Client was also hostage to a customer who accounted for 50% of gross sales. Between the perpetual audits and a slow paying major customer, profits evaporated and so did my Client. The Hostage Syndrome can definitely impede or eliminate profit improvement.

#9 – MANAGEMENT PERSONALITY – What is the Management Personality of your company? It can be hard charging, hyper analytical, slow to react, impulsive, weak willed, strong willed, kind, brutal, profit motivated etc. A Corporate Management Personality will set the tone for profit or loss, survival or failure. What is the Management Personality of your company?

 # 10 – RAPID GROWTH – The success and rapid growth of a company can be the precursor of failure. Rapid Growth controlled and managed is a great and coveted event for profit oriented companies. But be careful that rapid growth does not become uncontrollable or worse times could be just around the corner.

We then gradually developed and perfected a formal and quantifiable system of rapidly evaluating the strengths, weaknesses and Profit Improvement potential of Client companies based on this axiom. The “Ten Early Warning Signal” AXIOM is the unique glue that solidifies our Profit Improvement concept. Then, through our “Business Health Check-Up” program the individual and combination factor impact of these Early Warning Signals is computed.

The following Case Study addresses an amazing Company called “Long Term Capital Management” (LTCM). This is a fascinating story of big time business and the ignored impact of the omnipresent timeless, Ten Early Warning Signals. These Signals can be controlled and converted into profitable success or perilously ignored at the risk of losses and eventual failure .

LONG TERM CAPITAL MANAGEMENT

Before I offer my synopsis of the rise and fall of LTCM, let me tell you about a little something that I learned as a kid playing poker and blackjack.

I started playing cards with older, more experienced kids. I consistently lost! After several weeks of losing, I thought I must have been doing something very wrong. So, I brought a couple of books that explained the "odds" of success in various card-playing situations. I then played hundreds of solitary hands of draw, five and seven-card stud and blackjack…the games of choice in my world. I memorized the mathematical probabilities and I then reentered the local teenage world of gambling. I continued to lose most of the time but now I sometimes Won!

Something was still wrong! After a couple months of mostly losing and occasionally winning, it hit me! What a jerk I was! It was right in my face and I missed it. My problem was that I played short. I did not have a real "bank roll." I did not have enough of a cushion to buy the time to allow the math probabilities to work. In addition, when I had a hot hand I did not have the money to build the pot to create a score.

The solution was simple. However, it took me a while to achieve my goal. I went to work. I mowed lawns, ran errands, sold stuff and eventually I accumulated about $200…a lot of money for a young kid in the 1950's. I carried $1's, $5's and $10's in my wallet, in my pants pockets, in my socks, in my cap, in my zippered belt, etc. I had much more money than the entire pool of other players but they had no idea about my bankroll. At this point I started to consistently WIN! The math worked consistently "over time." That's one of the things I learned as a kid – money buys the time to allow the math probabilities to probably work. The math probabilities didn't work every time, but they did kick in a lot of the time. A relatively high percentage of the time I now won, I felt smart and I felt good.

During the last three years of High School I made $50 - $100 per week playing cards. I did so because I learned that "money buys time to allow the math probabilities to work." This axiom works in the world of business also.

The gang at LTCM was, to a person, brilliant. I could never hope to begin to compete with any of them in the smarts department. I would never have played cards with any of those guys.

Many of these guys were Harvard or MIT MBA's. A couple of these guys were Nobel Prize winners for their financial modeling creativity. But somewhere along their LTCM path they ignored the axiom that "money buys time to allow the math to work." Their story is amazing and amazingly short.

I wish to acknowledge my LTCM information source. Roger Lowenstein wrote the book, "When Genius Failed" – The Rise & Fall of Long-Term Capital Management. This book was my reference source. It is really a great and exciting book…well worth the read. Prior to reading Mr. Lowenstein's book I had no intention of using LTCM as a case study for my **Early Warning Signal** hypotheses. However, after reading Mr.

Lowenstein's extremely well written and very detailed book, (my reference source,) I had to use this book to explore the interplay of my "**Early Warning Signal Theory**". Thank you Mr. Lowenstein for creating a great piece of work.

THE BEGINNING

John Meriwether was a top-level partner at Salomon Brothers. He expanded the Arbitrage Group at Salomon and staffed it with a group of super bright people.

This group had the financial creativity and mathematical expertise to develop probability models that tended to predict Bond spread aberrations and the correction probability thereof. This team created models that generally simplified a small, very complicated segment of the Bond Market.

Their system incorporated "time impact" as a major component. They premised that:

- Given sufficient time, markets tend to comply with the model.

- Given sufficient time, markets tend to stabilize and volatility is diminished accordingly.

- Given sufficient time, diminished volatility reduces the current time pricing premium, thereby creating profit spread opportunity on the hedge.

- Given sufficient time and capital these super bright guys believed they would win an overwhelmingly high percentage of their hedge bets.

Having perfected their theories and gaining a world of experience this group left Salomon Brothers almost en masse. Under the Merriweather leadership they formed LTCM and commenced operations in early 1994.

Amazingly, this relatively small group rapidly raised approximately $1.2 Billion. This funding meant that LTCM was the number one funded start up in history. In addition, they did it under a veil of general secrecy and an over abundance of intellectual arrogance.

LTCM had an interesting hedge fund operating theory consisting of, but not limited to, the following components:

- LTCM would charge a high fee of 25% of the annual profits.

- LTCM would also charge an annual fee of 2% of client assets.

- LTCM would directly leverage its capital at a rough ratio of $1 in capital to $30 in assets.
- LTCM would borrow large sums to effectively multiply the indirect leverage impact into the financial stratosphere.

- LTCM would need and would "buy the time to allow the models to work" because the investors were required to commit to lock-in their LTCM investment

for a minimum of three years. This provided a solid financial operating base for LTCM.

During early 1994, LTCM looked just super. The only Early Warning Signal that might have been perceived by management was **"Management Personality."** However, the resented arrogance of certain of the Partners plus Merriweather's penchant for secrecy certainly had not visibly hurt them during start up of 1994.

At year-end 1994, LTCM reported earnings of 28%. They were in the zone. It was amazing! At year end 1995 LTCM reported earnings of 59%. This was incredible. Could it be just too good? This growth factor probably triggered John Merriweather's concerns. From my perspective the **"Rapid Growth Early Warning Signal"** would have absolutely been in play. But with earnings of 59% it would be a rare company that would have been concerned about the impacts of rapid growth. In my world I would be pleased but concerned. However, my world is small and the LTCM world was really "the world."

It gets better! The capital of LTCM was, at the end of 1995, approximately $3.5 Billion! Capital was almost triple the start up capital of $1.2+/- billion. The leverage appeared to be right in line with the $1 to $30 ratio that Merriweather pre-established. However, the borrowed fund monies were not really defined. Even the lending banks weren't aware of the financial structuring intricacies. At year end 1996 LTCM reported earnings of 57%. This equated to profits of slightly over $2+/- Billon. This small group of around 100 employees and partners earned more than many huge US name companies. This success just seems incomprehensible. If this wasn't a strong "**Rapid Growth Early Warning Signal"** then there was no such thing. These guys were flying faster than sound. No one ever did this type of thing before.

The LTCM people knew that they were breaking new ground. They knew that they made more money than other brokerage and hedge firms. They knew that these great things happened because they were just smarter. It looked to the world that they were in fact, smarter! This self acknowledged and publicly acknowledged smartness wasn't too far removed from stark arrogance. In my opinion what LTCM management should have seen was a super smart, incredibly successful, very arrogant "**Management Personality** Early Warning Signal" emerging or already solidly in place. This **Early Warning Signal** is much more evident now than it was when it first flickered in early 1994. In my opinion we now have two **Early Warning Signals** in play – **"Rapid Growth**" and "**Management Personality**." But for practical purposes who the hell would care about some **Early Warning Signal** crap at this stage. LTCM was just minting money.

In the world of business there is an adage, "Excess profits breed excess competition." The incredible profits of LTCM had, by mid 1997, drawn most of the world's investment banks etc. into direct or indirect competition with them in a finite market niche. It took a while, but the bigger guys figured out the LTCM operating strategy to a greater or lesser extent. The LTCM margins were now being squeezed by this "excess competition."

To counter the bond derivative competition LTCM moved into other territories. They knew that they were smart. They had the models. They had the success track down cold. So why not switch gears and expand into new fields. Could these new areas be that much different? LTCM didn't think so. They would now simply leverage their mighty intelligence.

LTCM began to aggressively play in new areas of the investment world. As always, they were highly leveraged. But now they didn't have their niche market segment experience edge working for them. Compounding the high leverage and unacknowledged inexperience level was an incredibly myopic attitude of overconfidence.

As LTCM transitioned from operating in familiar territory to operating in unfamiliar territory, the **"Early Warning Signal"** impact now begins to come into serious play. Certainly **"Rapid Growth"** and **"Management Personality"** had been technically in play for some many months. But so what! Nothing seriously negative was remotely apparent. The intensity of these two **"Early Warning Signals"** did not seem seriously significant, even in retrospect. However, now things begin to change.

The **"Rapid Growth"** and exceptional profits derived therefrom could not be maintained due to the rapidly expanding competition factor. The **"Management Personality"** was now clearly in play and Management should have picked it up…but they didn't. Their position seemed to say; Of course we're smart, always were and now were invincible too. How can we do anything other than succeed? LTCM was clearly reading and believing their own press releases.

At this point in the LTCM lifespan we could fairly add two additional **"Early Warning Signals"** to our matrix:

- **"Market Changes"** – created by a market share reduction driven by excess competition and entry into new markets albeit by management choice.

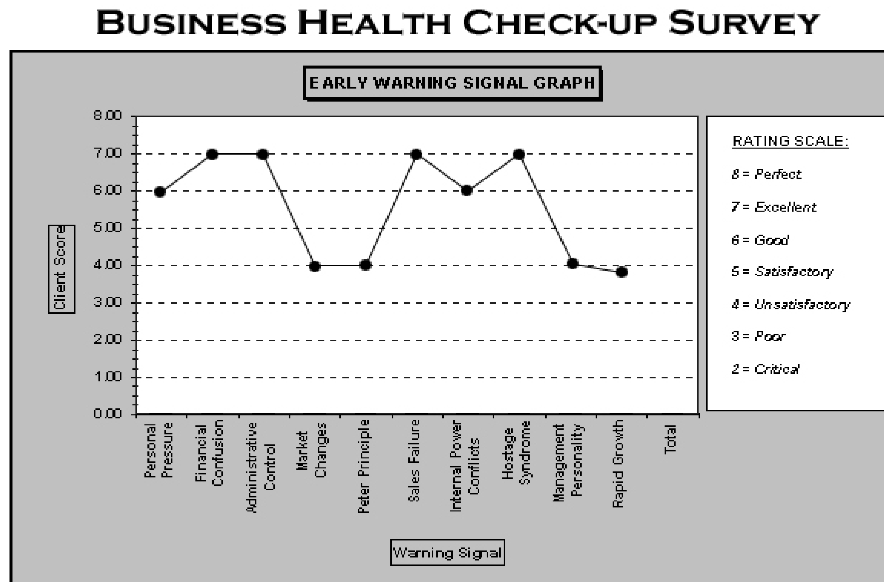
- **"Peter Principle"** – Dr. Peter's principle is simple. "Good people eventually rise or are promoted to their respective level of incompetence." This principle was in play at LTCM because of the Management decision to enter unfamiliar territory…in a massive manner.

In my opinion, four **Early Warning Signals** on a matrix is in fact, a significant **Early Warning** alarm. Depending on the respective intensity factors, this alarm could be minor or very serious.

When viewing the following **"Business Health Check Up Survey – Early Warning Signal Graphs,** the following Scoring Scale may be of assistance.

SCORING SCALE	
Scale	**Description**
2.0	**Critical**
2.5	**Critical to Poor**
3.0	**Poor**
3.5	**Poor to Unsatisfactory**
4.0	**Unsatisfactory**
4.5	**Unsatisfactory to Satisfactory**
5.0	**Satisfactory**
5.5	**Satisfactory to Good**
6.0	**Good**
6.5	**Good to Excellent**
7.0	**Excellent**
7.5	**Excellent to Perfect**
8.0	**Perfect**

At this stage of LTCM's life the LTCM **"Early Warning Signal"** graphic corporate profile would shake out as follows:



The six very positive **Early Warning Signals** are all floating in the "Good to Excellent" intensity levels which equate numerically to a 6.0 to 7.0 range. No abnormal ratings. Looks great!

The four unsatisfactory **Early Warning Signals** are estimated to be floating in the intensity level of 4.0+/-. This substantial, unsatisfactory **Early Warning Signal** block could prompt conceptual questions from LTCM, which might have included but not have been limited to the following:

- What can we do to reduce the market share decline resulting from excess competition in our finite niche market?

- Are our proven and unique skill sets transferable, at consistent levels, to other niche or major market areas?

- Are we really so arrogant that we offend bankers, clients and competitors or is it that they are just envious? Does it matter?

- Is **Rapid Growth** really a problem now if it ever was a problem? Don't we now have a serious **Market Change** problem that might have resulted from historic **Rapid Growth**?

- From a compound rating scale average of 5.55 "Satisfactory Plus" should we take a hard look at ourselves because we feel that we should be rated around 7.5+/- "Excellent Plus"…is something wrong?

At year end 1997 LTCM reported earnings of 25% or $2 Billion+/-. Not as high a percentage as in previous years but a mighty profit nonetheless. This year, particularly

the last quarter was a real bear. On one day, Monday, October 27th the DOW dropped 554 points. The New York Stock Exchange shut down twice to attempt to calm the market. Black Monday with it's 7% DOW market share loss was a very bad day.

As previously mentioned, during the formation of LTCM in 1994, the investors were required to commit their money for a minimum of three years. LTCM decided that at year-end 1997 they would return approximately 50% of their capital to outside investors. The LTCM capital base (investors & partners) was approximately $7 Billion. While LTCM Management explained their position in convoluted terms, the bottom line was that the majority of partners wanted more action for themselves. Some Partners disagreed with the proposed "give back/cram down." This disagreement, in this most critical area, caused the first really significant **"Internal Power Conflict" Early Warning Signal** within the LTCM partnership ranks and it ran deep. Ironically, many outside investors were very upset and angry that they were forced to cash out. During the previous period that they were in the fund they earned $2.80 +/- for every $1 they invested. This equated to a total return of 180%+/-. So, if $1,000,000 was invested in 1994 it was worth $2,800,000+/- in 1997…a super return on investment. We should all be half as fortunate. But these cashed out, unhappy investors, would shortly learn just how very fortunate they really were. They were out with great profits. By forcing many investors out, LTCM had effectively and substantially expanded their risk arbitrage position. By reducing capital over the strong objections of several LTCM partners, the balance of partners must have realized that they were also reducing the equity that previously supported the firm's asset base. Remember, "Money buys time to allow the math to work!"

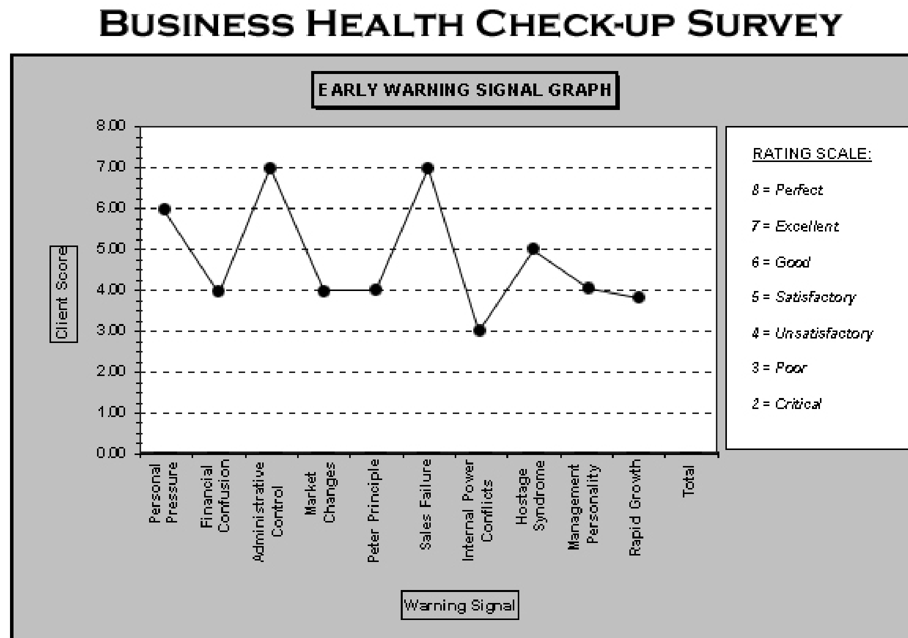
Another **"Early Warning Signal"** was increasingly in play. Because of Generally Accepted Accounting Principals (GAAP) it was extremely difficult to accurately define the derivative investment risks of LTCM. These risks, in accounting lingo, were opaque vis-à-vis transparent. This situation caused the emergence of the deadly **Early Warning Signal - "Financial Confusion"** as a point of concern in our analysis. This **"Financial Confusion"** would hinder the accurate financial analysis process of LTCM management. LTCM had thousands of trades in play every day and the culture change from bond hedging to risk arbitrage seriously expanded risk. LTCM management must have realized that their incredible steady financial control was becoming shaky. I would guess that they knew and generally ignored the situation.

On a positive note, in October, two LTCM partners Robert Merton and Myron Scholes won the Nobel Memorial Prize in Economic Science. They received this award for their 1970's efforts, along with Fischer Black now deceased, in developing a formula that was designed to calculate the "right price" for stock options. This formula is the foundation for what is known as the Black-Scholes Model.

During the December award ceremony Merton and Scholes must have felt the impending doom. Around that same time, Standard & Poors downgraded Russian debt. This "red flag" event and other events were pushing LTCM more and more away from its area of experience and expertise. As Merton, Scholes and Jim McEntire another partner, had vigorously argued, this was the wrong time to jettison almost one half of the fund

equity. Their position did not prevail…in spite of the Nobel Memorial Prize and the public perception attributable thereto. LTCM was now a deeply divided organization.

At year-end 1997 the LTCM Early Warning Signal Graphic Corporate profile might have looked something like this:



This year-end 1997 graphic corporate profile shows very significant negative changes from the previous profile as follows:

▸ **PERSONAL PRESSURE** – remains at the "good" 6.0+/- intensity level. Panic certainly does not present itself at this time.

▸ **FINANCIAL CONFUSION** – has nose-dived from an intensity level of "excellent" 7.0+/- to unsatisfactory 4.0+/-. This is a major drop in a very short time frame. This **Early Warning Signal** is a very important corporate health indicator. LTCM is experiencing serious financial confusion.

▸ **ADMINISTRATIVE CONTOL** – Remains positive at "excellent" 7.0+/-. Thus far this **Early Warning Signal** has not been a factor in the LTCM slide.

▸**MARKET CHANGE** - has not changed from the mid-year intensity level of "unsatisfactory" 4.0+/-. The two pronged market change factors of excess competition and new market entry are, at best, very unsettling. Potentially compounding these two factors will be the unknown impact of a massive investor capital reduction. *Several Early Warning Signal* combination factors to contend with and lots of leverage can create major volatility.

▸ **PETER PRINCIPLE** – remains at the mid-year unsatisfactory level of "unsatisfactory" 4.0+/-. We really don't know if this will be a major negative or a stable **Early Warning Signal** at this point in time.

▸ **SALES FAILURE** – is a non-factor at this point in time. LTCM is in the process of returning approximately 50% of the investor capital it obtained via wildly successful investor sales activity in 1993 and early 1994. In addition, the investor fund proceeds will also be redistributed. Actually the sales related **Early Warning Signal** could probably be rated as "Perfect" 8.0 instead of my excellent 7.0+/- intensity rating. I just never have rated anything as perfect.

▸ **INTERNAL POWER CONFLICTS** – A severe and very acrimonious disagreement between two divergent partner groups seriously impacted LTCM. The divergence occurred over one central issue – to force return 50% of LTCM capital to investors and hopefully make more money for the partners…or keep things just as they were. This issue split the LTCM partnership team into two groups. The decision was probably central to the survival of LTCM. Therefore, in just a few months this **Early Warning Signal** dropped from an intensity rating of 6.0+/- "Good" to 3.0+/- "Poor". This problem would not go away.

▸ **HOSTAGE SYNDROME** – slipped from an intensity rating of "excellent" 7.0+/- at mid-year to "satisfactory" 5.0-+/- at year-end. A 2.0+/- decrease in six months is a clear Early Warning Signal alarm. In this situation LTCM was actually becoming a hostage to the market niche that it had expanded and perfected. With excess competition, the market opportunities were contracting. With LTCM's capital heavily leveraged and focused on this niche market a hostage environment developed to the detriment of LTCM.

▸ **MANAGEMENT PERSONALITY** – had not changed. It was just part of the LTCM mix. It would not matter too much when things were working. But as the storm clouds rose it would come to haunt LTCM.

▸ **RAPID GROWTH** –didn't really change from early on in the LTCM life. This **Early Warning Signal** seems to lose significance as LTCM prepares to reduce capital by 50%+/-.

The **Early Warning Signal** rating scale indicates an average of 4.75+/- "Satisfactory Minus." This indicates a downward trend of (5.55+/- minus 4.75+/-) 0.8+/- in only six months. Of equal or more concern is the indication that six of ten **Early Warning Signals** are rated 4.00+/- "Unsatisfactory" – minus. In my world this condition would have all warning bells ringing because an iceberg was dead ahead.

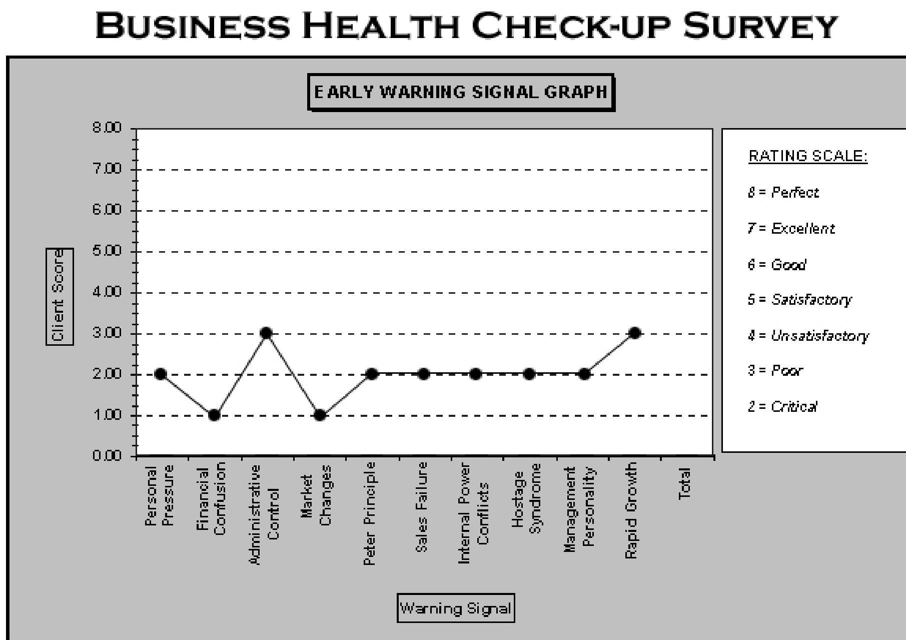
However, why would the management of a company, almost any company and particularly a powerhouse operation like LTCM, ever consider this **"Early Warning Signal"** system as a tool to assist Business Survival efforts? They wouldn't! Objective criticism is usually very unwelcome. In the case of LTCM they were now heading for the peak value of their fund in April 1998. Not only would the "Early Warning Signal" Graph (if it had been used) been tossed in the waste basket, but their own Nobel Prize

winners would have received some good natured and/or serious ridicule for their vehement concerns. Everything looked to be coming up roses. It was the best of times.

And 1998 would also be the worst of times for LTCM. The management of LTCM thoroughly believed in the law of large numbers. This law, in its simplest form is based on the theory that market volatility will, over time, return to predetermined mathematical patterns. The unknown time required to allow the math to work requires sufficient money to buy the time to achieve the predetermined pattern. However the amount of money that is required is also unknown. Both the unknown time and unknown money requirement components will be impacted by market volatility which is also unknown. With three unknowns in a somewhat unfamiliar environment, this is high risk gambling. LTCM certainly knew what the play involved – they were the best. However, now in 1998, their capital was almost half of what it was in 1997. LTCM had severely reduced the available capital to support the unknown money requirement. LTCM had made a significant departure from their perfected model game plans.

In April, a key lender to LTCM, Merrill Lynch, encouraged their own top executives to invest in LTCM and over 100 Merrill Lynch people did so. This was just about the end of the best of times for LTCM as Merrill Lynch would soon learn.

During June LTCM lost 10% of its fund. Russia was staggering toward insolvency. By August, Russia was shrieking a financial death rattle. Then the LTCM world really started to implode and the worst of times would hit like a bolt of lightening. In mid-August LTCM had approximately $3.5 Billion in capital. By early October LTCM was basically wiped out. It is my feel that during August 1998 the final LTCM “Early Warning Signal” graph would have looked something like this:



▸ **PERSONAL PRESSURE** – dropped from "good" 6.00+/- to "critical" 2.00+/- This always happens at the end. The long denied failure potential is now a short-term reality. Irrational attempts to belatedly discover or create some escape route causes extreme anxiety. If they had any real world chance for survival the negative impact of extreme personal pressure would have destroyed that chance. But it is moot because LTCM is finished as a management controlled entity.

▸ **FINANCIAL CONFUSION** – fell from the year-end 1997 intensity level of "unsatisfactory" 4.0+/- to "critical" 1.0+/- "minus." Sure, this situation is now completely hopeless. However, at year-end 1997 very few people would have given much credibility to the position that LTCM was in serious financial trouble. The financial confusion intensity level was estimated at "unsatisfactory" 4.0+/-. This is a serious event for any company. This rating would be a critical business survival event for a highly leveraged financial company. Finance was the base product of LTCM. They didn't manufacture high-end widgets. They moved world financial markets. Financial confusion should have been an obvious wake up call…or should it? After all, LTCM had, at year-end 1997 reported earnings in the $2 Billion range. The majority of LTCM partners were so confident about their future success that they were preparing to jettison approximately 50% of their investor capital base. From a majority partnership basis and an investor basis and a public perception basis, it certainly did not seem as though LTCM was suffering from anything more than too much financial success. Apparently, very few people heard the **Financial Confusion Early Warning Signal** alarm bell ringing. They did not see the iceberg until after it hit.

▸ **ADMINISTRATIVE CONTROL** – throughout this exercise this **Early Warning Signal** had not been a negative factor. At Y.E. 1997 it was estimated at "excellent" 7.0+/-. LTCM was in complete control of administration functions almost until the bitter end. At the very end game phase **Administrative control** did break down. However, it was the last thing to go and was at all times a trailing event. The final intensity level rating of "poor" 3.0+/- is more of a technical result than a meaningful intensity level rating. By the time this **Early Warning Signal** became serious LTCM was a lost cause.

▸ **MARKET CHANGES** – fell from the YE 1997 intensity level of "unsatisfactory" 4.0+/- to the "critical 1.0+/- – minus" level. The **Market Change "Early Warning Signal"** was ironically triggered by fantastic success. The hyper-success of LTCM had caused severe emulation by actual and wishful LTCM competitors. The LTCM financial pool was relatively small. LTCM became the big fish in a small pond. They rapidly succeeded in this finite financial pond. After bigger fish figured out their techniques, to a greater or lesser extent, they too jumped into the pond. Gradually, too many big fish got into this small pond and feeding opportunities diminished. So, "excess profits bred excess competition" for LTCM's area of expertise. To overcome this inadvertently self created event, LTCM decided to diversify. This diversification then self-created one prong of a two-pronged **"Market Change" Early Warning Signal**. The second, self-created prong was the return of 50%+/- of LTCM's investor capital back to the LTCM investors. These two events set the stage for a

serious and negative **Market Change** slide for LTCM. They could not survive in this self-created negative market atmosphere for long.

▸ **PETER PRINCIPLE** – fell from the YE 1977 intensity level of "unsatisfactory" 4.0+/- to the intensity level "critical" 2.0+/-.
In the LTCM case study the classic effect of the **"Peter Principle"** is very apparent when viewed conjunctively with the **"Market Change" Early Warning Signal** event. "Good people (even extremely smart people) eventually rise or are promoted to their respective level of incompetence." Dr. Peter's definition is right on target with the LTCM **Market Change** event. The historic career overview of several LTCM key principals was very similar. They were high-level academic types. Very bright in many ways and yet naïve in many other ways. John Merriweather recruited this group at Solomon Brothers. They grew to become the key players in Solomon's arbitrage group. They grew to become, perhaps, the best arbitrage group in the world. They generally left Salomon en-masse to form, under Merriweather's direction, LTCM. At LTCM they grew to become clearly the best in the world at what they did. Then they reached beyond their grasps. They self elevated themselves to world-class experts in "other" areas. But they could not completely transfer skill sets and experience from one area to another fast enough, if ever. So they indirectly promoted themselves to various levels of incompetence. Perhaps incompetence is too harsh a definition for these guys. They were real world-class players. So, lets just say that their combined level of expertise was impeded by forced repositioning resulting from their market expansion decision…and because of this and other reasons, they effectively lost their company.

▸ **SALES FAILURE** – technically is rated at "critical" 2.0+/-, down from "excellent" 7.0+/- at Y.E. 1997. However, this **Early Warning Signal** is, like the **Administrative Control, Early Warning Signal** and is kind of a non-issue. The LTCM initial sales activity was brilliant…probably an 8.00+/- perfect rating. That was it! After that initially great sales attack LTCM never really sold much of anything outside of derivative etc. sales, of course. The **Sales Failure, Early Warning Signal** was just a trailing piece of debris when LTCM flamed out and crashed.

▸ **INTERNAL POWER CONFLICTS** – fall from the Y.E. 1997 intensity level of "poor" 3.0+/- to the "critical" 2.0+/- intensity level.
This is not really surprising in the greater perspective. Partners fight, argue, disagree, kiss and make up…all the time. A partnership is always a difficult structure because people are always different. John Merriweather as the "more" equal partner seemed to be able to control and channel this group of brilliant, highly educated, independently successful, independently wealthy, generally introverted partners. However, a real split occurred when the plan to "give back/cram down" 50%+/- of the investment money to the outside investors was debated. This plan, and the eventual event, really caused a severe **"Internal Power Conflict"** within LTCM when it happened. As it turned out this hotly disputed event was one of the weak spots in the LTCM thought process. It was a

fatal error, because "money is required to buy the time to allow the math to work" if it can.

▸ **HOSTAGE SYNDROME** – did kick into play at YE 1997 with a 2.0+/- intensity-rating drop. But at mid-year 1998 it certainly came on with a vengeance. It rapidly settled at the "critical minus" 1.0+/- –intensity range. The **"Hostage Syndrome"** – was a very late bloomer. It occurred at the final stage of the normal existence of LTCM. It was simple, really! It should have been expected as a serious end game risk in the LTCM models. Maybe it was?

Because of the major market positions of LTCM in all of their invested markets, they could not significantly reduce their position/risk without creating a market wide downturn. This major market downturn would simply drive down LTCM's position further and faster. They could not liquidate a major position without running a great risk that they would create a run on their liquidity which would destroy them. And they couldn't buy into their position markets because they didn't have sufficient capital to do so. They gave that capital back to a lot of their original investors. LTCM did a favor for these cashed out investors but did no favor for themselves. This **"Hostage Syndrome"** was self-created but it completely hog tied LTCM in their **Business Survival** end game play. If any end game play really existed.

▸ **MANAGEMENT PERSONALITY** – fell from the Y.E. 1977 intensity level of "unsatisfactory" 4.0+/- to the "intensity" 3.0+/- level of "Poor". The **"Management Personality" - Early Warning Signal** was in play from the "get go." It didn't change much throughout the four and one half years of the LTCM independent existence. Because of their intellectual arrogance, many of the LTCM partners were resented or disliked by many of their lenders and investors. This didn't mean much when the partners were making money. What it did from the start, was lead to false feelings of invincibility. Most of the partners generally felt that, in the end, they simply couldn't lose. This feeling of invincibility was probably the driving force behind the partner group that won out in the capital "give back/cram down" decision. This decision has been picked up, not only under the **"Management Personality"** but also under: **Hostage Syndrome, Internal Power Conflicts, Peter Principle, Market Change and Financial Confusion.** This is called an **Early Warning Signal "Combination Factor"** in my world. It has been my experience that a two level **"Combination Factor"** is usually reason for immediate alarm and action. A hard, six level **"Combination Factor"** is rare and fatal. The hard multi-signal **"Combination Factor"** of these six **Early Warning Signals** is "Critical-minus" 1.75+/-. This would absolutely indicate a Ch#7 liquidation event. However in the LTCM situation, the Federal Reserve actively orchestrated a slow liquidation of LTCM supported by the largest investment firms in the United States.

▸ **RAPID GROWTH** – The impact of this **Early Warning Signal** had occurred early on in the life of LTCM. So there was certainly no surprise with this **Early Warning Signal** at the end of the game. By then, it didn't matter. However, back in 1995 **"Rapid Growth"** was very evident as a risk factor through our,

after the fact, **Early Warning Signal** system postmortem analysis. It is paradoxical. Business growth is necessary and good. But too much business growth can destroy a business just as fast or faster than no or slow growth. It is analogous to driving a powerful sports car. The car can travel at say 150 MPH. However, the road traveled can safely accommodate speeds up to 60 MPH. A good or great driver may be able to handle the car at the maxim speed for a few or many miles. But sooner or later that rapid speed and limited road quality overcomes the driver and a crash occurs. LTCM was a great driver for many miles and then they crashed and burned.

In drawing an overview of the LTCM situation from Mr. Lowenstein's book and presenting it as a base for this synopsis, I just glossed over or didn't mention the detail of his book. "When Genius Failed" is really a great read.

From my perspective the first 142 pages developed the history of LTCM. It was very well written, interesting and very helpful to me. The last 94 pages addressed the end game and provided a surprise ending. This part of the book was amazing! Lowenstein turned the story of a Hedge Fund, generally pretty dry stuff, into a thrilling tale. If you read the book you won't be sorry!

Finally, my postmortem analysis of the LTCM events is clearly subjective. The intent of this exercise was to determine if some or all of the **Ten Early Warning Signals** were or could reasonably have been in play in the LTCM demise. I believe that, to a greater or lesser extent, all **Early Warning Signals** were in play. The multiple combination factor potential also seems obvious. Certainly, my analysis could not be precise. However, my analysis albeit, postmortem, seems to be generally accurate. Subjective as I am, I believe that the postmortem analysis of the LTCM events generally supports the **Ten Early Warning Signal** hypothesis in the LTCM matter.

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July 12, 2007