

SELF-RATING A BUSINESS

AN ON-LINE DYNAMIC RATING SYSTEM

WHITE PAPER

Self-rating is a revolutionary internet-based service that allows even the smallest companies to diagnose and expose the hidden fragilities of their business models. The service helps businesses protect themselves from the dangers of excessive complexity which is the primary source of exposure in a turbulent economy.

A RADICALLY NEW LOOK AT RATINGS

CONVENTIONAL RATINGS

As a result of the global financial meltdown and economic crisis, ratings and rating agencies have come under heavy fire. Ratings are highly subjective – two rating agencies don't always issue the same rating for the same company. Moreover, ratings are expensive. Most importantly, rating typically involves interaction between the rating agency and the company wishing to be rated.

A DYNAMIC RATING FOR EVERYONE

A conventional rating process is typically carried out once a year. But in today's turbulent and fast economy this is not enough. A quarterly, even monthly rating should be performed especially in the case of companies that are globally exposed. But why should ratings be available only to the large and rich corporations? The idea behind Self-Rating is to reach every corner of the global economy, including small and medium enterprises. This is why Self-Rating is affordable and is available on the Internet.

REDUCING BUSINESS COMPLEXITY

The goal of Self-Rating is to help companies diagnose and expose the hidden excessive complexity which is the primary source of exposure and structural fragility. This is why Self-Rating has the objective of actually measuring the current complexity of a business and on pinpointing its sources. Businesses that are simpler have the highest chances of surviving the turbulence of our times. The triple-A-rated corporations which have recently defaulted were all highly complex. This shows that tracking the financial performance of a business is not enough - you also must keep an eye on its complexity.

A RATING YOU CAN TRUST

Using ready-to-use templates the process of self-rating takes a few minutes and is fully objective since the User is the only human in the loop. A business owner knows well the financial situation of his enterprise. What he doesn't know is if his business has been affected by a new and deadly disease – excessive complexity. Because a complexity rating is not intended for public use, you can use monthly or quarterly data which you already have and which you can trust.

EXCESSIVE COMPLEXITY IS THE MAIN ENEMY OF A BUSINESS

Highly complex
businesses suffer the
turbulence of the
economy and are
much more exposed
than their simpler
counterparts. Business
simplification across
the board is the key
towards a more stable,
resilient and
sustainable global
economy.

INTRODUCTION

Complexity is a newly discovered and fundamental property of all systems. Its importance is comparable to that of energy. Like with all things in life, a minimum dose of complexity is necessary in order to function. Too much can cause grave problems. A good example is cholesterol, an illness of our modern times. It gives no symptoms and when not monitored may severely endanger one's life. Fortunately, not only we know of the existence of cholesterol, we also know how to measure its level and how to control it. The same may be said of the complexity of a business. However, the production of complexity in all spheres of social life is inevitable. This is so not just due to our lifestyles, but is a result of the laws of physics. Until recently managers were not aware of the fact that complexity can be measured and controlled. Fortunately, today not only are we able to recognize the existence of the problem, we are also able to actually measure the complexity of practically any system. This includes, of course, corporations, ranging from huge multi-national firms to Small and Medium-size Enterprises.

Complexity cannot grow indefinitely. The laws of physics ensure that every system can sustain its own specific maximum amount of complexity before it becomes unmanageable and before it loses integrity. This limit is known as **critical complexity**. In the proximity of this threshold systems become unstable. Close to critical complexity a corporation loses resilience, becomes fragile and vulnerable. Prediction of performance becomes unreliable and the business is unprepared to face extreme events (the so-called Black Swans).

High complexity leads to many adverse consequences which managers know only too well:

- Low profitability
- High inefficiency
- Limited growth potential
- The business is unsustainable

Because we are all confronted with complexity on a daily basis it has become almost a matter of common sense to opt, with all things being equal, for the least complex solution when given the chance to make a choice. Many of our every-day decisions are instinctively based on a minimum-complexity approach. This is why managers prefer a lean business model to a highly complex one. Making decisions in a highly complex situation requires more knowledge and resources and is

EXCESSIVE COMPLEXITY IS THE MAIN SOURCE OF EXPOSURE

Highly complex businesses are fragile and vulnerable. They are unable to face extreme events and predicting their performance is almost impossible. Financially healthy companies can still hide high complexity. It is therefore paramount to monitor its value.

generally more difficult. From a practical standpoint high complexity implies:

- surprises are more likely
- high interdependency, numerous constraints
- high uncertainty
- multiple converging stresses, multiple points of failure

COMPLEXITY RATING OF A BUSINESS

Just like in the mentioned example of cholesterol, the state of health of a business is proportional to the difference between the current and limit (critical) value of its complexity. A healthy business functions at a safe distance from its critical complexity. Like with your cholesterol levels, or the balance of your bank account, so with complexity you should know its current value as well as the limits you can safely reach and sustain.

Because everything in life is relative the mere value of complexity of a business means little until the corresponding critical limit is specified. For this reason, it is not necessary for a company to be huge to say that it may be highly complex. In fact, an SME may be closer to its critical complexity than a multi-national concern even though it may have a lower complexity. It's how close you function to your own critical complexity that matters not the value of complexity itself.

Based on how close a business functions to its critical complexity it is therefore possible to issue a complexity rating. We may distinguish five categories of business complexity. Each level is assigned a number of stars ranging from one to five – a five star business being best:

Business complexity is very high. The business is globally close to its critical complexity. Its structure is weak. The business is unsustainable and very fragile. Exposure is very high and the business is highly inefficient and very difficult to manage. It is impossible to make forecasts and define realistic goals. **Rating:** ★

Business complexity is high. The business is highly complex and difficult to manage and control. Exposure is high as well as inefficiency. The structure of the business is fragile hence vulnerable. It is difficult to make forecasts. **Rating:** ★★

EXCESSIVE COMPLEXITY IMPLIES THE ABILITY TO SURPRISE

A system functioning close to its critical complexity limit is able to suddenly develop surprising behavior. In the case of a business this can mean sudden default. The current crisis has provided numerous and illustrious examples.

Business complexity is medium. The structure of the business is fairly robust. Performance predictability is acceptable. Exposure is moderate. **Rating:** ★★☆☆

Business complexity is low. This indicates a robust business structure. Predictability is high, exposure is low. Business sustainability and efficiency are quite high. **Rating:** ★★★★★

Business complexity is very low. This business structure is very strong. Exposure is very low. The business is manageable and it is possible to make credible forecasts. The business is potentially highly sustainable and efficient. **Rating:** ★★★★★

WHAT DOES A COMPLEXITY RATING MEASURE?

A complexity rating of a business does not measure its financial performance. Unlike conventional ratings it says nothing of a company's ability to honor its financial obligations or its long-term probability of default. What it does measure is its current resilience. In other words, it reflects the stability of the structure of its business model. In an increasingly turbulent economy – this too is consequence of the laws of physics – it is one thing to show great long-term growth potential based on exotic math models, having a resilient business structure today is another. This is precisely what a complexity rating reflects – the **robustness of the structure of the business** of a corporation. And this is something that managers and investors should know. For the rest there are accountants and analysts.

HOW IS A COMPLEXITY RATING COMPUTED?

This brings us to the fundamental issue of data. Complexity ratings, just like any other indicator, require data. Because complexity ratings are a corporation's internal affair, data which reflects the true performance of a business on a monthly or quarterly basis should be used. The more accurate and trustworthy this data is the more credible will the complexity rating be. It is in the company's interest to

COMPLEXITY RATING MEASURES BUSINESS RESILIENCE

While conventional ratings attempt to measure a company's ability to honor its financial obligations or its probability of default, complexity ratings reflect the stability and resilience of its business structure.

use for the purpose as many significant business parameters as possible. This is the fundamental difference between a complexity rating and a conventional one – instead of using balance sheets, which are prepared once a year, dynamic and genuine operational data is used for complexity rating. An example of business parameters in the case of an SME can be the following:

- Orders
- Backlog end of period
- Value of production
- Revenues
- Costs for purchases
- Costs for services
- Personnel costs
- Financial expenses
- etc.

A minimum of twelve samples of each of these parameters should be used. In case these parameters are available on a monthly basis, the data will obviously span one year. When data is available with quarterly frequency, the spanned period will be three years. Monthly data is of course preferred because this will allow management to have a near real-time and dynamic picture of the complexity and resilience of a business. In a turbulent and global economy this is a must.

Free MS-Excel templates are available for downloading. It is sufficient to fill-out a template and to upload it to our site for processing - this typically requires around one minute. Templates may be used in their original form or may be modified to suit user needs. Users may of course create new templates for very specific needs. Portion of an example input data set is illustrated below. Each row corresponds to a quarter.

B	C	D	E	F	G
Net Sales	Net Earnings	Total Assets	Long term debt	Number of stores	Ave Sale per trans (\$)
5137.00	249.00	2510.00	271.00	174.00	35.13
7148.00	363.00	3932.00	844.00	214.00	37.73
9239.00	457.00	4701.00	874.00	264.00	39.13
12477.00	605.00	5778.00	983.00	340.00	41.29
15470.00	732.00	7354.00	720.00	423.00	41.78
19535.00	938.00	9342.00	1247.00	512.00	42.09
24156.00	1224.00	11229.00	1303.00	624.00	43.63
30129.00	1614.00	13465.00	1566.00	761.00	45.05

THE GOAL IS A HEALTHY AND LIGHT BUSINESS STRUCTURE

Without a healthy and sound underlying structure a business is potentially fragile and exposed. Moreover, it is unable to safely face the extreme events known as Black Swans.

EXPOSING THE STRUCTURE OF A BUSINESS

The self-rating process synthesizes the so-called Business Structure Maps (BSM). These are built based on the user's raw data. BSMs are of fundamental importance towards the understanding of the structure of a business. BSMs indicate which business parameters are related and which are particularly important. An example of a 10-parameter BSM is indicated below.

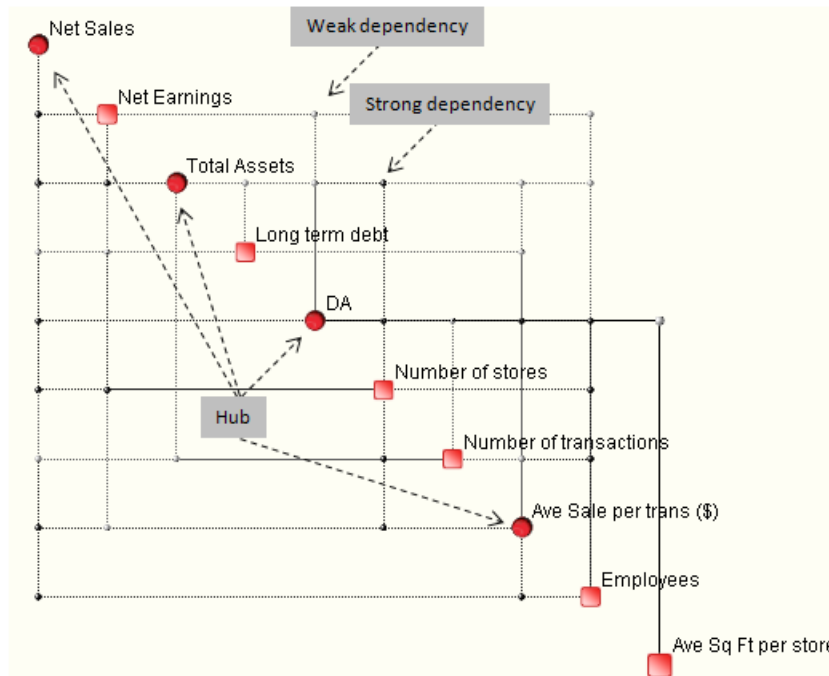


Figure 1. Example of 10-parameter Business Structure Map.

In the Business Structure Map the following components are present:

- Nodes (these are the business parameters) located along the map's diagonal and represented by red squares or discs
- Links – these are either “strong” or “weak” and are represented by black and grey connectors respectively
- Hubs – the red discs correspond to those parameters which are related to the highest number of other parameters

Understanding and BSMs is easy using the interactive MapView™ tool which is available for free downloading at our site. The fundamental business characteristic which a BSM reflects is its interdependency. Being able to visually grasp which parameters within a business are related to each other is of immense value. Running a business means setting goals and identifying constraints as well as feasible compromises. An example is shown below. Positioning the mouse cursor over the node “Net Earnings” illuminates the paths to all the

STRUCTURE AND KNOWLEDGE FROM DATA

Self-Rating exposes the structure of a business process based on raw performance and operational data, providing insight into the interdependencies and constraints that a business really faces.

other business parameters to which that particular parameters is linked. This is illustrated in the figure below.

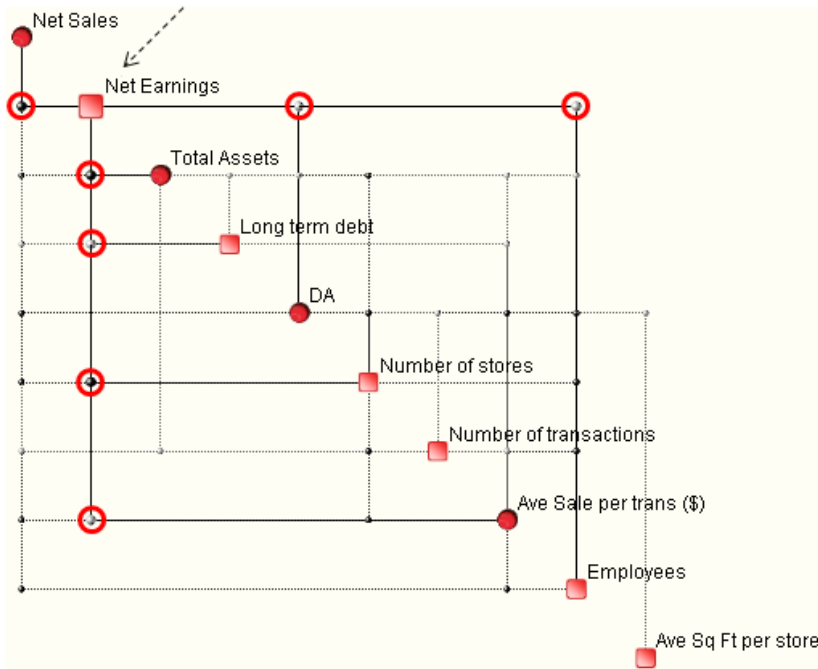


Figure 2. Business Structure Map in which paths to “Net Earnings” are highlighted.

One may note that “Net Earnings” is linked strongly to: “Net sales”, “Total assets” and “Number of stores”. It is also linked in a weaker fashion to other parameters, such as “Long-term debt” or “Employees”. What does this mean? For example, one may conclude that, based on the current business model, it is not possible to alter “Net Earnings” without altering, for example “Number of stores”. If one changes so does the other. This is illustrated in the plot below, which reflects the relationship between these two parameters based on User data.

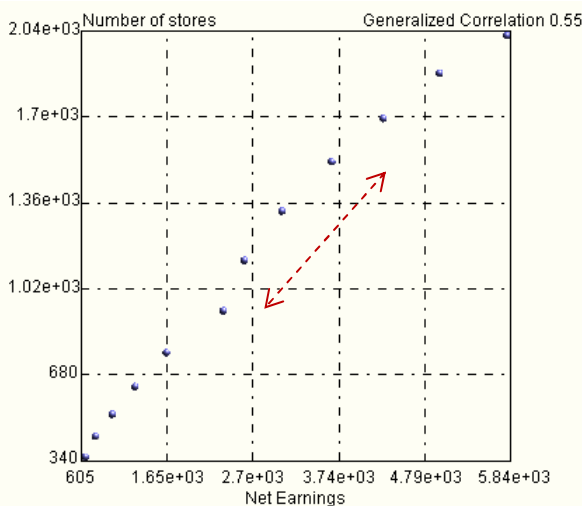


Figure 3. Example of relationship (scatter-plot) between two business parameters.

BUSINESS STRUCTURE – SUPERIOR BUSINESS INTELLIGENCE

Increasing business inter-dependency leads to constraints. These, in turn, make it difficult to implement new strategies or to grow the business.

Business Structure Maps provide superior information necessary for the formulation of realistic and feasible business goals. Quickly.

In particular, it is evident that both parameters either increase or decrease, as indicated by the red arrow. This means that if, for example, the management wish to increase “Net earnings” they must be prepared to increase the “Number of stores” or to change the business model. But the “Number of stores” is also related to “Employees”. Evidently, more stores mean more employees and higher costs. One quickly realizes that even this simple system hides numerous constraints. Modifying the structure of a business is expensive, costly and takes time, not to mention the risks involved. The alternative, at this point, is to pursue higher profitability without changing business structure or strategy. But how can a business become more profitable without modifying its structure? A modern approach is to reduce its complexity.

THE SOURCES OF BUSINESS COMPLEXITY

The most important result of a self-rating analysis of a business is the so-called Complexity Profile which provides a breakdown of the total business complexity as described by the user’s data. Let us consider the case of a large software and services company. Its Business Structure Map is depicted in Figure 4.

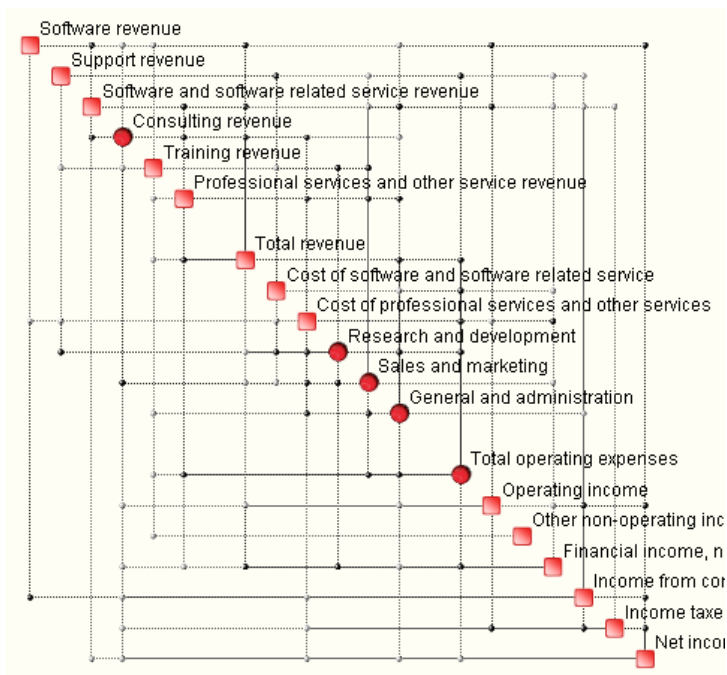


Figure 4. Business Structure Map of a large Software and Services company.

COUNTERING BUSINESS FRAGILITY AND INEFFICIENCY AT THE SOURCE

A fundamental result of a complexity self-rating is a breakdown of business complexity into its components. Since high complexity makes business inefficient and non-profitable it is paramount to counter complexity at the source.

Reduction of business complexity, as has already been illustrated, leads to two beneficial results: it reduces the global exposure and increases profitability. Two birds with one stone. In the case in question the complexity of the business is 15.7, as shown below in Figure 5.

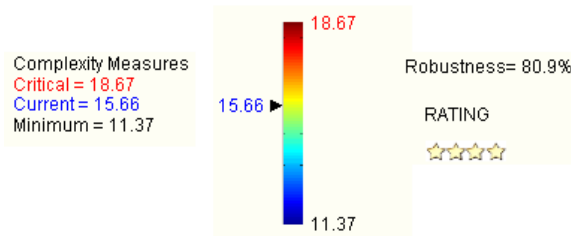


Figure 5. Complexity and corresponding rating of the company depicted in Figure 4.

The critical complexity, at which that particular business becomes fragile and extremely inefficient, is 18.7. Because the current complexity – 15.7 – is at a safe distance from the critical value, this leads to high business robustness (resilience) and a four-star rating. Figure 6 illustrates the business complexity breakdown which is of interest independently of its state of health.

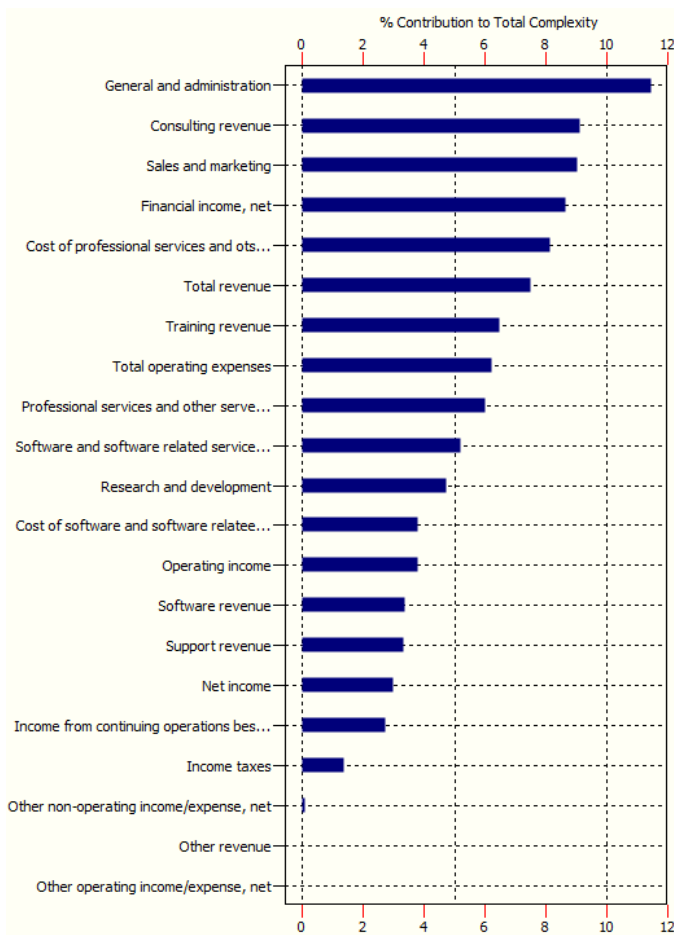


Figure 6. Complexity breakdown of the company depicted in Figure 4.

COUNTERING HIDDEN BUSINESS FRAGILITY

The fragility of a business is often hidden. The recent defaults of banks and corporations have shown that size doesn't make a company immune to the turbulence of an economy. Huge companies can be more fragile than one can imagine.

The top three complexity contributors are “General and Administration”, “Consulting Revenue” and “Sales and Marketing”, totaling approximately 30% of the total business complexity. What is the practical meaning of this? What makes a business difficult to manage are not only the fluctuations in the values of the critical parameters, it is also the fact that are often tightly correlated. Every business is a dynamic network in which information flows according to certain patterns. If these patterns – which are reflected by the Business Structure Map – are unknown, it will be difficult to:

- Establish correct and realistic performance targets
- Make credible forecasts

When it comes to establishing performance targets the interdependency (correlation) between business parameters is what gives rise to constraints.

An example of parameters interdependency is illustrated in Figure 7.

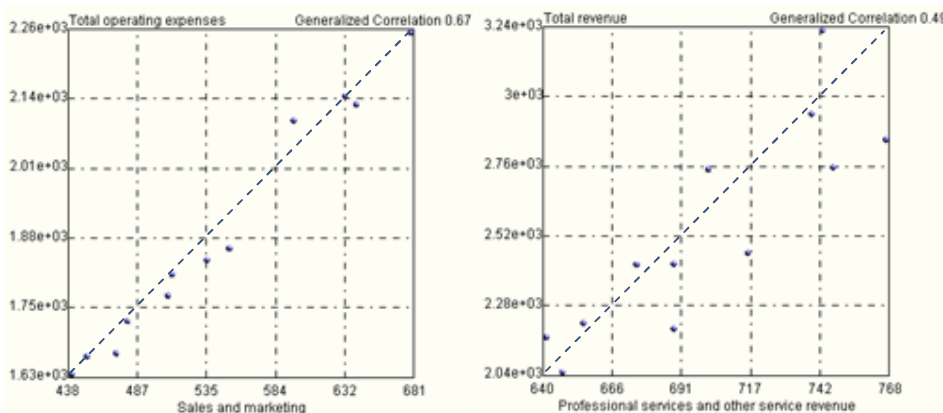


Figure 7. Example of parameter interdependency – crisp (left) and fuzzy (right).

One may observe that the relationship between “Total operating expenses” (left) and “Sales and marketing” is quite crisp. One may deduce that the two parameters are constrained to “move” together. In the case on the right this is no longer the case. In fact when one of the two parameters changes it will be difficult to specify what the other will do. This is natural and is consequence of the fact that uncertainties are present both inside a corporation as well as in its ecosystem (clients, suppliers, market, etc.). The presence of these uncertainties on top of constrains is what increases the complexity of a business producing known adverse effects on business manageability, profitability, stability and exposure. The Complexity Profile provides an invaluable ranking of business parameters and indicates those which are injecting the highest amount of complexity into the business. Is it on these

COMPLEXITY MANAGEMENT – ADVANCED RISK MANAGEMENT & STRATEGY IN ONE.

Managing the complexity of a corporation not only establishes an advanced and holistic means of managing risk – it also constitutes a foundation on which to build a solid corporate strategy for a turbulent global market.

parameters that management should concentrate first in order to reduce complexity. What does this mean? If one is unwilling to alter the business structure (i.e. the business model) the alternative is to “stabilize” the parameters at the top of the Complexity Profile. In practice this means reducing the variability in the values of those parameters. How to achieve this is beyond the scope of this White Paper. The first step is to diagnose a problem and to pinpoint its source. The cure comes later.

SELF-RATING AND EARLY WARNINGS

If there is one fundamental law in business it is the one which states that time is money. Having time, no matter what the circumstances, is equivalent to an advantage. As the current crisis has shown, a prestigious business can collapse suddenly and without early warning. Surprisingly, it can do so in the face of a triple-A rating. Sheer size and is no longer guarantee of business stability. The so called “Too Big To Fail” concept is replaced today by the more appropriate “Too Complex To Survive”. Huge and excessively complex organizations are not only immensely difficult to manage and steer – they hide a multitude of points of failure and sources of surprise which increase with the size of the organization. But also small organizations face the dangers of high complexity. A turbulent and unstable global economy is a threat to millions of SMEs. One way to face turbulence is to be less complex. A less complex and manageable business is able to better respond to unexpected and extreme events. Unfortunately, these will increase in number and magnitude. This means that an apparently healthy company can suddenly find itself out of business. Healthy-looking books don’t necessarily imply a healthy business structure, just like a healthy-looking individual may not be aware of a severe illness.

Because hidden and increasing complexity can cripple a business it is of paramount importance to track it. This is where self-rating comes into the picture. The process is as follows:

- Gather monthly/quarterly data reflecting the performance of your business.
- Run a self-rating analysis.
- Monitor the value of your complexity rating. Be aware that one or two-star rated companies are good candidates for default or take-over.

COMPLEXITY MONITORING - A UNIQUE PRE-ALARM SYSTEM

Sudden changes in the complexity of a business point to potential instabilities. Conventional methods are unable to deliver similar information.

- Any sudden changes in the rating point to potential “traumas” and reflect low business stability.

Evidently, based on the sort of data that is analyzed, self-rating can be done for an entire company, for a subsidiary or for a department or business unit.

GETTING MORE VALUE FROM YOUR DATA

Periodic business self-rating not only allows a corporation to expose its hidden fragilities and provide precious pre-alarm signals. It also establishes a mechanism thanks to which it is possible to add value to the data available within an organization. Data is expensive to collect and maintain. When collected properly and maintained in a rigorous fashion it provides a credible reflection of the functioning of a business.

As the current crisis has shown, conventional techniques of data treatment don't always provide the right answers. Traditional statistics, regressions, or data modeling have serious limitations of which not every user is aware. Unfiltered data hides precious information which new methods are able to expose and make available in the form of actionable Superior Business Intelligence. Our self-rating system adopts such new methods and delivers information which until recently has been unavailable.

The rapid growth of complexity is the main problem facing our global society. In order to counter its adverse effects we must start to monitor and manage complexity at all scales and levels, from SMEs to large multi-national concerns, from financial products to banks, from IT systems to communication networks. Today, the technology to do is available. On the internet.

GETTING MORE VALUE FROM DATA WHICH YOU ALREADY HAVE

Self-rating not only helps expose hidden sources of fragility in a business – it also adds tremendous value to your data.