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Mr. Chairman and Honorable Commissioners:

You have solicited comments on the proposed rule “Executive Compensation and Related Party Disclosure.” Your stated objective for the rule (amendments) is to “provide investors with a clearer and more complete picture of the compensation earned by a company’s principal executive officer, principal financial officer and highest paid executive officers and members of its board of directors.” This initiative is fully in concert with the “SEC mission as law enforcer, overseer of the capital markets, and general protector of investors.”

Introduction

This is the second of three commentaries responding to the SEC solicitation for considered reflection regarding the proposed amendments. The fourteen-year record since the last SEC cycle of “remedy” for disparate executive pay finds that the core issue steadily escalated to crisis proportions – notwithstanding the rules. The thesis was established that the rules in the notorious SEC multiyear “remedy” cycle are addressing one of the effects of a profound change in institutional culpability for business as usual and, as a result, serves to amplify rather than attenuate those effects. In an attempt to provide relevant, constructive PE expertise to support SEC due diligence to its mission, these commentaries will describe and derive the prime movers of this mess from first principles. When you understand the main engine driving the ancient and ubiquitous affair, you can calculate the final effects of a proposed rule, any rule, in advance for yourself.

The SEC, listed corporations, and the institutions it serves have taken the classic stance to the Enron-class scandals. Your position is based on the assumption that once the system rids the business barrel of the “bad apples,” everything will calm down once again to the cherished monotony of business as usual. A recent SEC speech to the listed reinforced the venerable assumption by declaring; “the pig has passed through the python.” The same assumption is promoted by the corporate liability insurance industry for the same reasons. As long as the SEC holds these assumptions, based upon nothing more than tradition and a wish, it will continue plastic surgery to reshape effects rather than tackle the causes.

These commentaries provide you with the sociotechnical platform for understanding the profound change in the context of business as usual that has already taken place - why the flow of scandal continues unabated. The next question the stakeholders are due to ask regarding this timeworn fabric of financial make believe, one-eyed management, and unearned income is likely to be: Why cumbers it the ground? And they are likely to find the scriptural answer ready to their hand.

Executive compensation disparity, the holy grail of inscrutability, is an intended end product of hierarchical driving forces. When the efficient cause is understood, it can be seen that runaway pay oblivious to performance floats along side several other effects flowing from the one wellspring. Among these siblings will be found institutional sabotage of its own viability, downsizing, outsourcing, bankruptcy, and a preoccupation with the exclusive “games” of the hierarchy to artificially inflate the stock price, such as M&A. The head shed angst that arranges the death-spiral exhibit flows from two primary sources beyond its control. The first menace is an increase in the frequency and severity of events that breach the institutional limits of competence. In spite of facades and appearances, there is no central control room, no intelligent design, operating this exposure to raw chance. It is blind drift.

The second threat is continued inflation of the tort wormhole undermining the business judgment rule. Tort is the only legal portal where engineering practice meets business as usual on neutral, objective ground. Large chunks of the event landscape that were legally unforeseeable a decade ago are now well within the de facto

PE standard of care and thereby tortious. While no one controls the flow of disturbing events waiting in the vast cone of the future, engineering can be found at ground zero diligently expanding the tort wormhole. The better we get at pragmatic foresight, the narrower the tolerance of stakeholders for absorbing damage from the willful derangements of business as usual.

A timely example of the first scenario is the response of institutions to the challenges of Katrina. The recently issued report by the House committee provides dozens of cases where institutions were “in over their heads.” This threat is overt and comprehended by management. The second peril to business as usual is institutionally invisible. Thriving within the great blind spot, hazard two is covert and uncomprehended. Recent examples of the tort standard of care in action are Rutan’s Spaceship One and DARPA’s Robocar. So far, lobbying for tort reform is the only countermeasure institutions have taken. As time moves forward, tort wormhole inflation will come into great prominence. Another litigation explosion fueled by trial lawyers representing damaged stakeholders is assured.

Overview

The first commentary provided a scenario, from the perspective of engineering methodology, of the regulator/regulated situation when the listed institution perceives a threat to its central operating benchmarks. Head shed remuneration is about as central as it gets. The preponderance of commentary posted on S7-03-06 speaks to the protracted gross disparity, adds examples, indicates areas you may have overlooked, and energetically supports your amendments.

History records the generic template born a century ago in the Colton case. Taken before a Congressional commission, the great president of the two Great Northern railways lamented that for decades his railroads never came in for reasonable earnings on their invested capital. During his incumbency, however, he increased his private possessions from \$20 to something over \$200 million. His cohorts ran off with so much money as to have merited a couple of decent peerages under the British Crown. It was business as usual in 1905; it is business as usual today.

Hierarchies are uneasy about the perceived degradation in their power because the limits of institutionalism are showing up in public view with greater frequency and severity. The SEC will do itself a big favor by recognizing those limits as intrinsic, enforced by omnipresent natural laws, and incapable of being exceeded by any quantity of leadership zeal. The purpose of the commentary that follows herein is to address the first peril to institutional stability. It will describe and derive the absolute, unalterable limits of institutional effectiveness to deal with those special disturbances, threats and upsets the institution cannot deflect. Institutional ideology has the defects of its qualities.

The span of institutional viability is set by natural law operating on the ideology implemented – and nothing else. The absolute limits are indifferent to the cast of players. Natural law acting on institutional ideology, architect of the limit, commands that institutions can only be held responsible for fidelity to means expressed in rule form, not ends. Only engineering professionals, licensed as individuals, can rationally be held responsible for outcomes. The fortunes of the institution, fixated on the quality of rule-based behavior, are at the mercy of the defects in business as usual to solve problems outside the lines.

The third commentary will address peril two. It will describe what has transpired within the “great institutional blindspot,” the zone outside of institutional perception, authority and control, to compound the growing dilemma for business as usual supremacy. Predicted a century ago, it is the new and material competency within the great institutional blind spot, and not any degrading of business as usual, that erodes institutional superstability and omnipotence. The consequences of this erosion, unmitigated because it is institutionally invisible, is a general retreat to the core values of the hierarchy. The head shed compensation stampede is directly proportional to the perceived rate of erosion of its power and control.

View from the trenches

Compensation opacity is deliberate, not accidental. The source of the great head shed remuneration disparity originates in the limits of the institution's behavior control system – its ideology. As mentioned in the first commentary, the prime mover of pay disparity expansion is the level of insecurity apperceived by the head shed. Since the end of the institution could come at any time and for an increasing variety of reasons, the compulsion is to get it while the getting is good. There are multitudes of independent signs and indicators of this crevice insecurity and frenzied money grab

The span of institutional viability is bracketed by its rule-based means. The profile of disturbances the ideology faces over time determines the net score. When significant upsets happen to fall within the zone of effectiveness, the institution appears to be omnipotent, omniscient and invincible. When important events occur that fall outside the zone, the institution goes imbecile. At this time, unfortunately for us, we have a superabundance of ongoing examples of institutions outclassed by their assigned challenges including Katrina, terrorism, health care, energy, etc. The endless flood of corporate scandals is just one of the gang of indicators. Meanwhile, stakeholder assumptions are whipsawed between habitual faith in institutional omnipotence and the wreckage in their laps from gross incompetence. The reality doesn't fit the vision.

Since natural law cannot be guilty of discrimination, there is no ethical or moral component to the limits. To introduce the human factor, you have to get into miracles – natural law defied. Thereby, any and all attempts to influence those limits by ethics police is the pursuit of the impossible. Do you really care if the engineered artifacts you can no longer live without were designed by convicted felons? Do you ever forgive the designer, when your favorite artifact fails you, because he is a canonized Saint?

Watchdog agencies insert the ethics card into these affairs as a diversion. Morality is frequently used as a cover to protect the myth of institutional omnipotence from sober examination. The use of the ethics card assumes the competency appropriate to deal with the conundrum actually exists in the target individuals – that, if they only would choose good over greed, they could handle the damaging affair with dispatch. The limits of institutional competency trump the ethics card right out of the game. If the problem at hand is within organizational limits, it will be handled by routine process. If the matter at hand falls outside the institutional borders of competency, the hierarchy has no fix to withhold.

When you have been battered with enough diverse examples over enough time, as we have, it may dawn on you as the generations come and go that the spectrum of human subjectivity doesn't seem to much matter in these affairs of hierarchy. You will wonder how all the separate situations all evolve the same – worldwide. When your search of history finds no exceptions, then and only then can your epiphany commence. Yes, there are higher force fields in control here. Get with the program.

The entire issue of today was thoroughly and fully described several generations ago. Thorstein Bunde Veblen's 1914 classic "The Instinct of Workmanship" derived the ideology as observed and reported a century before his time. His works describing the fundamentals herein do not age. His derivations cannot be improved upon. Veblen describes the what and the why, during various epochs, all institutions sport the same ideology.

A condition that falls outside of the span of competency of a regulated institution will also be beyond the reach of its regulator twin. A regulator institution is ideologically prevented from benchmarking any functional requirements the regulated institution cannot provide. Since all institutional ideology is the same, the regulator cannot enforce any benchmark it cannot abide itself. This means that whatever disturbances fall outside of the institutional span are operationally opaque to both twins. As an individual PE, I can describe and derive the governing force fields and you can understand them. But, you are ideologically incapable of acting on that knowledge on behalf of the institution. The purpose here is to help you understand the limits, not to encourage a change. It is enough, as *parens patriae*, that you intelligently avoid attempting to do what you cannot.

Building on the solid foundation left by Veblen, the limits of the fixed ideology in the operational reality were first grounded in natural law by Rudolf Starkermann in the mid 1950s. This distinguished professor of Mechanical Engineering and control theory has extended the application of natural law to all credible social and institutional relationships with precision and unexampled reliability. Starkermann's brilliant works, the series "Feedcross" (ISBN: 3-908730-29-5), do not age. The common denominator of Starkermann's investigations and studies is the focus on the efficiency and productivity of goal attainment. The limits are scribed by the onset conditions of paralysis and the destabilization inflection points. When the institution "gets in over its head," it either turns rigid or it implodes. The many robust dynamic simulations of social relationships configured by Starkermann are freely available for use and independent validation.

The platform for limits

Since the institution functions over time to attain its goals, the natural laws that pivot about time are the most significant to received outcomes. The spotlight thereby goes to the conservation laws, laws of systems and dynamics, and the theorems of communication. Newton's calculus of the motion laws includes time in their constituent equations. All of the laws of systems and dynamics involving time do not execute in linear fashion to completion, but incessantly loop ends back to reshape ways and means. Right away there is collision between the institutional demand for rule-based behavior, linear think, and the looping reality of natural law. Tying results on one shift of work back to improve the goal-seeking procedures in the next shift is, perhaps, the ultimate exhibit of institutional disloyalty. Society is universally keen on sensing the occurrence of loop thinking so that it can be stamped out. What do you mean that harvesting of the life in the oceans on an industrial scale changes marine ecology?

There is no rational way to reconcile our individual duty as *parens patriae* with blatant attempts to defy natural law. The PE can either plead ignorance of natural law, and be hung by his peers, or admit willful negligence, and be hung by tort. The SEC can plead ignorance of natural law with impunity, but to what and whose possible benefit? Personally, I have never found anything worthwhile in various unwitting attempts to defy natural laws. It foots up as an affront to intelligence.

Like it or not, outcomes obtained by institutional process are determined by how the institution leverages the laws of control and communications with respect to the challenges it faces. It has nothing to do with the abstract, subjective legal standards of "reasonableness." This is how, exactly, the PE meets his duty to forecast project failure with perfect reliability long before the fact is manifest. This forecast can be done by computation, completely and scrutably connected to natural law, leaving no residue of doubt. Transparency means zero subjectivity.

Derivation of the zero foresight institution

While everyday experience makes it painfully obvious that institutions have competency limits, the sentinel of those limits is culturally undiscussable. To understand the supreme "keeper of the limit," it will help to understand events as a function of the three orientations to time itself - hindsight, foresight and the immediate present. The basic identity of the "institution" is the strict and aggressive exclusion of foresight. That is, institutions are deliberately foresight-free social groups topped by an oracle. The intrinsic limits of the hindsight orientation to time set the limits of institutional competency. You cannot drive forward with safety assured, indefinitely, through any terrain you encounter, by only using the rear view mirror.

To understand why the institution, any organization, is so hostile to foresight, it is necessary to grasp the organizational theorems worked out by Starkermann from control theory. Starkermann proved, beyond dispute, that only hindsight could act as a substrate to support a hierarchy - no restrictions on group size. He showed further, using only natural law, that institutions are by nature a two-cleft or bicameral system with any managing hierarchy having more than one level becoming parasitical. That is, hierarchies with two levels or more, cannot possibly contribute to goal seeking more than they consume to be on the organizational chart. What's worse, when the hierarchy turns parasite on the goal-seeking workforce, the ideology of the institution splits into two incompatible sets of values (control targets) featuring mutual

distrust. The work force busies itself with the stated institutional mission while the hierarchy is preoccupied with the self-serving value system common to all hierarchies. The fuss about head shed remuneration transparency is a direct descendant of this venerable conflict in value systems used to choose activities.

As will be derived in the third commentary, the practices of what PEs call pragmatic foresight or engineering foresight are seen as an archenemy to hierarchical governance. Starkermann proved that the only organizational structure suited to engineering foresight is flat with a group size of four or less. Engineered foresight is the application of natural law to bring high-fidelity replicas of possible specified future states forward to the immediate present (the future is now), with zero subjectivity. Pragmatic foresight is not prognostication, not crystal ball gazing, and certainly not prophecy. The activities of engineering foresight cannot function at all within a hierarchy. Conversely, when engineering foresight is requisite to effective goal-seeking, there is zero role for the chain of command. The US Department of Defense is going through that wrenching, technology-driven redistribution of power now. If you wish your society to survive, you do what it takes to win the next war.

The span of institutional control

The keyword in limits derivation is control. By control, engineers mean the network of contraptions by which system regulation to a desired state is effectuated by marriage to a goal-seeking process. We live in a world that is designed and control is intrinsic to design. The institution is objectively viewed as a regulator for human behavior with obedience to a rules-based ideology as the control target. The compelling purpose of control is to attain the goal of the system despite constraints, disturbances and perils: despite leak, lag and friction. The institutional goal is high fidelity obedience to rules and authority – the requisite substrate to support a freeloading hierarchy.

The common denominators of the institution, its identity, that maps where it is competent to attain objectives and where it is not, include linear think, rules (ideology expressed) and a hindsight fetish. Since foresight, anticipation and preemption are strictly forbidden practices, the institution is, in control engineering terms, restricted to the spectrum of classic proportional control. As long as the process being controlled exhibits no conditions falling outside of what proportional control can correct (Ashby's Law), it comprises an entirely satisfactory arrangement. As institutions age, they append strict proportional control with integrative circuits that resist rash action. The tribal elders authoritatively restrain the young warriors eager to avenge a raid. Proportional plus integral control is an effective safeguard against institutional instability caused by internal regulatory overshoot. It also paralyzed agent initiatives to deal with the immediate consequences of Katrina. Both of these basic control engineering tools function exclusively by hindsight – reacting to transpired events by executing a set of rules for response. Hindsight is organizationally neutral.

The immutable limit of any system restricted to proportional-integrative control is the limit of hindsight. The serious collisions of limit occur when loyalty to institutional ideology, as the paramount measure by which individuals are evaluated for due diligence, meets a novel operational reality where the rules (hindsight) are manifestly counterproductive. The convenient attribute for students of these collisions is that they are physical/psychological real. No act of faith, as in séance, is necessary. You can witness these train wrecks on the media every day of the week. The most entertaining exhibits, by far, are the hearings staged by Congress. This is Broadway Theater where the hierarchy chiefs are summoned to appear in person to face both their stakeholders and higher authority in a public venue the vested interests do not control.

These days, Katrina provides an endless stream of examples of every size, shape and color. Long after the winds of Katrina fizzled out as a named hurricane, long-predicted consequences continue to propagate and multiply. Institutions at all levels and branches of government are thrust into an opportunity to prove their mettle. What they do, in fact, is reveal their institutional limit in a very public arena, where the victims of this barrier to problem solving can see the human perpetrators of their misery first hand.

The new dilemma for the institution is that the wrecked citizens no longer automatically buy the venerable standard excuse – that responders are only following orders. No one is responsible (for results) and no one is to blame for the damage. The hapless constituents see that obedience to ideology prevails oblivious to the amount of wreckage being caused. If the damaged citizens numbered in the millions instead of the thousands, or the hundreds, the same response would be received. Institutions will only follow orders.

The hearings on the fraud, waste and ineffectiveness of the Katrina disaster response held in late February 2006 and carried live on CSPAN, provided the largest and most vivid display ever of the collision of society's high command with the limits of the institutions – representing all sides. The limit of institutional competency was on display by every institution summoned to the chamber. The hearing staged two prominent exhibits. The first was that no one on any side could imagine an actual remedy to disturbances of this genre. The perfunctory promises of improvement for the future are believed by no one at or watching the hearings.

The second feature is the strong Congressional depression with the collision-as-usual and the futility. The elected have all these damaged constituents, all the promises made that the government would protect and make whole, and the reality that the institutions ostensibly created to deliver on the promises are impotent. No one in the room otherwise is responsible and no one is to blame. Only now does Congress find out that neither Homeland Security nor FEMA recognizes the duty (goal) of disaster prevention! These agencies define themselves only as “response augmenters.” Knowing better by experience, Congress makes no move towards a new alignment of institutions as the answer.

It should carefully be noted that the ubiquitous institutional posture with no one responsible and no one at fault is the hallmark of the legal obligation to means and not ends. Even though institutional charters typically contain material goals to be attained, when litigation time comes the law will hold it responsible only for following established rules and protocols. All institutional defense is, always and only – “we were only following orders.” Both goals and consequences disappear as factors in the institutional equation. Only rules of action remain as benchmark.

It is the same scenario, exactly, that confronts the belated SEC initiative for remuneration transparency. You can readily imagine a Senator asking the SEC commanders why they imposed more rules to solve a problem that rules failed to solve, repeatedly, in the past. The answer would be, of course, that the SEC has formed a new task force to develop tougher rules. Once again, no one is responsible and no watchdog is to blame for the stakeholder damages. Senators witness the same crashes into the same barriers every day, helpless to make a difference.

No one notices much that the Katrina report(s) reads exactly like the 9/11 report(s) and the Challenger/Columbia reports on institutional NASA. Nothing relevant to institutional limits is changed. Dancing around the great blind spot, the answer proposed is always more enforcement of the rules through the chain of command, augmented by lessons learned and more funds for crisis response. The influence of the Challenger disaster on institutional ideology was confirmed by the Columbia disaster. Nothing relevant to avoiding failures of this kind was changed. And so the parade of collisions marches on, as it must.

The threat to the survival of our society is not that natural law has established unalterable limits to institutional competence – limits that restrict your legal obligations to means, not ends. The real peril is the repeated failure to act responsibly on that knowledge. To the extent that the SEC fails to define and accept its institutional barriers to competency is the extent the SEC will augment stakeholder damage. Nothing is more hazardous to our survival than the delusion of omnipotence of institutional process. It does great harm, all around, to pursue the impossible in lieu of the attainable. In the instance here, it is the notion that the next round of rules will fix the enlarging discrepancy.

There is no moral reason why your responsibility as *parens patriae* to the stockholders should be different from that of the PE as *parens patriae* to the stakeholders. The PE is clearly obligated by law to both know and respect the limits of institutional competence. Once you accept the tangible limits set by control theory, you are automatically obliged to exhibit competence in two procedures. The first duty is to prepare a screening examination, a prequalification test, to distinguish in-scope issues from those challenges residing beyond the reach of institutional competency. This task is not only simple, it can be done by anyone in your organization. Clients flaunting the rules is in; Katrina is out.

The second duty is to act on the basis of this limit knowledge. It means to stop before the limit is reached, not after it is breached. You have a duty to avoid pursuit of the impossible when doing so harms your constituents. Stakeholders at risk must also know this limit. Warn all interested parties when issue outcome is beyond institutional containment. Know the difference – upfront. In this instance, tell the shareholders you are powerless to stop the differential escalation in pay. You are.

Since it is necessary to have someone to blame for damage in order to litigate, society only grants PEs to individuals. While licensed institutions can be blamed only for infidelity with means, extremely rare, only individual professionals can be blamed for unsatisfactory ends. This legal obligation implies engineering foresight, which is how you attain ends specified ends in the first place. Individual, personal responsibility for outcomes is entirely rational to the PE. All design originates in an individual and “whoever picks the parts owns the behavior” is an ancient apothegm of engineering. Who else but the design engineer could be responsible for appropriate system performance?

Along with the responsibility for ends, of course, the law grants the PE freedom to choose means. Engineering foresight can only be performed by masterless men. As the PE cannot stop at discipline boundaries in due diligence, he can abide no rules restricting his choice of goal-seeking actions. In stark contrast to the institution, he cannot use the limits of hindsight as an excuse for failure. He is expected to use the full spectrum of control options as appropriate to meet performance specifications. This duty commits engineers to a focus on method toolboxes oriented to the future-is-now. There are several awesome techniques available to the PE in the foresight control category called “derivative.” The compelling purpose of the PE in design is the self-regulating system – found in the foresight section of control theory. The PE knows intimately that only knowledge of system dynamics in the possible future conveys the authority to act.

It is the focus on the future inherent to engineering design that enables the engineer to detect and measure the limits to hindsight-based institutional ideology. We operate squarely in the zone business as usual forbids. The ordinary work of engineering is to deliver results on matters the institution finds nonnegotiable with rules. The engineer cannot imagine reliance on crisis management to compensate, in part, for events that were foreseeable and preventable in the first place. To the engineer, e.g., failure of the N.O. levees was never an option. If cat 5 is possible, demonstrate the levee can take a six, which is exactly how the Dutch live securely below the North Sea. To hindsight, crisis response is the logical partner to account for whatever falls through the cracks. To engineering foresight, defaulting to crisis management is a shameful dereliction of duty.

Business as usual defined

Since rule sets define scope, if the disturbance at hand is contained by the rules, it will be engulfed and devoured. Any matter that extends beyond the rule set is free to run its course until a threshold of wreckage is exceeded. Then, the crisis response factory takes over while business as usual continues along. Event driven crisis/emergency response begins with rescue, damage control and insurance, moving on to litigation, public relations, and image restoration. The end product of the crisis factory is an amended set of rules for business as usual specific to the incident. The intrinsic limits of hindsight are simply inherited by the institution. Authority to act is retained by the hierarchy.

Activity classification by hindsight/foresight

The organizationally neutral activities of hindsight include analysis, forensics, diagnostics, science, accounting, discovery, triage, autopsy, anamnesis, verification, validation, and emergency response – to name a few. Hindsight work ends up as rules of action, the orders to be followed, executed by the obedient to authority. Soon, mission objectives and the consequences of rule-based activity cease to be considered in choosing activity. Only the rules for means remain as the benchmark for selecting appropriate established procedures to execute. It is work for operators.

Foresight procedures based on brute facts, forbidden under business as usual, include synthesis, invention, design, construction, integration, system dynamics simulation, and complex problem solving – to name a few. Pragmatic foresight is part of the premier goal-seeking process – run, break and fix (RBF). It is work for system designers.

The triggers of intrinsic incompetence

To render the institution impotent, the disturbance event exhibits one or more of the following attributes: novelty, rapid expansion of significant damage, sporadic, fast turnaround, little or no warning, difficult to detect in incipient stage. Basically, the variety of the disturbance exceeds the variety available in the PI control and crisis response (Ashby's Law). Legal process will eventually sort out which events count as willful blindness and which are just tortious.

This commentary focused on the span of institutional competency to attain goals and solve problems – limits set by natural law operating on ideology. The plethora of institutional performance failures of late, caused by these limits, validate that one size does not fit all. Executive angst was proffered as the driver to enlarge the disparity in head shed remuneration – the compelling purpose of any hierarchy. Because all regulatory agencies are intrinsically hindsight-based, exactly like the institutions they regulate, they have a special duty to warn their stakeholders when conditions outside their span of effectiveness have developed - that their legal duty stops at fidelity in means, not ends. In those conditions, the SEC can neither stop the damage to stakeholders nor offer any remedy for the future.

The SEC is commended for providing this convenient portal for submitting commentary

William L. Livingston, PE