Why Risk Matters: Deriving Profit by Knowing the Unknown

Enterprises that invest in strengthening their risk-management capabilities are well placed to manage known risks and identify unforeseen ones, thereby reducing risk-related expenditures and accruing greater profits.

Executive Summary

This white paper discusses risk and risk management from a nontraditional viewpoint. It argues that the most critical aspect of risk management is an organization's ability to understand and identify various kinds of risk that it faces. Further, the paper posits that this understanding of types of risk is even more important than the organization's formal financial or operational plans, or traditional corporate strategies designed to identify and eliminate those risks through corrective measures or mitigate their negative effects.

Moreover, it is specifically those risks of which an organization is completely unaware that pose the greatest inherent threat, precisely because their effects are unknown and, thus, unquantifiable. These unknown risks, therefore, have the greatest potential to be the most disastrous to the entire corporate enterprise.

On the other hand, successfully identifying these unknown risks also holds the greatest potential to turn these unknown risks into profit. Unknown risk can be directly linked to unknown, albeit real, financial losses. That is, losses from unknown risk are not even accounted for from an accounting practice perspective. Identifying the unknown risk enables formal accounting of the associated loss. The immediate remediation of that financial loss leads to formal accounting of the recaptured revenues. The enterprise now recoups and formally tracks the additional “cost-avoidance” profit. This cost recuperation and cost avoidance in the future is quantifiable and therefore goes directly to the bottom line as corporate income.

This paper discusses the various types of risk and some well-known historical examples of the potentially disastrous effects of both unknown and unaddressed risks to the corporate enterprise. The paper then presents an approach for identifying risk and formulating a plan to mitigate its negative effects.

Risk at a Glance

A reasonable definition of risk is: “uncertainty in the likelihood of a favorable outcome.” From the opposite viewpoint, “risk is a calculation of the probability of an unfavorable outcome.”

More formally, Funk and Wagnall’s Encyclopedic Dictionary defines risk as “exposure to the chance of injury or loss; a chance of encountering harm or loss.” And Wikipedia defines risk as “...the potential that a given action or activity (including
the choice of inaction) will lead to a loss (an undesirable outcome).”

Risk is an intrinsic part of every activity. Regardless of the activity, managing risk, by eliminating or mitigating its effects, will yield a greater chance of a favorable outcome. Therefore, an important part of risk management is prioritizing how an organization will eliminate or mitigate risk.

If we consider the degree to which an outcome is unfavorable—the deleterious effect of the negative outcome—then we have a metric for gauging the potential severity of loss. The more potential for damage from a given risk, the more important it is to avoid or mitigate the risk. But before an organization can control its risks, it must clearly identify and document the risks throughout its entire operation.

Addressing risk requires a concerted, focused effort across the enterprise that must encompass consideration of all types of risk. Often, organizations have risk that is unknown—they are not aware of its existence. It is these unknown risks that pose the greatest threat to a favorable outcome of an activity precisely because the loss from the unknown risk cannot be identified, evaluated and quantified. Unknown risks are akin to icebergs, with their 90% of unidentified mass looming ominously below the water surface (see Figure 1).

**Types of Risk**

Perhaps nonintuitively, an organization’s vulnerability stems less from its decision about whether or not to address risk and more from its failure to identify the existence of risk and to understand the nature of the risk. Looking again at the definitions of risk above, we see that all risk is inherently related to uncertainty. Uncertainty represents the unknown. Thus, the very nature of risk is the uncertainty of what one knows.

Donald Rumsfeld, former U.S. Secretary of Defense, talks about three categories of risk in his latest book, *Known and Unknown*:

- Known knowns.
- Known unknowns.
- Unknown unknowns.

**Unknown Risks Have a Dangerous Yet Unfathomable Impact Like a Submerged Iceberg**
Although neither the concept of these categories nor the nomenclature are new by any stretch of the imagination, Rumsfeld’s use of these terms during his tenure as Secretary of Defense and now in his recent book has made them dramatically more popular recently in forums such as security and project management Web sites. These types of risk are discussed below.

Known Knowns: Identifiable Risks and Quantifiable Loss

This is, perhaps, the most obvious category of risk, representing risks that are easily identified, even if the extent of potential loss or harm cannot be easily quantified.

A very famous case that gained worldwide notoriety in the 1970s was that of Ford Pinto’s gas tank design. The Pinto was a small, relatively inexpensive car that was conceived to compete with German and Japanese models in the lucrative U.S. domestic small-car market. By 1968, foreign car sales had captured approximately 10% of that market. Thus, Ford wanted to aggressively reduce costs per unit sold in order to be price-competitive there.

Ford engineers knew early on from exhaustive industrial testing that the Pinto’s gas tank would explode upon rear impact, even at very low speeds, as a result of bolts rupturing the gas tank when pushed forward by a rear force. Despite Ford’s ownership of patents on a safer gas tank that would cost only $8.00 per production vehicle – as well as the availability of several other solutions, one costing only $5.08 per vehicle – Ford executive management decided to forego implementing any of the available fixes of the flawed design, which would have mitigated the known risks of the inherent vulnerability of the gas tank design. Ford actuaries estimated that approximately 500 people would die each year in fires resulting from rear impact collisions. Nevertheless, the Ford Motor Co. performed a cost-benefit analysis that concluded that, statistically, Ford would spend more to put a fix into production than it would likely end up paying in legal fees and court settlements.

This is an example of a risk that was well understood and quantified: the risk of not fixing the faulty gas tank design. The risk of financial loss directly related to legal settlements was identified and compared to the loss (investment or overhead) of fixing the faulty design. In this case, the loss that could result from the occurrence of an unfavorable result could be quantified.

While this Ford Pinto exposé cogently explains “known risk,” it also underscores the critical importance of identifying and addressing all risks. The Ford actuaries, engineers, CPAs, attorneys and senior executives failed to consider the risk of financial damage that might result from bad public relations and a loss of customer trust and faith as well as the damage to the brand name,
which took 70 years to develop! While one could argue that Ford is doing well today, four decades later people still cite this example when discussing unethical corporate behavior, consumer issues and so forth. And perhaps Ford would have done much better in the past 40 years had the Pinto case never occurred.

Ford’s decision about how to address the risk was a policy issue, and while risk management policy is certainly part of any comprehensive risk management strategy, it is not within the scope of this paper. Nevertheless, it is intrinsically related to the activity of identifying, calculating and evaluating the degree of potential damage, loss or other unfavorable outcome.

Known Unknowns: Awareness of Gaps in Knowledge
This category represents risks that are known: risks of which one is aware. However, despite the awareness of the existence of a risk, what remains unknown is the extent of the potential damage that can result from it. Simply put, the organization does not know how to quantify or calculate the extent of the potential damage that could result from an unfavorable outcome.

An interesting example of a known unknown risk, and one that is very germane to information systems-oriented discussions, is zero balance accounting (ZBA). Prior to computer software that implemented ZBA, first created by Marshall and Isley (M&I), the majority of corporations did not have an automated accounting system designed to link and capture disparate data, fuse them into a consolidation account and perform granular accounting of their intraday cash and disbursement obligations. Corporations did not have a good way to determine how much cash they needed to cover both their end-of-day (EOD) disbursements and overnight investment options.

If a corporation didn’t have enough cash buffer, there would always be the risk and embarrassment of overdrafts, with resulting interest penalties of 1/360th of the prevailing overnight Federal Funds Rate of the Federal Reserve Bank of New York (FRBNY).

The M&I software accurately tracked corporate banks’ commercial clients’ immediate needs for overnight cash. It supported demand deposit accounting and offered a solution that eliminated the risks in disbursement and accounting regularities.

The crux of this example is that although the problem was understood, there was no known solution to eliminate the risks prior to the M&I software package with its ZBA software module.

Unknown Unknowns: The Epitome of Risk
The last of the three risk categories is called unknown unknowns. This category represents risks about whose existence an organization or enterprise is not even aware. As Rumsfeld commented in his famous “unknown unknowns” speech, “How do you prepare for the unexpected?”

His rhetorical question is all-encompassing: Of course the goal of risk management in any arena is to prepare for the unexpected. Notwithstanding that, one could ask the more focused questions: “How do you identify or discover that which is unknown? And, how can you prepare for something that you don’t even know exists?” This conundrum represents the challenge of identifying risks related to any organization or enterprise.

In the 1980s, the then JP Morgan Bank of New York had 26 different general ledger systems in operation at the same time. Naturally, the existence of these IS/IT systems had intrinsic risk associated with them – as does every other operation and computing system. The “unknown unknown,” however, was that no one in management, audit or compliance in the entire corporation knew exactly how the 26 general ledger systems and their divergent supporting 1,000-plus legacy systems mapped or how they were used in the daily operation of the bank. Because of this situation, the entire bank enterprise was at risk.

In modern accounting, general ledger software acts as a central repository holding formal permanent records for the double-entry control of the accounting data. Typically, data is transferred from modules such as accounts payable, accounts receivable, cash management, fixed assets, property, plant and equipment (PP&E) and purchasing.
In the case of JP Morgan Bank, it has historically suffered consistent financial penalties imposed by both the U.S. federal government and the UK government for inaccurate and incomplete accounting and compliance violations. The bank’s ongoing inability to resolve accounting irregularities was a direct result of its failure to coordinate the undocumented 1,000-plus legacy systems and their intrinsic undocumented financial risks.

For example, in spring 2013, JP Morgan Chase Bank was fined $1.65 billion on receivables of $100 billion that it made in Wales in the UK stock market. And in spring/summer 2013, JP Morgan Chase Bank paid the $1.65 billion in penalties.

An interesting twist to the JP Morgan Chase Bank example is that the bank’s executive management perceived the $1.65 billion penalty as merely a “wheat tax,” or a “cost of doing business.” And after the financial penalties were levied and paid, Jamie Dimon, Chairman of the Board (COB) of JP Morgan Chase Bank, decided not to make capital investments to remediate the IS/IT, process and work flow deficiencies to fix the problem because it was cheaper to pay the penalties than to address the problem. The $1.65 billion penalty represented a 1.67% tax, or merely a cost of doing business.

This example highlights the risk of the unknown — the risk of not knowing the unknown. Unlike the Ford Pinto example where the risk was known at the outset and the company could indeed make a realistic assessment of the extent of the financial loss from unfavorable outcomes, in the JP Morgan Chase Bank case the risk was not known because the cause of the risk was never identified. Therefore, the extent of the potential damage and resulting financial loss could not be identified, monitored, captured, evaluated, assessed or quantified.

But the two examples also share one similarity. Just as Ford’s decision not to remediate the defective gas tank design was a policy decision, so too was JP Morgan Chase Bank’s opting not to fix the problems within its enterprise a cost-avoidance-motivated policy decision. One can conclude, however, that JP Morgan Chase Bank was fortunate that the damage incurred was “acceptable.” This outcome will not always be the case. In fact, it would be prudent for any organization to assume that the unfavorable outcome they experience will not be “acceptable.”

The JP Morgan Chase Bank case exemplifies the notion that no organization can possibly assess the potential damage associated with a risk if it can’t even identify the existence of the risk.

Herein lies the reason that, arguably, unknown unknowns is the most risky category. By risky we mean that either the likelihood of the unfavorable outcome or its impact is greater. This idea can be expressed more formally using the following formula:

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Risk = \text{probability of risk occurring} \times \text{impact of risk occurring}
\]

Monte Carlo theory and Black Swan theory are used in risk management to identify various scenarios and outcomes. An inescapable step in the process of risk management is the need to first identify the jeopardy. One cannot assign, calculate or estimate the probability of an outcome if one can’t identify the risk that could cause that unfavorable outcome. Consequently, the greatest risk always comes from the unknown.

Identifying, Comprehending and Addressing Risk

To underscore the importance of comprehensively identifying all risks, think of the reality that simply because one cannot identify the existence of a real risk does not mean that the risk is not present. Moreover, every activity or endeavor has a unique set of individual intrinsic risks, which makes consideration of risk an imperative for any enterprise. This section focuses on identification and comprehension of unknown risks.

Even for the first two categories of risk presented above, creating a solution to reduce the probability of unfavorable outcomes is a distinctly different activity than identifying the associated risk. Certainly for any company or enterprise, designing a solution is more often than not a nontrivial undertaking that probably involves many departments including strategic planning, project and program management, IS/IT departments, QA/QC, actuaries, statisticians, operations research (OR) and so forth.
**Risk Categories: A Comprehensive Look**

![Diagram of Risk Categories](#)

**Discovery Phase**

To reduce the probability of unfavorable outcomes occurring, one must identify risks, understand and document them and make plans to eliminate unfavorable outcomes or mitigate their effects.

In the first two categories of risk, the risks are known even if not documented. In the known knowns category, the risks are known explicitly. In the known unknowns category, too, the risks are known although the solution to eliminate or mitigate the effects of unfavorable outcomes is not known and has yet to be developed.

However, in the unknown unknowns category, neither the risk nor the solution is known. And this category is the one that needs the most attention in any organization.

Perhaps unfortunately, there is no formula or esoteric theory that explains how to uncover unknown unknown risks. But the process is relatively straightforward, albeit it requires a methodical effort of a certain kind.

Before getting into that method, it helps to first analyze the problem in more depth. In many organizations, individuals know their job functions, even if they are not formally documented. However, there might be only a few people who understand an organization’s entire enterprise-wide processes or work flows from the top down, particularly in large organizations. This creates the phenomenon within an organization of isolated, undocumented silos, also known as “archipelagos” of information and knowledge.\(^9\)\(^14\)

Returning to the JP Morgan Chase Bank example, very few people in the company definitively knew that there existed 26 general ledger applications and 1,000+ undocumented legacy systems and applications in use. Each department knew of the existence of the application in its specific purview. But personnel didn’t seem to think about “what happens to our data when we send it along downstream” to another department or entity within the larger organization. No one clearly understood the totality of the entire enterprise-wide data and work flows. It was painfully clear that no one at JP Morgan Chase truly understood the ramifications of the legacy enterprise-wide process, work flows and their costly intrinsic financial risks to the profitability of the enterprise.

The discovery of the existence of the 26 general ledger applications occurred during an audit. However, the “audit” was a hybrid or combination operation that was part of a larger program of modernization. In the end, it was the inquisitive nature of one individual who asked many questions about the company’s operations that led to the discovery of the risk related to the multiple general ledgers.\(^9\)
The only viable approach to discover the unknown unknowns might be a very comprehensive question-and-answer (Q&A) process whose purpose is to identify, discover, document and explain an enterprise’s operations.

Often, the “experts” are not the suitable individuals for this work.

While the interviewer should be someone with knowledge of the organization’s domain, he or she should be an outsider not privy to details of the operation. This individual should ask questions whose answer appears obvious to the subject matter experts (SMEs). The strategic nature of questions should address enterprise-wide concerns such as inter- and intra-departmental work flows, work breakdown structures (WBS), data flow diagrams (DFDs), quality control rates, error rates, variance analysis (VA), trend analysis, historical statistical records, just-in-time (JIT) inventory control, JIT green supply chains, asset management, warehousing, outsourcing work functions, federal and state regulatory financial penalties, federal, state, and city taxes actually paid and enterprise processes, among other categories.

A suitable candidate for this role would be an enterprise architect who can freely pose questions that address both business analysis as well as technical concerns. The questions should focus on all aspects of known and unknown risks.

For example, one should ask “what happens if there is a discrepancy in general ledger application A?” The Q&A sessions should involve diversified SMEs knowledgeable about the enterprise’s entire operation.

The enterprise architect should be the catalyst who precipitates the fallout of information that was previously assumed or known implicitly by the silos but was unbeknownst to all. The architect is a facilitator, the ombudsman, the honest broker who elicits the discovery of information that cuts across the stove pipes, domains, perspectives and viewpoints of the enterprise.

Risk Management Yields Profitability

Corporations see risk management, audit and compliance as an unnecessary operating expense. But in reality, reduction of any kind of loss through risk management leads to positive bottom-line profits.

Risk leads to unfavorable outcomes and loss, which enterprises usually valuate in financial terms. Obviously, reducing risk reduces financial loss, which saves money and positively impacts the bottom line.

Cost-Benefit Analysis, GAP Analysis, Variance Analysis, Cost Avoidance

For known risks whose loss is quantifiable, it is easy enough to predict savings that result from their elimination. On the other hand, how does one quantify loss—or savings—if one cannot even define or identify the risk in the unknown unknowns category?

The loss from unknown risk is very real. To reiterate, just because the risk is not known does not mean it does not exist.

For example, in the case of J P Morgan Chase Bank’s 26 general ledger systems, obviously the bank incurred a real cost associated with operating these systems. But if the systems were not listed and constantly tracked on an accounting ledger, no one could quantify the operating costs or their financial losses and compliance-incurred regulatory penalties. Perhaps the corporation’s liabilities balanced, but it was probably impossible to correlate an amount with the cost of the systems. Therefore, how could the bank know how to reduce risk, in this case financial risk that resulted from extraneous overhead, if the bank could not even identify the existence of it?

If the bank could identify the redundancy in its general ledger systems, and if it chose to eliminate it, it could then accurately report reduction in overhead—a new bottom-line profit. Additionally, it’s likely that it would also reduce the probability of accounting discrepancies and other kinds of unfavorable outcomes in daily operations.

In this way, identifying unknown unknowns leads to increased profit. That profit is not from an already identified loss. It comes from the identification of an unknown loss.
Looking Ahead

Risk management is a broad topic with many facets. But perhaps the most important aspect of risk management is the need to identify and document the risks and, ultimately, to evaluate the extent of financial damages directly resulting from an unfavorable risk-related outcome.

Among the three categories of risk, assessing the potential for loss or harm from unknown risks is the most important to address. Risk management is the discipline of eliminating, reducing or mitigating the deleterious effects that occur as a result of the occurrence of unfavorable outcomes. One cannot do this if one cannot first fully identify the risks.

A compelling method for uncovering the unknown risks that an enterprise faces is to use a strategic Q&A interview process. Detailed Q&A sessions between facilitators and business experts can elucidate critical pieces of information about an organization’s operations. It might even be necessary to include pedantic questions to precipitate the discovery of information that some might consider obvious. But what might be implicit knowledge to some could be unknown to others. The right information must be put in the right hands – those that need to address risk in an organization.

Successfully identifying unknown risks will lead to profit from newly identified losses that were previously not even known and therefore impossible to recoup.

Footnotes

About Cognizant

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