HEURISTICS-BASED DECISION-MAKING IN SMALL AND MEDIUM CANADIAN BUSINESSES

by

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Abstract

In this dissertation, I study the use of tacit and explicit business heuristics in decision-making in small and medium Canadian businesses. I confirm the use of heuristics in business decision-making, present some common business heuristics identified in the study, and propose methods of making the application of heuristics more useful for better decision-making in various business situations.

Although business decision-making has been a subject of research in big corporations, investigating decision-making using tacit and implicit business heuristics remains limited in small and medium businesses. A method for organizing and compiling various forms of decision-making using these types of business heuristics can deliver significant benefits to small and medium businesses.

I define a heuristic (sometimes referred to as rule of thumb) to be a description of an informal or formal problem-solving process, not necessarily 100% reliable.

Some examples of business heuristics include "Apply 5 times sales for business valuation," and "Ensure the client is given a meaningful and prompt response." The first
heuristic contains enough information for a competent business executive to make a business
decision; I call this first type of heuristic an *explicit business heuristic*; the second heuristic
requires additional knowledge to make a business decision; in particular, the decision-maker
needs to know what "*a meaningful and prompt response*" entails in order to make the decision. I
call this second type of heuristic a *tacit business heuristic*.

My research involved a group of Vancouver Island executives participating in an online
survey on the use of heuristics in business decision-making. Two main conclusions resulting
from this research are that executives apply extensively various forms of business heuristics
when solving business problems, and that the heuristics they use are both tacit and explicit. A
review of heuristics scholarship and my 25-year business experience as a senior executive with
small and medium Canadian companies support these results.

I propose a set of *what-how* rules that can assist in converting tacit business heuristics
into explicit ones by expanding their information content. Finally, I recommend follow-up
research for the development of tacit knowledge transfer methods using business heuristics.
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Dedication

To my wife Nina,

My life-long partner, companion, and love.

This research, as well as all my graduate studies, could not have taken place without the ongoing support and love of my wife Nina,—my lifelong partner in every achievement.
In this dissertation, I study the use of tacit and explicit business heuristics as a method for better decision-making in small and medium Canadian businesses. I confirm the use of heuristics in business decision-making, present a list of common business heuristics identified in the study, and propose methods of making the application of heuristics more useful for better decision-making in various business situations.

Chapter 1: Overview

The challenge small and medium business executives face is that of making better business decisions. Currently business executives make decisions using gut feel, common sense, intuition, experience, and, often without knowing it, various forms of heuristics or rules of thumb (Gigerenzer, 2007).

Over the past 25 years, as a senior executive of several small and medium Canadian hi-tech businesses, I noticed that the decision-making process I have applied was often based on personal experience. Discussing this decision-making process with colleagues possessing similar business backgrounds confirms that most business executives I talked with rely on personal experience when solving challenging business problems. Of course, I could not always share with others, especially the competition, the specifics of the problems facing my businesses. Therefore, we were sharing solutions to common business situations like government red tape, tax matters, or external political and economical influences on our businesses.
There is no substitute for years of experience in any human endeavour. However, tapping into some of the principles and lessons learned from my personal experience as well as that of my colleagues can result in useful methods for others to follow, especially for entrepreneurs interested in building their own businesses. Therefore, a method for organizing and compiling various forms of decision-making methods could deliver significant benefits by improving the decision-making process of executives in small and medium businesses.

1.1 Heuristic, a Definition

I introduce in this section definitions of heuristics, tacit and explicit knowledge, tacit and explicit heuristics, and quantitative and qualitative heuristics.

I define a heuristic (sometimes referred as a rule of thumb) to be the description of a problem-solving process that is not necessarily 100% reliable.

In other words, heuristics are rules, not necessarily readily generalized and not necessarily always correct; they are practical principles with wide application, not necessarily strictly accurate. Some heuristics communicate clear, concise, and understandable processes, whereas others sound incomplete, fuzzy, and even incomprehensible because they assume unspecified additional knowledge. Heuristics can nevertheless provide helpful decision-making guidelines for business executives when problem-solving or decision-making, especially when critical information is missing (Gigerenzer, 2008).

Following Polanyi, I define tacit knowledge as knowledge that one cannot express completely; hence, tacit knowledge is difficult to communicate. Polanyi wrote, "We know more than we can tell" (Polanyi, 1967). For example, most of us can recognize a familiar face in a crowd; however, if asked how we achieve this recognition, we would not be able to describe the
process in a clear way. Conversely, I define *explicit knowledge* as knowledge one can communicate to another person completely with no need of further interpretation.

Similar to the above definitions of tacit and explicit knowledge, I define tacit and explicit business heuristics as follows:

- An *explicit business heuristic* is a clear, concise heuristic, understandable by any competent business executive. Explicit business heuristics involving quantitative data are called *quantitative business heuristics*.

  For example, the heuristic in the previous section ("Apply 5 times sales for business valuation") contains enough information for a business executive to make a decision; it is therefore, an explicit business heuristic.

- A *tacit business heuristic* requires additional unspecified knowledge to carry it out. Tacit business heuristics often use qualitative information to convey their message. They are also called *qualitative business heuristics*.

  For example, "Ensure the client is given a meaningful and prompt response," requires knowing what "a meaningful and prompt response" means.

Heuristic-based problem-solving methods are present extensively in business, the military, games (including sports), medicine, computer science, economics, statistics, arts, academic research, engineering, history, rhetoric, law, agriculture, religion, politics, science, fashion, education, psychology, and philosophy. (Not an exhaustive list).

For instance, in AI (Artificial Intelligence), a heuristic is a strategy for problem-solving that uses rules to select what is hopefully the best solution. In the construction of scientific theories, heuristics may take the form of rules-of-thumbs, procedures, or even research
methodologies.

1.2 Various Meaning of Heuristics

When examining the various meanings of the word *heuristics*, I notice that *heuristics* have often vague, even contradictory definitions in the present literature. To many people, the meaning of the word *heuristic* varies depending on the situation to which one applies it. For example, a *heuristic method* is a trial-and-error-based problem-solving process, applicable in psychology (Duncker, 1945), mathematics (Pólya, 1957), astrophysics, (Zwicky_in_Wild, 1989), and philosophy of science (Sebestik, 2007).

The most common definitions of *heuristics* (which do not mirror mine) contain the words *invention* or *discovery*. Additional interpretations of heuristics include trial and error handling, problem-solving, unstructured proof, incremental exploration, learning from experience, comparison to previously recognized patterns, intelligent guesswork, speculative formulation, investigative discovery, conducive discovery, rules of thumb, algorithmic search, and even common sense.

The ancient Greeks were the first to recognize value of heuristics in decision-making. Aristotle acknowledges that humans reason, and he explores the various forms this reasoning can take (Aristotle, 2007). Furthermore, he realizes that not all reasoning must follow formal logic, admitting for example that the value of experience is important when making decisions. Indeed, Aristotle was probably the first philosopher to use heuristics as *semi-formalized* logic. Aristotle applies the method of *loci* or *topos* (literally *place*, or *location*) as a persuasion technique by using it as a general argument source from which individual arguments may derive. Aristotle discourages the use of topics that are based on faulty arguments.
1.3 Heuristics-Based Business Decision-Making

In this section, I discuss the use of heuristics in business decisions. The heuristics that executives apply are frequently based on their personal experience when they make business decisions. Some of these heuristics can be straightforward and simple for people who understand the business jargon.

For example, when facing the prospect of a merger or a venture capital investment opportunity, "Apply 5 times sales for business valuation" is a straightforward business heuristic, even if it may be valid in some situations and not in others. Sometime the business heuristic or rule of thumb can be more subtle. Certain rules of thumb do not contain clear information about what or how to apply them; they presume that the person needing those rules of thumb possesses the information required to make the decision.

In another example, the rule of thumb that states to, "apply a meaningful and prompt response," is not clear, because the understanding of meaningful and prompt response can vary with each person. One interpretation of meaningful and prompt response could be to, "call the client right away, and confirm your call with an email or letter to ensure the issue was resolved." Whereas, for another person, the same rule of thumb could mean to "call the client - within the week," or to, "write a letter, as soon as you find some time for it."

Moreover, executives can seldom rely on peer support from inside their organization. Indeed, it may be difficult for them to share with their managers or employees some of the issues their businesses are facing. Executives cannot discuss various matters with their senior staff because it could affect their staff positively or negatively; they cannot discuss those issues with their colleagues from other companies for competitive reasons. Their board members can give them moral support and some form of mentorship, although, not enough to address the daily
predicaments they are facing. It is lonely at the top. What are they to do? Repeatedly they end-up using their own gut-feel and take their chances (Gigerenzer, 2007). Sometimes they are right, sometimes not. These are hit and miss situations.

1.4 Statistical or Quantitative Heuristics and their Limitations

In this section, I argue that decision-making based solely on statistical or quantifiable business heuristics can lead to faulty decisions because this form of decision often does not consider the non-quantifiable elements intrinsic to the decision process.

Indeed, early application of heuristics in business generally took the form of statistical or quantitative analysis (Hinkle & Kuehn, 1966). Certainly, when facing quantifiable financial problems, executives have at their disposal a plethora of mathematical models, economic laws, statistical formulas, algorithms (as specific computational procedures for numerical manipulations), and various risk analysis tools to assist them with decision-making. However, one cannot always quantify business risk (Coleman, 2006). What are executives supposed to do when the outcomes are not quantifiable?

Numerous decision-making theories, like Bernoulli’s Expected Utility Theory (Bernoulli, 1738, translated 1954), Rank Dependent Expected Theory (Quiggin, 1991), and Prospect Theory (Kahneman, 1979), use risk analysis reasoning of the form:

\[ E(U) = \sum_{i=1}^{n} w_i \cdot u(x_i) \]

in which \( w_i \) is a decision weight and \( u(x_i) \) is the utility of outcome \( x_i \).

In the above formula, \( E(U) \) represents a model of the Expected Utility Theory decision-making. This model considers that a decision is the acceptance of an uncertain proposition,
delivering probable benefits - hence expected utility. This probable benefit is equal to the sum of each possible result represented by the utility \( u(x_i) \) of the outcomes, multiplied by the respective weights \( w_i \) of the decision, in terms of expected gains versus losses. These weights can relate to both the event and to its outcome, particularly when ambiguity is involved. The above generic formula recognizes that people assign different weights to different events. For example, people tend to overweight dramatic occurrences, and prefer gains to losses. These weights relate to the event and its potential outcomes, particularly when the outcomes are ambiguous. However, in business, one often cannot compute decision weights.

Because of these informational constraints, some concrete applications of those theories have been useful in psychology, economics, and finance; however, they strike me as meaningless for most daily business-decisions. Often the daily challenges executives face originate from dilemmas that need immediate response, leaving little time for detailed analysis. Executives frequently do not have the time, the expertise, or the experts available when needed. These conditions establish a need for the use of heuristics-based decision-making.

I am not claiming here that quantitative analysis relying on quantifiable data is to be disregarded. I argue that one should not use exclusively quantitative data when making business decisions. What are then those *heuristics* that may provide solutions to the pressing daily business problems executives face?

I will illustrate heuristics-based decision-making with some examples using qualitative business heuristics.

As the chief financial officer of a maritime services company (a shipyard serving fishing fleets), I had to make capital investment decisions, mostly associated with new equipment or
facilities improvement. The company was often short of capital, therefore any new investment needed to meet stringent criteria, one of which was a payback period of three years or less.

One investment opportunity consisted in upgrading aging machine-shop equipment. The machine shop supervisors found new lathes that met their needs and suggested that the company purchase those machines. The capital required was around $500,000.

Most heuristics applied to capital investments decisions of this kind are based on straightforward calculations, usually applying a cost/benefit analysis. I informed the supervisors of the company's rule regarding capital investment and advised them to submit a business case, with the help of the finance department, showing that this investment meets the required cost/benefit criteria (Kotchen, 2010).

Taking into account various variables (like maintenance costs of the old equipment, overtime, improved productivity) the business case developed by the machine shop supervisors and the finance team showed that investing in the new equipment as compared to continuing with the use of the old equipment had the same financial consequences. This meant that, if I applied the standard cost/benefit rules, I could not justify this capital investment.

However, I had to consider other business heuristics, like, "Listen to your employees," "Insure employees' opinions are considered," and "Maintain high employee morale." These heuristics were qualitative; they did not provide reliable quantifiable data. These qualitative heuristics suggest the decision-maker needs to looks beyond the numbers, goes beyond formal logic, and applies a different set of decision criteria based on unquantifiable information that may apparently contradict the payback period rule. Believing that the acquisition of new equipment was an important motivational element for the machine shop supervisors, I decided to
apply the 'unreliable' qualitative heuristics instead of the more 'reliable' quantitative one. The company acquired the new equipment.

The results were surprising to me. The payback period was half of the originally predicted one. Indeed, the machinists were so enthusiastic in using the new equipment that their performance level was much higher than the one they predicted, resulting in increased productivity, work output, and revenue growth.

Beyond the immediate cost/benefits resulting from the decision to acquire the new equipment, the machinists could now work on new products that were inaccessible to them before. One example was the production of a *Shaft Brush Assembly* that could be used as an alternative conduit for electricity in ships, reducing the electrolysis damage on the shaft (an expensive piece of equipment) and complementing the role the sacrificial anodes (zinc) protecting the ship's metal frame. [*Explanatory note: different metals in a conductive liquid, like seawater, create a type of battery. The resulting current removes metal from one of the metal pieces (electrolysis). The piece to protect is the propeller and the shaft it is attached to.*]

When including the additional product line, the productivity, the reduced maintenance costs, the new equipment expenditure was recovered within a year of purchase.

On another occasion, I had to face an irate customer with a legitimate complaint about a deficient product - a non-performing polyurethane hydraulic seal. The production demand was high (tens of thousands of pneumatic seals per month), and the consequences of failure were important because if the pneumatic equipment using this kind of seals was leaking, the equipment was unusable. I hesitated between two responses to a situation of this kind: a defensive response (talk to my lawyer) or a pro-active response (support the customer).
Applying the "customer is always right" heuristic could have been considered risky, because if this were the case, my company risked a losing litigation. At first, I did not yet receive the information confirming or contradicting the customer's claim. I still preferred to give my customer the benefit of the doubt. By avoiding a confrontation (talking to a lawyer) and opening the door to a discussion (accepting that the customer was right, and the product defective, which proved to be the case later), I diffused a potentially dangerous situation to our mutual advantage. The customer had the opportunity to explain the problem, and brainstorm various solutions (costly for the company but beneficial to the customer), resulting with an acceptable solution: a recall and a correction in manufacturing process. My company's credibility was reinforced, the customer secured, and the manufacturing process improved. No amount of quantitative information would have given similar results.

Sometimes the available information can be fuzzy. As the president of a hi-tech manufacturing company, I had to consider a number of merger or acquisition opportunities. These were often potential avenues for growth. I found these opportunities quite challenging. On one hand, their appeal was real because they implied important infusion of capital, something the company was always in need of; on the other hand, those offers implied loss of control, or cultural change, with the transformation that would most certainly follow.

My board would generally support my recommendations when an opportunity of this kind arose. However, on one occasion, my partner and I disagreed on an acquisition opportunity. My partner was 10 years older than I was; he was more eager to sell the company and retire than I was. I was convinced that the interested party was not trustworthy based on my experience with previous medium manufacturing companies with, at their helm, an owner more interested in short-term rather than long-term return on investment. The heuristic I applied was, "When in
“doubt, refuse the deal.”

I confess that my partner followed the standard due diligence process to reduce my doubts and convince me of the value of the acquisition for both the senior management and the shareholders alike. I remained unconvinced and argued accordingly at the board table. I was overruled and agreed to leave the company with a suitable arrangement. Nine months later, the company went bankrupt. I learned that the suitor arranged for a large order that did not materialize. The company was undercapitalized to meet the demand and the bank foreclosed. The suitor bought the company in a fire sale at 20 cents on the dollar. I was right to refuse the deal. Some board members acknowledged this to me later.

The following is another example in which the quantitative approach in decision-making led to a faulty decision.

When Richard Feynman was investigating the shuttle's reliability following the Columbia disaster in 1986, he noticed that the probability of a failure was estimated by management to be 1 in 100,000 but 1 in 100 by the engineers (Feynman, 2001). Instead of accepting the discrepancy of those estimates as a sign of weakness, management preferred to rely on numbers; numbers that, in hindsight, made no sense. The estimate by management was wrong giving a false sense of security, and, therefore, supporting the decision to launch the shuttle.

In extreme conditions, when executives face major effects of faulty decision-making based on incomplete information, the application of formal logic and of statistical probabilities can lead to disastrous consequences.

### 1.5 Qualitative Heuristics as a Valid Decision-Making Alternative

Applying exclusively quantitative heuristics in decision-making can lead to faulty
decisions; therefore, the use of qualitative heuristics can be a valid alternative for heuristics-based decision-making. When not enough information is available to make a business decision, and when the executive needs to make a decision anyway, using qualitative heuristics can become an expedient tool for the decision-making process. Indeed, the executive deals with incomplete information and needs to fill in the void with a process that may lead to a workable outcome. Under these circumstances, qualitative heuristics can assist in making fast and frugal business decisions (Gigerenzer, Hoffrage, & Goldstein, 2008).

In most business schools, teaching formal decision-making processes is currently the norm. For example, some business management schools describe decision analysis courses as "decision-oriented courses that focus on the frameworks, concepts, theories, and principles needed to organize and use information to make informed business decisions." A closer analysis of the courses' content reveals that those courses mostly cover operations management and statistics. The formal decision-making process relies on quantitative data, hence limiting the decision-making process to the application of quantitative heuristics. I am not advocating that these kinds of courses are not useful in business management. Managers need to apply various quantitative tools when they face quantifiable problems - like financial opportunities that need scrutiny, or operation gridlocks that need resolution. However, most of these situations are usually delegated to professionals, like statisticians, accountants, operational, or financial managers that have the time and required detailed analytical knowledge to study those kinds of problems and suggest appropriate solutions. Executives will then review the suggestions, consult with their managers, and ensure proper decisions are applied. These situations often do not require on the spot resolutions.

Charles Hinkle, emeritus faculty at the College of Business, University of Colorado,
argues that:

Value creation in the 20th century was largely defined by the conversion of heuristics to algorithms. It was about taking a fundamental understanding of a ‘mystery’–a heuristic–and driving it to a formula, an algorithm–so that it could be driven to huge scale and scope. (Hinkle & Kuehn, 1966)

Dr. Roger Martin, Dean of Rotman School of Management (University of Toronto), proposes the following definition for heuristics: "Heuristics are rules of thumb or sets of guidelines for solving a mystery by organized exploration of the possibilities" (Martin, 2004). He continues,

Heuristics do not guarantee success–they simply increase the probability of getting to a successful outcome. They represent an incomplete understanding of a heretofore mystery. Business people will have to become more like designers — more ‘masters of heuristics’ than ‘managers of algorithms’. (Martin, 2004)

The above two references illustrate opposing views concerning the wide range of heuristics interpretations in academia.

Even if the scientific research method takes for granted that one can arrive at valid conclusions based on formal logic and exhaustive testing, in daily business decision-making, informal logic and use of qualitative heuristics can also lead to satisfactory results (Gigerenzer et al., 2008) and (Kahneman, 1979). Understanding the importance of qualitative heuristics becomes essential in decision-making because the business executive will need, at some point, to face his stakeholders (employees, customers, vendors, and shareholders) and explain or justify the decisions made.
Researchers like Herbert Simon and Gerd Gigerenzer have studied the importance of qualitative data as opposed to the use of quantitative data in decision-making. Simon introduced the term *Bounded Rationality* with useful application in economics. Simon states "boundedly rational agents experience limits in formulating and solving complex problems and in processing (receiving, storing, retrieving, transmitting) information" (Williamson, 1981). This theory maintains that models of human-decision-making should rely on what individual humans know and not on assumptions like the laws of probability. Simon stressed that "Because of the limits on their [computers and the human brain included] computing speeds and power, intelligent systems must use approximate methods to handle most tasks. Their rationality is bounded." (Simon, 1990). These computing methods include recognizing elements of the circumstances similar to those previously experienced, therefore reducing the need for additional information search. Simon further advocates the use of heuristics for information search and for needing to stop search. Simon also suggests using simple rules for deciding how to use found information, like the rule of syllogism in formal logic (Simon, 1990).

On the other hand, research by Gigerenzer and his team at the Max Plank Institute for Human Development shows that applying heuristics for problem-solving can lead to remarkably accurate solutions (Gigerenzer et al., 2008).

In addition, new research in judgment and decision-making (JDM) shows that unquantifiable elements like emotion and feelings also have an important influence in decision-making (Slovic, Garling, Vastfjall, & Peters, 2006). Emotions and feelings are also often at the source of qualitative heuristics.

Applying qualitative heuristics for business decisions comes with its caveat resulting from unsubstantiated assumptions, groupthink, prejudice, or personal bias. On the other hand, as
one increases the use of business heuristics in making business decisions, one also increases
one's experience, knowledge base, and comfort level of using fast and frugal heuristics.
Ultimately, knowing what heuristic to apply does not imply that a decision will take place. The
executive has the final say whether to apply the business heuristic or reject it.

1.6 Summary

In summary, business heuristics involve formal or informal application of rules,
processes, and methods for problem-solving, a level of incompleteness or uncertainty, and
eventually, the discovery of a solution that is not necessarily 100% reliable, but is a solution that
can nevertheless result in positive business outcomes. Heuristics-based decision-making does not
need to follow formal logic. Heuristics can derive from the familiarity of the settings one
operates in, without any *a priori*, formal logical foundation.

I asked myself if Canadian business executives use regularly business heuristics when
making business decisions. I was wondering what sort of heuristics executives use, and if used,
how could one apply those business heuristics to improve the business decision-making process.
These questions formed the basis of my research.

The present state of research in small and medium Canadian businesses (and by extension
- most small and medium business) about heuristics-based decision-making is limited.
Systematic scientific research on that topic remains scarce (Haldin-Herrgard, 2000) and
(Hancyk, 2003). I present a detailed literature review in Chapter 3, Heuristics Scholarship.

1.7 Research Methodology and Summary Results

I present in this section an overview of my research methodology and a summary of the
research results. I describe the research methodology in Chapter 5: Research Methodology, and
Study Design.

Relying on my business experience, I decided to use 10 business scenarios I encountered in various situations, as examples in which business heuristics would have assisted me in making a business decision. Each scenario describes a situation that required a swift, usually immediate decision. These scenarios were used in a survey in which participants were asked to suggest various heuristics-based solutions to the challenges the executive was facing. Analysis of the survey results convincingly reflects the use of heuristics-based decision-making in small and medium Canadian businesses.

Because my research focus was heuristics-based decision-making, my interest was primarily in discovering whether business executives use explicit or tacit heuristics when making business decisions. My research questions are the following:

1. Are small and medium Canadian business executives using heuristics when making business decisions?
2. Assuming a positive answer to the first question, what are the heuristics small and medium Canadian business executives use when making business decisions?
3. When small and medium Canadian business executives use heuristics when making business decisions, do they use explicit business heuristics, tacit business heuristics, or both?
4. How can one improve the decision-making process by using tacit business heuristics?

Preliminary pilot studies at the University of Victoria’s Human Computer Interface Lab, substantiate that business executives often make decisions based on personal experience using various heuristics. As an alternative to formally established rules, such personal experience may
also represent business knowledge acquired during their career. Building on these results, I developed a modest thesis research study composed of four phases.

In the first phase, I describe 10 scenarios based on my own business experience, requiring business decision-making or business problem-solving using heuristics. During the second phase, I solicit a non-probabilistic group of Vancouver Island executives to suggest heuristics for each scenario they feel comfortable addressing. I analyze the result of the survey responses and categorize the identified business heuristics in the third phase. I present my findings in the fourth phase.

Three distinct groups participated in the study. The first group was composed of second-year University of Victoria MBA students. Members of this group represented future executives with, presently, limited business experience; they served as a baseline group.

The second group consisted of business mentors volunteering at the University of Victoria’s School of Business. Members of this group included seasoned business executives who were at the peak of their career, or who retired.

The third group represented executives, whose businesses were registered with either the Greater Victoria Chamber of Commerce or the Vancouver Island Advanced Technology Centre. These executives managed small or medium hi-tech firms, or various small or medium business firms on Vancouver Island.

Research results provide evidence that small and medium Canadian business executives routinely use heuristics when making business decisions. Data obtained from the online surveys includes 2,465 statements out of which 2,419 (98.1%) were either explicit or tacit heuristics; only 46 (1.9%) contained various comments not considered heuristics. Indeed, all the businesses
executives participating in the research applied various forms of heuristics when suggesting solutions to business problems, providing evidence that the use heuristics in decision-making is prevalent in that population.

My extensive business experience also supports these findings. Furthermore, a review of heuristics scholarship in Chapter 3, indirectly corroborates those results for big business.

Once the various heuristics were consolidated by eliminating repetitions, I developed and applied a set of criteria to distinguish explicit versus tacit heuristics. Using these criteria, I extrapolated 432 explicit or tacit heuristics from the available residual data. A subdivision of the explicit heuristics category consists of N=278 (or 64%), with a parallel subdivision of the tacit heuristics category of N=157 (or 36%). Further statistical analysis establishes the ratio between explicit and tacit heuristics to about 60% to 40%. This strongly supports the statement that tacit and explicit heuristics are both commonly used when making business decisions.

I propose a set of what-how rules that facilitate the conversion of tacit business heuristics into explicit ones.

1.8 Future Research

If a better heuristics-based decision-making process is a competitive asset for small and medium business, as several recent studies claim, (Levin & Cross, 2004), (Butler, Le Grice, & Reed, 2006), and (Strassmann, 2006), then a method for organizing various forms of this asset can deliver significant benefits to those businesses.

A useful follow-up study could address the use of heuristics as a knowledge-transfer mechanism in small and medium Canadian businesses. Indeed, similar to the apprenticeship process used in various trades, a better understanding of heuristics as a business apprenticeship
tool would be an interesting topic to pursue. An ancillary study to the above could consist in determining the types of errors in judgment some small and medium business executives make. Helping to avoid such errors would further improve the heuristics-based decision-making process.
Chapter 2: Background and Self-Anthropology

In this chapter, I describe my background, because this narrative portrays relevant information to the discussions regarding the source for the research scenarios and the interpretation of the research results.

2.1 The Researcher’s Experience: a Self-anthropology

The business knowledge of an executive is that person’s expertise and skill acquired through experience or education. By definition, an autobiography is a biography in a form of life story of oneself written by oneself. In the context of this dissertation, I believe that my 30-year experience as a senior executive in several small and medium Canadian businesses (SMCB) represents a valuable example of what I have learned, and shared with others.

Usually an autobiography follows a chronological sequence, describing a series of events over time. For the purpose of this research, my autobiography covers specific nodal moments that occurred during my various business experiences. Each period is not necessary linked to the following one in a logical way other than by time: I present events in chronological order, without any regard to why they occurred in such a way.

2.2 The Early Years

I was born in Zagreb, Croatia (former Yugoslavia), on the last day of the year WWII ended. Two years later, my parents, (and I) moved to Israel. In Israel, I attended international private schools (K-12) where I learned French, English, and Hebrew. At home, we spoke Serbo-Croatian and German. From an early age, I became fluent in those languages. Following the advice of my high-school philosophy teacher, I enrolled in the University of Jerusalem to study
Mathematics, Philosophy, and Theology. Those topics introduced me to various ways of applying heuristics in problem-solving. My Dominican and Jesuits teachers installed in me a sense of curiosity and analysis, which contributed to expand my views during my philosophy, mathematics, and logic studies. Wanting to understand better my roots, I decided to continue my undergraduate studies in Yugoslavia.

The private schooling experience taught me to be self-sufficient; hence moving to a different country was not a deterrent, but rather an adventure. During the early 70s, Belgrade was already an open and burgeoning European city. Yugoslavia was a good base for travelling across Europe, and the economy was solid, with a large number of migrant workers contributing to the country’s economy. I enrolled in the Faculty of Mathematics, at the University of Belgrade. I remember well some of my teachers at the time, notably Professor Djuro Kurepa. He inspired my passion for the study of logic, a passion still present. I graduated with honours.

2.3 The Formative Years

The first two years following immediately my undergraduate studies were those that instilled my interest in teaching. During this period, I was a mathematics teacher at a technical high school in Belgrade while continuing some post-graduate research in mathematical logic with professor Kurepa.

Not only did I enjoy teaching a subject that was difficult for my high school students, but I also inspired them into applying to the classroom, some of their acquired technical knowledge in electronics. They built, using the school’s workshop, an interactive "clicker." Every student desk was equipped with a multi-choice switch (5 choices), which was connected to a central console on the teacher’s table. This teaching method increased students’ interaction between
themselves, and their engagement to the subject matter, because learning took the form of a game.

During this formative period, I had to face the challenges of one form of knowledge transfer: teaching in the classroom. I also learned that modeling knowledge was possible by converting rote learning into a game, and increasing in this way the interest of the learners in the process. Later on, in my professional career, I used often this teaching model to convey to my clients or employees, the importance of visualizing a problem to find solutions.

2.4 The Growing Years

Believing that my opportunities were limited in Yugoslavia, I moved to Canada in the early 70s. Shortly after my arrival to Montreal, I started working as a credit manager for an import/export firm. The few months spent with that firm made me realize the challenges one faces in business. I had to manage hundreds of business credit accounts, some of which were delinquent. Conveying the proper message to the delinquent customer was important: indeed, the objective was to be paid without losing the customer’s good will, and continuing the business relationship. This was my first foray into the finance industry, not knowing that I will soon work in this sector for the next 20 years.

A few months year later, I joined IBM, where I learned not only about computer technology (mainframes) but also about the North American business environment. Those first five years with IBM were influential and prepared me well for what was to follow.

I was fortunate to experience three major learning phases with IBM: the technical phase, consisting in learning about the technology, the systems engineering phase, consisting in applying what I learned to IBM business clients, and the marketing and managerial phase,
involving project management, and mainframe computers marketing and sales.

During the IBM technical phase, I was introduced to the technological challenges mainframes faced in the mid-70s, and the importance of human-machine-interaction, a major challenge at that time. In the 70s, ‘techies’ were facing the challenge of explaining complex technology features and benefits to businesspersons who had little or no knowledge of computer technology; the solution, converting technology’s technical features into business benefits using analogies. For example, implementing a computer-managed inventory using IVRS (Interactive Voice Response System) for MEDIS (a major Quebec-based pharmaceutical distributor), would not only keep track of inventory with fewer errors, but would also improve the re-ordering process, reduce unused inventory items, therefore, freeing working capital that could be directed toward increasing sales or market penetration. One needed to convert technology into a business case, giving technology a quantitative interpretation that business managers could understand.

The IBM systems engineering phase involved planning the conversion of a major financial institution’s outdated terminal network to an up-to-date, online banking system. As a member of a team of technical experts, I developed a comprehensive conversion process that involved a number of conversion teams, going from branch to branch, and converting the old branch system to the new one. After the first few unsuccessful conversions, it became obvious that something important was missing. Our limited knowledge of the branch banking operations was affecting our project planning and implementation process. To remediate to this lack of knowledge and experience, the IBM project team ended up building in the lab, a full-scale simulation of a bank branch. This lab bank branch was staffed with real bank branch personnel (tellers, accountants, and management), real terminals, real bank counters, and fake customers. Using this technique, we were able to identify the major deficiencies of our conversion process,
modify our implementation strategy, and fan out a solid conversion method that worked out in the field. The mentoring of our team by the branch manager was valuable in the process.

I was ready to assume more responsibilities, and start to develop my experience in marketing and management.

During the IBM marketing and management phase, my responsibilities included converting a Burroughs banking customer, to IBM. This took a couple of years with a successful outcome for IBM. This was also my most formative IBM period, as it involved inter-personal relations instead of technical or financial challenges.

The saying was, at that time that IBM was a good school for future executives. Indeed, I had the opportunity to learn how to acquire knowledge on a subject completely foreign to me (computers were a rarity at the time), and apply that knowledge in challenging business environments – the financial industry.

2.5 The Professional Years

From IBM, I moved to the Movement Desjardins (Desjardins), a major financial cooperative group in the province of Quebec. As a senior executive with Desjardins, I had firsthand experience of a wide variety of financial challenges small and medium businesses face.

The Desjardins period could also be divide intro three distinct phases: the professional years, the management years, and the international years.

During the first couple of years at Desjardins, I faced a steep learning curve, entering the corporate world, and its political challenges. As a senior professional, my projects included planning and implementing a network of automated teller machines, and finalizing the implementation of the banking network started while with IBM. Considering that Desjardins was
a financial cooperative composed of 12 independent federations and more than 1,500 branches across the province of Quebec, one needed to perfect the team approach, and adapt to a decision by consensus process, typical in a cooperative environment. Accepting a different decision-making paradigm was my first priority – a decision made by a group instead of an individual. During this first phase, my most valuable lesson was that of patience. I was fortunate in finding a mentor in the Desjardins Movement’s general manager, who was well conversant with the hurdles I was about to face. The acquisition of a cooperative mentality was valuable later on, when I took the responsibility of implementing a global financial lending strategy plan in Latin America.

The management years at Desjardins included the integration of Desjardins to the Canadian banking system through the Canadian Payment Association (CPA). This involved negotiations at the corporate, provincial, and federal levels, ending up with the integration of Desjardins as a member of the CPA. As a CPA member, Desjardins would no longer need to keep a deposit in another bank to insure inter-financial institutional payment transfers. This also meant important savings for Desjardins, because the need for a multimillion-dollar daily float (money not earning interest) in another bank was eliminated.

The major lessons learned from this experience consisted in understanding better the political motivations involved in finding win-win solutions in a highly competitive marketplace. The institutions sitting on the CPA committee were competitors and had to work together to make the flow of money work efficiently.

While with Desjardins, an opportunity arose to head an international project in Latin America, sponsored by the Canadian International Development Agency (CIDA) involving the COLAC cooperative movement (Confederacion Latinoamericana de Coopertivas de Ahorro y
I went through a culture shock: that of the Latin American way of life, compared to the North American one. Indeed, the legal, and national financial infrastructures we are used to count on in Canada, (like the Canada Bank Act, the Bank of Canada, the Canadian Payment Association, the Canadian Banking Association, for example) were absent in Latin American countries. Covering 19 countries out of Panama City (Panama), visiting local federations in some countries, meeting with various levels of government, and understanding the expectations from the international cooperative movement, were some of the challenges that needed to be faced. Here the gift of patience acquired in Quebec came in handy, because the Latin American culture (as opposed to our North American one) has a different sense of urgency – time becomes an ally instead of a constraint.

2.6 The Management-Consulting Years

On my return from Panama City to Montreal, I was ready to enter the world of consulting. I wanted to share the experience gained in those first 10 years in business with companies needing assistance as they grew or struggled to survive.

My first foray into management consulting was with Peat Marwick (today KPMG), among the largest professional services firms in the world at the time. As a senior consultant, I was called often to assist companies facing some sort of financial distress. The projects involved companies across Canada, the USA, and Haiti. In most instances, I had to inform the company’s top management of the seriousness of the difficulty there were in, the corrective measures that they needed to take, and to suggest various implementation plans that would assist them in regaining their financial stability. Only one of my KPMG clients did not follow the proposed
recommendations. That client ended up bankrupt a few months later.

Soon after joining KPMG, an IBM colleague and friend, who joined a young Quebec-based information technology consulting company (Conseillers en Gestion et Informatique - CGI), gave me a call and suggested I join CGI, which I did a few months later. As a partner and director of consulting services with CGI, presently one of the biggest management-consulting firms in the world, I had the opportunity to work with a large number of small, medium, and big businesses, in the private and public sectors. My clients came from a variety of market segments (finance, distribution, and manufacturing). However, my specialty remained mainly in finance, serving banks, trusts, stock exchanges, and insurance companies.

Working with top executives in those companies taught me the importance of applying strong listening skills, expressing clearly my findings (mostly in form of business recommendations), and attention to detail. The detail consisted in ensuring that the conveyed message was not only understood, but was also understood the way it was supposed to be, instead of becoming a modified interpretation by the listener.

A few vignettes hereafter, illustrate the activities during the CGI period. Because of customer confidentiality, customer names and assignment specifics are not disclosed.

The challenge a stock exchange client was facing, consisted in ensuring 24/7 process availability, and minimizing the inevitable maintenance and breakdown time. I provided, as a model, the operations of the Visa department of a local bank. Visiting those operations during off-peak and peak hours, understanding the logistics required to ensure 24/7 service availability, was a revelation to the stock exchange client. This resulted in an acquisition of additional computing equipment, and a business process re-engineering contract of the existing information
technology procedures.

A problem faced by an insurance company consisted in checking that the life insurance forms, completed by the field agents, were free of errors, before submitting them for approval to the head office. Establishing a validation online link between the company agents’ mobile units (laptops in this case), and head office, was the solution – borrowed from the travel agency industry, which had similar requirements. This was achieved long before the Internet era, using dial-up communication technology and private networks.

In several instances, once the strategic plan was accepted by senior management, I remained as a support resource to senior and middle level management, assisting them in converting the strategic plan (what needs to be done) into a tactical one (how to do it), and finally into an operational one (doing it).

During the early 90s, I headed a CGI branch operation in Victoria, British Columbia, where I faced the challenges of dealing with the provincial government and its complex decision-making infrastructure. This was an opportunity to be acquainted with the politically motivated New Democratic Party’s (NDP) decision-making process.

One of the most satisfying projects of this period consisted in developing a technology and telecommunications strategy plan for the three Canadian military colleges: The Royal Military College of Canada (RMC) in Kingston, Ontario, the Royal Roads Military College (RRMC), in Victoria, British Columbia, and Collège Militaire Royal de Saint-Jean (CMR), in St. Jean d’Iberville, Quebec. RRMC and CM were closed a few years later because of government cutbacks on defense spending. However, the technology infrastructure survived in the conversion of RRMC into the Royal Roads University.
2.7 The Entrepreneurship Years

Instead of moving back East, I decided to leave CGI in the early 90s. This allowed me to form my own consulting firm, and apply the acquired experience to my own business.

This section describes the period, during which I held the positions of managing director of Stellar Systems Group (SSG),- a consulting firm, president of VIC TEC Corporation (VTC) - a high-tech manufacturing company, chief financial officer of Point Hope Shipyard (PHS) - a ship construction and services company, and director of operations at University Canada West (UCW), a private university.

The above companies had their headquarters in Victoria, with branches across British Colombia, or other parts of the world. Some of those companies have inspired the business scenarios used in the research part of this study.

**Stellar Systems Group (SSG)**

Feeling too young to retire after leaving CGI, I was looking for some business challenges. I was approached by the president of Stellar Systems Group (SSG) to head a floundering division specialized in technology training. The requirement consisted in making the division profitable, increasing its customer base, and diversifying its product line. This took a couple of years.

Diversifying the customer base meant reversing the revenue stream from mainly government customers to a balanced mix of public and private sector customers, expanding the product base by developing some vertical training programs, (like Microsoft Certification), and an increase of the services rendered by opening branches in Vancouver, Prince George, Kelowna, and Nelson. SSG was sold to EDS, an American consulting company.
Scenario 4, (Move Decision), and Scenario 10, (Joint Venture), relate specifically to the events I have encountered when leading SSG.

**VIC TEC Corporation (VTC)**

VTC was a new business venture capitalizing on the discovery of a revolutionary material with remarkable qualities. The product’s trademark was COOLPAC™. This material was composed of a unique blend of polyurethane and proprietary chemicals. Specialized manufacturing methods gave it characteristics not found in any other product of its kind. The main application was in hydraulics; however, other applications were developed over time.

I could not resist the challenges this company offered, and accepted to become the president of VTC. My objectives were to raise venture capital, diversify the product line, expand the customer base, and improve the profitability of the failing start-up. I achieved the above objectives over three years.

The main research and development projects at VTC included the improved automation of the manufacturing process, the expansion of the product line from hydraulics to pneumatics, the negotiation of agency agreement in Europe (England, France, and Italy) and the planning of a new plant in Kuala Lumpur, Malaysia.

I left the company when it was about to be acquired by a US competitor, against my advice. Shortly after my departure the company was indeed acquired by a US firm (Grover Corporation, out of Milwaukee, WI), which dismantled the Saanich plant and moved it to the US, closing the Canadian operations.

Study scenarios 1 (Company Valuation), 2 (Cost Forecasts), 3 (Lawsuit), 7 (Project Slippage), and 8 (Quality Management) were based on various business predicaments.
encountered while with VTC.

*Point Hope Shipyard (PHS)*

After acquiring the company to avoid bankruptcy, the new management at PHS was in dire need of fresh operating capital to meet the growing demand in marine services. The company was ripe for injection of fresh capital, a reorganization of its operating practices, and new negotiations with its unionized workforce. The president invited me to assist him in achieving those objectives. After reviewing the company’s financial status, I accepted the position of CFO with extended operational responsibilities.

My tenure with PHS was eventful, because not only was the union involved in PHS’s daily operations and had some input on how business was managed, but also because of the growing pains and large demands in resources (financial, technical, and human) PHS needed to meet its growth target. I succeeded in stabilizing the company financially, ensuring a regular flow of work, and securing operating capital and cash flow based on its receivables.

Some of the eventful realizations at PHS included debt renegotiations with lending institutions, various levels of government, and the vendor community. A “pay-as-you-go” customer payment policy insured steadier cash flow, and assisted in better cash management. I left the company a few years later, following the delivery of a new pilot boat to Pacific Pilotage Authority Canada.

Study scenarios 1 (company Valuation), 5 (Credit Line), 6 (Collective Agreement), and 7 (Project Slippage) reflect quandaries encountered at PHS.
University Canada West (UCW)

The launching of a new private university in Victoria revived my interest in teaching. I joined as faculty of UCW shortly after its creation, and enjoyed developing, and delivering graduate and undergraduate courses to a growing student base. UCW’s president invited me to take on the responsibilities of operations while continuing to act as active faculty. I accepted, and spent a few years with this institution as Director of Operations, until the Vancouver-based Eminata group acquired it.

2.8 The Academic Adventure

Over the years, I continued to be highly interested in teaching. While with IBM, an opportunity arose to teach computer science at University of Montreal’s school of business (Hautes Études Commerciales – H.E.C.). Soon after, the University of Sherbrooke, with a growing student base in the Information Technology department of the Faculty of Science, invited me to teach in Sherbrooke. This gave me the chance to develop and deliver a number of computer science and business courses. Since then, I have also developed and delivered a wide range of computer science and business courses at the University of Victoria, Royal Roads University, Camosun College, University of Phoenix, University Canada West, and Meritus University.

Following 30 years of various business experiences, challenges and trepidations, I finally decided to set aside time for myself, and focus on my on-going objective of lifelong learning.

Presently, while continuing to be active as a teacher, I can dedicate my time to research and course development activities. I devoted the last few years to teaching, studying, and working on my PhD thesis.
Chapter 3: Heuristics Scholarship

In this chapter, I present an overview of heuristics scholarship. I explore the diverse definitions of heuristics used in a variety of human endeavours. I examine various definitions of the terms heuristic and heuristics in literature, online and print dictionaries. I define heuristic categories. I suggest a business heuristics definition. Finally, I present a summary overview of heuristics application in politics, psychology, philosophy, law, economics, computer science, education, the military, medicine, and business.

3.1 Background

When reviewing various definitions of the word ‘heuristic’ I discern a common denominator that of discovery. Indeed heuristics have been used traditionally, rightly or wrongly, as a method to discover solutions to a variety of problems.

I present hereafter a brief overview of heuristics etymology.

**Greek:** ευρισκειν, heuriskein - to discover, to find; see also ευρετής, heuretes – the one who discovers; and ευρίσκω, heurísko, I find.

**German:** heuristisch - bezeichnet die Kunst, mit begrenztem Wissen und wenig Zeit zu guten Lösungen zu kommen; (the art to find good solutions with limited knowledge and little time – translated by me)

**French:** heuristique, euristique - l'art d'inventer, de faire des découvertes (Littré); (the art of inventing, of discovering – translated by me)

**English:** heuristics - proceeding by trial and error (Oxford)

Heuristics are used in the common language because they tend to follow a syllogistic
argumentation process. This mode of argument, first described by Aristotle, became the foundation of the Western logical thinking paradigm.

Considering that heuristics can either be unreliable, informal or both, and lead to valid or invalid conclusions, one needs to be careful how one uses heuristics when making decisions. Although heuristics may be useful, especially in circumstances that can lead to a rapid solution, which may be reasonably close to the best answer, applying a heuristic-based solving process does not guarantee the validity of that solution.

I trace the use of heuristic-based reasoning to the classic Greek rhetoricians. Aristotle uses the words like invention to characterize the rhetorical process. The process of invention (in the context of discovery) invites the rhetor (speaker) to explore alternative ideas that may lead to an understanding of the subject matter or to a conclusive argument on a topic discussed. The process is similar to that followed when one applies heuristics in problem-solving. Invention is complemented with arrangement, style, memory, and delivery.

Aristotle introduces Rhetoric as an art of using language for persuasion. Rhetoric follows three methods of logos (reason or rational discourse), pathos (experience or story telling), and ethos (moral competence), as well as the five canons of memory, invention, delivery, style, and arrangement. Along with grammar and logic or dialectic, rhetoric is one of the three ancient arts of discourse. Aristotle identifies two broad types of topics (topoi), or lines of reasoning, as effective persuasion categories. They consist of 28 common topics applicable in any types of discourse, and special topics applicable in specific types of discourse, like political, judicial, or ceremonial. (Braet, 2005)

Aristotle follows-up by analyzing the structures of rhetorical reasoning using the
enthymeme (from ‘enthumeisthai - to consider’) and the example. Quoting Aristotle, "The enthymeme is a sort of syllogism (sullogismos - i.e. a deductive argument), and the consideration of syllogisms of all kinds, without distinction, is the business of dialectic, either of dialectic as a whole, or of one of its branches." (Aristotle, 2007)

In other words, an enthymeme is a three-part deductive argument (syllogism) containing an unstated assumption that must be true for the premises to lead to a valid conclusion. On the other hand, the example takes usually the form of a long story, or that of a complex case, leading to a probable but not certain conclusion.

This process is similar to the one used when applying heuristics to solve a problem: one starts by stating the problem, followed by suggesting a heuristic that may lead to a solution, based on a form of reasoning. Some of Aristotle’s syllogisms can be considered as intuitive.

For example, Aristotle’s Barbara syllogism states:

Every X is a Y.

Every Y is a Z.

Therefore, every X is a Z.

In "Rhetoric, Romance and Technology," Father Walter Ong argues that to find something to say, one needs to analyze various models, reminiscent of classical antiquity’s dialectic: develop a structure to explain the choice of a particular result (Ong, 1971). Heuristics, in this context, provide supporting arguments to the decision-maker, hence justifying that decision.
3.2 Heuristics use in Human Endeavours

Wide varieties of human endeavours use heuristics for problem-solving. The most common include business, military, games (including sports), medicine, computer science, economics, statistics, the arts, academic research, engineering, history, rhetoric, law, agriculture, religion, politics, science, fashion, education, psychology, and philosophy.

I describe hereafter some prevalent categories of human endeavors applying a heuristics-based decision-making process. These are summarized in figure 1.

Figure 1. Human endeavors using heuristics

In politics, for example, the poliheuristic theory (PH) bridges the gap between cognitive and rational theories of decision-making. PH uses a two-stage decision process. The first stage consists in reducing the set of possible options by applying a ‘non-compensatory principle.’ This eliminates any alternative with an unacceptable return. During the second stage, the decision maker uses analytic processing in an attempt to minimize risks and maximize benefits (Mintz, 2004).
In psychology, heuristics are simple, efficient rules, proposed as an explanation of how humans make decisions, come to judgments, and solve problems when facing complex problems or incomplete information. These rules work well under most circumstances, but in certain cases may lead to systematic cognitive biases (Sriram & Greenwald, 2009).

In philosophy, a heuristic (or a heuristic device) is used when an entity exists to enable understanding of, or knowledge concerning, some other entity. For example, a model, never identical with what it models, is a heuristic device that can facilitate some understanding of what it models. Stories and metaphors also can be termed heuristic devices in that sense. In his 1945 book *How to solve it*, Polya suggested a series of heuristics, like "If you are having difficulty understanding a problem, try drawing a picture;", or "Try assuming that you have a solution and seeing what you can derive from that," a form of "working backward." (Pólya, 1957)

In economics, heuristics are used when case-by-case analysis would be impractical, in which practicality is defined by the interests of a governing body (Gigerenzer et al., 2008).

In law, Rissland and Skalak suggest 12 categories of heuristics used to reason legal cases; they include for example, various ways to begin reasoning, rule-based near miss or near hit, or sanity checks (Rissland, Skalak, & Friedman, 1994).

In computer science, a heuristic (or a heuristic algorithm) is a technique designed to solve a problem that is not required to be 100% correct. However, the use of this technique produces usually a good solution, or solves a simpler problem that contains, or intersects with the solution of complex problem. Heuristics may assist in gaining computational performance, or produce conceptual simplicity, at the potential cost of accuracy or precision (Pearl, 2001).

In human-computer interaction (HCI), heuristic evaluation is a usability-testing
technique devised by expert usability consultants. In heuristic evaluation, some experts review the user interface and its compliance to a number of broadly stated characteristics of a good user interface as defined by Jakob Nielsen (Nielsen, 1995).

In education, students approach concepts, ideas, and problems differently, according to their backgrounds, experiences, and studies. For example, according to George Pólya, students may use some of the various heuristic problem-solving techniques, when faced with a mathematical problem like diagrams, graphs, patterns, special case analysis, or trial and error (Pólya, 1957).

Military operations often rely on past performance results building on past military planning practices (William, 2007).

In medicine, the ever-present "Primum non nocere" (First do no harm - a fundamental medical precept of Hippocrates ca. 460-ca. 377 B.C.), is a telling example of the importance of the application of heuristics. Gigerenzer confirmed the importance and validity of medical heuristics in his analysis of heart disease predictive instrumentation. Presently, evidence-based medicine is prevalent as a method used to clarify, improve, and standardize medical heuristics, resulting in reduced practice variation, and optimization of the care processes. Furthermore, according to Clement J. McDonald, "more uniform use of explicit and better heuristics could lead to less practice variation, and more efficient medical care." (McDonald, 1996).

### 3.3 Heuristics as Business Processes

One way of differentiating heuristics from other reasoning methods, would be to consider them as problem-solving methods based on formal or informal processes, and reliable or unreliable processes.
I consider a process *formal* if it follows a method prescribed by a predefined procedure. I consider a process *reliable*, to the extent that the same result is achieved when the same process is repeatedly applied in the same circumstances. I define a *law* as a process that is formal and 100% reliable. Any process that does not meet the above requirements of reliability and formality is, by definition, a heuristic process. Table 1 summarizes this categorization process.

Table 1

*Formal and Informal Processes.*

<table>
<thead>
<tr>
<th>Process</th>
<th>% Reliability</th>
<th>Formal</th>
<th>Informal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliable</td>
<td>100%</td>
<td>LAW</td>
<td>N/A*</td>
</tr>
<tr>
<td>Unreliable</td>
<td>&lt;100%</td>
<td>HEURISTIC</td>
<td>HEURISTIC</td>
</tr>
</tbody>
</table>

* An informal process may be different each time, leading potentially to a different and uncertain result.

For example, the law of gravity is a 100% reliable and formal law of classical physics, because this law is based on an invariable relationship observed between or among phenomena, for all cases meeting specified conditions. The law of supply and demand in economics, as a generalization based on consistent experience or results, is also formal and considered 100% reliable.

Inductive reasoning is a heuristic following a formal process, not necessarily 100% reliable. On the other hand, mathematical induction is not a form of inductive reasoning, but rather a form of deductive reasoning.

‘*If it is more expensive, it must be better*’ is a heuristic example following a formal but
unreliable process in applied psychology. This heuristic is often used to evaluate a perceived value of objects. Another similar and common marketing heuristic example is ‘Price implies quality.’ ‘Keeping up with the Joneses’ is an informal and unreliable process, sometimes used in day-to-day reasoning and even in business decision-making.

Applying heuristics in business decision-making gives additional validity to that decision, from the decision-makers perspective. The tacit reasoning associated with the use of heuristics can support the business decision taken.

Heuristics are often associated with situations where decision makers need to act fast, under uncertain conditions, with insufficient information. Because of this, statisticians like Jerzy Neyman and Egon Sharpe Pearson have pointed some myths about the validity of heuristics (Birnbaum, 1977). The most common misconceptions about heuristics include; the assumption that heuristics represent 'second-best' results; cognitive limitations incite the use of heuristics; heuristics are applied only in routine decisions; only people with lower cognitive capacity use simple heuristics; more information is always better. Gigerenzer refutes those myths by highlighting that optimization is often impossible because of estimation errors; human's cognitive limitations are part of what characterizes the environment we live in; people with both lower and higher cognitive capabilities rely on heuristics, and good decisions in an uncertain world require sometimes ignoring some of the available information (Gigerenzer, 2008).

In summary, business heuristics involve some formal or informal application of rules, processes, or methods for problem-solving, a level of incompleteness or uncertainty, and eventually the discovery of a solution that is not necessarily 100% reliable.
3.4 Literature Review

A literature review regarding the present state of research in small and medium Canadian businesses concerning heuristics-based decision-making reveals that understanding the dynamics of heuristics-based decision-making in small and medium business remains a challenge because of limited systematic scientific research on that topic.

The figure below presents a summary literature map of the major concepts linking argumentation, reasoning, heuristics, rules of thumb, and decision-making.

Figure 2. Heuristics-based decision-making literature map - an overview
References (in alphabetical order):

Chapter 4: Heuristics-based Decision-making as Knowledge Transfer

When a person makes a heuristics-based decision that person applies either personal knowledge or knowledge acquired directly or indirectly from another person. Knowledge acquired from another person and transmitted through heuristics is a form of knowledge transfer.

The ambiguity and lack of consistently accepted definitions of knowledge transfer is one of the hurdles when describing heuristics as a form of knowledge transfer. Unfortunately, knowledge management, also part of the management of knowledge transfer, is too easily associated with tools instead of processes, or ways of thinking (Newman, 2006).

Organizations use knowledge management as a strategy to turn their intellectual assets or creative capital into greater productivity, new value, and increased competitiveness. However, SMCB do not have the resources required to establish a solid base (supported either by technology or by experts) to deal with specific knowledge transfer needed in day-to-day operations. Moreover, most technology-based knowledge management systems use tools like Data Mining, Data Warehousing, Business Intelligence, Executive Decision Systems, Enterprise Resource Systems, Data Pattern Recognition Systems (to name the most common ones), which require large repositories of data and information. Some of the data collected in those repositories is text based, making its analysis difficult. This results in high costs in technology tools (hardware and software) and human resources (knowledge management experts), something SMCB can hardly afford.
4.1 Tacit Knowledge

Tacit knowledge is individual. Tacit knowledge is also a process and not only a form of knowing. Often, the daily operation of business depends on the availability of the personal contribution and experience of the owner-manager. This experience is not stored in any database, policy, or procedure manual. Thus, the firm depends on the owner-manager to continue to count on experiences, behaviours, attitudes, and abilities, or competencies of that person to perpetuate the competitive advantage of the firm or simply ensure its survival.

In the medieval ages, most apprenticeships took place in the artisan’s workshop. A carpenter would learn by watching his master work the wood, a stone carver would learn by following the advice of his trainer, a tailor would mimic his instructor’s example. One-on-one knowledge transfer is cumbersome, time-consuming, and often impossible for SMCB executives because of limited resources, time constraints, the fast pace of business change, and the ever-present competition.

Knowledge management, thus far, has been addressed in literature at either the philosophical or the technical levels, with little practical methods usable by small and medium businesses for managing and applying effectively their knowledge daily. Numerous models, tools, and techniques are in use for effective knowledge management (Anonymous, 2010). However, those tools focus mainly on explicit (or codified) knowledge rather than tacit knowledge. In addition, most of the literature on knowledge management reflects the experiences of large firms rather than small and medium businesses.

Research in knowledge management of small or medium-sized firms is still limited. This lack of research is particularly evident when exploring the differences between the acquisition, transfer, dissemination, and maintenance of tacit business knowledge in the context of the
owner-manager.

This study focuses on SMCB in which owner-managers often need to share their knowledge (both tacit and explicit) with key employees if they are to grow and ensure a stable succession planning process can take place. Owner-managers do not have resources to set up knowledge management systems, and they are not aware of the latest scientific trends in this area.

Macaulay and Cree suggest that instead of trying to turn this tacit knowledge into an explicit one, it may be beneficial to transfer tacit knowledge from the owner-manager through a process of socialization (Macaulay & Cree, 1999). Nonaka and Takeuchi suggest similar approaches. Nonaka gives two examples in which big companies enable tacit knowledge transfer between individuals and groups. The first, applied by Matsushita’s Home Bakery Team consists of creating apprenticeship teams, the second at Honda, uses sake as the transfer catalyst in out of office social gatherings (Nonaka & Takeuchi, 1995).

### 4.2 Present State of Research in Knowledge Management in Small and Medium Business

The review of literature in the areas of knowledge management, data and information management, tacit and explicit knowledge, personal and organizational learning, as well as knowledge as an intangible asset to SMCB shows that the present state of research on tacit knowledge transfer in SMCB is deficient.

Some authors explored tacit knowledge while studying knowledge management in big firms. For example, associative thinking is also tacit learning, or learning without being able to describe that knowledge was acquired, and therefore, difficult to share it with others. Zohar also
states, "All of us must learn a skill in our own way, for ourselves. No two brains have the same set of neural connections" (Zohar, 1995).

Owner-managers operate mainly using tacit knowledge. Most small firms do not codify their experiences or practices. SMCB have usually a strong corporate culture, largely derived from the owner-manager’s vision for the firm. Thus, understanding fully tacit knowledge and how SMCB transfer, disseminate, absorb, and manage this knowledge is important for them.

Some work was published recently on making tacit knowledge explicit – for example, by codifying tacit knowledge for reference librarians. Using terms as inarticulate intelligence, collective wisdom, or elusive knowledge, the authors suggests a form of tacit knowledge transfer using two steps: from tacit to explicit and from explicit to codified (Herschel, Hamid, & Steiger, 2001).

Sharing tacit knowledge also can be inhibited by a cultural context. Indeed, McDermott and O’Dell state that, in companies were knowledge is shared, knowledge management was adapted to the culture rather than the other way around. The objective was sharing knowledge to solve business problems (McDermott & O'Dell, 2001).

Endres and his research group compared knowledge sharing activities in the Open Source Community with traditional organizations. They conclude that their ‘self efficacy’ model could serve as "a useful framework for better understanding the effects of context on tacit knowledge sharing" (Endres, Endres, Chowdhury, & Alam, 2007).

Harlow found significant relationships between the Tacit Knowledge Level Index (TKI) and innovation performance of firms. Although Harlow writes about an ‘operational definition’ of TKI, he does not provide a formal definition of that index but rather the result of a series of
correlations in financial and innovation performance measures (Harlow, 2008).

Cavusgil, Calantone, and Zhao discovered similar results when studying the relationship between tacit knowledge transfer and a firm’s innovation capability (Cavusgil, Calantone, & Zaho, 2008).

4.3 Knowledge Transfer: a Historical Perspective

To understand better the present nature of knowledge transfer one can go briefly back in time, revisiting the Greeks, the Romans, and the way they addressed a similar subject using rhetoric. Thereafter, I analyze another aspect of knowledge transfer using the military’s perspective – a topic of constant interest to business. Finally, I review the contemporary literature on the subject, covering mostly the last 20 years, with a short intrusion to the first half of the last century.

Aristotle

According to Father Bochenski, logic started with dialectics, rules for discussion and reasoning, and in particular, rules for how to argue successfully (Bochenski, 2009). Following Bochenski’s line of thought, to better understand the present nature of knowledge transfer one can go back in time, revisiting the Greeks, the Romans, and the way they addressed a similar subject using rhetoric (Cocchiarella, 2001) and (Bochenski, 1953).

Whereas Aristotle has no special technical name for logic (for him logical means the same as our probable), I argue that most of the decisions (as defendable arguments) made by executives, follow some form of logical rule, therefore, those arguments can be presented (or defended) as logical in the sense of defensible reasoning. Indeed, reasoning, contrary to
demonstration, can be derived from opinions, and because reasoning based on opinions is not necessarily always correct, it can rely on heuristics.

4.4 Heuristics in Business

Applying decisions based on heuristics often leads to debate, questioning, revising, and understanding what has happened or might happen. Applying this same method to the general management structure and culture of our North American society means that the decision-makers will need to argue their case in front of their reports or peers to ensure their decision is followed. Hence, one needs to possess strong rhetorical skills when applying business heuristics to business decision-making.

With the Worldwide Web omnipresence in our every day private and business life, Charles Hinkle argues that:

“Value creation in the 20th century was largely defined by the conversion of heuristics to algorithms. It was about taking a fundamental understanding of a ‘mystery’ – a heuristic – and driving it to a formula, an algorithm – so that it could be driven to huge scale and scope” (Hinkle & Kuehn, 1966)

Dr. Roger Martin, Dean of Rotman School of Management (University of Toronto), proposes the following definition for heuristics:

"Heuristics are rules of thumb or sets of guidelines for solving a mystery by organized exploration of the possibilities" (Martin, 2004)

He continues,

Heuristics do not guarantee success – they simply increase the probability of getting to a
successful outcome. They represent an incomplete understanding of a heretofore mystery. Business people will have to become more like designers — more ‘masters of heuristics’ than ‘managers of algorithms’. (Martin, 2004)

Indeed, a heuristic, far from being a mystery, is a very concrete expression of one’s belief based on experience. Second, although some explicit heuristics can be derived into formulas (for example, those based on quantitative or statistical information), tacit heuristics might sometime resist generalization because of their reliance on information specific to one person’s experience.

4.5 Military Heuristics and Business Heuristics

The marketplace has often been described as a war field; therefore, one would expect that concepts from the military, applied to business, would be straightforward.

Carl von Clausewitz wrote,

Rather than comparing [war] to art, we could more accurately compare it to commerce, which is also a conflict of human interests and activities; and it is still closer to politics, which in turn may be considered as a kind of commerce on a larger scale. (Clausewitz, 1873)

However, even in its simplest description, business does not look much like war. For one thing, business has always three sides: the company, the customer, and the competitor. In war, usually only two sides are fighting our side and the enemy.

In the marketplace, unlike war, it may even be desirable to be conquered by a competitor in a lucrative merger or acquisition. Soldiers have to obey orders. If they refuse, they could face a court martial. Employees can refuse to obey. They can do so legally if the work is dangerous, or through strikes or resignations, with usually, only monetary consequences. On the other hand,
employer’s recourses can be lockouts, layoffs, or dismissals (firings).

Strategies and tactics of war are destructive. They rarely apply to business. Expressions like "Attack enemy weaknesses" have no factual meaning, except as metaphors, or analogies. Across different domains, such expressions can be misleading.

Winning in war can be achieved only if one group wins and the other one loses. Pyrrhic victory in war is also a possible outcome. In business, winning does not mean a loss to the other party since the war is not over. Other winning opportunities abound. The objective of business is to survive and stay in business.

Winning wars is built around two primary themes, one with a focus on time (sometimes also speed), using dislocations in time to shape the existing setting, and the other one on a culture of force as an attribute that enables — even drives — armies to exploit superiority for competitive advantage.

A similar effect of time can be different in business. The business strategy of first to market can be disastrous for business. Opposite effects can follow, resulting with unwanted products, disclosure of marketing strategy to the competitor, or missing the timing of a product launch. Business attracts customers through constructive marketing and sale strategies. The customers are those who decide whether to buy the product or service.

In business, the military strategy of the use of force is usually considered negatively. Overpowering the marketplace often results in a counter reaction of the consumer, the competition, or even the government. The European’s Commission 2004 antitrust ruling against Microsoft is a telling example of the potential consequences of market overpowerment and the resulting reaction of the European marketplace. Coca Cola and Wal-Mart have experienced
similar negative reactions in Asia (Gentleman, 2007), (Baker, 2003) and (Hines, 2004).

If one looks at a particular group of military practitioners, like Hannibal, Julius Cesar, Napoleon, Sun Tzu, Belisarius, Genghis Khan, T. E. Lawrence, the Blitzkrieg generals, the Israeli Defense Force, many modern guerilla commanders, or the US Marine Corps, and compares the heuristics expressed by those military leaders, one finds remarkable agreements between military and business application of heuristics.

I list in table 2 some examples of military heuristics with their suggested business interpretation. The corresponding business heuristic stemming from the study is in italics.

Table 2

*Military Heuristics versus Business Heuristics - Examples*

<table>
<thead>
<tr>
<th>Military heuristic</th>
<th>Business heuristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>He who has never learned to obey cannot be a good commander. (Aristotle)</td>
<td><em>Business leaders need to understand the effect of their leadership on their followers.</em></td>
</tr>
<tr>
<td>A man must make his opportunity, as often as he finds it. (Francis Bacon)</td>
<td><em>Take advantage of business opportunities</em></td>
</tr>
<tr>
<td>It is even better to act quickly and err than to hesitate until the time of action is past. (von Clausewitz)</td>
<td><em>He who hesitates is lost</em></td>
</tr>
<tr>
<td>To lead untrained people to war is to throw them away. (Confucius)</td>
<td><em>Skilled employees are beneficial to business</em></td>
</tr>
<tr>
<td>Only poets make strategy without budgets. (General Giulio Douhet)</td>
<td><em>Money talks</em></td>
</tr>
<tr>
<td>By failing to prepare, you are preparing to fail. (Benjamin Franklin)</td>
<td><em>Be prepared, plan</em></td>
</tr>
</tbody>
</table>
4.6 Business Heuristics and Knowledge Capital

Because using business heuristics in knowledge transfer can be viewed as part of the knowledge capital of a firm, I revisit that concept in this section. This will assist later on, in linking business heuristics to management functions (Weiss, 2007).

George Mason University professor, Paul A. Strassmann introduced and trademarked the term Knowledge Capital. The concept of knowledge as a measurable capital of a company, was researched under various names, such as knowledge value (Perkmann, 2002), intellectual capital (Nick Bontis, 2001), or knowledge assets (Young & Mentzas, 2001).

The concept of knowledge capital is tied closely to the field of knowledge management. Knowledge management is loosely defined as the activity a company needs to perform when dealing with its knowledge, harness that knowledge, and manage it wisely, just as any other business resource like money or material (Arenas & Lavanderos, 2008).

The idea of gathering and passing on knowledge is as old as written history, which sought to preserve the knowledge of past civilizations. As an example, some seeds of knowledge management are present in various medieval guilds, as artisans sought to pass on their skills and understanding (Dempsey, 1999).

Strassmann believes that the value of employee knowledge is reflected through payroll using traditional accounting methods. He explains that knowledge capital is a function of employees discussing how they do their jobs. Diefenbach, on the other hand, argues that one cannot measure knowledge, an intangible concept (Diefenbach, 2006). Strassmann replies simply, "That is a copout […] if you cannot measure it, it does not exist" (Strassmann, 1999).

Ostro introduces the concept of Knowledge Metrics without explicitly explaining the
source of these metrics (Ostro, 1997).

Bontis puts a price on heads, work stoppages, discrimination complaints, and uses a set of formulae to arrive at a corporation's knowledge capital and its ratio to investment capital or shareholder equity in his controversial 1996 paper (Nick Bontis, 1996).

Based on the above interpretation of the value of knowledge, SMCB (and corporations) must plan strategically their knowledge capital investment, and need to value the 'brain value' of their workers, at least as highly as they value funds, equipment, facilities, or any other resource, including equity capital. Employees and the knowledge they hold and create must be a valued resource because only people innovate and increase productivity.

A logical starting point for any corporation in planning knowledge capital management is to conduct a strategic analysis and quantify the capital on hand. Internal and external analyses can help pinpoint the value of the company's knowledge.

One can measure a company's knowledge capital in a variety of ways. For example, Strassmann starts with a company's year-end stock market valuation, or Market Value (MV). He then subtracts the Shareholder Equity (SE), or Financial Value, to arrive at a company's Knowledge Value. He introduces a Knowledge Capital Multiplier (KCM) - the ratio of knowledge assets to financial assets. This ratio reflects how much shareholders expect from intangible knowledge compared to tangible financial assets. If indeed, he is correct, and knowledge is a resource that one must capitalize and treat as carefully as money, then corporate managers and leaders must be able to apply management principles and functions to it.

In summary, a corporation's Market Value (MV) minus its Shareholder Equity (SE) equals its Knowledge Value (KV). KV is then divided by the Equity Value (EV) to arrive at a
Knowledge Capital Multiplier (KCM). KCM, when multiplied by the Knowledge Value, gives the Knowledge Capital (KC) of the corporation.

\[ MV - SE = KV, \]
\[ KV/EV = KCM, \]
\[ KCM \times KV = KC \]

The above was summarized by Bontis in the following diagram, using Scandia as an example.

\[ Figure 3. \text{ Assessing knowledge assets at Scandia's assurance and financial services} \]
Source (Nick Bontis, 2001).

The Value-Added valuation of Knowledge Capital™ reflects a view that equity capital may be available as a risky commodity based on the generally accepted Capital Asset Pricing
Model (Strassmann, 2005). Hence, in some circumstances, one can convert knowledge capital into working capital. One example of the acceptance of this concept is supported by the Canadian Imperial Bank of Commerce (CIBC). Indeed, CIBC considers some form of knowledge capital secure enough to be considered as collateral when required (Frankl, 2008).

I argue based on the few examples presented above that knowledge capital remains a debatable topic. Considering that business knowledge and tacit business knowledge in particular, represent a form of knowledge capital, I have found no coherent framework for conceptualizing or organizing various forms of this knowledge capital.

Evaluating competitors' knowledge capital may be beneficial, especially because knowledge capital is a source of competitive advantage. It also helps to know if either the company or its competitors are likely targets of raids on valuable staff.

Therefore, an environmental analysis of the external knowledge climate like the skills of potential employees will help in forecasting future sources of knowledge capital.

In analyzing global operations, corporations need to consider how they plan to share knowledge and develop their knowledge capital. Databases, although important when managing some form of knowledge, should not become the primary knowledge management tools. Knowledge capital will exist outside information technology. Any new system planned for storage and sharing of knowledge capital should be reviewed to ensure it could integrate data from previous systems. Proper knowledge capital management depends in part on a firm’s ability to organize itself, and integrate its knowledge management both internally and externally (McGovern, 2001).

Although business must consider multiple ways of organizing knowledge, business also
needs to know what is organizing knowledge capital, and where to allocate it. How knowledge capital is organized can be an extremely important element depending on the way it yields a return on investment. Information technology used need not be expensive or complex. Some of the simplest solutions yield the highest results.

Knowledge management experts who promote the latest and greatest systems abound. However, what is important is not the system, but the usability of the knowledge the system contains. Systems that employees do not understand or use are not an effective return on investment. SMCB executives face this form of challenges when they need to transfer that knowledge to others in their organization.

An organization must make sure knowledge resources are properly allocated; to do that requires knowing if that resource is in the right field and area of operation. A company needing innovation in research and development is not well served if most of its knowledge capital is in marketing. Although knowledge capital can be applied anywhere within an organization, needs must be prioritized for the best return on capital, just as with any other resource. In general, knowledge capital is valuable any place innovation is needed.

Not all knowledge is valuable for a business. Some knowledge is perishable and may become outdated as technology and processes change. Some employee knowledge may not pertain to the business. While knowing how much knowledge an organization has and where its knowledge lies is important for that organization, it is also important knowing what is valuable knowledge for that organization (Holsapple & Joshi, 2004).

Training can play an important role in determining what knowledge is valuable. Management should be trained to use knowledge capital effectively, by learning what knowledge
capital is and how to manage it. Management should also be trained on attracting and retaining knowledge capital resources, just as any other resource. Knowledge capital, like any resource, is intended to produce results and is not an end unto itself. Knowledge capital unused is a wasted resource.

When considering resource allocation, corporations sometimes make the mistake of attempting to save money on information technology (IT) in an attempt to increase profit margin. Strassmann states, however, "Even large reductions in the expenditures for computers can't impact profits as much as a small gain in the effectiveness of information management." Information technology should be viewed as a necessary expenditure for managing knowledge capital (Strassmann, 2006).

Corporate management must lead the way in managing knowledge capital. This starts with leadership decisions to invest in knowledge management systems and to value knowledge capital as a corporate resource. Members of an organization will follow the direction of the leaders who set the tone; if leaders value knowledge capital, the members will as well. Management can lead the way in motivating employees, valuing employee knowledge, and through transformational leadership. Leaders inspire and motivate their followers to meet organizational goals, and must motivate their employees to share their knowledge with others in the organization. Davenport writes, "The key is to think about how to motivate people to create, share, and acquire knowledge" (Davenport & Prusak, 1998).

Leadership must value its sources of knowledge capital: its people. A healthy corporation’s knowledge capital transcends its payroll. Payroll may be a place to start. A company that does not value its knowledge capital enough to retain it will lose it to companies will to recruit valuable human resources. One indicator Strassmann uses to measure the health of
a corporation is its knowledge capital index and its human capital index. Corporations start showing losses in knowledge capital long before productivity and profits show losses.

Other ways to ensure the retention of knowledge capital assets is through incentives, challenges, and creative outlets. Individuals respond to different motivators: some are motivated by recognition; others value being able to contribute to a greater purpose; still, others need creative outlets and thrive on challenge. Management must know their employees' motivations to choose the proper incentives that will help those employees believe they are valued and remain with the organization.

In some organizations, the knowledge capital concept may meet with resistance and may require transformational leadership to change the culture and bring about a new vision. This will require patience and encouragement by management.

The systems used to manage corporate knowledge are sometimes overlooked. Jeffery Conklin, an expert in collaborative technology research, and the Director of the CogNexus Institute in Napa, California, states, "Many have ended up creating the electronic version of the attic full of stuff." Much of such stuff does not qualify as knowledge. A successful management system will need regular filtering and clean-ups (Conklin, 2010).

Climate surveys are useful tools in evaluating the climate and culture of an organization. Surveys can be tailored to meet knowledge management and knowledge capital requirements. Surveys, especially when anonymous, can help leadership identify and correct misconceptions about knowledge capital (Chatzkel, 2004).

A helpful tool to follow completion of a major project or operation is the lessons-learned session. Knowledge and knowledge capital management can easily be incorporated into such
sessions to pinpoint what went right as well as what needs improvement. Military organizations have long conducted such sessions, often called 'hot washes', to judge campaigns and battles, and make adjustments. Corporations often do the same, but need to adapt the concept to include knowledge management.

**SWOT (Strengths, Weaknesses, Opportunities, Threats)**

In addition to the internal analysis, an external analysis is helpful in determining opportunities and threats to a company. Evaluating competitors' knowledge capital may be beneficial, especially since knowledge capital is a source of competitive advantage. It also helps to know if either the company or its competitors are likely targets of raids on valuable staff. An environmental analysis of the external knowledge climate like the skills of potential employees will help in forecasting future sources of knowledge capital.

In analyzing global operations, corporations should consider how they plan to share knowledge and develop their knowledge capital. A corporation needs to plan how knowledge capital will be collected and maintained. Databases, while important to knowledge management, should not become the primary area of focus. Knowledge capital will exist outside information technology (Strassmann, 1999). Any new system planned for storage and sharing of knowledge capital should be reviewed to ensure it could integrate data from previous systems.

In summary, knowledge capital, as part of a benefit brought by company employees, is an important factor in knowledge management. Knowledge transfer is therefore an essential element SMCB need to consider when considering the use of heuristics in decision-making.
Chapter 5: Research Method and Study Design

In this chapter, I describe the research method applied, the participants in the research, and the data collection process. I then present the coding process in detail, analyze the coding reliability, and the coding results. Finally, I include a detailed data analysis using the proposed coding criteria.

5.1 Background

Preliminary pilot studies I performed at the University of Victoria's Human Computer Interface lab, showed that the few SMCB executives who participated in this pilot study use business heuristics for business decision-making. Using these results, I developed the thesis research in four phases: a development phase, a data collection phase, a data analysis phase, and a reporting phase.

During the research development phase, I created 10 scenarios based on my business experience, requiring either a business decision or a solution to a business problem. I also developed an online survey tool to maintain objectivity and remain at arm's length with the participants. Throughout the data collection phase, the participants took the survey and suggested solutions for each scenario they chose to tackle. In the course of the data analysis phase, I analyzed the solutions provided by the survey participants based on the criteria defined in the study. Finally, I present my findings in the reporting phase.

5.2 Research Development and Data Collection Tool

The main investigation tool applied in this research was a survey in the form of an online questionnaire consisting of 10 business scenarios. Each scenario describes briefly a business
experience I encountered during my career as a senior executive with various hi-tech Canadian companies. The topics of the survey cover diverse situations like company valuation, cost forecast, lawsuit, move decision, credit line downgrade, collective agreement negotiation, project slippage, quality management, crisis management, and a joint venture opportunity. The participants were asked to suggest solutions to the business problem(s) described in the scenario.

The participants had to:

1. Identify their gender (for statistical purposes),
2. Read a short business scenario (5-10 lines) requiring a decision,
3. Confirm if they had encountered a similar business experience during their careers,
4. Regardless of their previous experience with the suggested scenario, describe briefly the most probable business decision they would have made in the scenario described, and
5. Write down the most probable rule of thumb or heuristic they would have applied to make that decision.

To ensure anonymity and objectify of the answers, a third party directed the participants to the survey online website. The survey participants could request a preliminary report on the survey findings by providing their e-mail address through a separate website, therefore ensuring they could not be associated with their answers. Furthermore, they had the opportunity to review the research purpose, and read an online consent form, as required and approved by the University of Victoria Human Research Ethics Board (Protocol # 07-313).

I present the full survey in Appendix 1: Business Heuristics Analysis by Scenario, the
some of the detailed resulted of this research.

### 5.3 Survey Participants

The survey participants included three non-probabilistic distinct and pre-defined groups consisting of University of Victoria MBA candidates, University of Victoria MBA Mentors, and Senior SMCB executives, members of specific business associations on Vancouver Island, namely the Vancouver Island Advanced Technology Center or the Greater Victoria Chamber of Commerce.

Second-year University of Victoria MBA candidates symbolize future executives with limited business experience. Although most of the participating members of this group provided heuristics-based solutions to the business scenarios problems, none of them had experienced firsthand the business problems described in those scenarios. These results strengthen the claim that the chosen business scenarios represented situations encountered mostly by senior business executives.

Business mentors volunteering at University of Victoria's School of Business represent the second group. Members of this group were seasoned business executives, at the peak of their career or retired.

Executives whose business is a member of either the Greater Victoria Chamber of Commerce or Vancouver Island Advanced Technology Centre represent the third group of participants. Members of this group typically belong to small or medium hi-tech firms or various small or medium business firms on Vancouver Island.

All the University of Victoria MBA mentors and all senior SMCB executives have experienced firsthand some variations of the suggested scenarios, therefore corroborating that the
business scenarios were probably common to a typical SMCB executive. The participating business executives recommended a wide variety of heuristics-based decisions to the business scenario problems.

### 5.4 Data Collection Process

The data collection process involved the following four steps. During the first step, I developed the data collection tool and website, and communicated to the chosen third parties (University of Victoria School of Business, the Vancouver Island Advanced Technology Center, and the Greater Victoria Chamber of Commerce) the appropriate website containing the survey data. Following this first step, the third parties communicated to their respective survey participants the website address using their own emailing or communication system. This ensured confidentiality and objectivity of the data collection process. Participants could choose to provide their email address at the end of the survey form should they desire to receive a summary report of the survey. The third parties were not involved in their member's decision regarding this choice. In step three, once the data was uploaded to the survey's website database, I compiled the survey data and proceeded to code the data applying coding criteria I developed for this purpose, and analyzed the results of this coding using three different coding analysis tools. I finally present my findings in this dissertation in step four.

I use my personal knowledge and experience to interpret the collected material, a method supported by Trochim (Trochim, 1993). Strauss and Corbin argue that applying this type of research analysis could result in the expression of my impressions, hence potentially being intangible and undocumented (Corbin & Strauss, 1990). I address this concern in chapter 8, by discussing the threats to validity of my chosen research method.
5.5 Coding Analysis Tools

I used three coding analysis tools to interpret the resulting survey's textual data.

The first coding analysis tool used in this research is the program Atlas.ti version 5.2. Atlas.ti is a powerful workbench for the qualitative data analysis and concept mapping of large bodies of textual, graphical, audio, and video data. This tool permits tagging and associating memos to the data analysis process; it enables multiple coders to collaborate on a single project, and generates output that facilitates the analysis and concept mapping process.

The second coding analysis tool is University of Pittsburgh's Qualitative Data Analysis Program (QDAP). QDAP is a service of the University of Pittsburgh Center for Social and Urban Research and hosted by the University Center for Social and Urban Research (UCSUR) at the University of Pittsburgh. The Coding Analysis Toolkit (or CAT) associated with QDAP, is a web-based suite of tools facilitating efficient analysis of text datasets.

The third coding analysis tool is the KWIC (Key Word in Context) Concordance program, which is open-source software for Windows using Microsoft Excel.

5.6 Data Preparation for Analysis

I compiled the emailed survey results into primary Excel spreadsheets for easy sorting and organizing the textual data. I then transferred those results to a Microsoft Word document to delete the questions and tags, remaining only with the raw textual data.

I converted all the textual data (with obvious spelling errors corrected) into a set of primary documents in rich text format to serve as input for the various coding analysis tools. Textual analysis activities include compiling, segmenting, and organizing the textual data files, and coding data segments of each primary document involved using the material available from
the survey website.

5.7 Quantitative Data

I use purposive sampling of the compiled business heuristics instead of probability sampling because this research method allows a more detailed analysis of qualitative data. Lincoln and Guba state that this form of sampling "is based on informational, not statistical, considerations. Its purpose is to maximize information, not facilitate generalization. […] The criterion invoked to determine when to stop sampling is informational redundancy, not a statistical confidence level" (Guba & Lincoln, 2000). Table 3, summarizes the resulting quantitative textual data downloaded from the survey website.

Table 3

Quantitative Data: Survey Text Content Distribution.

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pages</td>
<td>141</td>
</tr>
<tr>
<td>Paragraphs</td>
<td>2,419</td>
</tr>
<tr>
<td>Words</td>
<td>16,749</td>
</tr>
</tbody>
</table>

Table 4, on the next page, presents the distribution of the survey participants by control groups (MBA students, UVic MBA mentors, and Business executives).
Table 4

Quantitative Data: Survey Participants by Control Group.

<table>
<thead>
<tr>
<th></th>
<th>Mentors</th>
<th>Executives</th>
<th>Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of participants by type</td>
<td>15</td>
<td>17</td>
<td>7</td>
<td>39</td>
</tr>
<tr>
<td>Participant's experience with the scenario</td>
<td>15</td>
<td>17</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>Participant's experience in %</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>82%</td>
</tr>
<tr>
<td>Number of male participants by type</td>
<td>14</td>
<td>14</td>
<td>6</td>
<td>34</td>
</tr>
<tr>
<td>Percentage of male participants</td>
<td>36%</td>
<td>36%</td>
<td>14%</td>
<td>87%</td>
</tr>
<tr>
<td>Number of female participants by type</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Percentage of female participants</td>
<td>3%</td>
<td>8%</td>
<td>3%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Note: Four participants sent incomplete survey responses commenting that the survey was too long.

The analysis of table 4 reveals that some of the University of Victoria business mentors and some of the business executives experienced at least one of the survey scenarios. This substantiates the survey scenario validity by corroborating that the presented scenarios did not represent only my business experience but rather a business experience common among the business executives that participated in the survey.

Moreover, none of the participating MBA students experienced any of the survey's business scenarios. This also reinforces the survey scenario validity by indicating that those business scenarios were of the type experienced mostly by senior executives.

5.8 Business Heuristic Coding Criteria

In this section, I describe in detail the coding criteria developed to categorize the
heuristics and analyze their distribution and usage throughout the survey data.

**Definition of Explicit and Tacit Business Heuristics**

Business heuristics are informal rules, not intended to be strictly accurate, used to solve business problems (Chapter 1). Business heuristics are statements (sometimes in the form of advice or informal rule) given by businesspersons to other businesspersons in need of a solution to a business problem. Those statements can contain explicit or tacit information. An *explicit* statement is a statement that is demonstrates or expresses fully and clearly, leaving nothing implied. A *tacit* statement is a statement that may contain implied or hidden information.

I define a business heuristic (BH) to be *explicit* (EBH), if it describes what needs to be done in the form of an action verb, and if *how* to perform that action. The *how* determination is satisfied if the business heuristic contains the information required to solve the business problem or that information is readily available in literature.

Of course, although some business heuristics might not describe in detail *how* to perform an action, one can easily find reliable literature describing explicitly *how* to perform that action. For example, a business heuristic stating, "*Do a cost/benefit analysis,*" is an *explicit* business heuristic because doing a cost/benefit analysis is well defined in a variety of documented and reliable online and print sources.

A business heuristic is *tacit* if it does not meet both conditions defining an *explicit* business heuristic.
Conjecture:

A business heuristic is explicit if it satisfies the (W+) and the (H+) rules as defined hereafter:

1. The (W+) rule states that the WHAT in the business heuristic is described by at least one action verb. I used the (W-) notation when the (W+) rule is not satisfied.

2. The (H+) rule states that the HOW in the business heuristic can be determined. I use the (H-) notation when the (H+) rule is not satisfied.

Table 5 below summarizes the above rules.

Table 5

Explicit and Tacit Business Heuristic Coding.

<table>
<thead>
<tr>
<th>Code</th>
<th>What</th>
<th>How</th>
<th>Type of business heuristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>BH1</td>
<td>(W+)</td>
<td>(H+)</td>
<td>Explicit</td>
</tr>
<tr>
<td>BH2</td>
<td>(W+)</td>
<td>(H-)</td>
<td>Tacit</td>
</tr>
<tr>
<td>BH3</td>
<td>(W-)</td>
<td>(H+)</td>
<td>Tacit</td>
</tr>
<tr>
<td>BH4</td>
<td>(W-)</td>
<td>(H-)</td>
<td>Tacit</td>
</tr>
</tbody>
</table>

Examples:

1. Respond quickly to client needs.

Checking for the (W+) rule: the verb respond is an action verb; therefore, this business heuristic is an explicit business heuristic candidate. Checking for the (H+) rule: the adverb quickly modifies the action verb respond, therefore, indicating HOW the response needs to be.

Hence, the above business heuristic is an explicit business heuristic.
2. Negotiate.

Checking for the (W+) rule: the verb *negotiate* is an action verb; therefore, this business heuristic is an explicit business heuristic candidate. Checking for the (H+) rule: this business heuristic contains no indication HOW one needs to negotiate. Hence, the (H-) rule applies. This business heuristic is therefore a tacit business heuristic.

As per above definitions, for a business heuristic to be explicit (EXPLICIT BUSINESS HEURISTICS - EBH) it needs to include a description of HOW the action is to be performed, or a description of the manner in which the heuristic is to be applied. The description can suggest, for example, by what means, by what method, in what manner, just how, exactly how, in what way, to what extent, or in what form to perform the action.

3. A problem is also an opportunity.

Checking for the (W+) rule: the verb *is* is a state-of-being verb; therefore, this business heuristic is a tacit business heuristic. Checking for the (H+) rule: no need to check for (H+). This business heuristic is a tacit business heuristic.

4. Do a cost/benefit analysis.

Checking for the (W+) rule: the verb *do* is an action verb; therefore, this business heuristic is an explicit business heuristic candidate. Checking for the (H+) rule: in this case the HOW is determinable indirectly by the words cost, benefit, and analysis. Performing a cost/benefit analysis is a known business process, readily available in the business literature. Therefore, although the heuristic does not describe in detail HOW a cost/benefit analysis is done, one can easily find reliable literature describing explicitly a cost/benefit analysis. Therefore, this business heuristic is an explicit business heuristic.
5. Consult legal advisers for advice.

Checking for the \((W+)\) rule: the verb *consult* is an action verb; therefore, this business heuristic is an explicit business-heuristic-candidate. Checking for the \((H+)\) rule: in this case the HOW is determined by the form this consultation should take place - using an external entity (legal adviser). Therefore, this business heuristic is an explicit business heuristic.

If the action verb requires a dynamic external input (usually involving others) then the HOW is imbedded in the action verb. The example above, consult \((legal advisers for advice)\) illustrates HOW the action needs to be performed, for example, by involving another person.

6. Know your limit.

On the other hand, some business heuristics do not contain information HOW is one to apply the business heuristic. If the verb is of a static, introvert form (usually self-centered), then the HOW part of the business heuristic is missing, like in this example. Checking for the \((W+)\) rule: the verb *know* is a static verb. It does not describe an activity that needs active performing; this business heuristic does not convey information on HOW the action needs to be performed therefore, this business heuristic is a tacit business heuristic. Checking for the \((H+)\) rule is not needed here.

These decision criteria are summarized in figure 4 on the following page.
5.9 Dataset Preparation for Coding

The final business heuristic table compiled from the survey analysis consisted of around 16,000 words distributed in more than 2,300 statements. This original textual data was stripped of repetitive or irrelevant information, and the remaining text was analyzed for its implicit or tacit content using the above coding criteria.

Statements considered as comments were omitted from the coding dataset because they contained irrelevant material for coding purposes. For example,

- *It seems like a small business.*

- *Business decisions of this nature are not simply business decisions.*
• *I did experience a lawsuit at BMO however, it was slightly different.*

Repeated or similar business heuristics were replaced by one business heuristic. For example,

• *Ask questions, have questions ready*

• *Find solutions, explore solutions*

• *Explore alternatives, analyze alternatives*

The result of this consolidation process was a dataset of around 5,000 words comprising 511 business heuristics. This resulting dataset was used in the coding process as described hereunder.

### 5.10 Explicit and Tacit Coding Process

**Background**

The abbreviations in this section are applicable to the text only. Various figures and tables (and the respective software applied) use slightly different abbreviations because of software constraints.

I introduce six codes used for sorting business heuristics into tacit and explicit categories. Those codes are:

1. **WHAT_YES**, (the what in the business heuristic is an action verb)

2. **WHAT_NO**, (the what in the business heuristic is not an action verb)

3. **HOW_YES**, (the how in the business heuristic can be determined)

4. **HOW_NO**, (the how in the business heuristic cannot be determined)
5. EB_RoT, (Explicit Business Heuristic - Rule of Thumb), and

6. TB_RoT, (Tacit Business Heuristic - Rule of Thumb).

The WHAT, HOW and B_RoT codes are exclusive, meaning that a business heuristic could have either a "yes" or a "no" WHAT or HOW code, and either an EB_RoT or a TB_RoT code.

EB_RoT and TB_RoT codes could have been automatically inferred from the WHAT and HOW coding. Indeed, any business heuristic coded without both WHAT_YES and HOW_YES codes is automatically a TB_RoT. However, this additional validation was useful in the coding process when different coders were involved to secure a more uniform criteria distribution process.

Each business heuristic was assigned three codes (one WHAT code, one HOW code and one B_RoT code). The same code structure was applied during each coding of the dataset.

Table 6 on the next page summarizes the above coding distribution and the resulting business heuristic category.
Table 6

*The Coding Process.*

<table>
<thead>
<tr>
<th>WHAT</th>
<th>HOW</th>
<th>EB_RoT</th>
<th>TB_RoT</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>n/a</td>
</tr>
<tr>
<td>YES</td>
<td>NO</td>
<td>n/a</td>
<td>YES</td>
</tr>
<tr>
<td>NO</td>
<td>YES</td>
<td>n/a</td>
<td>NO</td>
</tr>
<tr>
<td>NO</td>
<td>YES</td>
<td>n/a</td>
<td>YES</td>
</tr>
<tr>
<td>NO</td>
<td>YES</td>
<td>n/a</td>
<td>NO</td>
</tr>
</tbody>
</table>

**5.11 Coding Reliability Analysis**

Coding qualitative data is always questionable. Is the coding criteria reliable, will different coders arrive at similar results, is the process repeatable, does the code give out consistent information, are some of the questions I address hereafter.

Three different coders used four identical datasets for coding to explore the reliability of the coding criteria. Furthermore, to validate the results stemming from the chosen criteria, a coding reliability analysis was done choosing code-by-code comparisons of three different coding tools (Atlas.ti, QDAP-CAT, and Microsoft Excel), by looking at exact matches, overlaps, or mismatches.

*Atlas.ti Coding*

Atlas.ti was used as a first mechanism to code the dataset. Atlas.ti is a powerful workbench for the qualitative data analysis of large bodies of textual, graphical, audio, and video data. It allows tagging and associating memos to the data analysis process, enables multiple
coders to collaborate on a single project, and generates output that facilitates the analysis process. See below the Atlas.ti screenshot in figure 6.

![Atlas.ti screenshot](image)

**Figure 5.** Atlas.ti screenshot.

**Qualitative Data Analysis Program (QDAP) Coding**

The Qualitative Data Analysis Program (QDAP) is a service of the University of Pittsburgh Center for Social and Urban Research and hosted by the University Center for Social and Urban Research (UCSUR) at the University of Pittsburgh. The Coding Analysis Toolkit (or CAT) associated with QDAP, is a web-based suite of tools facilitating efficient analysis of coded text datasets using an internal coding module.

QDAP-CAT consists of several interactive online modules allowing researchers to upload raw data like survey research documents, define a series of coding criteria, and proceed with coding this data individually or using other coders with access to this tool. The QDAP and CAT
programs permit independent coding online by different coders using the same coding criteria. Two separate coding sessions were used to explore the application of the defined coding criteria. The resulting coded dataset files were downloaded as comma delimited files for further analysis using Excel. Two different coders participated in the CAT program. Figure 7 presents a sample of the QDAP-CAT screenshot.

![Image of QDAP-CAT screenshot]

Figure 6. CAT (Coding Analysis Toolkit) screenshot

**Microsoft Excel Coding**

Microsoft Excel's multiple table analysis and data tagging was the third tool used as a validation instrument of the coding criteria. Each business heuristic was associated with its criteria tags. The criteria was converted to one (1) applicable criteria, or zero (0), non-applicable criteria. The resulting tables were then sorted according to each criterion. The process is summarized in table 7, showing 2 comparative coding examples, and their resulting entries in the comparison table.
Table 7

*Comparison Table - Including Two Coding Examples.*

<table>
<thead>
<tr>
<th></th>
<th>DATASET 1</th>
<th>DATASET 2</th>
<th>DISCREPANCIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Heuristic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BH1</td>
<td>HOW</td>
<td>HOW</td>
<td>TB RoT</td>
</tr>
<tr>
<td>Anticipate the worst</td>
<td>WHAT_NO</td>
<td>TB RoT</td>
<td>WHAT_NO</td>
</tr>
<tr>
<td></td>
<td>HOW_NO</td>
<td></td>
<td>HOW_NO</td>
</tr>
<tr>
<td>BH2</td>
<td>WHAT_YES</td>
<td>TB RoT</td>
<td>WHAT_NO</td>
</tr>
<tr>
<td>Allowing change is important</td>
<td>HOW_NO</td>
<td></td>
<td>HOW_NO</td>
</tr>
</tbody>
</table>

Note: BH1 and BH2 are two codes applied according to the defined coding criteria.

5.12 Coding Reliability Results

I present hereafter the results of the coding reliability analysis by comparing the coding results of two coders using the same dataset and the same coding criteria, using Fleiss's Kappa and Krippendorff's Alpha calculations (Uebersax, 2007) and (Krippendorff, 2007).

Those results are compared later with two other coders using the Atlas.ti and Microsoft Excel coding results.
Reliability of the Chosen Criteria using Fleiss Kappa calculations

Tables 8 to 11 on the following pages present the Fleiss Kappa (hereafter F-κ values) results of the coding analysis.

Table 8

**F-κ Values for the WHAT Criteria.**

<table>
<thead>
<tr>
<th>Code</th>
<th>Coder 1</th>
<th>Coder 2</th>
<th>Exact Match</th>
<th>(F-κ values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT_NO</td>
<td>64</td>
<td>65</td>
<td>52</td>
<td>0.68</td>
</tr>
<tr>
<td>WHAT_YES</td>
<td>449</td>
<td>444</td>
<td>432</td>
<td>0.94</td>
</tr>
<tr>
<td>Totals</td>
<td>513</td>
<td>509</td>
<td>484</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Table 9

**F-κ values for the HOW criteria.**

<table>
<thead>
<tr>
<th>Code</th>
<th>Coder 1</th>
<th>Coder 2</th>
<th>Exact Match</th>
<th>(F-κ values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOW_NO</td>
<td>197</td>
<td>208</td>
<td>164</td>
<td>0.68</td>
</tr>
<tr>
<td>HOW_YES</td>
<td>319</td>
<td>301</td>
<td>269</td>
<td>0.77</td>
</tr>
<tr>
<td>Totals</td>
<td>516</td>
<td>509</td>
<td>433</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Table 10

**F-κ Values for the Explicit versus Tacit Business Heuristic Criteria.**

<table>
<thead>
<tr>
<th>Code</th>
<th>Coder 1</th>
<th>Coder 2</th>
<th>Exact Match</th>
<th>(F-κ values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBH_RoT</td>
<td>309</td>
<td>299</td>
<td>260</td>
<td>0.75</td>
</tr>
<tr>
<td>TBH_RoT</td>
<td>209</td>
<td>209</td>
<td>167</td>
<td>0.67</td>
</tr>
<tr>
<td>Totals</td>
<td>518</td>
<td>508</td>
<td>427</td>
<td>0.71</td>
</tr>
</tbody>
</table>

Table 11
**F-κ Values for the Combined Criteria.**

<table>
<thead>
<tr>
<th>Code</th>
<th>Coder 1</th>
<th>Coder 2</th>
<th>Exact Match</th>
<th>(F-κ values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT_NO</td>
<td>64</td>
<td>65</td>
<td>52</td>
<td>0.68</td>
</tr>
<tr>
<td>WHAT_YES</td>
<td>449</td>
<td>444</td>
<td>432</td>
<td>0.94</td>
</tr>
<tr>
<td>HOW_NO</td>
<td>197</td>
<td>208</td>
<td>164</td>
<td>0.68</td>
</tr>
<tr>
<td>HOW_YES</td>
<td>319</td>
<td>301</td>
<td>269</td>
<td>0.77</td>
</tr>
<tr>
<td>TBH_RoT</td>
<td>209</td>
<td>209</td>
<td>167</td>
<td>0.67</td>
</tr>
<tr>
<td>EBH_RoT</td>
<td>309</td>
<td>299</td>
<td>260</td>
<td>0.75</td>
</tr>
<tr>
<td>Totals</td>
<td>1547</td>
<td>1526</td>
<td>1344</td>
<td>0.75</td>
</tr>
</tbody>
</table>

According to Landis and Koch in the case of a few raters and a large dataset, when the F-κ values are over 0.61, the agreement between coders is considered as substantial (Landis & Koch, 1977).

**Reliability of the Chosen Criteria using Krippendorff’s Alpha calculations**

I also use the Krippendorff’s alpha (hereafter, K-α) method to describe the reliability of the resulting coding between raters. Table 12 on the next page interprets the significance of the K-α value as suggested by Landis and Koch. The alpha is usually higher when fewer categories are present (Sim & Wright, 2005) whereas smaller samples could result in larger differences and lower alpha (Popping, 2009) and (Kolbe & Burnett, 1991).
Table 12

Significance of the $K$-α Value

<table>
<thead>
<tr>
<th>K-κ values</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$&lt; 0$</td>
<td>Poor agreement</td>
</tr>
<tr>
<td>$0.0 – 0.20$</td>
<td>Fair agreement</td>
</tr>
<tr>
<td>$0.21 – 0.40$</td>
<td>Slight agreement</td>
</tr>
<tr>
<td>$0.41 – 0.60$</td>
<td>Moderate agreement</td>
</tr>
<tr>
<td>$0.61 – 0.80$</td>
<td>Substantial agreement</td>
</tr>
<tr>
<td>$0.81 – 1.00$</td>
<td>Almost perfect agreement</td>
</tr>
</tbody>
</table>

Tables 13 to 16 hereafter present the Krippendorff’s Alpha calculations results.

Table 13

Krippendorff’s Alpha Calculations Results for the WHAT Criteria

<table>
<thead>
<tr>
<th>Code</th>
<th>Coder 1</th>
<th>Coder 2</th>
<th>Total Count</th>
<th>(K-α values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT_NO</td>
<td>64</td>
<td>65</td>
<td>129</td>
<td>0.778</td>
</tr>
<tr>
<td>WHAT_YES</td>
<td>449</td>
<td>444</td>
<td>893</td>
<td>0.739</td>
</tr>
<tr>
<td>Totals:</td>
<td>513</td>
<td>509</td>
<td>1022</td>
<td>0.759</td>
</tr>
</tbody>
</table>

Table 14

Krippendorff’s Alpha Calculations Results for the HOW Criteria

<table>
<thead>
<tr>
<th>Code</th>
<th>Coder 1</th>
<th>Coder 2</th>
<th>Total Count</th>
<th>(K-α values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOW_NO</td>
<td>197</td>
<td>208</td>
<td>405</td>
<td>0.685</td>
</tr>
<tr>
<td>HOW_YES</td>
<td>319</td>
<td>301</td>
<td>620</td>
<td>0.663</td>
</tr>
<tr>
<td>Totals:</td>
<td>516</td>
<td>508</td>
<td>1025</td>
<td>0.674</td>
</tr>
</tbody>
</table>

Table 15

Krippendorff’s Alpha Calculations Results for the Explicit versus Tacit Criteria

<table>
<thead>
<tr>
<th>Code</th>
<th>Coder 1</th>
<th>Coder 2</th>
<th>Total Count</th>
<th>(K-α values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EB_RoT</td>
<td>309</td>
<td>299</td>
<td>608</td>
<td>0.642</td>
</tr>
<tr>
<td>TB_RoT</td>
<td>209</td>
<td>209</td>
<td>418</td>
<td>0.660</td>
</tr>
<tr>
<td>Totals:</td>
<td>518</td>
<td>508</td>
<td>1026</td>
<td>0.651</td>
</tr>
</tbody>
</table>
Table 16

*Krippendorff’s Alpha Calculations Results for the Combined Criteria*

<table>
<thead>
<tr>
<th>Code</th>
<th>Coder 1</th>
<th>Coder 2</th>
<th>Total Count (K-α values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EB_RoT</td>
<td>309</td>
<td>299</td>
<td>608 0.642</td>
</tr>
<tr>
<td>TB_RoT</td>
<td>209</td>
<td>209</td>
<td>418 0.660</td>
</tr>
<tr>
<td>HOW_NO</td>
<td>197</td>
<td>208</td>
<td>405 0.685</td>
</tr>
<tr>
<td>HOW_YES</td>
<td>319</td>
<td>301</td>
<td>620 0.663</td>
</tr>
<tr>
<td>WHAT_NO</td>
<td>64</td>
<td>65</td>
<td>129 0.778</td>
</tr>
<tr>
<td>WHAT_YES</td>
<td>449</td>
<td>444</td>
<td>893 0.739</td>
</tr>
<tr>
<td>Totals:</td>
<td>1547</td>
<td>1526</td>
<td>3073 0.694</td>
</tr>
</tbody>
</table>

Because K-α > 0.667 the tentative conclusion that the coding is reliable is considered acceptable. The results indicate that the proposed criteria were appropriate for their intended use as an analysis tool of the consolidated business-heuristics-survey data set. Specifically, both the F-κ and K-α values show a high level of agreement between the coders.

*Similarity of the Coding Results Using the Expanded Data Sets*

Four datasets were compared using a combination of comparison tools. Coding results in column A were compiled using Microsoft Excel, those in column B used Atlas.ti, while coding results in columns C and D were coded using QDAP CAT.

Tables 17 and 18 summarize the explicit and tacit business heuristics rules of thumb coding differential.
Table 17

*EB_RoT versus TB_RoT Coding Differential*

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EB_RoT</strong></td>
<td>60%</td>
<td>45%</td>
<td>63%</td>
<td>60%</td>
<td>57%</td>
</tr>
<tr>
<td><strong>TB_RoT</strong></td>
<td>41%</td>
<td>55%</td>
<td>37%</td>
<td>41%</td>
<td>43%</td>
</tr>
</tbody>
</table>

The ratio between EBH and TBH was 1.33, indicating that business heuristics tend to be more often explicit than tacit. Therefore, SMCB executives are encouraged to ask for business heuristic when in need of a business solution, because the resulting business heuristic will probably offer a worthwhile business solution.

Table 18 presents the standard deviation for each of the six coding criteria, showing a WHAT standard variation of 0.020, a HOW standard variation of 0.041 and a TB versus EB RoT standard variation of 0.068. Although low standard variations of the WHAT and HOW were expected (see next section showing overwhelming uniformity in the use of these criteria), the higher standard variation of the RoTs shows a relatively uniform criteria distribution for this population sample.

Table 18

*Standard Deviation Comparison*

<table>
<thead>
<tr>
<th></th>
<th>Standard Deviation</th>
<th>Standard Deviation</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB versus EB_RoT</td>
<td>0.068</td>
<td>WHAT_YES Versus NO</td>
<td>0.020</td>
</tr>
</tbody>
</table>

5.13 Consistency of the Resulting Information

The histograms in this section show a relatively strong uniformity (with an average of 88%) in
the distribution of the choice criteria for the four datasets.

*Interpretation of the WHAT Criteria Coding Results*

The WHAT criteria is present in 87% to 92% of the codes (with an average of 88%), an indication that heuristics, when applied to solving business problems, use predominantly action verbs as mechanisms for knowledge transfer. The knowledge transferred consists mostly of WHAT needs to be done. See figure 7.

![Comparison histogram WHAT-NO versus WHAT_YES](image)

*Figure 7. Comparison histogram WHAT-NO versus WHAT_YES*

*Interpretation of the HOW criteria coding results*

The determinability of the HOW criteria varied between 54% and 62% (with an average of 60%) indicating that a lower number of BHs expressed how the business heuristic was to be implemented, when compared to WHAT needs to be done, leaving to the other party to find how to implement the solution to their business problem. See figures 8 and 9.
Interpretation of the criteria coding results

I conclude that the chosen criteria are reliable for the identification of explicit versus implicit business heuristics in the study dataset.

In the next chapter, I perform a qualitative analysis of the research data.
Chapter 6: Qualitative Data Analysis

In this chapter, I present a qualitative analysis of the research data.

6.1 Background

Business decisions often depend on whether they affect necessities (must haves), possibilities (should haves), or opportunities (nice to haves). Expressions like can, could, should, might, must, cannot, have to, want, do not want, need, require, and so on, direct the various forms business decisions will take. A danger in making unsubstantiated decisions exists when the problem at hand is filled with ambiguity or uncertainty, which is frequently the case in business. Business executives often follow a three-staged decision-making process consisting in:

COLLECT => ANALYZE => DECIDE

In stage 1, the executive collects the required information for making the decision. The collected information may be incomplete, misleading, confusing, or outright wrong.

Most often at this stage, the executive asks for advice that may take the form of a business heuristic. In stage 2, the executive analyzes the heuristic to determine if he or she can decide based on the collected information. In the final stage, the executive decides whether to apply the heuristics in the decision-making process. This is, of course, the decision stage.

If the executive decides to make a decision at this stage, (usually based on objective or subjective criteria) then the decision can be positive, negative, or neutral - where neutral means no decision takes place, which is also a form of decision. The importance is that a decision takes place and "we go on with business," which is a desirable outcome. If the executive cannot decide, usually for lack of enough information, the executive will try to search for that missing
information. Therefore, more work is required. This is usually an undesirable outcome.

The research survey follows the above method with some refinement consisting in associating to the heuristic additional data (when available). For example, the heuristic "perform a cost/benefit analysis" implies that a competent executive knows how to perform a cost/benefit analysis from experience or by using readily available information, filling in the additional data missing from the heuristic; this facilitates the decision-making process.

In most of the survey scenarios, when the participants have experienced a similar business problem or challenge, this experience transpired through the business heuristics they provided.

For example, the following BHs describe clearly what and how one can minimize a cash flow problem:

- **Reduce the exposure of the company by maintaining draws from the client at regular milestones.**

  - The problem is reduced cash flow, often because of insufficient working capital, poor credit, or deficient accounts receivable management, for example.

  - The solution proposed consists of two steps: maintain (require) draws (payments) from clients at regular intervals (milestones), which can translate into more frequent, e.g. bi-weekly, payments.

On the other hand, in a few situations, we can infer from the proposed business heuristics that the participant had no idea how to address the problem at hand by offering a business heuristic that had no problem-solving value because the proposed business heuristic was either
not applicable or not relevant to the business problem at hand.

For example, the business heuristic below states simply a business fact without suggesting either an action or a process:

- *Shareholders and stakeholders both benefit from a financially strong, productive, and rewarding work environment.*

In my experience as well as stemming from the survey responses, executives seldom perform detailed analysis when facing business problems that require quick decision-making. They usually tend to use their experience or their instinct because they often do not have enough time to do all the required due diligence or information search. This means that a business heuristic needs to be easy to implement, therefore, the business heuristic needs to contain sufficient decision-making information to be useful to the business executive.

### 6.2 Business Heuristics Categories and Families

Applying the above analysis to the survey's business heuristics, I distinguish two business heuristics categories: *explicit business heuristics* and *implicit (tacit) business heuristics*. Each category consists of two business heuristics families. Explicit business heuristics comprise complete and incomplete heuristics. Implicit business heuristics include rules of thumb and experience-based business heuristics. Figure 9 summarizes this business heuristics distribution.
6.3 Explicit Business Heuristics: Qualitative Data Analysis

Using the above categorization, between 45% and 63% (with an average of 57%) of the survey's business heuristics are explicit. Explicit business heuristics contain both an action verb and a determinable method of implementing the proposed heuristics.

I subdivide E-BHs into two families consisting of complete explicit business heuristics (the CE-BHs family) and incomplete explicit business heuristics (the IE-BHs family).

Complete explicit business heuristics (CE-BHs) contain all the information required for
solving the business problem at hand.

For example:

- *When producing something, it is important to make sure every single detail is adequately satisfied in accordance with the company's regulation.*
  
  (when addressing production quality control)

- *Win-Win negotiation is an important business strategy.*
  
  (when negotiating with a union)

- *Work with the team toward finding a solution.*
  
  (when trying to find a solution to a product defect)

- *Apply 5-6 times sales for business valuation, and At least 65% of the purchase price needs to be in cash or near-cash.*
  
  (when negotiating a company's market value)

CE-BHs are the easiest explicit business heuristics to implement when trying to solve business problems. They contain the action and the process leading to a solution; therefore, they can readily assist the decision-making process and the decision maker.

Most business people are known for their frugality in dispensing advice. CE-BHs represent good examples of this form of business advice.

About 2/3 of the survey's E-BHs belong to the CE-BHs family.

Incomplete EBHs (IE-BHs) imply that some of the knowledge needed to solve the business problem is either readily available or is common knowledge. For example:
• Admit the problem/mistake, offer to make reparations, and seek to remove attorneys from the situation.

The business executive is supposed to know how to admit a mistake and how to make reparations, no need to describe the process here.

• An allowance for doubtful accounts is an unfortunate reality in business, and you must be prepared for it.

The business executive is expected to know how to deal with doubtful accounts.

The IE-BHs below contain suggestions readily available from various business support resources - like small business websites, business books, or known business processes.

• Develop a better Quality Assurance System.

Information about Quality Assurance Systems is available, for example, through the International Organization for Standardization (ISO 9000)

• Add contingency to project.

Various forms of contingency application to projects are available using, for example, the Project Management Knowledge Base, or the Project Management Institute.

• Calculate cost-benefit.

A cost-benefit analysis is a term that refers to a method applied in assessing the financial validity of a business investment. A cost-benefit analysis is a readily available tool for making various business decisions, using various financial
management business resources. One such source is the online, free, Cost-Benefit-Analysis Newsletter.

Incomplete EBHs require the business executive to seek for further information or clarification if he or she is not familiar with the process proposed. However, in most cases, the process is readily obtainable from widely accessible resources on the Internet or business manuals, for example. About 1/3 of the survey's E-BHs are I-EBHs.

6.4 Tacit Business Heuristics Families: Qualitative Data Analysis

Between 37% and 55% (with an average of 43%) of the survey's business heuristics were deemed tacit, which means that they were lacking either the WHAT (action verb), or the HOW (determinable process), or both.

I identify two tacit business heuristics (TBHs) families based on the WHAT-HOW criteria.

The first TBHs family stems when applying the WHAT-NO/HOW-NO and the WHAT_NO/HOW_YES criteria. I name those business heuristics, \textit{business rules of thumb}, or B-RoTs.

The second TBHs family is characterized by the WHAT-YES/HOW_NO criteria. I name this BHs family \textit{experience-based business heuristics} or EB-BHs.

Both TBHs families are described hereafter.

\textbf{The B-RoTs TBHs family}

About 64% of tacit business heuristics fit in the WHAT-NO/HOW-NO criteria, characterized by the absence of an action verb, and a determinable implementation method.
The B_RoTs state a rule (a 'business reality') without describing the corresponding action. B_RoTs are often incomplete business heuristics, hence tacit. They do not define how they need to be implemented because they contain neither an action verb nor a determinable process of implementing the business heuristic. Experienced executives may infer what needs to be done when considering those rules, whereas less experienced executives may need additional information to use those rules effectively for business problem solving.

Because tacit business heuristics do not contain enough explicit information about how to proceed implementing the heuristic, tacit business heuristics require either some previous experience in solving the particular business problem at hand, (which may translate into steering the decision process in the 'right' direction), or additional information needed to solve the business problem at hand. For example:

- **Clients do not pay sometimes**
  
  As a RoT, a businessperson needs to consider that clients do not pay sometimes, tacitly stating that a business needs to count with this potential drawback by planning for write-offs.

- **Business relationships are important**
  
  As a RoT, maintaining good business relationships is beneficial for a company; therefore, they are important - especially when problems arise.

- **Whatever can go wrong usually does.**
  
  As a RoT, situations can deteriorate; therefore, one implies the need for contingency plans as options that may mitigate the problem situations when something goes wrong.
Less than 3% of tacit business heuristics fit into the WHAT_NO/HOW-YES criteria, characterized by the absence of an action verb, with, paradoxically, suggesting a determinable implementation method. In those instances, the tacit business heuristic is considered also a B_RoT because the business heuristic take the form of a rule in which the action verb is part of the description process rather than a separate activity. For example:

- *Redundancy is not always bad.*
  
  Rule of thumb: have a redundancy in your processes.

- *Quality must be built into every process of an organization, so a lapse in quality usually means a lapse in process.*
  
  Rule of thumb: build a quality assurance in your process.

- *People work best when confronted with a penalty for non-performance or reward for over-performance.*
  
  Rule of thumb: apply a performance appraisal management system containing a reward/penalty element.

- *Being a leader does not mean to dominate every single aspect of the detail.*
  
  Rule of thumb: avoid micro management. Do not go too much into detail.

About two-third of the tacit business heuristics (67%) fall into the B-RoTs family.

**The Experience-Based TBHs family**

The WHAT_YES/HOW_NO business heuristics family is characterized by the presence of an action verb, and the absence of a determinable process because the HOW is not determinable. These TBHs are useful to those executives that have some experience with the
business problem they are facing. The business heuristic provider assumes that the experienced executive knows how to perform the required action. Of course, the less experienced executive will need more information to problem-solve the problem at hand.

We name this TBHs family Experience-Based Tacit Business Heuristics or EB-TBHs. They represent about one third of the survey's TBHs.

Examples:

- *Work to improve the assets you have.*
- *Watch out for competition.*
- *Validate your information.*
- *Validate the buyer.*
- *Use common sense.*
- *Understand your responsibilities.*
- *There is always a way to borrow money.*
- *Take risk in business.*
- *Mitigate damages.*

A complete list of the survey's B_RoTs and EB-TBHs is presented in Appendix 5.
Chapter 7: Business Heuristics Applied to Management Functions

7.1 Background

This section presents business heuristics as they relate to the presently widely accepted concept that management operates by applying four management functions, which are: planning, organizing, directing, and controlling (Bateman & Snell, 2002) and (Weiss, 2007).

Other authors use similar terms for describing those management functions. For example, some authors use staffing instead of organizing, and leading or motivating instead of directing, and coordinating instead of controlling (Drucker, 1999). Henry Fayol has identified seven management functions, splitting some of the above into two (Fayol, 1966). However, contemporary management literature considers that most management functions fall within the four functions introduced above. I present those four management functions hereafter.

Planning is the ongoing process of developing the long-term and short-term business mission and objectives and determining how to achieve them.

Directing is establishing the internal organizational structures required to achieve the planning objectives. It includes staffing all business positions in the business. Recruiting, hiring, training, evaluating, and compensating are also part of this function.

Organizing is leading by influencing people's behavior through motivation, communication, inspiration, and support. The purpose of leading is to channel employee behavior to meet the organization's mission and objectives while helping them achieve their own career objectives.
Controlling is a process that directs the activities of individuals toward the achievement of organizational goals. Controlling includes establishing performance standards, measuring them, and taking appropriate action when those standards are met or not.

Business heuristics resulting from the study, be they explicit, (complete or incomplete), or tacit, (rules of thumb or experience-based), can relate to those management functions.

7.2 Business Heuristics Distribution by Management Functions

In this section I analyze how business heuristics resulting from the study, be they explicit, (complete or incomplete), or tacit, (rules of thumb or experience-based), relate to those four management functions.

Considering that some business heuristics can be associated with two or more management functions whereas other business heuristics are associated with exclusive management functions, one would expect to end up with 16 distribution possibilities: the sum of all the combinations of 4 functions as per below:

\[ \sum_{i=1}^{4} 4C_i = 4C_1 + 4C_2 + 4C_3 + 4C_4 = 2^4 = 16 \]

where \( C_i \) (i = 1 to 4) represent each management function.

Of course, \( C_0 \) does not apply because business heuristics not associated with any management function are statements of no interest to the study. However, when associating business heuristics to their respective management functions one notices that several of the above combinations are absent. The absent combinations are highlighted in the following truth table, where P, O, D, and C represent respectively the PLANNING, ORGANIZING, DIRECTING, and CONTROLLING management functions, and\((-P)\), \((-O)\), \((-D)\), and \((-C)\)
indicate the absence of relationship between the business heuristic and the respective management function.

Table 19

*Business Heuristics Distribution According to Management Functions*

<table>
<thead>
<tr>
<th>PLAN</th>
<th>ORGANIZE</th>
<th>DIRECT</th>
<th>CONTROL</th>
<th>ABBREVIATION a</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>POD(-C)</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>PO(-D)C</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>PO(-D)(-C)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0</td>
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<td>0</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>(-P)O(-D)C</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>(-P)(-O)DC</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
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<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>(-P)(-O)D(-C)</td>
</tr>
</tbody>
</table>

a The absent management functions are preceded with the negative sign in curly brackets.

Interpretation of the above results gives the following:

The first three absent PODC combinations suggest that no business heuristics are associated with (PO and D) and not with (C), or with (PO and C) and not with (D), or with (PO) and not with (C and D). We infer from this that the PLANNING and ORGANIZING functions are highly related to most business heuristics.
The last three absent combinations suggest that no business heuristics are associated with (OC) and not with (PD), or with (DC) and not with (PO), or with (D) and not with (POC). This highlights the importance of the P function.

### 7.3 Interpretation of Business Heuristics Relation to Management Functions

For this analysis, I use the four functions of management as reference codes. Each action verb within each business heuristic relates to one or more management functions.

For example:

- *Find information* is an action verb appearing in business heuristics associated with all four management functions of PLANNING, DIRECTING, ORGANIZING, and CONTROLLING.

- *Manage QA* (Quality Assurance), on the other hand, appears only in business heuristics associated with DIRECTING, ORGANIZING, AND CONTROLLING.

- *Plan need* appears only in business heuristics associated with PLANNING.

The resulting quantitative tables below summarize the relations between business heuristics and management functions, once the survey business heuristics have been stripped from obvious duplications.

**Explicit/Tacit Business Heuristics Distribution**

**Discussion:**

In table 20 and figure 10 on the next page, we notice that the ratio between explicit and tacit business heuristics resulting from the study is approximately 2/3 to 1/3 or 2 to 1. Indeed,
responses by executives participating in the study tended to contain explicit business heuristics two times more often than tacit ones. Explicit business heuristics are easier to apply than tacit ones - especially if the advised party lacks the experience needed to interpret the tacit business heuristics.

A consequence of the above is that it may be useful to compile explicit business heuristics tables - because they may not require additional interpretations for the reader, as those business heuristics are self-explanatory.

Table 20

*Quantitative Business Heuristics Distribution by Explicit and Tacit Categories*

<table>
<thead>
<tr>
<th>BH</th>
<th>TOTALS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBH</td>
<td>278</td>
<td>64%</td>
</tr>
<tr>
<td>TBH</td>
<td>157</td>
<td>36%</td>
</tr>
</tbody>
</table>

*Figure 10. Distribution ratio between explicit and tacit business heuristics*
On the other hand, how would we treat tacit business heuristics? To answer this question I analyze in more detail the composition and distribution of tacit business heuristics families below.

*Distribution by Management Functions*

Rules of thumb representing business heuristics having no direct association to specific management functions are added to this analysis, for completeness. The resulting table 21 below reflects the adjusted distribution of business heuristics by management functions.

Table 21

*Quantitative Business Heuristics Distribution by Management Functions*

<table>
<thead>
<tr>
<th>BH Distribution</th>
<th>Plan</th>
<th>Direct</th>
<th>Organize</th>
<th>Control</th>
<th>RoT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34.5%</td>
<td>21.4%</td>
<td>10.8%</td>
<td>21.4%</td>
<td>12.0%</td>
</tr>
</tbody>
</table>

*Figure 11.* Distribution of the business heuristic ratio between management functions.
Discussion:

The data in table 21 and figure 11 show that over 1/3 of the business heuristics are associated with the planning process, and 1/5th of the business heuristics cover the directing and controlling functions. Finally, about 1/10 of business heuristics address organizing functions and 1/10th are rules of thumb.

Planning is the management function most often addressed in the study. Directing and controlling management functions share similar business heuristics coverage. Organizing is the management function that has been addressed the least.

The above distribution may be a reflection of the type of challenges covered by the study scenarios. Indeed, those scenarios were addressing strategic management issues rather than operational ones. Organizing as an operational function has not been a major issue in the study scenarios.

On the other hand, strategic issues have been at the forefront of the study scenarios, therefore one can expect that the study participants have applied the functions of planning, directing, and controlling more often than the organizing function.
Chapter 8: Threats to Validity

Some qualitative researchers reject the framework of validity commonly used in traditional quantitative methods. For example, Guba and Lincoln question the concept of "validity" in qualitative research (Guba & Lincoln, 2000). They proposed four criteria they believe are better alternatives to the traditional ones of Cook and Campbell (Cook & Campbell, 1979). Their proposed qualitative criteria could replace or complement the quantitative criteria as presented in the table below. Their proposed qualitative criteria could replace or complement the quantitative criteria as presented in the table below.

Table 22

<table>
<thead>
<tr>
<th>Criteria for Judging Research from a Qualitative Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional Criteria for Judging Qualitative Research</strong></td>
</tr>
<tr>
<td>Internal validity</td>
</tr>
<tr>
<td>External validity</td>
</tr>
<tr>
<td>Reliability</td>
</tr>
<tr>
<td>Objectivity</td>
</tr>
<tr>
<td><strong>Alternative Criteria for Judging Qualitative Research</strong></td>
</tr>
<tr>
<td>Credibility</td>
</tr>
<tr>
<td>Transferability</td>
</tr>
<tr>
<td>Dependability</td>
</tr>
<tr>
<td>Confirmability</td>
</tr>
</tbody>
</table>

8.1 Traditional Criteria for Judging Qualitative Research

Traditional criteria in judging quantitative research addresses conclusion validity, internal validity, construct validity, and external validity.
Internal Validity Threats.

One of this study’s limitations is the choice and the limited sample of participants. Because the survey targets a limited number of expert participants from each group, this choice precludes one from generalizing the findings to all SMCB executives.

External Validity Threats.

If a causal relationship exists between the constructs of the cause and the effect, one cannot necessarily generalize this effect to other people or business scenarios. However, one expects to find some common behavioral denominators ideally through some form of theory saturation.

Reliability Validity Threats.

The study is based on perception. Typical experimental psychology effects of perception, thinking, and problem-solving associated with each participant, can further constrain the survey results on the grounds that each participant has to imagine the scenario in question and identify with its hypothetical and sometimes incomplete parameters. The scenario approach relies on analogies rather that real business situations.

Objectivity Validity Threats

Reliance on recollection/memory is another limitation of the study. The business scenarios used require a dependence on implicit or explicit memory and are subject to the effects of memory loss, emotional effect on memory, or other elements affecting memory like specific experiment circumstances, disturbances, or distractions. This may lead to biased information hence infirming some of the study conclusions.
8.2 Alternative Criteria for Judging Qualitative Research

Alternative criteria in judging qualitative research address credibility threats, transferability threats, dependability threats, and confirmability threats.

*Credibility Threats*

Credibility threats involve establishing that the results of the qualitative study are believable from the perspective of the participants of the research.

The study participants have expressed readily their understanding of the proposed scenarios, either implicitly by participating constructively in the study, or explicitly in direct e-mails to me; therefore, I presume that the results are credible. On the other hand, the sample population was limited to an *expert* group, and I cannot necessarily conclude that this would have been the case in any other similar circumstances.

*Transferability Threats.*

Transferability deals with the capability of generalizing (or transferring) the results of the study to other settings. Transferability depends on the one doing the study. Because this study is the first of its kind, further research is needed to claim transferability in this case.

*Dependability Threats.*

The traditional view of reliability considers the replicability or repeatability of the study. In qualitative research, one cannot replicate *exactly* any case under study.
Confirmability Threats.

Confirmability indicates the level of corroboration of the study results. Although several strategies can be used for that purpose, the most common one would be to search and describe (if found) examples that contradict the finding. Similar to external validity threat, assuming a causal relationship exists between the constructs of the cause and the effect; one cannot necessarily generalize this effect to other people or business scenarios.

***
Chapter 9: Conclusion and Discussion

This study explored various forms of applying business-heuristics in decision-making in SMCB based on a set of 10 scenarios used in a targeted survey.

Thirty-nine participants composed of University of Victoria MBA student, University of Victoria Business Mentors and Vancouver Island small business executives participated in the study. More than 20,000 words summarizing about 2,500 heuristics were collected and summarized into 511 business heuristics. Those business heuristics were categorized according to criteria based on an action verb and a determinable process.

The analysis of the survey results lead to the identification of two business heuristics categories (explicit and tacit) each containing two different business heuristics families; explicit business heuristics are composed of the complete explicit business heuristics family (CE-BHs family) and the incomplete explicit business heuristics family (IE-BHs family). Tacit business heuristics are composed of the business rules of thumbs (B-RoTs) and the experience-based tacit business heuristics family (EB-TBHs).

*The study results suggest that the design of the research survey was valid.*

Indeed, all the business executives participating in the survey had experienced at least one the survey scenarios, whereas none of the MBA students had experienced any of the survey scenarios. This suggests that the scenarios were those experienced typically by senior executives rather than entry-level managers (represented by the MBA students).

*The study results suggest also that the sample population was appropriate and provided reliable data.*
The two control groups representing senior SMCB executives had very similar experiences with the study scenarios, suggesting that they represented an adequate control group for this type of survey.

*Furthermore, the study results suggest that the research hypothesis is valid, namely that executives use rules of thumb in the form of business-heuristics in their decision-making process.*

Most executives participating in the survey provided business heuristics or rules of thumb as problem-solving suggestions potentially leading to business decisions. A few executives found the survey too long and provided only partial answers to the survey. None of the participants found any of the survey scenarios inadequate examples of challenges SMCB executives have to face in their daily business decision-making requirements.

*Finally, the study results suggest that some of the tacit business heuristics can be converted into explicit ones by either adding an action or including a determinable implementation process, or both.*

In table 23 on the following 3 pages, I present a sample list of 36 business heuristics with an interpretation of each.
### Table 23

**Business Heuristics - A Sample List in Alphabetical Order.**

<table>
<thead>
<tr>
<th><strong>Business Heuristic</strong></th>
<th><strong>Interpretation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipate the worst</td>
<td>Be ready for any eventuality</td>
</tr>
<tr>
<td>Avoid the blame game rather use an outcome frame to problem</td>
<td>Focus on the problem, not the people</td>
</tr>
<tr>
<td>Avoid unknown intermediary</td>
<td>Validate your source</td>
</tr>
<tr>
<td>Be prepared to make a decision when the opportunity arises</td>
<td>Do not procrastinate</td>
</tr>
<tr>
<td>Be proactive and know your customer</td>
<td>Build customer relationships</td>
</tr>
<tr>
<td>Business is risky</td>
<td>Risk is inherent in business</td>
</tr>
<tr>
<td>Dialogue is always better than adversarial approaches</td>
<td>Win-win approach is better than win-lose</td>
</tr>
<tr>
<td>Direct reasons for issues are never obvious</td>
<td>Look beyond the surface</td>
</tr>
<tr>
<td>Diversify</td>
<td>Do not put all your eggs in one basket</td>
</tr>
<tr>
<td>Do due diligence</td>
<td>Verify your sources, your information</td>
</tr>
<tr>
<td>Do not go outside your risk/comfort zone</td>
<td>Listen to your inner voice too</td>
</tr>
<tr>
<td>Do not take anything for granted</td>
<td>Verify your information</td>
</tr>
<tr>
<td>Don’t panic</td>
<td>Take the time to understand the problem</td>
</tr>
<tr>
<td>Draw the line</td>
<td>Limit your losses</td>
</tr>
<tr>
<td>Ensure customer satisfaction</td>
<td>The customer is always right - up to a</td>
</tr>
<tr>
<td>Point</td>
<td>Strategy</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td><strong>Every problem has a solution</strong></td>
<td><strong>Look for alternatives</strong></td>
</tr>
<tr>
<td><strong>Get advice</strong></td>
<td><strong>Consider asking for help</strong></td>
</tr>
<tr>
<td><strong>Get it right the first time</strong></td>
<td><strong>Avoid mistakes</strong></td>
</tr>
<tr>
<td><strong>Go with the flow</strong></td>
<td><strong>Count on your intuition</strong></td>
</tr>
<tr>
<td><strong>He who hesitates is lost</strong></td>
<td><strong>Avoid delaying decisions</strong></td>
</tr>
<tr>
<td><strong>Hold people accountable</strong></td>
<td><strong>Delegate responsibility</strong></td>
</tr>
<tr>
<td><strong>Honesty is always the best policy</strong></td>
<td><strong>The truth in business is a good investment</strong></td>
</tr>
<tr>
<td><strong>If no consensus, direction must be given</strong></td>
<td><strong>Show leadership</strong></td>
</tr>
<tr>
<td><strong>In for a penny, in for a pound</strong></td>
<td><strong>Commitment needs to be total</strong></td>
</tr>
<tr>
<td><strong>Innocent until proven guilty</strong></td>
<td><strong>Do not jump to conclusion</strong></td>
</tr>
<tr>
<td><strong>Keep personal assets out of business</strong></td>
<td><strong>Do not mix the two</strong></td>
</tr>
<tr>
<td><strong>Keep the debt at a manageable level</strong></td>
<td><strong>Manage your finances</strong></td>
</tr>
<tr>
<td><strong>Learn from the mistake</strong></td>
<td><strong>Experience talks</strong></td>
</tr>
<tr>
<td><strong>Negotiate</strong></td>
<td><strong>Quid pro quo</strong></td>
</tr>
<tr>
<td><strong>Promise less, deliver more</strong></td>
<td><strong>Over achieve</strong></td>
</tr>
<tr>
<td><strong>Quality must be assured</strong></td>
<td><strong>Quality Assurance is important</strong></td>
</tr>
<tr>
<td><strong>Redundancy is not always bad</strong></td>
<td><strong>Have a contingency plan</strong></td>
</tr>
<tr>
<td><strong>Resolve without court system particularly if you are wrong</strong></td>
<td><strong>Avoid lawsuits</strong></td>
</tr>
<tr>
<td><strong>Strike while the iron is hot</strong></td>
<td><strong>Avoid procrastination</strong></td>
</tr>
<tr>
<td>Stuff happens, deal with it</td>
<td>Accept the consequence of your actions</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td><strong>When decisions affect others, those others</strong></td>
<td><strong>Delegate responsibility</strong></td>
</tr>
<tr>
<td><strong>must have a voice in the decision</strong></td>
<td></td>
</tr>
</tbody>
</table>

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Chapter 10: Future Work

Research findings of this study confirm that the business scenario approach and the use of business heuristics as business decision-making tools because they are presumable, realistic, and practical in general.

If knowledge in all its forms is a capital asset for SMCB, a method for organizing various forms of this capital as business heuristics, can deliver significant benefits to those businesses.

Future research could lead to the development of a valuable tool in the form of a wiki-business heuristics to respond to the need of more readily available business heuristics.

Moreover, future work could also be targeting a wider range of SMCB beyond Vancouver Island to gain a model applicable to a wider variety of small and medium businesses.
You have brains in your head. You have feet in your shoes. You can steer yourself any direction you choose. You’re on your own. And you know what you know. And YOU are the guy who’ll decide where to go.

(Dr. Seuss, 1990) Oh, the Places You’ll Go! Party Edition. p. 2

***
Appendix 1: Business Heuristics Analysis by Scenario

In the following section, we review some of the proposed business heuristics for each of the survey's scenarios. Business heuristics underlined for easier identification. Each scenario's description is included for quick reference.

Scenario 1 Company Valuation Data Analysis

The first business scenario (Company Valuation) asked the following question:

As the CEO of a small software business ($2M in revenues, 10 employees), you have been approached by an unknown "intermediary" claiming to represent a company interested in acquiring your business.

Regardless of your previous experience with the above-described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

Discussion

Recurring themes emerging from reading the suggested business heuristics in the first scenario gravitate mostly around two needs: the need for more information (a decision is not made without additional information—a decision in itself), and the need for trust (a decision is not made without validating the buyer—another way of requiring additional information).

The need for more information is expressed directly ("I would require more information," and "Request further information, name of referral, plans if business is acquired," and so on) or indirectly ("It would depend on the offer" or "I would also want to know much
more about the acquiring company”). This approach is further supported by the underlying business heuristic:

*Verify sources and information before making a decision.*

Validating the buyer is prevalent in this scenario. For example, the need for validations is expressed in "Validate the buyer" or "Determine if the intermediary is legitimate," or "Always qualify the person that you are dealing with," or "Do due diligence," and "Do not take anything for granted."

All those business heuristics express the need for more information. Other actions are also suggested, like, *listen, discuss, build relationship, negotiate, consult, contact, ask, and meet.* Those actions mostly relate to communication behaviors. Finally, some actions point to critical thinking, such as *analyze, evaluate, define, and get second opinion.*

Hints at typical financial business heuristics are also present, like: minimum purchase price (*5 times annual revenue, 65% cash*), length of the process (*3 months*), follow business plan, fiscal implication, need for confidentiality (*non-disclosure agreement - NDA*) or maximize *shareholder value*.

**Scenario 2: Cost Forecast Data Analysis**

The second business scenario (Cost forecast) asked the following question:

*Your chief engineer has presented to you his cost estimate for a new production workstation to be implemented within three months. You feel that those estimates are too low and the time frame too short, once again. You need to decide how to address those issues with your chief engineer, taking into account that he is one of the key people in your company and that your client expects results since your company is the only one with the required technology and knowledge to address their needs.*
Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

**Discussion**

In this scenario, one theme predominates: the need for discussion, followed by the need for outside help, and the need for contingency planning.

When the predicament is outside the control of the decision-maker (in this scenario only the chief engineer can deliver the goods), the best approach is to discuss (in this quandary "discuss" implies negotiate a mutually acceptable solution), followed by developing a contingency plan (have alternatives if business does not evolve as planned) coupled with getting outside help if possible.

The following business heuristics have been suggested:

*Promise less, deliver more.*

The understanding here is that the client will be better served if he gets more than expected—in quality or quantity ref: "Baker's dozen"

*Get it right the first time.*

Fixing mistakes is more costly than preventing them.

*Hold people accountable.*

Accountability increases self-confidence and reliability, instead of pointing the blame at someone

*If no consensus, direction must be given.*

This business heuristics remind of the known saying: "The buck stops here"—attributed to
US President Trumann (Mitford, 1957); the executive needs to assume full responsibility for the company, hence the executive has the power of last resort.

**Scenario 3: Lawsuit Data Analysis**

The third business scenario (Lawsuit) asked the following question:

*Your secretary has informed you that a major client is on the phone. You have just picked up your phone to greet your client when an irate voice on the other end informs you that this client is going ahead with a lawsuit against your company. The new product delivered failed catastrophically and the client incurred a major loss. You know this client very well and you are pretty sure that his claim is well founded.*

Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

**Discussion**

One theme overshadows the others: take responsibility, complemented by "The client is always right." Some effort in listening, seeking help and mitigating loss (damage control, avoid lawsuit) is also present.

Other suggested business heuristics include:

*The customer is always right.*

This expression has become a cliché in the industry; applying it verbatim can become impossible at times (especially when the client is not right).

*Resolve without court system particularly if you are wrong.*
Lawsuits are only good for the lawyers.

_innocent until proven guilty_. Do not jump to conclusions before reviewing the information.

_Learn from the mistake, Experience talks_, or do not make the same mistakes too often.

_Honesty is always the best policy, Dialogue is always better than adversarial approaches._

One needs to remember that in the US business tends often to use a "Win-Loose" strategy, instead of "Win-Win" one. One needs to consider this when dealing with somewhat "antagonistic" counterparts.

_Direct reasons for issues are never obvious._

Experience shows that people tend to hide their true needs—therefore, one needs to identify them through dialogue, and keep an open mind—avoiding judgmental reasoning: a technique often difficult to achieve without adequate training.

**Scenario 4: Move Decision Data Analysis**

The fourth business scenario (Move decision) asked the following question:

_Your plant has had a vigorous growth in the past three years and expansion plans have been on the book for some time. You are only waiting for the right opportunity to increase your manufacturing floor space. This opportunity came up today. You real estate agent called to inform you that the space you coveted came up for sale and several suitors are already interested in it. You feel the need to come to a quick decision on this matter._

_Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in_
Discussion

The recurring theme is "Take advantage of business opportunities."

The main messages are based on the following business heuristics:

*Be prepared to make a decision when the opportunity arises,*

meaning that change happens quickly; hence decisions need to be quick. Often the opposite is true in big corporations.

*He who hesitates is lost,* similar to *Strike while the iron is hot.*

On the other hand, a need for "more information" and "due diligence" is present here too. Hasty decisions may lead to mistakes. ("Do not get caught in any hysteria," "Do not jump"). Therefore, the suggested business heuristics contradict some of the previous ones.

Scenario 5: Credit Line Data Analysis

The fifth business scenario (Credit line) asked the following question:

*Your bank manager has just called informing you that based on the last quarter’s financial performance of your company; your company’s line of credit is being reduced from $750,000 to $400,000. You have two weeks to comply or your demand loan (the whole amount) will become due. You are aware that your partner and yourself (sharing the company 60/40) have the required $350,000 in forms of portfolio and/or equity (house values). You have been reluctant to offer your house as collateral, mostly because your wife is strongly opposed to it.*

Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in
Discussion

In this complex setting, participants agree that personal assets (like the house) should be kept outside the business.

An "aparte" appears in several cases where the concept of: "If I do not believe in my business why anybody else should?" is put forward. This implies total commitment— as in: "In for a penny, in for a pound."

The suggested business heuristics include:

*Do not go outside your risk/comfort zone,*

based on "gut feelings" since the "comfort zone" may vary for every individual.

*When decisions affect others, those others must have a voice in the decision.*

This business heuristic suggests a specific cooperative management style: involving others in the decision-making, a process not necessarily generalizable, albeit reasonable here.

*Keep the debt at a manageable level.*

Although a wise suggestion, statistics shows that a large number of small businesses still have a short life span of less than 5 years (StatisticsCanada, 2010).

*Keep personal assets out of business.*

This heuristic contradicts the on-going policy applied by banks. Banks often require personal guarantees from SMCB owners, making the above suggestion sometime difficult to apply.

*Every problem has a solution.*

This business heuristic sounds more like "wishful thinking" than reality. Entrepreneurs need to remain optimistic and seek solutions, sometimes difficult to find. This cannot be
generalized.

*In for a penny, in for a pound.*

Here, the business heuristic implies that "risk is worth taking." It contradicts some of the other proposed business heuristics, making the generalization of this one less plausible. Risk is a "personal" and "emotional" element, risk-taking is therefore, also personal and emotional.

*Anticipate the worst.*

This business heuristic implies that, when taking risk, one should look at the worst-case scenario, and evaluate if the outcome is within the decision-maker’s comfort zone. Worst case scenarios are often associated with life and death situations. In business, this may relate to staying in business (staying alive) or going bankrupt (dying). No decision is suggested here, just a "gut feel."

**Scenario 6: Collective Agreement Data Analysis**

The sixth business scenario (Collective agreement) asked the following question:

*Your union representative has informed you that the union is ready to go on strike if their last demand regarding an increase in benefits about their RRSP contribution is not met. The final clause needs to include a 2% increase in company’s contribution to the employee’s RRSP, i.e. it is going up from the present 5% to 7%. The employee’s contributions remain at 5%. This means an increase in $200,000 in additional costs to the company or 20% of expected gross profit, all other things being equal. Furthermore, this is a three-year contract.*

*Regardless of your previous experience with the above-described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.*


**Discussion**

The main message in this scenario is "negotiate." In some instances, additional information is sought for—to negotiate better.

The underlying message is one that suggests an adversarial approach instead of a cooperative one, exactly what one needs to avoid. This might not be surprising since only two of the participants have actually experienced a similar scenario.

In this case, executives did not hesitate to provide advice even if their personal experience did not include this scenario, which was reflected by the business heuristics they proposed. Their heuristic, if followed, would only worsen the outcome. Here a need for "expert advice" is critical since the consequence can be disastrous for the company: a strike, to be avoided if possible.

The suggested business heuristics include:

*Negotiate.*

Negotiation is always a best first option. The objective is to find a "win-win" solution (suggested by one participant).

*Quid pro quo.*

This is more difficult to achieve since the parties start on an adversarial footing. The objective is to find common ground beforehand. Here, an external resource specialized in this subject comes in handy.

*Draw the line.*

This suggestion is definitely to be avoided here. It opens alternative antagonistic avenues, and is conducive to an "open war" (in military terms). The executive needs to avoid open conflict, and rather use a conciliatory tactic that brings the parties closer to each other. Knowing
the "adversary" is a better method (again borrowed from the military).

*Get advice. (Analyze alternatives).*

Definitely: getting expert advice is probably the most common denominator in the suggested scenarios. This was mentioned only sporadically, mostly by those with experience in the matter.

**Scenario 7: Project Slippage Data Analysis**

The seventh business scenario (Project slippage) asked the following question:

*During your regular weekly meeting today with your client, your client has expressed concerns over the delivery date of the expected 72 ft top of the line powerboat now in construction. You have seen the construction of this latest vessel slip steadily over the past six months. Although the delivery date is still another six months away, you are aware that this is a fixed bid and that any delay in construction will affect the profitability of this project.*

*Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.*

**Discussion**

The most difficult problem addressed in this scenario concerns dealing with people (the project manager) not performing as expected.

Suggestions include buy-ins (from client or employees), honesty (with client and employees), and closer management (*keeping an eye on things, documenting well, monitoring progress*).
Some wishful thinking permeates, indicated by business heuristics like, *All is possible; It is usually just a function of money, time, and a sense of urgency.*

This approach is unlikely to provide acceptable solutions since the project is in deep trouble already. It is over budget, over schedule, and underperforming.

**Scenario 8: Quality Management Data Analysis**

The eighth business scenario (Quality management) asked the following question:

*Your latest shipment of goods was returned today attributable to poor quality. This return represents a major revenue loss to you as well as a credibility problem with your client. You have had some minor quality problems in the past and delegated the responsibility of addressing them to your plant manager. Based on recent shipments, you thought that this problem was addressed by your plant foreman. This return shows that flaws in the production process are still present.*

Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

**Discussion**

This scenario is similar to the "project slippage" one. The bottom line: quality is #1.

Some rules of thumb suggested in this case include:

*Quality must be assured.*

You need quality processes, implement a continuous QA process, do it right NOW, customer service is critical, have checks and balances.
All these highlight the importance of managing quality in the workplace.

Avoid the blame game, rather use an outcome frame to problem solve.

Avoiding the blame game is an important management style that empowers employees to do a better job. When mistakes are made (and we know that "errare humanum est"), management focuses on the processes involved to correct them, instead of on "pointing fingers" as in "who is going to be blamed now?"

**Scenario 9: Crisis Management Data Analysis**

The ninth business scenario (Crisis management) asked the following question:

*You hear from your broker this morning that your investment in XYZ shares (one of your major clients) just lost all value. XYZ declared bankruptcy in Arizona yesterday. Not only have you invested in that company (not a major amount but enough to show interest in XYZ future since they choose your company as their main supplier of silicon belts) but also your latest shipment worth over $40,000 CDN was still not paid. Luckily, you had all your U.S. shipments insured by Export Development Canada (EDC). However, this will affect your cash flow as well as your line of credit with the bank.*

Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

**Discussion**

In this scenario, the company is affected by an outside event: an important customer has gone bankrupt. The shipment of goods is unpaid. However, the shipment was insured, therefore,
no loss was incurred.

Only two executives have mentioned that they have had a similar experience. They were also the only two who gave proper advice: inform your banker! Other suggestions or remarks show a poor understanding of the difficulty faced.

“Stuff happens”—(is this an advice or a statement?)

“Diversify”—(after the fact?)

“Risk of doing business”—(a statement?)

“Don't panic”—(and?)

The message is "doing business involves risk" and one needs to deal with it. Three business heuristics stand out: Know your customers; Do not put all your eggs in one basket, and Redundancy is not always bad.

Duplication, even if costly, can be beneficial.

Scenario 10: Joint Venture Data Analysis

The tenth business scenario (Joint venture) asked the following question:

Your technology training company with headquarters in Victoria has expanded nicely in the last three years, opening branches in Vancouver, Prince George, and Kelowna. You got a phone call from the dean of Okanagan College, inviting you to visit this institution to discuss a potential joint project in delivering technology training in that region. The meeting will need to be done the next day to meet the budget deadlines the institution is facing.

Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.
Discussion

In this scenario, acting is the predominant advice.

*Take advantage of every opportunity*

*Go with the flow*

*Money talks, Talk is cheap.*

*Nothing ventured, nothing gained.*

***
Appendix 2: Milan Frankl's Curriculum Vitae

Last update: March 2010

**Employer Name:** MFA Inc.

**Position:** Principal

**Period:** 05/1994 - Present

**Work Email:** milan.frankl@shaw.ca

**City:** Victoria, BC

**Principal Responsibilities:**

Managing a financial services company with high growth potential requiring equity financing, international exposure (marketing and sales) and internal organization and infrastructure implementation.

**Employer Name:** University Canada West

**Position:** Director of Operations

**Period:** 04/2005 - 09/2008

**City:** Victoria, BC

**Principal Responsibilities:**

Directing all operations related to the proper functioning of university campuses. Preparing budgets, and supervising operations personnel responsible for delivering their respective tasks. Dealing with other departments to insure they receive proper services in order to perform their respective functions.

**Employer Name:** Point Hope Shipyard

**Position:** CFO & Controller
Period: 09/1999 - 03/2004
City: Victoria, BC

Principal Responsibilities:
Managing the financial operations and auditing. Managing the financial assets of the company including financial reporting, forecasting and cash management. Insuring operational and tactical financial strategies are implemented and followed according to overall corporate objectives in three countries. Conducting all business research, directly supervising department managers and employees.

Employer Name: Vic Tec Corporation
Position: President
Period: 06/1996 - 09/1999
City: Victoria, BC

Principal Responsibilities:
Leading the company forward on the strength of internal management, financial planning, and analysis. Driving Internal Information Systems, Internal Financial Controls, Finances and Accounting. Contributing Strategic and Tactical insights as a member of the executive team and of the board. (Note: the company was sold to an American competitor in 1999.)

Employer Name: Stellar Systems Group
Position: Managing Director, Education Division
Period: 05/1994 - 05/1996
City: Victoria, BC

Principal Responsibilities:
Providing leadership and direction in defining the mission and vision of the company. Ensuring
that effective quality, operational and safety systems are established and implemented throughout the company. Producing, implementing, and monitoring the annual Strategic Plan and budget based on established company goals and objectives. Participating in executive management committees, and at the board level. (Note: the company was sold to EDS in 1996)

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**Employer Name:** The CGI Group  
**Position:** Branch Manager and Director- Management Consulting Services  
**Period:** 05/1985 - 05/1994  
**City:** Victoria, BC, and Montreal, PQ

**Principal Responsibilities:**
Developing consulting business, managing senior consulting staff, maintaining liaison with client and government representatives as required. Performing strategic consulting assignments.

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**Employer Name:** Desjardins Cooperative Movement  
**Position:** Director, Clearing Systems  
**Period:** 05/1980 - 05/1985  
**City:** Montreal, PQ

**Principal Responsibilities:**
Managing clearing systems, special projects, and banking back-office operations.

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**Employer Name:** IBM  
**Position:** Systems Engineer and Marketing Representative  
**Period:** 09/1974 - 05/1980  
**City:** Toronto, and Montreal

**Principal Responsibilities:**
Developing banking business and implementing customer solutions.
Appendix 3: Business Heuristics List

Survey participants have suggested more than 1,000 heuristics-based decisions for the proposed scenarios. These heuristics do not need to be associated with specific scenarios since similar heuristics can apply to different situations. For example, *consult someone, under-promise over-deliver, do not put all your eggs in one basket*, are examples of *generic heuristics* applicable to a variety of business challenges. Some non-heuristic suggestions are simply general statements or comments containing no specific action or rule. Other heuristics suggest finding more information indicating that sometimes it is safer to abstain from making a decision rather than making one based on incomplete information. Heuristics in the form of rules rather than actions may apply to other situations besides the problem at hand. A decision is possible by applying the rule. The decision can be postponed. No decision can also be the outcome.

Each of the heuristic can be either explicit, in which case it clearly states the action to be taken, or tacit, in which case at least part of the action to be taken is not clearly defined.

Duplicate heuristics are removed. The heuristics are listed in alphabetical order for quick reference.

***
Survey Business Heuristics List

List of participants' heuristics in alphabetical order (for quick reference)

1. […] I would see if there was any way to avoid the lawsuit by dealing with the client's needs

2. [Also,] Discuss situation with client and determine how to rectify situation with them [However at the same time] I would remind the client that we would not permit slander or liable statements to be made, as they would negatively affect my business

3. [Also,] try to be as sensitive and as supportive as possible to employees -- they're the heart, mind and soul of the organization

4. [Also] Ask what barriers they see between themselves and the goal

5. [Anyway], the first thing I would do is call my counsel and follow not only the letter but also the spirit of the law

6. [Either that or] I would turn the plant manager’s salary into a ownership plan so that he/she could clearly understand how much money the company can lose for poor quality control

7. [In addition,] When conflict exists, it is important to figure it out by looking at the bigger picture

8. [Moreover,] When people make a mistake, it doesn't mean anyone wins because unless the team can start working toward in the best interest of the company,
everyone loses

9. [Once verified,] I would ask for more details on the acquisition (why, when, how, what, etc.) and evaluate the proposition on its fit for our company

10. [See above] Anticipate the worst

11. [The second thing I would do is] Talk to my wife, if and only if, the company decided that we were going to move ahead

12. [Then,] I would try to get more details on what actually happened, how our product was involved

13. [Then] I may need a lawyer to get ready for the property transfer

14. [Then] I would investigate the situation within the company as well as do a site visit. I would make a decision then on how to proceed based on our findings

15. [Then] Recommend that you contact your outside accountant to review the situation with him

16. [Then] Wonder about other alternatives

17. [Therefore] Work to understand what the root problem is and if there are systemic issues

18. [This is a marvellous opportunity to] Switch to other methods of financing

19. [This is to] Ensure that our ultimate response/defence of the claim is handled as professionally as possible

20. 20% of gross profit would likely chew up the company's annual profit
21. A company is always for sale, and a strategic acquirer can pay a relatively high price

22. A joint project with a College/University is a lengthy and expensive process

23. A joint venture will take more than a day to sort out. Find time or forget it.

24. A minimum purchase price of 5-times annual revenues

25. A normal agreement would be subject to shareholder approval.

26. A second option is to have a non-disclosure agreement up front with some sort of cash deposit

27. Accept responsibility where appropriate

28. Accept the collateral mortgage on your house and pull the proposal to 'shop' your account to other banks, if it's not already out there - you know this is coming; it's never a total surprise

29. Achieve the goal

30. Acknowledge accountability

31. Acknowledgement is big when it comes to taking the steam out of an irate client

32. Act quickly on made decisions

33. Add contingency to project

34. Additionally, given the small size of the company, employee input might be warranted

35. Additionally, have flexible systems to allow for rapid change
36. Address schedule slippage and identify elements that have caused delays
37. Address those issues and put the project back on schedule
38. Adjust as necessary
39. Admit errors and scramble to reduce losses
40. Admit the problem/mistake, offer to make reparations, and seek to remove attorneys from the situation
41. Advise the bank right away that there may be a problem brewing
42. After recalculating the estimates would have passed on the new figures to the client
43. After the client has left, arrange a meeting with the Project Manager to see what the situation is
44. Alert partners
45. Alignment to and impact on strategy
46. Allocate additional resources and try level best to remove all bottlenecks so that the vessel is completed and delivered as scheduled
47. Although some firms work the best when they stay small in size, companies do grow depending on what industry you are in
48. Always have your own price (terms) in mind before engaging in a negotiation, and don't be afraid to walk away once exceeded
49. Always offer an alternative that is acceptable and doesn't add to LTC [long term
50. Always qualify the person that you are dealing with

51. An adversarial approach can be reserved for later

52. An offer is a starting point that can generate, flexible, creative alternatives when not trapped by an "either/or" mentality

53. An unprofitable business is not a business

54. Announce the loss due to XYZ shares

55. Anything is possible

56. Apologize clearly and succinctly

57. Apply a little Socratic method and ask lots of questions

58. Appraisal firms up your sense of value

59. Are the estimates reliable, justifiable? (maybe not, since the 'again' implies we've been burned by his estimates before)

60. Are there any payments that can be delayed by a day, week, and month without breaching any payment terms or incurring negative credit scores? How many dollars?

61. Are there any Receivables that can be harvested early with just a nudge or phone call? How many dollars?

62. Are there opportunities to gain productivity and/or offset $200K worth of expenses? If "yes," sit down and negotiate with the union rep.
63. Are there some future purchases that can be delayed? How many dollars?

64. Arrange repayment plan with the bank or other financial institutions

65. As I am looking to act in the best interest of the company, I will always be looking at different alternatives to maximize shareholders' value

66. As the engineer is an experienced team member, sit down and go over project plan and details

67. Ask for a meeting to discuss the situation

68. Ask for the same analysis for two other realtors, and compare the results

69. Ask him to review his projection with the CFO, and give them 3 days to come back with answers; why is production slipping against schedule? When will it likely be finished now, given the slippage to date? Can this be solved? What are the choices? At what cost? What is their recommendation?

70. Ask how much they are wanting to buy it for?

71. Ask how you can demonstrate the ongoing integrity of your products and your company.

72. Ask the bank manager more details about why the loan came up

73. Ask the board regarding this opportunity at an extraordinary meeting

74. Ask the engineer to review his work plan with me -- to prove to me that his work and cost estimates make sense

75. Ask the realtor for current, detailed market analysis
76. Asked for the basis of projections

77. Asked the engineer to use optimistic numbers for cost estimates and pessimistic numbers for the time estimate

78. Assess the risks

79. Assuage the client

80. Assuming I am in the industry that can enjoy growth, growth will not continue forever when other people seek the same opportunities

81. Assuming I had already done the due diligence in determining the space would meet my needs, I would consult with my real estate agent with respect to making a strategic offer for the premises

82. Assuming I'm operating in a highly competitive market with narrow margins, and the business is growing profitably, I would agree to the increase but incorporate language that would link it to a specified increase in productivity over the 3-year contract

83. Assuming that I had already run the cost/benefit analysis I would move ahead with the project immediately

84. Assuming the stock investment was personal, get over it and move on

85. Assuming we are paying on-time there is no reason the bank and my company couldn't work out something, such as a lower payments about, such as $100K, or depending on the bank, a possible silent partnership
86. Assuming we're fully into our line of credit, I would -not- put the house up

87. Assure the client that this problem will be solved as quickly as possible, and provide an accountable action plan to replace the damaged goods

88. Avoid a "blame frame." It is usually unproductive and the loss of people or commitment can cause a downward spiral

89. Avoid emotion in critical business decisions

90. Avoid lawsuits as much as possible since they damage the image

91. Bad press is damaging for a business

92. Balance the shifting wants and needs

93. Balance the shifting wants and needs

94. Banks do not benefit from your bankruptcy

95. Banks WILL extend credit but impose expensive restrictions on your business

96. Banks’ approach is that you are more useful alive than dead

97. Be honest with the chief engineer in suggesting that his estimate may be too optimistic and list some (additional) risks and contingencies that you would like him to build into his estimate

98. Be open, honest and examine the facts

99. Be prepared for both the best and worst events/opportunities

100. Be prepared to make a decision when the opportunity arises
101. Be prepared to say "Sorry, we just can't for that price under those time constraints"

102. Before I take a firm decision I want to know the effect of a strike on the business as a whole

103. Begin negotiations

104. Being a leader does not mean to dominate every single aspect of the detail

105. Bid to win

106. Bring in a good corporate labour negotiator to advise me

107. Bring the key team together to analyse the problem(s) and formulate the solution(s)

108. Business requirements come first

109. Calculate cost/benefit including long term cultural issues

110. Call a board meeting ASAP

111. Call bankruptcy trustee and get claim in

112. Call EDC immediately

113. Call in the plant manager. Ask tough questions and give them a very short time frame to gather information and get back to you.

114. Call the client directly and/or to see him/her in person

115. Call your client or send your best account manager to speak with them directly
116. Can I afford to have a strike?

117. Cannot bring family out in the open even if the business flops.

118. Cannot meet and discuss potential joint project, too rushed (avoid being rushed)

119. Carry through to completion. Worry about the potential lawsuit later

120. Catch people doing things right

121. Celebrate small wins

122. Chances are, if things work out reasonably well there will be no need for a lawsuit

123. Check my calendar to see if the schedule fits. If not, a conference call may be an option

124. Check out the return on investment— if it make sense (zero or above), go for it till the $ value where it becomes un-economical

125. Check progress and ensure that the vessel will deliver in time

126. Check the flight schedule and prepare for meeting content as soon as possible

127. Check to see if you can buy your shipment back for 10 cents on the dollar

128. Check with the bankruptcy trustee on line to get the financial data as well as the list of creditors, dates, etc.

129. Choose to set time aside to work with him to review his methodology and coach him to do a better job

130. Clients do not pay sometimes
131. Coach the manager and train him to work more closely with the foreman

132. Collect information of suitors, and prepare for competition. If the information shows that your price has no appealing power, just quit.

133. Collective agreements are a matter of give and take, not all one way

134. Communicate the revised timeline to the client and ensure the expectations are reset accordingly

135. Consider all factors and identify the problem(s)

136. Consider locating other firms facing similar demands from this union, to see how they might have dealt with it. May not get a straight answer, but worth checking.

137. Consider that there are often choices for solving problems, and each choice should be evaluated and then compared on an even basis, to arrive at the best decision

138. Consider the information learned and make a rational well-documented decision

139. Consider the various options (including doing nothing) and the ultimate cost of each

140. Consult legal advisers for advice

141. Consult with the chief engineer to assess the risks of not being able to deliver the project on time and on or under budget

142. Contact accountant and assume bad debt
143. Contact banker

144. Contact other financial institutions to obtain a better line of credit

145. Contact our lawyer to notify him/her of the impending lawsuit

146. Continually adjust this 'Adjustment Factor' as estimates and actuals become available

147. Cost/benefit analysis

148. Counter with a 6 and 6 proposal (instead of 5 and 7)

149. Create a "From 10,000 feet" proposal, along with standard pricing models

150. Customer service is critical; not only does it impact the current customer, it impacts the reputation of the company, which may impact future sales with others

151. Cut losses

152. Damage control

153. Deal with the customers openly and honestly

154. Decide if you have an entrepreneurial of "employee" type personality

155. Decide what business you are in

156. Depending on the significance of this project, consider bouncing our strategy off outside financial advisors, along with our real estate agent

157. Describe what caused the problem and what steps you have taken to correct the problem
158. Determine exposure

159. Determine how or if it can be resolved

160. Determine identity of company represented

161. Determine probability of getting business

162. Determine reason for decrease

163. Determine role of the intermediary

164. Determine the reliability of the parties

165. Determine what has caused the poor quality of production

166. Determine where the project slippage is coming from and rectify ASAP

167. Determine whether this was properly identified earlier, and that action assigned to fix the problem was in fact agreed upon in an accountable manner

168. Determine why was the suitor interested in my company

169. Develop better QA

170. Dialogue

171. Dialogue - reasonable balance of company/employee needs

172. Dialogue is always better than adversarial approaches

173. Direct reason for issues are never obvious

174. Discuss concerns with all who work on project

175. Discuss concerns with Engineer and finance folk
Discuss concerns. Identify cost risks

Discuss intermediary's interest and previous experience

Discuss the matter with your partner

Discuss the problems candidly and explore opportunities to make timely corrections and/or compensate the client

Discuss with the company's accountant (that is, the Partner in charge of your account), for his thoughts

Discuss with the engineer to modify the estimation, learn the detail information about estimation, and then make agreement with the engineer

Discuss with your CFO and see if he/she has any positive suggestions

Discuss: If you got the deal, when, where, how and for how much? They called you on short notice

Discussion of "one" alternative often leads to more viable, creative options

Diversify: suppliers, customers, investments

Do a presentation about your capabilities

Do due diligence research when coldly contacted

Do not be attracted by speculation, greed or out-bidding

Do not get caught in any hysteria

Do not go outside your risk/comfort zone
191. Do not jump before using the best information we have available, and the best minds around us to help make the decision

192. Do we have the resources to make this work? - already know it’s the right location

193. Do you need to: - Call upon the Shareholders for capital or a shore term loan?

194. Do you need to: - Explain and negotiate with key Suppliers?

195. Do you need to: - Factor any outstanding invoices?

196. Do you need to: - Meet with your Banker?

197. Document everything always a good idea

198. Document well

199. Don't commit to something not feasible because you will lose credibility

200. Don't do his job, but try and understand the reasoning and correct if necessary

201. Don't panic

202. Don't put all eggs in one basket

203. Don't take anything for granted

204. Don't try to solve a major financial issue, particularly one which involves your personal assets, on your own

205. Dust off older business plans for Vancouver, Prince George, and Kelowna

206. Duty calls
207. Enduring slippages for 6 months is not acceptable

208. Engage University Staff the next day

209. Ensure customer satisfaction

210. Ensure the client is given a meaningful and prompt response that indicates concern and a commitment to solve his problem

211. Ensure the company stays solvent

212. Enter into negotiations

213. Err on the side of caution in estimating

214. Evaluate, if possible, the honesty of the reply

215. Even if the guy is not the chief engineer, since we work as a team, we should all work toward what is the best for the company

216. Even if the loss is huge for admitting the mistake, the best the company can do is to minimize the cost and try to move on

217. Even senior managers need some coaching and counselling

218. Every opportunity needs to be qualified

219. Every problem has a solution

220. Every problem with a client is an opportunity to reinforce the relationship and prove to them that they made a good decision to work with you, even if you make a mistake

221. Everyone has its price
Examine systemic issue. This is more than a manufacturing issue. It could be lack of training, lack of standardized (written) processes, lack of proper quality control.

Examine the obviously poor planning and hold the person responsible accountable.

Examples: Would you agree that

a) The company should look after its employees?

Examples: Would you agree that

b) The company needs to be profitable in order to look after its employees?

Examples: Would you agree that

c) Shareholders deserve a return on their investment?)

Explain the issues

Explain the situation and ask their take on the severity of the problem? $40K is a hit, but may or may not be a calamity - especially if insurance will cover it at sometime within the next X months

Explain to client that things are working towards the delivery date but there's may be possible delay just in case something happens. However, we will have to try to eliminate the possibility [of another problem]

Explain to my wife the situation need to be resolved

Explain what happened and the fact this cash squeeze is temporary due to the
EDC insurance

235. Explore if there any other ways to quickly raise the cash?

236. If "no", but the future is still judged to be sound and the partner is agreeable, then each person should go home and inform their spouse that action needs to be taken

237. Explore likelihood of business generating a profit

238. Explore previous relationship with university

239. Explore probability of selling given industry market conditions

240. Express your concerns and go over the specs with the engineer to ensure expectations of the client and the business are realistic

241. Family money is jointly controlled and I cannot make a unilateral decision

242. File a lien against the company

243. Financial health of the company is paramount

244. Find a short term funding source

245. Find an interim solution if possible

246. Find out the facts and keep critical people informed

247. Find out what happened to XYZ

248. Find out what it is before it affects all of your clients

249. Firing may be a solution if the person(s) have the product, knowledge, tools, and ability but just don't care. Otherwise, it's a reprimand, goal setting,
supervision, recognition /reprimand, etc.

250. First I have to understand the reasons for the slippage and decide whether the causes of the slippage are things that we control and can do something about, or are outside our control

251. First, I would try to calm him down by listening;

252. Focus on the problem, not the person

253. Focus on your business plan not on get-rich schemes

254. For such a major decision, the spouse should be involved

255. Gather knowledge and let them know you will come back and talk with them again over lunch, then meet with your Manager(s) and ask open-ended "outcome frame" questions: what do you want; when; what keeps you from going back to the front line with your Manager(s)

256. Gather the facts, analyze what will likely happen, use your best advisors to do this, and finally bring your banker into the picture as quickly as possible, once you have reliable data to present him with

257. General mistrust for the time needed and effectiveness of government programs in Canada

258. Get a better understanding of what exactly the meeting is about

259. Get a new plant manager with QA experience and then fire the existing one stand up for your F_ _ K up
260. Get back to the client quickly to repair the damage and maintain good relations

261. Get buy-in on the problem from the client

262. Get commitments from all parties to crystallize their estimates

263. Get him to explain his estimations and calculations to me like I'm a 6 year old

264. Get it right the first time

265. Get on the next plane

266. Get sales working on finding other clients who need your belts

267. Get the best advice from those around you who can help deal with difficult situations

268. Get the CFO in with the contingency plan we formulated for the expansion, and review the potential site data to see if this property makes sense to the plans

269. Get the facts

270. Get the facts from the real estate agent

271. Get there myself, and with my key staff to understand the problem first hand

272. Get your CFO and possibly your outside accountant in the picture, and see if you, as a team, can work out a strategy and project estimate going into the meeting

273. Get your most knowledgeable person to file the papers for the EDC insurance? Have them phone in and get estimates as to when? Do they know how, where, etc to do so? (Ensure "yes") How long do they forecast before you see the
insurance $? Quickly gather your F&A folks

274. Getting attorneys involved ALWAYS makes things worse (more expensive, prolonged, etc.), honesty is always the best policy

275. Give benefit of the doubt to plant manager

276. Given that he is one of the key people in the company I would be very attentive of his comments and thoughts

277. Given the close relationship with the client, I would ask him to hold off on the lawsuit pending the investigation

278. Go for it (but make sure it won't bankrupt the company)

279. Great people are the solution

280. Gut feel if intermediary actually has something

281. Have future needs clearly defined and involve highly trusted people; even those working indirectly for you

282. Have the building appraised ASAP

283. Have to look at the overall impact of the strike vs. the loss of 20% profit

284. Have we done something similar in the past? What were the results?

285. Having discussed the situation with the client, I will make no promises but will indicate I shall be back to him as quickly as possible

286. He (the CEO) needs to be involved since the Board represents the interests of the shareholders
287. He who hesitates is lost

288. He will probably come in to meet with you and your partner, and will discuss the options he can see, along with the tax implications of each choice

289. High quality and reliability must be assured

290. Hire a mediator

291. Hold people accountable and you will often be amazed at what they accomplish

292. Honesty with the people you deal with if you aren't honest you will never get anywhere in business

293. Honour wife's/partner's expectations

294. Hopefully, I would have already setup an allowance for doubtful accounts, and hopefully this is less than the allowance I set up. This is an unfortunate reality in business, and you must be prepared for it

295. How bad do I need the money NOW

296. How does the risk of selling (present versus future evaluation potential) counter the risk of not selling?

297. How great is the remaining problem?

298. How much are they willing to pay and what will be the terms of payment?

299. However I would see if there was any way to avoid the lawsuit by dealing with the client's needs

300. I am sure that no one in the company team wants bad image for the company
and business decline

301. I ask myself if I want to go that route? Identify my + selling factors, what do I have to offer

302. I assume I would have a sense of the impact on potential sales, but would bring in related staff to assess where we stand on this and on our diversification of customer based

303. I have appealed to the professional work ethic and pitched in and helped, though I don't see the latter as a good ongoing management style except in an emergency

304. I know Bill Gates pays $1 million per engineer so I'd be looking to sell at a high multiple based on high calibre head count

305. I know Bill Gates pays $1 million per engineer so I'd be looking to sell at a high multiple based on high calibre head count

306. I may not know the exact answers, but will use those on the team (including our business advisors) to help make the best decision possible for the company

307. I may seek some tactics around "dealing with single minded people"

308. I will [...] arrange a meeting with our legal advisors as soon as possible, even prior to checking out the story with various personnel in the company

309. I will address the quality issue myself in a big meeting

310. I will analyze the state of the business, can we afford the strike?
311. I will arrange a meeting with all key people in the company and explain that we need further discussion for the estimates

312. I will ask the plant manager to work with his team and present me tomorrow a plan how to overcome the situation

313. I will call the people involved in the project for immediate research on the failure and I will discuss a settlement with the customer to avoid a lawsuit

314. I will call you at 4 PM and give you an update on what progress we are making

315. I will check what is the current status and I will brief the project team that I want a plan how to overcome the delay and deliver the vessel on time

316. I will consult a lawyer

317. I will consult my accountant to see the book of value of my business

318. I will contact the bank, mortgage broker, and check the property's history to make sure everything will be ok

319. I will decide depending on the market trends, and whether I and the owner would like to stay in the small business domain, or we have other ideas for growth of the company

320. I will develop back-up plans

321. I will devise risk/reward plan

322. I will discuss all the information I have with the owner of the business, and we will decide whether to meet the people from this interested company taking in
consideration the current market trends, the trend of our business (growth/decline), and the information received from the preliminary research/meeting

323. I will discuss with the chief engineer that I feel that those estimates are not realistic (cost too low and the time frame too short) and get him to consider my thoughts

324. I will ensure back-up plans

325. I will ensure I have leadership [control] of the project, and costs/duration parameters

326. I will ensure to delegate to the right people but still keep control

327. I will explain and educate the CE (engineer)

328. I will explain them that it is a sealed deal and we will lose money otherwise

329. I will explain to the union representative why exactly I can't offer more, and how diminishing the gross profit by 20% will impact the overall business

330. I will find out how much I will get from him/them first

331. I will first understand the situation and see what I can do to replace the client's loss

332. I will go ahead to make an offer

333. I will go ahead with the meeting

334. I will have the plant manager to explain issue to the plant foreman and explain
the damage to the company and this should not happen

335. I will identify business parameters, 5-6 times sales?

336. I will identify other potential buyers

337. I will identify the future of my business/industry

338. I will meet the dean on the next day

339. I will not allow to have the business depend on one individual

340. I will not deal with an unknown intermediary

341. I will not use personal portfolio/assets/house to finance the business

342. I will quantify business benefits

343. I will sit with my chief engineer and will discuss his estimate and timing in details. He might have reasoning that I am not aware of. I will remind him the importance of this project to our company and the clients company

344. I will take careful notes, as these may prove important later on

345. I will then arrange a meeting with our legal advisors as soon as possible, even prior to checking out the story with various personnel in the company

346. I will try to negotiate a 1% increase since I don't want a strike but also I am not ready to sacrifice the company results

347. I worked with a fishing company and introduced a theme, "We are catching food, not fish" to improve the handling of the raw material

348. I would acknowledge their concern by saying something like "Gee it must have
been awful for you when the xyz screwed up just before your big sales day"

349. I would add an amount to that 'value' and make a firm, cash offer with a short closing

350. I would advise the bank and write it off

351. I would also make sure that the client knew that our company was addressing the issue and dealing with the problem ASAP

352. I would also offer them bonuses for early delivery

353. I would also want to know much more about the acquiring company

354. I would apologise and use an appropriate tone (cap in hand)

355. I would approach at least three other banks and see if they wanted my business

356. I would arrange to meet with the client with my staff and initiate an emergency repair/replacement of the product

357. I would ask for more time to accommodate the new terms

358. I would ask for verification of the legitimacy and authority of the intermediary, and the basis on which they are making the approach

359. I would ask him to meet with me and others, brainstorm, and re-work the estimates

360. I would ask how we can put this right immediately. What can we do?

361. I would ask if he needed help and offer it

362. I would ask if it happened because it did not perform to specifications, or
because it was put into an untested configuration. - check with staff to
determine if we sufficiently tested the product before it went out to the client

363. I would ask to meet with the client, empathize and sympathize with him and
assure him that we would resolve the issue personally, or take responsibility to
find a solution

364. I would assess the cost of a strike versus the cost of an increase in contract costs
factoring in a three-year deal

365. I would bargain some alternative, with a baseline and an add-on dependent
upon profitability, or some other option

366. I would be concerned about the future operation of the company (break apart or
continued operation under new owner)

367. I would be courteous and professional with the bank

368. I would be fully prepared to make the situation right by refunding cost or
basically whatever the client demanded

369. I would be happy to meet with him face-to-face and over coffee or lunch and I
would listen to what he had to say with empathy and understanding

370. I would be primarily concerned with the value I would receive if a sale was
agreed upon

371. I would be very receptive to their approach but cautious at the same time (don't
sign anything)

372. I would begin remedial action
373. I would bring the client in to discuss the client's concerns and my action would definitely depend on the type of business my company is in

374. I would call a board meeting and brainstorm

375. I would call the EDC and the bank immediately

376. I would call XYZ's CEO/CFO and ask for an official statement

377. I would carefully measure and monitor the processes that create perfect products

378. I would carefully measure and monitor the processes that create perfect products

379. I would check to make sure the client cannot obtain the technology and expertise elsewhere

380. I would choose to draft and sign a two-way confidentiality agreement, so I could find out more, and protect my own position till I can learn more

381. I would consult before making a decision

382. I would consult with my business partner on the situation

383. I would consult with the management team to confirm the appropriateness of proceeding immediately with the expansion plans

384. I would contact my Board Chairman, to apprise him of the situation.

385. I would deal with situations immediately and personally

386. I would decide on how much we are willing to pay
387. I would decide to have more research conducted

388. I would determine if the intermediary is legitimate and who is making the offer

389. I would determine the company's book value

390. I would determine the source name

391. I would develop negative parameters and present to the Board

392. I would discuss the issue with the person asking about the probability of the information being accurate

393. I would discuss the opportunity with partners and key staff

394. I would discuss with my chief engineer that I had concerns with the time frame and cost associated with the project

395. I would discuss with the client what is the problem with the product

396. I would do whatever it takes to put it right NOW

397. I would document everything (the time and date and content of the phone call and of everything that happened before and after the event)

398. I would either try and rush the project, tell the client and compromise quality, or inform the client that the boat will be delayed, and unfortunately there is nothing my company can do

399. I would engage with the intermediary to find out more about who wishes to purchase the company and why

400. I would explain the importance of meeting the client's schedule in a realistic
manner

401. I would explore the market trend - Up or down? Is it time to sell?

402. I would express interest in a conversation

403. I would find an alternative to [your] senior executive

404. I would find some inside knowledge in case there is some latent defects or problems

405. I would first "qualify" the intermediary by asking about and verifying his/her credentials; and secondly,

406. contact the company that he/she claims to be representing, to verify that what he/she has said is true and factual

407. I would first assure the client that it is our intention the use all our resources to correct the fault in the product and see him through the catastrophe that has been created

408. I would form a team from individuals from each department/unit and start a dialog on quality

409. I would get a person or company to help me with this. One familiar with acquisitions and valuations

410. I would get an employee on the next plane to Arizona. While the employee is travelling to the plant, I would call the sheriff in Arizona, and have him/her verify that my company was the legal owner of said assets, and notify them that we were repossessing them, and secure some of our assets ASAP
411. I would get to them and assess the likelihood of my company being able to make a profit out of the situation while being able to meet their needs opportunity for profit

412. I would have a conversation with other principals in the company and decide whether to entertain the offer

413. I would have a promise of yes or no answer on an agreed date

414. I would have an EBITDA number in my mind for my type of business, age and stage and would at any time be able to quickly estimate the valuation I would be interested in receiving

415. I would have constant and regular communication with the client

416. I would have discussions with the following people: shareholders, partners, and fellow managers

417. I would have implemented, or will implement, a continuous QA process

418. I would have quickly reworked earlier proposals and jumped on a WestJet flight to Kelowna to get him what he needed

419. I would have stood my ground on an equal 5% contribution unless they were prepared to increase their contribution to 7%

420. I would have to say that I tried to apply HR rules

421. I would have verified the source of the information first

422. I would identify consequences of slippage
423. I would identify the problems, look for operational alternatives, and procedures
424. I would increase the frequency of the draws if necessary
425. I would inform my banker, accountant and lawyer of this event
426. I would inform the client of possible risks ahead of time
427. I would inform the client of scope increases due to unforeseen events immediately
428. I would inform the insurance company of the possible loss
429. I would investigate the reason for the delays
430. I would leave and return when they had a few ideas
431. I would let all stakeholders know that both the union and company were still negotiating in good faith
432. I would like to know this. It gives me the confidence that the prospective purchaser is not a competitor on a 'fishing expedition, and the gut feel that goes into predicting market upside potential
433. I would listed to everything the client had to say, and take notes
434. I would listen to the proposal, then complete some analysis of the offer, weighing both tangible and intangible benefits and risks
435. I would listen. This assures that both parties have a similar understanding
436. I would look at the state of the economy and the position of my company in the business cycle depending upon the quality of the product and its future viability
437. I would make all efforts to retrieve the 40k receivable ASAP

438. I would make sure that as CEO I set the customers' expectations low and therefore the company could exceed them

439. I would make sure the customer hears an action plan

440. I would meet with the people involved and place the problem in the situation

441. I would meet with the plant foreman

442. I would monitor his/her response to the process closely

443. I would monitor progress to plan and take remedial action to avoid a late shipment

444. I would most likely admit the wrong if I am legally liable for the new product delivery

445. I would need to discuss the situation with the responsible person

446. I would need to do the analysis before agreeing to anything

447. I would negotiate a firm delivery date based on firm estimates from my managers and commit to a reasonable penalty for late delivery beyond the agreed upon date

448. I would not offer my house as collateral without the permission of my spouse

449. I would not put up my home as collateral

450. I would not risk heavy cost overruns, and unexpected delays that would erode the confidence of our clients
451. I would outsource or sub-contract part of the job

452. I would phone my broker for more information

453. I would politely tell the union rep that I understand the unions concerns and that I was attending a board meeting today to attempt to find a way to meet their needs

454. I would prefer a joint project with a for-profit organisation

455. I would probably explore the basis of the current estimates with the chief engineer, seeking to understand how the estimates had been arrived at

456. I would proceed with the meeting

457. I would propose solutions to deal with the new realities and let the client be involved with the final selection

458. I would randomly sample the product before it is shipped and inspect it for flaws

459. I would read my mental and written notes back to him/her to make sure I understand exactly his reality

460. I would reduce the exposure of the company by maintaining draws from the client at regular milestones

461. I would remind them of the long term relationship we have had with them (assuming this was the case)

462. I would require more information
463. I would research this unknown "intermediary" as much as possible to prepare myself for a meeting. [Then I will meet the person that approached me to receive more information about the company interested in acquiring the business]

464. I would review the estimate for the new production workstation to see if the assumptions underlying are not realistic and what variables exist that cause this happen

465. I would seek to change the union proposal by spreading the increase over five years

466. I would seek to gain from the alliance without jeopardising the company's current business

467. I would seek to listen and understand the offer before committing anything right away

468. I would seek to understand first (the problem)

469. I would speak with my partner, and wife

470. I would start to look for a new plant manager and give the current manager his notice

471. I would stop the project and give the client his money back? (Not likely)

472. I would suggest a signing bonus in an effort to get them [union] to agree to a compromise on their terms
473. I would take notes while I listening to him/her

474. I would then ask him for help with the low estimate and the short time frame and ask him how we could resolve these issues

475. I would then attempt to transfer some of the penalty to my suppliers and or senior C-level execs

476. I would then be in touch with the company attempting the acquisition and discuss an appropriate valuation

477. I would then recommend that we contact the company's business advisor, probably a CA, to discuss the situation. He would be able to help us formulate a response to this approach, and I would expect help in the following areas from our advisor:

    - checking on the bona fides of the intermediary
    - discussing the pros and cons of selling
    - helping us decide whether to consider it seriously
    - helping us place a range of value for the sale

478. - helping us to devise a logical method of selling (shares or assets), taking into account the after-tax 'bottom line' to the shareholders of my company

479. I would try and determine if the problems are mine or his, or whether they can easily be resolved

480. I would try and see it from his perspective
481. I would try to calm him down and invite him for lunch/dinner to discuss and evaluate the situation.

482. If he accepts, would give me time to plan ahead for the worst

483. I would try to figure out some costs of putting a training proposal together so you can see if the project is feasible when you meet with the college people

484. I would try to find some money elsewhere, perhaps selling some of my interest

485. I would try to get a clearer outline before attending the meeting via phone or email

486. I would try to have him/her draw on historical time line success

487. I would try to talk to the client to see if there is any way we can solve the problem without resorting to a lawsuit -- get details of the nature of the failure

488. I would try to turn it into a creative project with some fun involved

489. I would try to understand the problem

490. I would use benefit of the doubt- assuming that the plant manager didn't do this on purpose he may deserve to keep his job

491. I would use benefit of the doubt- assuming that the plant manager didn't do this on purpose he may deserve to keep his job

492. I would use our accountants if necessary to determine this information, then, arrange a meeting with your CFO and your account manager at the bank, to let them know what has happened, and what you will be doing about it.
493. Hopefully, the manager will be able to react to this with a clear indication of what the bank will need to carry you past this scenario.

494. I would use various search criteria

495. I would be looking for investment money from mortgage brokers, and on line banks

496. I would validate the buyer. If information not forthcoming from 'intermediary' offer to do NDA. If not probable say "it is a bit early" and build relationship with intermediary. If probable enter into NDA. Discuss intermediary's interest and previous experience

497. I would verify that this new space will in fact accommodate our current and future business

498. I would very likely side with my wife, being strongly opposed and advise my partner that I cannot raise the necessary funds

499. I would walk down and ask the front line folks how things are going

500. I would want to establish rules of confidentiality

501. I would want to use my supportive listening skills to validate the client's experience and then to interview the client for more information

502. I would watch out [for competition]

503. I would work with the folks initially (pizza et cetera) towards finding a solution
504. I'd be looking to double the estimates given the overly optimistic estimates I had received in the past

505. I'd meet after sizing up the probability of success and/or trying to get travel money guaranteed

506. Identify and address the source of the problem

507. Identify the key sources of delay and focus on getting these back on track

508. Identify the real financial issue

509. Identify with your client and the problem

510. If "yes", then let him know that our clients, stakeholders, and shareholders will be relying on him and his team

511. If a fishing expedition, thank him for time and move on, otherwise provide basic information

512. If an increase of the manufacturing floor space was on the book for some time, I should have calculations for how much I am ready to pay for it, so I will proceed with immediate offer on the site

513. If client has added 'extra' features, which is the norm, help him understand the scope-creep

514. If client has added 'extra' features, which is the norm, help him understand the scope-creep

515. If good, then determine financial conditions
516. If good, then sit down that night and determine financial conditions

517. If he is willing to raise the whole amount, I would be prepared to give him some of my equity

518. If I am the President and CEO of the company, I would get a second opinion

519. If I believed in my business, (which I always do) I'd offer to personally guarantee my pro rata share of the credit facility, and communicate my turnaround plan with the banker

520. If I can't get there, plan a conference call to complete the plan

521. If I did find something does not make sense, because my chief engineer is one of the key people in my company, I would not go ahead and play the "blame" game on people

522. If I don't believe the business will recover I will look for other opportunities such as selling or reforming the business structure

523. If I know the reason for the bad performance, and I believe we have the potential to overcome it, I will explain to my husband that this is a temporary situation, and the line of credit will be changed back to normal in xxx months and the house won't be required as collateral

524. If I take a stand, I have to be prepared to take the consequences, therefore, I better inform myself well

525. If I were the Production Manager or the Sales Manager, I would appeal to the President to be cautious, and if we were to go ahead, to warn the client of
impending delays

526. If information not forthcoming from 'intermediary' offer to do NDA

527. If it involved quoting for a client, I would have taken the estimate with a grain of salt and quoted a higher amount, based on my own estimates

528. If key players are not doing their jobs adequately, I may have to take disciplinary actions to ensure quality is maintained

529. If no agreement is reached, make decision based on best information

530. If no consensus, direction must be given

531. If not getting anywhere, I'd ask to be assigned to the Special Credit desk where competent staff can monitor my workout

532. If not probable, say "it is a bit early," and build relationship with intermediary

533. If probable, enter into NDA

534. If so, they should be consulted as well to ensure that the Queen's share of any transactions (income tax) can be minimized

535. If someone is responsible for not having acted as promised or expected, consider replacing that individual/individuals with someone who can solve the problem

536. If the action plan is not acceptable the next step is to get an assessment of what it takes to mitigate the damages caused by the defective product

537. If the client indicates 'you'll be hearing from our lawyers,' that promise [to fix
the problem] will not be necessary

538. If the company is doing well, I would probably agree to this increase, especially given the number of labour shortages around

539. If the company wants to enjoy this current trend, it needs to act fast

540. If the company were not doing well, I would attempt to continue negotiation to educate the union representative about why the company could not afford this increase along with everything else in the collective agreement

541. If the lease space meets those criteria, make an offer for the space "subject to shareholder approval" and with a possession date significantly in the future

542. If the opportunity is aligned with company strategy, make time for the meeting, if not, decline

543. If the plans have been on the books for some time, they ought to have some expression of cost/benefit

544. If the price is reasonable, I would agree to sell my company. [If the investment of all employees, including mine, is less than acquiring price with a defined percentage]

545. If the product is or will be out of fashion in the next couple of years--Sell

546. If the product is something that seems to have a bright future -Wait

547. If the product was used outside of specifications, then we cannot be held liable, but I would rather avoid going to court, if possible
548. If the project is large enough, I might ask him to request a review by our outside financial advisors, likely a public accounting firm

549. If the workers are on strike the company won't make the forecasted profit for sure

550. If they [unions] see a weak CEO, they can bring the company to its knees. From 5% to 7% is a 40% increase in contribution NO WAY

551. If they are not within our control, we advise the client, and only assign the resources that will keep profitability in line

552. If they are within our control, we bring the team together and set out a new schedule that we are going to meet

553. If they would not tell me, I would refuse the offer

554. If this is not possible, document a change in schedule and get approval

555. If this were important to them, I would attempt to have something else removed at an equivalent cost saving

556. If we are a service oriented company then I would have used the rule "the client is always right"

557. If you want a quality product, not only do you need quality people, but also you need quality processes, and employees need a deep understanding

558. If you want a site make an offer ASAP

559. In a competitive marketplace, bidding above the 'accepted value' by between 5
& 10% can in fact, lessen the end-to-end acquisition costs because there are
costs in making an offer

560. In all cases I would play hardball with the bank as they have a lot to lose as well

561. In all cases the decision is highly volatile depending on the stage of life you're
in, your attachment to the business and your priorities (these will change based
on the person): Jeopardy to life balance, effect on family, and ability to sustain
bankruptcy and start over

562. In all human interaction there doesn't have to be a winner and a loser

563. In anticipation, the costs are all 'in the can', so a quick decision is made to move
on the property with a minimum of 'subjects' so that our bid is superior

564. In for a penny, in for a pound!

565. In order to ensure the quality of the production, production audit might be used

566. In order to minimize the cost of this lawsuit, it is important to understand what
is really going on and to learn from the mistake

567. In the event of financial collapse the financial institutions can come after the
owners personal assets whether they have been chattels to the loan or not

568. In the software business, there are always different opportunities to be exploited

569. In this case, $2M revenues with 10 employees seems to me that the company is
doing fairly well and I will probably not sell the business

570. In this scenario, is it marketing or training?
571. Increase frequency of measurement and ongoing communication

572. Increase line of credit for the time being from another source of finance institution other than banks

573. Initially decline the offer for engagement in any discussion

574. Innocent until proven guilty

575. Insist buyer be revealed a certain point.

576. Insist on at least 65% of the purchase price being in cash or near-cash

577. Institute an in house quality system that will resolve issues prior to shipping or mass production

578. Interacting with academic institutions is never a bad idea

579. Investigate as to why the situation has gone from bad to worse

580. Investigate cause of failure

581. Is a face-to-face meeting required? Is it required with me personally?

Ultimately, if this is a strategic opportunity for my company, I jump on an airplane and go meet with the Dean

582. Is it still the right time? Analyze alternatives, if any

583. Is the business growing? Am I happy with the Business? Am I the only one this decision will affect? (i.e. my situation is a family business other people involved - I could not make this decision on my own)

584. Is the request reasonable?
585. Can you afford it?

586. What is the cost of not granting?

587. Is there overall benefit to me/them?

588. Isolate the cause of the problem, and replace the responsible staff if necessary

589. It does not make sense to put any personal equity into a business. Family and business are separate domains

590. It is better if your bank agent learns from you

591. It is better to be proactive instead to hide from problems

592. It is better, whenever possible, to not simply override a member of your management team, but to get them to arrive at the correct answer themselves

593. It is important to admit your mistakes, especially in the field of business, because integrity and honesty means everything

594. It is important to get a commitment from him/her [interested party]

595. It is not always beneficial to pay too much attention to the details

596. It is usually just a function of money, time, and a sense of urgency

597. It sounds, from the problem, that the power is in the company’s hands and I would therefore talk to the engineer and ensure that the timeframe that the client was told included a significant delay so that we would be sure to finish early

598. It will be very reflective of a purchase price, and depend whether my company can achieve upside value on its own or in conjunction with the purchaser's
resources

599. It would depend upon the offer, the credibility of the "intermediary” and the potential growth opportunity in the present situation

600. It's always flattering to be asked [to sell] and at the very least the conversation could prove educational in its own right

601. Jump on the plane

602. Keep a project on track as much as possible

603. Keep a sharp eye on our project management information to alert us to get on to the slippages and correct them before they become a problem

604. Keep in touch with the trustee to see if he is selling assets or the business and if there is the possibility of getting a new owner/client

605. Keep personal assets out of business

606. Keep the personal debt at a manageable level

607. Kick your own butt for breaking investment rules and investing on emotion not economic principles

608. Knock down barriers and facilitate resources of people, time, or money

609. Lastly, if the LOC is not being used, let them [the banks] have it

610. Leadership of experienced individuals requires buy-in and acknowledgment of their skill

611. Likelihood of business generating a profit [is important]
612. Listen as they vent
613. Listen carefully and fully discuss the barriers as a group
614. Listen to what the wife has to say!
615. Listen, analyze the situation and then proceed
616. Listen, listen, listen
617. Locate a lawyer/union specialist for advice
618. Look for alternate financing—fill gap scenario—BUT concurrently look for new openings
619. Look for changes to other areas of the collective agreement that had the potential to reduce the cost by an equal amount
620. Look quickly into the opportunity
621. Maintaining a good relationship to the client is important
622. Major problems that repeat are mostly systemic, not 'individual' related
623. Make a determination of likely benefit of proceeding
624. Make an agenda based on what you can offer, and what you can't
625. Make an educated guess leading to a very reasonable estimate
626. Make an immediate reasonably priced written offer subject to board approval and financing
627. Make an offer on the building subject to appropriate internal approvals
628. Make an offer on the space to see if I can get it on my own terms

629. Make attempts to recover your assets

630. Make better personal investment decisions in future

631. Make notes

632. Make positive decisions based on your wants, needs, and goals

633. Maximize positive risks

634. Maximizing shareholder value

635. Measure and follow up frequently

636. Meet with banker to renegotiate a favourable alternative arrangement

637. Meet with my banker and explain what has happened and how I plan to deal with any fall out that affects my company

638. Meet with plant manager and review problem mitigation solution adopted and causes for recurrent failures

639. Meet with relevant people in the organization, and call EDC and the bank. Clear the calendar if possible and attend the meeting

640. Meet with the client and mitigate the situation by making good on the claim

641. Meet with the plant manager and foreman to assess and identify the source(s) of the problem(s) and implement new higher quality performance standards in the production process

642. Meet with the team determine causes and correct
643. Money talks, and BS walks

644. Morale fibre, I have no patience for unions

645. Moreover, when people make a mistake, it doesn't mean anyone wins because unless the team can start working toward in the best interest of the company, everyone loses

646. Most credit managers at banks are more willing to work with you on credit problems if you are upfront with them and keep them informed

647. Most disputes can be negotiated rather than litigated

648. Most likely would purchase

649. Move quickly on acquiring the space having set threshold limits to avoid the trap of an extreme bidding war

650. Must break even, therefore profitability will have to suffer

651. My chief concern will be to not get emotional or say something that I might regret later in the coming proceedings

652. My curiosity might be piqued but I would not proceed without full information on the interested party

653. Need a mediator to help resolving the issues

654. Negotiate

655. Negotiate a settlement out of court

656. Negotiate an acceptance of offer
657. Negotiate with the union representative to bring the % down to a comfortable level or offer alternative offer over a certain period of time

658. Negotiations need to be win-win

659. Never let a good opportunity go

660. Never stray from effective client relations

661. No excuses

662. No need to jump at this opportunity since business is going well

663. No sense in getting the shareholders excited unless you have something solid to offer

664. No, I would not offer my house as collateral

665. Nothing ventures nothing gained

666. Obtain as much information on the project from the Dean as possible

667. Obviously it was floor space I had done my homework on, I would make sure that I was the first offer that was accepted for the space

668. Offer a one-time 2% signing bonus as our final position. It does not affect long term costs, and we have done the math on the expected outcome

669. Offer to knock a bit of money off. Even the hardest client will understand

670. Offer to work with him on alternatives that will speed production, but keep costs in line

671. Offer to work with the client to learn what happened, how to rectify and how to
mitigate and cover losses

672. Offer to work with the client to learn what happened, how to rectify and how to mitigate and cover losses

673. Once I've explored the avenues to see if all $40K would be written off, I would probably move on and not let this setback phase me

674. One or both of them should accompany you to the meeting, if possible

675. One or more one-on-one discussions getting him/her to address the past optimistic schedules and budgets, and to apply that past knowledge to the current project

676. Open the books, and negotiate on the basis of actual company financial position

677. Otherwise, provide basic information. Begin negotiations.

678. Our company's reputation is built on client relationships and since we are the only game in town we need to meet and in fact exceed our client's needs

679. Our product is only as strong as the weakest link

680. Over time, build an estimate adjustment factor based on the individual presenting the estimate, the nature of the task being estimated and your own feeling regarding the potential margin you would like to see applied to this specific task

681. Pamper this [the] customer

682. Participate, don't just delegate
683. Pay down some of the debt from each partner's securities, and negotiate an extended schedule for a slower pay down of the LoC (Letter of Credit)

684. People count

685. People who feel valued and included are generally more productive than those who are not

686. People work best when confronted with a penalty for non-performance or reward for over-performance

687. Persuade partner to support.

688. Pinched my nose and got my wife to sign the spousal guarantee

689. Plan a budget for write-offs

690. Point out to the client that the delays are attributable to demand / supply problems with components

691. Position issue so that it is outside of their role

692. Praise publicly

693. Previous relationship with university [is important]

694. Price the opportunity accordingly

695. Probably put up the portfolio and house as equity. Doesn't appear we have much of a choice do we?

696. Proceed with signing off of project charter

697. Promise less, deliver more
698. Provide a 1% increase provide the employees match with a 1% increase in their contribution (assuming the business can manage the increase in cost)

699. Provide immediate feedback to critical senior staff

700. Provide incentives if appropriate

701. Put your ego away

702. Quality is #1 one priority since it is directly linked to client satisfaction and the image of the company

703. Quality must be built into every process of an organization, so a lapse in quality usually means a lapse in process

704. Quantify costs of lawsuit + damages + reputation against re-manufacturing the product and propose to re-deliver

705. Quid pro quo

706. Quit watching

707. Reach a consensus on the valid engineering plan

708. Reacting or becoming defensive to a client is a sure fire way to make the situation worse

709. Ready, fire, aim - learn from your tries

710. Reasonable balance of company/employee needs

711. Re-assure the bank that although there will be a short-term impact it does not pose a serious threat to the company
712. Recognize feelings and accept role
713. Redundancy is not always bad
714. Re-examine your financials
715. Refinance and adjust your plans so that reliance on your bank can be minimized
716. Re-focus on the business
717. Regardless of the possibility of a lawsuit, try to find a short-term solution to keep the client in satisfactory operation
718. Reinforce/echo their most valid points
719. Renew your guarantee and set new expectations
720. Replace the poor quality goods with an expedited shipment of replacements
721. Report the claim
722. Request further information, name of referral, plans if business is acquired, etc
723. Resolve issue and restore credit, shop for more credit
724. Resolve without court system particularly if you are wrong
725. Resourcing decisions are dynamic based on the issues or opportunities, and be prepared to reallocate quickly if necessary
726. Respond to emergent opportunities where there are benefits to be gained
727. Response to action is just as important as acknowledgment
728. Review the details and re-arrange my calendar and make arrangements to attend
the meeting

729. Review the results first [before making a decision]

730. Review the results first [before making a decision]

731. Review your financials

732. Risk of doing business [is to be expected]

733. Risk vs. reward calculation

734. Roll up your sleeves

735. Safety and security of my business and family interests

736. Safety and security of my business and family interests [are important to me]

737. Say "yes, what time would you like to meet?" Arrange your travel plans

738. Say sorry to the client, and listen to the real situation of the customer. If the information provided by the customer is reasonable, coordinate with the customer to solve the problem

739. See if he ends up at the same point after the discussion

740. See where you are at

741. See whether there is any hope of a proposal to creditors and the chance of getting something on the dollar

742. Seek extended credit from suppliers and clients

743. Seek new investors to bridge the gap
744. Seek other banks who would extend better terms

745. Seek professional advice when needed

746. Selling flawed products will not only affect sales, but also affect the reputation of the company

747. Send an apology letter to concerned customers and inform that problem will be rectified

748. Set down a minimum and/or maximum length of time that I would be expected to serve

749. Set limits/boundaries on extent of commitments

750. Set quality targets and measurement criteria, and follow-up timelines

751. Set up a meeting to discuss any pending offer and conditions

752. Set up a meeting with all relevant stakeholders to understand why the delays, and discuss ways to resolve them

753. Set up a meeting with all relevant stakeholders to understand why the delays, and discuss ways to resolve them

754. Settle for 6% [instead of 7%]

755. Set-up a meeting with client and gather detailed information regarding the incident

756. Share but limit the gains, share but limit the declines

757. Shareholders and stakeholders both benefit from a financially strong,
productive, and rewarding work environment

758. Show good will

759. Shut the door of the plant, and let the union members sweat out the strike time

760. Since my suspicion is that the estimates are inaccurate, I will ask my CFO to have a look at the numbers as well

761. Since the issue has been "on the book" for some time, I would act immediately

762. Since you have had ample time to study and verify your needs, you can jump on it quickly and finalize the deal

763. Sit down with chief engineer, review and revise estimates

764. Skilled people coming out of training institution are always beneficial for the business

765. Slow your payments to your suppliers to help cash flow

766. So my mission in this call will be to learn what I can from the client about what happened, in as professional a manner as possible

767. Sometimes emotionally charged situations can be a levered towards future success through being authentic with a customer

768. Sometimes the best deals are the ones you walk away from

769. Sometimes, great things happen from unexpected (and unplanned) events, and you need to be able to go with the flow

770. Sometimes, the best way to lead is to be a facilitator
771. Speak to the tenant that is leaving the building and ask some open probed questions

772. Start the response quickly and competently

773. Strategic opportunities usually require the CEO to be involved

774. Strike while the iron is hot

775. Suck it up

776. Surround yourself with the best minds you can find to help make important business decisions

777. Take advantage of business opportunities

778. Take advantage of every opportunity

779. Take full responsibility, incur whatever costs are necessary to make the customer happy, work with the customer (the parts are probably part of a greater whole assumption)

780. Take immediate action

781. Take responsibility to correct the problem

782. Talk is cheap [one needs to act]

783. Talk to an independent labour relations specialist, if there is one available, to see if this demand is getting traction in the area

784. Talk to the employees about the decision

785. Talk to whoever appears to be a key person to glean what their hopes are and
how they envision the joint project

786. Talk with your partner

787. Team play

788. Team play [group work is important]

789. Tell your Manager(s) you are going to MBWA (manage by walking around)

790. Test the extent of interest by the interested party

791. Test the extent of interest by the interested party

792. The bank manager's decision should not be based on an individual quarter

793. The client is upset so we must create a non-judgmental dialogue directly with the key decision makers

794. The client satisfaction and the image of the company are on first place

795. The client would need to be careful exactly what he accused my company of, because he/she would be liable in court for frivolous lawsuits

796. The client would need to be careful exactly what he accused my company of, because he/she would be liable in court for frivolous lawsuits

797. The customer is always right

798. The first thing I would do is talk to my partner, because if he/she isn't willing to proceed with raising the money personally then there is no point in me trying to raise my end of the funds

799. The more you owe the weaker they [the banks] are
The most important thing here is client expectation

The only people who truly win in a lawsuit are lawyers

The outside accounting firm might, for example have some ideas about how to present the offer that takes advantage of the vendor's position

The owners are personally liable for the debts of the company even with limited liability companies. (This is assuming that I am the owner or one of the owners of this small business)

The price should be less critical than the plan and the probability of effective, efficient roll-out

The product should perform to the agreed specifications

The sweetness of water depends upon the amount of sugar dissolved. This is only true to a point after which the additional sugar makes the solution sour

The vessel should be delivered on time or the client will require compensation and we will lose money on the deal

Then I would state that it is very important for me to address the situation ASAP, and ask for a face-to-face meeting

There is always a way to borrow money

There is always another alternative

This deal cannot be agreed to without an equal concession elsewhere
813. This is to ensure that our ultimate response/defence of the claim is handled as professionally as possible

814. This may require dealing with specific employees who are not producing at the level required

815. This may require dealing with specific employees who are not producing at the level required

816. This sounds a little complicated, and I want our CFO to review the likely financial, cash flow and income tax implications

817. Time between the start and end of the acquisition must be no more than 3 months

818. Time pressure (whether real or not) gets deals done. Use it whenever you can

819. To the best of your ability, verify the facts with the real party that you are/will be dealing with

820. Try and avoid the lawsuit route as all parties will lose in both the short-term and in the long-term monetarily, relationship and reputation-wise

821. Try other banks and lenders before using personal collateral

822. Try to achieve a consensus on the renewed goal

823. Try to get them to agree to principle-based negotiations

824. Try to negotiate lower. If not possible, give the union what they want

825. Try to recover your shipment
826. Try to resolve the issue without going to court

827. Turn the intermediary away. If they are serious enough, they will come back with a serious offer

828. Under-promise and over-deliver

829. Unions are extremely dangerous organizations

830. Unless full disclosure is made, I would not share any details with the intermediary except public information

831. Use an "Outcome Frame" to problem solve

832. Use Common sense

833. Use your best advisors in helping you respond to a problem

834. Using a team approach, then, we could arrive at a likely costing and timing scenario to present to the client

835. Validate the buyer

836. Verify sources and information before making a decision

837. Verify, analyze, evaluate

838. Very similar to project slippage, determine what the root cause is and get it fixed

839. Warning will be given if this [poor quality] continues to happen, and it may result to termination due to the lack of responsibility

840. We are both on the same side, not adversaries
841. What are the business constraints from the client? What is our relationship with this client?

842. Have we done something similar in the past?

843. What were the results?

844. Are the estimates reliable, justifiable? (maybe not, since the 'again' implies we've been burned by his estimates before)

845. What can we do? I would say "Listen Jim, Bob and the boys will be right over with a team of widget engineers and we will get to the bottom of this and have it fixed for you hopefully by midnight tomorrow"

846. What do I want/need?

847. How can I get it?

848. What resources of people, time, money, and knowledge will I need? How will my life/our lives be better if we get what we want? What keeps us from achieving our goal/getting what we want/need?

849. What exactly is he/she expecting to buy?

850. What is our relationship with this client?

851. What is the business cycle state compared with my life cycle state?

852. What is the driving force behind acquisition of my company?

853. What will be the impact on my employees?

854. Is there overall benefit to me/them?
855. What is the nature of the problem(s)? What caused the problem(s)?
856. What prevented your quality assurance people from being aware and taking the appropriate preventative measures? Has the problem been resolved already?
857. If "no", when will it be?
858. How will you know? Is this a result of skills, time, knowledge, supervision, poor products?
859. You NEED an immediate and permanent correction.
860. How will you get it both immediately and over time?
861. What is the opportunity cost of selling? What are they offering?
862. What will be the impact on my employees?
863. Whatever can go wrong, usually does
864. When dealing with real estate, speed is crucial
865. When decisions affect others, those others must have a voice in the decision
866. When producing something, it is important to make sure every single detail is adequately satisfied in accordance with the company's regulation
867. When would they wish to begin and complete the acquisition?
868. Where can F&A (Finance and Administration) see an opportunity to regain cash flow?
869. While doing a production audit might look like a bad thing, it can at the same time create value for the company, such as increase the efficiency of the
production

870. While employees deserve most of the benefits that are provided, when it comes to contributing more to their retirement fund than do they, I would draw the line.

871. While it is important to accomplish something in life, when you have a family, sometimes opportunities should be ignored, especially if they are risky [if I see that the company has a great prospect in the future, and I also know there are unknown factors that will keep the company from being successful].

872. While people do make a mistake, it is important to work it out as a team and not try to point finger even if you have the clout in the company.

873. While traveling, brainstorm over the phone with your manager in Kelowna.

874. While we are sure that the client's claim is well founded, it is still possible that other variables might affect the outcomes.

875. Who reports to whom?

876. Will stay with whatever the industry standard. If the increase is industry wide then I am ready to take the pinch.

877. With experience in the industry, most financial costing is boilerplate and academic institutions have guidelines.

878. With the numbers upgraded in this manner, I would then bring the CFO into a meeting with the Chief Engineer to discuss this, and at the same time explore the possibility with him that the timeline might be optimistic.

879. Word of mouth is important. One dissatisfied client can take away many more
880. Work to improve the assets you have

881. Work with complete team to determine the best thing to present to the client

882. Work with other staff to come up with a "business" time-frame that takes into account risk and business

883. Work with your key staff to solve problems

884. Working together to solve the issues leads to strong long-term solutions

885. Would I be required to commit to serving the company after its acquisition?

886. Write down a list of attributes that my company has that are pluses for the suitor.

887. Yes I would go on and make a move

888. You have to survive a failure and be able to come back again

889. You need independent professional advice to solve the matter. The fees will likely be worth it.

890. You speak with the Dean about the best way of accomplishing his/her objectives

***
Appendix 4: Survey's Raw Data

I present hereunder the raw data from the survey. For quick reference, I repeat every survey question along with the answers provided by the participants.

The # column identifies the participants by response order. The Yes/No column (q#rad) indicates if the responder had previous experience with a similar situation. The suggestion column (q#pbd) lists the participant's problem-solving suggestions, and the last column (q#rad) shows the rules of thumb the participants provided. The # indicates the scenario number.

Scenario 1: Company Valuation Raw Data

The first business scenario (Company Valuation) asked the following question:

As the CEO of a small software business ($2M in revenues, 10 employees), you have been approached by an unknown "intermediary" claiming to represent a company interested in acquiring your business.

Regardless of your previous experience with the above-described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

<table>
<thead>
<tr>
<th>#</th>
<th>Yes/No</th>
<th>Suggestions</th>
<th>Heuristics or Rules of Thumb</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>q1rad: yes</td>
<td>q1pbd: 1. Validate the buyer 2. If information not forthcoming from 'intermediary' offer to do NDA</td>
<td>q1rot: 1. Gut feel if intermediary actually has something</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>q1rad:</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>q1pbd:</td>
<td>3. If not probable say &quot;it is a bit early&quot; and build relationship with intermediary 4. If probable enter into NDA 5. Discuss intermediary’s interest and previous experience. 6. If a fishing expedition, thank him for time and move on 7. Otherwise provide basic information 8. Begin negotiations 9. Insist buyer be revealed a certain point etc</td>
<td>To engage with the intermediary to find out more about who wishes to purchase the company and why.</td>
<td>I would listen to the proposal, and then complete some analysis of the offer, weighing both tangible and intangible benefits and risks. I would also want to know much more about the acquiring company. If they would not tell me, I would refuse the offer.</td>
</tr>
<tr>
<td>q1rot:</td>
<td>2. Probability of selling given industry market conditions</td>
<td>A company is always for sale, and a strategic acquisitor can pay a relatively high price.</td>
<td>- What is the driving force behind acquisition of my company? - What will be the impact on my employees? - Is there overall benefit to me/them?</td>
</tr>
</tbody>
</table>

**Notes:**

- **q1rad:** Question 1: radial
- **q1pbd:** Question 1: personal bound
- **q1rot:** Question 1: rotation
<table>
<thead>
<tr>
<th></th>
<th>q1rad:</th>
<th>q1pbd:</th>
<th>q1rot:</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>no</td>
<td>I would choose to draft and sign a two-way confidentiality agreement, so I could find out more</td>
<td>Protect my own position till I can learn more</td>
</tr>
<tr>
<td>9</td>
<td>no</td>
<td>I will find out how much I will get from him/them first.</td>
<td>I will consult my accountant to see the book of value of my business.</td>
</tr>
<tr>
<td>10</td>
<td>no</td>
<td>I would contact my Board Chairman, to apprise him of the situation. He needs to be involved since the Board represents the interests of the shareholders. I would then recommend that we contact the company's business advisor, probably a CA, to discuss the situation. He would be able to help us formulate a response to this approach, and I would expect help in the following areas from our advisor: - checking on the bona fides of the intermediary - discussing the pros and cons of selling - helping us decide whether to consider it seriously - helping us place a range of value for the sale - helping us to devise a logical method of selling (shares or assets), taking into account the after-tax 'bottom line' to the shareholders of my company.</td>
<td>Surround yourself with the best minds you can find to help make important business decisions.</td>
</tr>
<tr>
<td>11</td>
<td>no</td>
<td>I would have determined the following: 1 - Why was the suitor interested in my company? Evaluate, if possible, the honesty of the reply. 2 - What exactly is he/she expecting</td>
<td>1 - A minimum purchase price of 5-times annual revenues. 2 - Time between the start and end of the acquisition must be no more than 3 months 3 - Write down a list of attributes</td>
</tr>
<tr>
<td>q1rad</td>
<td>q1pbd</td>
<td>q1rot</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>12</td>
<td>yes</td>
<td>I would decide to have more research conducted.</td>
<td>No rules.</td>
</tr>
<tr>
<td>13</td>
<td>no</td>
<td>It would depend upon the offer, the credibility of the &quot;intermediary&quot; and the potential growth opportunity in the present situation. Additionally, given the small size of the company, employee input might be warranted.</td>
<td>How does the risk of selling (present versus future evaluation potential) counter the risk of not selling? What is the business cycle state compared with my life cycle state?</td>
</tr>
<tr>
<td>14</td>
<td>no</td>
<td>I would ask for verification of the legitimacy and authority of the intermediary, and the basis on which they are making the approach.</td>
<td>ROT: Verify sources and information before making a decision.</td>
</tr>
<tr>
<td>15</td>
<td>yes</td>
<td>To determine if the intermediary is legitimate and who is making the offer. In most cases, this is not a &quot;true&quot; offer.</td>
<td>1. Determine the reliability of the parties 2. Determine role of the intermediary 3. Determine identity of company represented 4. Make a determination of likely benefit of proceeding 5. Proceed or not.</td>
</tr>
</tbody>
</table>
| 16    | yes   | I would first "qualify" the | Always qualify the person that you
intermediary by asking about and verifying his/her credentials; secondly, contact the company that he/she claims to be representing, to verify that what he/she has said is true and factual.

<table>
<thead>
<tr>
<th>17</th>
<th>q1rad: no</th>
<th>q1pbdd:</th>
<th>q1rot:</th>
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<tbody>
<tr>
<td></td>
<td>I would require more information.</td>
<td>My curiosity might be piqued but I would not proceed without full information on the interested party.</td>
<td></td>
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<thead>
<tr>
<th>18</th>
<th>q1rad: no</th>
<th>q1pbdd:</th>
<th>q1rot:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Request further information, name of referral, plans if business is acquired, etc.</td>
<td>Do due diligence research when coldly contacted</td>
<td></td>
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</tbody>
</table>

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<thead>
<tr>
<th>19</th>
<th>q1rad: yes</th>
<th>q1pbdd:</th>
<th>q1rot:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Determining the company's book value. Determine the source name. To ask the board of this opportunity at an extraordinary meeting.</td>
<td>I would want to establish rules of confidentiality.</td>
<td></td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>20</th>
<th>q1rad: no</th>
<th>q1pbdd:</th>
<th>q1rot:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I will identify other potential buyers. I will identify business parameters, 5-6 times sales? I will identify the future of my business/industry. Up or down? Is it time to sell?</td>
<td>As a RoT, I will not deal with an unknown intermediary.</td>
<td></td>
</tr>
</tbody>
</table>

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<tr>
<th>21</th>
<th>q1rad: no</th>
<th>q1pbdd:</th>
<th>q1rot:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>I would get a person or Company to help me with this. One familiar with acquisitions and valuations. I would like to know this. It gives me the confidence that the prospective purchaser is not a competitor on a 'fishing expedition'.</td>
<td>The gut feel that goes into predicting your market and upside potential. It will be very reflective of a purchase price and depend whether my company can achieve upside value on its own or in conjunction with the purchaser's resources. No sense in getting the shareholders excited unless you</td>
<td></td>
</tr>
</tbody>
</table>

are dealing with. To the best of your ability, verify the facts with the real party that you are/will be dealing with. Do not take anything for granted.
have something solid. A normal agreement would be subject to shareholder approval. Unless full disclosure is made, I would not share any details except public information with the intermediary. Second option is to have a non-disclosure agreement up front with some sort of cash deposit.

<table>
<thead>
<tr>
<th>22</th>
<th>q1rad: no</th>
<th>q1pbd:</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>First order decision would have been to meet with the other party to ascertain what its business proposition was. Depending on what was indicated would determine whether the negotiation proceeded.</td>
<td></td>
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</tbody>
</table>

| q1rot: | |
|--------| |
| Active listening and the entry stage of a formal negotiation. |

<table>
<thead>
<tr>
<th>23</th>
<th>q1rad: no</th>
<th>q1pbd:</th>
</tr>
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</table>
|    | -Set up a meeting to discuss any pending offer and conditions  
   -I would have a conversation with other principles in the company and decide whether to entertain the offer. |

| q1rot: | |
|--------| |
| I would be primarily concerned with the value I would receive if a sale were agreed upon. Secondly, I would be concerned about the future operation of the company (break apart or continued operation under new owner) |

<table>
<thead>
<tr>
<th>24</th>
<th>q1rad: no</th>
<th>q1pbd:</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>If the price is reasonable, I agree to sell my company.</td>
<td></td>
</tr>
</tbody>
</table>

| q1rot: | |
|--------| |
| The investment of all employees, including mine, is less than acquiring price with a defined percentage |

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<thead>
<tr>
<th>25</th>
<th>q1rad: no</th>
<th>q1pbd:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ask how much they are wanting to buy it for? Decision factors: Is the business growing? Am I happy with the Business? Am I the only one this decision will affect?</td>
<td></td>
</tr>
</tbody>
</table>

| q1rot: | |
|--------| |
| What is the opportunity cost to selling?  
What are they offering? |
(i.e. my situation is a family business  
4 other people involved - I could not  
make this decision on my own)

| 26 | q1rad: no | q1pbd: I would have verified the source of the information first. Once verified, I would ask for more details on the acquisition (why, when, how, what, etc.) and evaluate the proposition on its fit for our company. | q1rot: Verify, analyze, evaluate. |

| 27 | q1rad: no | q1pbd: Depending upon the quality of the product and its future viability. If the product is something that seems to have a bright future -- Wait.  
If the product is or will be out of fashion in the next couple of years -- Sell. | q1rot: How bad do I need the money NOW. |

| 28 | q1rad: no | q1pbd: I would have discussions with the following people: Shareholders, partners, and fellow managers. I would then be in touch with the company attempting the acquisition and discuss an appropriate valuation. This procedure may be slightly different depending on whether or not my company was publicly traded. | q1rot: Maximizing shareholder value |

***
Scenario 2: Cost Forecast Raw Data

The second business scenario (Cost Forecast) asked the following question:

Your chief engineer has presented to you his cost estimate for a new production workstation to be implemented within three months. You feel that those estimates are too low and the time frame too short, once again. You need to decide how to address those issues with your chief engineer, taking into account that he is one of the key people in your company and that your client expects results since your company is the only one with the required technology and knowledge to address their needs.

Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case:

Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

<table>
<thead>
<tr>
<th>#</th>
<th>Yes/No</th>
<th>Suggestions</th>
<th>Heuristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>q2rad: yes</td>
<td>q2pbd: Consult with the chief engineer to assess the risks of not being able to deliver the project on time and on or under budget.</td>
<td>q2rot: Assess the risks.</td>
</tr>
<tr>
<td>2</td>
<td>q2rad: yes</td>
<td>q2pbd: I would discuss the issue with the person asking about the probability of the information being accurate. I would try to have him/her draw on historical time line success. Then, &quot;wonder&quot; about other alternatives.</td>
<td>q2rot: Most estimates are too low and time lines too optimistic. Discussion of &quot;one&quot; alternative often leads to more viable, creative options.</td>
</tr>
<tr>
<td></td>
<td>q2rad:</td>
<td>q2pbd:</td>
<td>q2rot:</td>
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<td>---</td>
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<td>--------</td>
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</tr>
<tr>
<td>3</td>
<td>no</td>
<td>I would ask him to meet with me and others, brainstorm, and re-work the estimates.</td>
<td>No rules.</td>
</tr>
<tr>
<td>4</td>
<td>no</td>
<td>Be honest with the chief engineer in suggesting that his estimate may be too optimistic and list some (additional) risks and contingencies that you would like him to build into his estimate.</td>
<td>Over time, build an estimate adjustment factor based on the individual presenting the estimate, the nature of the task being estimated and your own feeling regarding the potential margin you would like to see applied to this specific task. Continually adjust this ‘Adjustment Factor’ as estimates and information become available.</td>
</tr>
<tr>
<td>5</td>
<td>yes</td>
<td>Discuss concerns with Engineer and finance folk.</td>
<td>1. Discuss concerns 2. Identify cost risks 3. Add contingency to project</td>
</tr>
<tr>
<td>6</td>
<td>yes</td>
<td>If I were the President and CEO of the company, I would get a second opinion. I would not risk heavy cost overruns, and unexpected delays that would erode the confidence of our clients. If I were the Production Manager or the Sales Manager, I would appeal to the President to be cautious, and if we were to go ahead, to warn the client of impending delays.</td>
<td>Whatever can go wrong usually does. Err on the side of caution in estimating.</td>
</tr>
<tr>
<td>7</td>
<td>yes</td>
<td>Sit down with chief engineer, review and revise estimates. Proceed with signing off of project charter.</td>
<td>Don’t commit to something not feasible because will lose credibility</td>
</tr>
</tbody>
</table>
### Heuristics-Based Decision-Making

<table>
<thead>
<tr>
<th>8</th>
<th>q2rad: yes</th>
<th>q2pbd:</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>I would probably explore the basis of the current estimates with the chief engineer, seeking to understand how the estimates had been arrived at.</td>
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<td></td>
<td></td>
<td>q2rot:</td>
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<tr>
<td></td>
<td></td>
<td>I would be looking to double the estimates given the overly optimistic estimates I had received in the past.</td>
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<tr>
<th>9</th>
<th>q2rad: no</th>
<th>q2pbd:</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>I would explain the importance of meeting the client’s schedule in a realistic manner.</td>
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<tr>
<td></td>
<td></td>
<td>I would ask if he needed help and offer it.</td>
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<tr>
<td></td>
<td></td>
<td>I would listen. This assures that both parties have a similar understanding.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check to make sure the client cannot obtain the technology and expertise elsewhere.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This does not seem to be an area where technology can help. It is an interpersonal or management problem.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>q2rot:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would watch out.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>It is important to get a commitment from him/her.</td>
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<tr>
<th>10</th>
<th>q2rad: no</th>
<th>q2pbd:</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>I will explain and educate the CE.</td>
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<tr>
<td></td>
<td></td>
<td>I will devise risk/reward plan.</td>
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<tr>
<td></td>
<td></td>
<td>I will develop back-up plans.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>q2rot:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>As a RoT, I will not allow to have the business depend on one individual.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ill ensure b/up plans</td>
</tr>
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</table>

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<thead>
<tr>
<th>11</th>
<th>q2rad: yes</th>
<th>q2pbd:</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Given that he is one of the key people in the company, I would be very attentive of his comments and thoughts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would be happy to meet with him face-to-face and over coffee or lunch and I would listen to what he had to say with empathy and understanding.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would try to see it from his perspective. I would then ask him for help with the low estimate and the short time frame and ask him how we could resolve these issues.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>q2rot:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would take notes while I listened to him/her.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would read my mental and written notes back to him/her to make sure I understand exactly his reality.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would monitor his/her response to the process closely.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would have a promise of yes or no answer on an agreed date.</td>
</tr>
<tr>
<td></td>
<td>q2rad:</td>
<td>q2pbd:</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>12</td>
<td>no</td>
<td>I would make sure that as CEO, I set the customers’ expectations low and therefore the company could exceed them. It sounds, from the problem, that the power is in the company’s hands and I would therefore talk to the engineer and ensure that the timeframe that the client was told included a significant delay so that we would be sure to finish early.</td>
</tr>
<tr>
<td>13</td>
<td>no</td>
<td>discuss with the engineer to modify the estimation</td>
</tr>
<tr>
<td>14</td>
<td>no</td>
<td>I would review the estimate for the new production workstation to see if the assumptions underlying are not realistic and what variables exist that cause this happen. If I did find something does not make sense, because my chief engineer is one of the key people in my company, I would not go ahead and play the &quot;blame&quot; game on people. Even if the guy is not the chief engineer, since we work as a team, we should all work toward what is the best for the company.</td>
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<tr>
<td></td>
<td>q2rad:</td>
<td>q2pbd:</td>
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</tr>
<tr>
<td>16</td>
<td>no</td>
<td>I will sit with my chief engineer and will discuss his estimate and timing in details. He might have reasoning that I am not aware of. Then I will remind him the importance of this project to our company and the clients company.</td>
</tr>
<tr>
<td>17</td>
<td>no</td>
<td>I would discuss with my chief engineer that I had concerns with the time frame and cost associated with the project. I would try to determine if the problems are his, or mine or whether they can easily be resolved.</td>
</tr>
<tr>
<td>18</td>
<td>no</td>
<td>Asked for the basis of projections. Asked the engineer to use optimistic numbers for cost estimates and pessimistic numbers for the time estimate. After recalculating the estimates, I would have passed on the new figures to the client.</td>
</tr>
<tr>
<td>19</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>yes</td>
<td>Express my concerns and go over the specs with the engineer to ensure expectations of the client and the business are realistic.</td>
</tr>
<tr>
<td>21</td>
<td>yes</td>
<td>Get him to explain his estimations and calculations to me as if I am a 6 year old.</td>
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<tr>
<td><strong>Apply a little Socratic method and ask lots of questions. See if he ends up at the same point after the discussion.</strong></td>
<td><strong>Hold people accountable and you will often be amazed at what they accomplish.</strong></td>
<td></td>
</tr>
<tr>
<td>If &quot;yes,&quot; then let him know that our Clients, Stakeholders, and Shareholders will be relying on him and his team.</td>
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<tr>
<td>Measure and follow up frequently</td>
<td></td>
<td></td>
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<tr>
<td><strong>q2rad:</strong> no</td>
<td><strong>q2pbd:</strong></td>
<td><strong>q2rot:</strong> -</td>
</tr>
<tr>
<td>Ask the engineer to review his work plan with me—to prove to me that his work and cost estimates make sense.</td>
<td>What are the business constraints from the client?</td>
<td>What are the business constraints from the client?</td>
</tr>
<tr>
<td></td>
<td>What is our relationship with this client?–</td>
<td>What is our relationship with this client?–</td>
</tr>
<tr>
<td></td>
<td>Have we done something similar in the past?</td>
<td>Have we done something similar in the past?</td>
</tr>
<tr>
<td></td>
<td>What were the results?–</td>
<td>What were the results?–</td>
</tr>
<tr>
<td></td>
<td>Are the estimates reliable, justifiable? (maybe not, since the ‘again’ implies we’ve been burned by his estimates before)</td>
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</tr>
<tr>
<td><strong>q2rad:</strong> yes</td>
<td><strong>q2pbd:</strong></td>
<td><strong>q2rot:</strong></td>
</tr>
<tr>
<td>One or more one-on-one discussions getting him/her to address the past optimistic schedules and budgets, and to apply that past knowledge to the current project.</td>
<td>It is better, whenever possible, to not simply override a member of your management team, but to get them to arrive at the correct answer themselves.</td>
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</tr>
<tr>
<td><strong>q2rad:</strong> yes</td>
<td><strong>q2pbd:</strong></td>
<td><strong>q2rot:</strong></td>
</tr>
<tr>
<td>If it involved quoting for a client, I would have taken the estimate with a grain of salt and quoted a higher amount, based on my own estimates.</td>
<td></td>
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</tr>
<tr>
<td><strong>q2rad:</strong> yes</td>
<td><strong>q2pbd:</strong></td>
<td><strong>q2rot:</strong></td>
</tr>
<tr>
<td>Be open, honest and examine the facts. As the engineer is an experienced team member, sit down and go over project plan and details. Reach a consensus on the</td>
<td>Leadership of experienced individuals requires buy-in and acknowledgment of their skill.</td>
<td>Leadership of experienced individuals requires buy-in and acknowledgment of their skill.</td>
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</table>
valid engineering plan. Do not do his job, but try to understand the reasoning and correct if necessary. Work with other staff to come up with a "business" time-frame that takes into account risk and business. Work with complete team to determine the best thing to present to the client. If no agreement reached, make decision based on best information.

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<th>26</th>
<th>q2rad: no</th>
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<td></td>
<td>If no consensus, direction must be given.</td>
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<td></td>
<td>Position issue so that it is outside of their role.</td>
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</table>

If no consensus, direction must be given.

Position issue so that it is outside of their role.

choose to set time aside to work with him to review his methodology and coach him to do a better job.

<table>
<thead>
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<th>27</th>
<th>q2rad: no</th>
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<td></td>
<td></td>
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<td>work to improve the assets you have.</td>
</tr>
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</table>

I will discuss with the chief engineer that I feel that those estimates are not realistic (cost too low and the time frame too short) and get him to consider my thoughts.

I may not know the exact answers, but will use those on the team (including our business advisors) to help make the best decision possible for the company.

Since my suspicion is that the estimates are inaccurate, I will ask my CFO to have a look at the numbers as well. If the project is large enough, I might ask him to request a review by our outside financial advisors, likely a public accounting firm. With the numbers upgraded in this manner, I would then bring the CFO into a meeting with the Chief Engineer to discuss this, and at the same time explore the possibility with him that the timeline might be optimistic. Using a team approach, then, we could arrive at a likely costing and timing scenario to present to the client.

<table>
<thead>
<tr>
<th>28</th>
<th>q2rad: no</th>
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<table>
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<th>29</th>
<th>q2rad: no</th>
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</table>

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<th>30</th>
<th>q2rad: no</th>
<th>q2pbd:</th>
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</table>
Scenario 3: Lawsuit Raw Data

The third business scenario (Lawsuit) asked the following question:

*Your secretary has informed you that a major client is on the phone. You have just picked up your phone to greet your client when an irate voice on the other end informs you that this client is going ahead with a lawsuit against your company. The new product delivered failed catastrophically and the client incurred a major loss. You know this client very well and you are pretty sure that his claim is well founded.*

Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case:

Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

<table>
<thead>
<tr>
<th>#</th>
<th>Yes/No</th>
<th>Suggestions</th>
<th>Heuristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>q3rad: no</td>
<td>q3pbd: Obviously, my risk assessment on this contract was faulty. I would arrange to meet with the client with my staff and initiate an emergency repair/replacement of the product.</td>
<td>q3rot: Take responsibility to correct the problem.</td>
</tr>
<tr>
<td>2</td>
<td>q3rad: no</td>
<td>q3pbd: I would ask to meet with the client. Empathize and sympathize with him and assure him that we would resolve the issue personally, or take responsibility to find a solution.</td>
<td>q3rot: Sometime emotionally charged situations can be a levered towards future success through being authentic with a customer.</td>
</tr>
<tr>
<td>3</td>
<td>q3rad: no</td>
<td>q3pbd: I would listen to everything the client had to say, and take notes. Then I would state that it is very important for me to address the situation ASAP, and</td>
<td>q3rot: No rules.</td>
</tr>
<tr>
<td></td>
<td>q3rad</td>
<td>q3pbd:</td>
<td>q3rot:</td>
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<tr>
<td>4</td>
<td>no</td>
<td>ask for a face-to-face meeting.</td>
<td></td>
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</tbody>
</table>
| 5 | yes   | Try to resolve the issue without going to court | 1. Recognize feelings and accept role  
2. Resolve without court system particularly if you are wrong |
| 6 | no    | 1. I would first assure the client that it is our intention the use all our resources to correct the fault in the product and see him through the catastrophe that has been created.  
2. Get there myself, and with my key staff to understand the problem first hand.  
3. Regardless of the possibility of a lawsuit, try to find a short-term solution to keep the client in satisfactory operation | The customer is always right.  
Identify with your client and the problem.  
We are both on the same side, not adversaries.  
Start the response quickly and competently.  
Find an interim solution if possible.  
Carry through to completion.  
Worry about the potential lawsuit later.  
Chances are, if things work out reasonably well, there will be no need for a lawsuit. |
| 7 | no    | Set-up a meeting with client and gather detailed information regarding the incident. Investigate cause of failure. Negotiate a settlement out of court. | Ensure customer satisfaction.  
Bad press is damaging for a business. |
| 8 | no    | I would want to use my supportive listening skills to validate the client’s experience and then to interview for information. | I would seek to understand first. |
| 9 | no    | I would ask how we could put this right immediately. What can we do? If the action plan is not acceptable, this is the next step. Get an assessment of what it takes to mitigate the damages caused by your defective product. | Acknowledgement is big when it comes to taking the steam out of an irate client.  
Response to action is just as important as acknowledgment.  
Document everything always a good idea. |
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<tr>
<th>10</th>
<th>q3rad: no</th>
<th>q3pbd:</th>
<th>q3rot:</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Quantify costs of lawsuit + damages + reputation against re-manufacturing the product and propose to re-deliver. Pamper this customer.</td>
<td>Understand the problem. Develop better QA.</td>
</tr>
<tr>
<td>11</td>
<td>q3rad: yes</td>
<td>q3pbd:</td>
<td>q3rot:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would acknowledge their concern by saying something like.&quot; Gee it must have been awful for you when the xyz screwed up just before your big sales day&quot; etc (this falls back on a customer satisfaction skills course I took 20 years ago). I would ask how we could put this right immediately. What can we do? I would say &quot;Listen Jim. Bob and the boys will be right over with a team of widget engineers and we will get to the bottom of this and have it fixed for you hopefully by midnight tomorrow. I will call you at 4pm and give you an update on what progress we are making. The customer hears an action plan.&quot;</td>
<td>I would apologize and use an appropriate tone (cap in hand). I would document everything. The time, date, and content of the phone call and of everything that happened before and after the event.</td>
</tr>
<tr>
<td>12</td>
<td>q3rad: no</td>
<td>q3pbd:</td>
<td>q3rot:</td>
</tr>
<tr>
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<td></td>
<td>I did experience a lawsuit at BMO however, it was slightly different. Anyway, the first thing I would do is call my counsel and follow not only the letter but also the spirit of the law. I would also make sure that the client knew that our company was addressing the issue and dealing with the problem ASAP. however at the same time I would remind the client that we would not permit slander or liable statements to be made, as they would negatively affect my business.</td>
<td>Innocent until proven guilty. The client would need to be careful exactly what he accused my company of because he/she would be liable in court for frivolous lawsuits.- However, I would see if there was any way to avoid the lawsuit by dealing with the client's needs.</td>
</tr>
<tr>
<td>13</td>
<td>q3rad: no</td>
<td>q3pbd:</td>
<td>q3rot:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Say sorry to the client, and listen to the real situation of the customer</td>
<td>If the information provided by the customer is reasonable, coordinate with the customer to solve the problem</td>
</tr>
<tr>
<td>q3rad : no</td>
<td>q3pbd:</td>
<td>q3rot:</td>
<td></td>
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</tr>
<tr>
<td>14</td>
<td>I would most likely admit the wrong if I am legally liable for the new product delivery.</td>
<td>It is important to admit your mistakes especially in the field of business because integrity and honesty means everything. Even if the loss is huge for admitting the mistake, the best the company can do is to minimize the cost and try to move on. While we are sure that the client’s claim is well founded, other variables might affect the outcomes. In order to minimize the cost of this lawsuit, it is important to understand what is really going on and to learn from the mistake.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I will call the people involved in the project for immediate research on the failure and I will discuss a settlement with the customer to avoid a lawsuit.</td>
<td>Client satisfaction and the image of the company are on first place. Avoid lawsuits as much as possible since they damage the image.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I would bring the client in to discuss the client’s concerns and my action would definitely depend on the type of business my company is in. I would be fully prepared to make the situation right by refunding cost or whatever the client demanded.</td>
<td>This question required me to think about what is best for my company. If we were a service oriented company then I would have used the rule “the client is always right.”</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Try to calm him down and invite him for lunch/dinner to discuss and evaluate the situation. If he accepts, would give me time to plan for the worst. I also feel bad as to why I did not have the</td>
<td>Damage control</td>
<td></td>
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</table>
right information about the performance of the delivered product.

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<th>19</th>
<th>q3rad: no</th>
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<td></td>
<td></td>
<td>First, I would try to calm him down by listening; then, I would try to get more details on what actually happened, how our product was involved. Then, I would investigate the situation within the company as well as do a site visit. I would make a decision then on how to proceed based on our findings. Given the close relationship with the client, I would ask him to hold off on the lawsuit pending the investigation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>q3rot:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reacting or becoming defensive to a client is a sure fire way to make the situation worse. Listen, analyze the situation, and then proceed.</td>
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<th>20</th>
<th>q3rad: no</th>
<th>q3pbd:</th>
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<td></td>
<td>Meet with the client and mitigate the situation by making good on the claim.</td>
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<td></td>
<td></td>
<td>q3rot:</td>
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<tr>
<td></td>
<td></td>
<td>Cut losses. Acknowledge accountability.</td>
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<th>21</th>
<th>q3rad: yes</th>
<th>q3pbd:</th>
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<tr>
<td></td>
<td></td>
<td>Call the Client directly and/or go to see him/her in person. Discuss the problems candidly and explore opportunities to make timely corrections and/or compensate the Client.</td>
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<tr>
<td></td>
<td></td>
<td>q3rot:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Most disputes can be negotiated...rather than litigated. Put your ego away. Accept responsibility where appropriate. The only people who truly win in a lawsuit are lawyers.</td>
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<tr>
<th>22</th>
<th>q3rad: no</th>
<th>q3pbd:</th>
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<tbody>
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<td></td>
<td></td>
<td>Contact our lawyer to notify him/her of the impending lawsuit. Try to talk to the client to see if there is any way we can solve the problem without resorting to a lawsuit. Get details of the nature of the failure. Was it because it did not perform to specifications, or because it was put into an untested configuration? Check with staff to determine if we sufficiently tested the product before it went out to the client.</td>
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<tr>
<td></td>
<td></td>
<td>q3rot:</td>
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<tr>
<td></td>
<td></td>
<td>Maintaining a good relationship to the client is important. - the product should perform to the agreed specifications. - If the product was used outside of specifications, then we cannot be held liable, but I would rather avoid going to court, if possible.</td>
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<th>q3rad: no</th>
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<td>Admit the problem/mistake, offer to make</td>
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<td></td>
<td>q3rot:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Getting attorneys involved</td>
</tr>
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<td></td>
<td>reparations, and seek to remove attorneys from the situation.</td>
<td>ALWAYS makes things worse (more expensive, prolonged, etc.), and that honesty is always the best policy.</td>
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<tr>
<td>24</td>
<td>q3rad: no</td>
<td>q3pbd:</td>
</tr>
<tr>
<td>25</td>
<td>q3rad: yes</td>
<td>q3pbd: Listen, listen, listen. The client is upset so we must create a non-judgmental dialogue directly with the key decision makers. An adversarial approach can be reserved for later. &quot;The customer is always right.&quot; Therefore, work to understand what the root problem is and if there are systemic issues. Provide immediate feedback to critical senior staff. Consult legal advisers for advice. Determine exposure. Try to avoid the lawsuit route as all parties will lose in both the short-term and in the long-term; and monetarily, relationship and reputation-wise.</td>
</tr>
<tr>
<td></td>
<td>q3rot: Dialogue is always better than adversarial approaches. Direct reasons for issues are never obvious. Working together to solve the issues leads to strong long-term solutions.</td>
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<td>26</td>
<td>q3rad: no</td>
<td>q3pbd:</td>
</tr>
<tr>
<td>27</td>
<td>q3rad: yes</td>
<td>q3pbd: Offer to work with the client to learn what happened, how to rectify and how to mitigate and cover losses</td>
</tr>
<tr>
<td>28</td>
<td>q3rad: no</td>
<td>q3pbd: I will first understand the situation and see what I can do to replace the client's loss.</td>
</tr>
<tr>
<td>29</td>
<td>q3rad: no</td>
<td>q3pbd: I realize that our legal advisors will likely be in the picture pretty quickly. So my mission in this call will be to learn what I can from the client about what happened, in as professional a manner as possible. Will take careful notes, as these may prove important later on. My chief concern will be to not get emotional or say something that I might</td>
</tr>
<tr>
<td></td>
<td>q3rot: Avoid emotion in critical business decisions. Get the facts. Seek professional advice when needed.</td>
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regret later in the coming proceedings. Having discussed the situation with the client, I will make no promises but will indicate I shall be back to him as quickly as possible. If the client indicates, 'you'll be hearing from our lawyers', that promise will not be necessary. I will then arrange a meeting with our legal advisors as soon as possible, even prior to checking out the story with various personnel in the company. This is to ensure that our ultimate response/defense of the claim is handled as professionally as possible.

***
Scenario 4: Move Decision Raw Data

The fourth business scenario (Move Decision) asked the following question:

Your plant has had a vigorous growth in the past three years and expansion plans have been "on the book" for some time. You are only waiting for the right opportunity to increase your manufacturing floor space. This opportunity came up today. You real estate agent called to inform you that the space you coveted came up for sale and several suitors are already interested in it. You feel the need to come to a quick decision on this matter.

Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case:

Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

<table>
<thead>
<tr>
<th>#</th>
<th>Yes/NO</th>
<th>Suggestions</th>
<th>Heuristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>q4rad: yes</td>
<td>q4pbd: Assuming I had already done the due diligence in determining the space would meet my needs, I would consult with my RE agent with respect to making a strategic offer for the premises.</td>
<td>q4rot: ROT: Be prepared to make a decision when the opportunity arises.</td>
</tr>
<tr>
<td>2</td>
<td>q4rad: yes</td>
<td>q4pbd: Since the issue has been &quot;on book&quot; for some time, I would act immediately.</td>
<td>q4rot: Have future needs clearly defined and involve highly trusted people; even those working indirectly for you.</td>
</tr>
<tr>
<td>3</td>
<td>q4rad: yes</td>
<td>q4pbd: Ask the realtor for current, detailed market analysis. Ask for the same analysis for 2 other realtors, and compare the results.</td>
<td>q4rot: No rules.</td>
</tr>
<tr>
<td></td>
<td>q4rad : yes</td>
<td>q4rad : no</td>
<td>q4rot:</td>
</tr>
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</table>
| 4 | q4pbd: 
I would likely have a reasonable idea of the 'value' of the space. 
I would add an amount to that 'value' and make a firm, cash offer with a short closing. | q4rot: In a competitive marketplace, bidding above the 'accepted value' by between 5 & 10% can in fact, lessen the end-to-end acquisition costs because there are costs in making an offer. |
| 5 | q4pbd: Make an offer on the building subject to appropriate internal approvals. | q4rot: I don't know |
| 6 | q4pbd: Since you have had ample time to study and verify your needs, you can jump on it quickly and finalize the deal. | q4rot: He who hesitates is lost. |
| 7 | q4pbd: Look quickly into the opportunity. 
Most likely would purchase. | q4rot: Take advantage of business opportunities (maximize positive risks) |
| 8 | q4pbd: Consult with the management team to confirm the appropriateness of proceeding immediately with the expansion plans. | q4rot: Consult before making a decision. |
| 9 | q4pbd: Negotiate an acceptance of offer. Gives you some inside knowledge in case there are some latent defects or problems. | q4rot: Use Common sense. Appraise - Firms up your sense of value. |
| 10 | q4pbd: Do not be attracted by speculation, greed or out-bidding. 
Business requirements come first. Is it still the right time? Analyze alternatives, if any. | q4rot: Decide on how much we are willing to pay. 
Do not get caught in any hysteria. |
<p>| 11 | q4pbd: Verify that this new space will in fact accommodate our current and future business. | q4rot: Call a board meeting ASAP. Speak to the tenant that is leaving the building and ask some open probed questions. |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Make an immediate reasonably priced written offer subject to board approval and financing.</th>
<th>Have the building appraised ASAP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>q4rad: no</td>
<td>q4pbd: Obviously, it was floor space I had done my homework on, I would make sure that I was the first offer that was accepted for the space.</td>
<td>q4rot: Assuming that business will continue to grow, and that I had in fact been waiting for this floor space to come up, it would not be a rash decision.</td>
</tr>
<tr>
<td>13</td>
<td>q4rad: no</td>
<td>q4pbd: Collect information of suitors, and prepare for competition</td>
<td>q4rot: If the information shows that your price has no appealing power, just quit</td>
</tr>
<tr>
<td>14</td>
<td>q4rad: no</td>
<td>q4pbd:</td>
<td>q4rot:</td>
</tr>
<tr>
<td>15</td>
<td>q4rad: no</td>
<td>q4pbd: Yes, I would go on and make a move.</td>
<td>q4rot: Although some firms work the best when they stay small, companies do grow depending on what industry you are in. Assuming I am in the industry that can enjoy growth, that growth will not continue forever when other people seek to these same opportunities. If the company wants to enjoy this current trend, it needs to act fast.</td>
</tr>
<tr>
<td>16</td>
<td>q4rad: no</td>
<td>q4pbd: If an increase of the manufacturing floor space was on the book for some time, I should have calculations for how much I am ready to pay for it so I will proceed with immediate offer on the site.</td>
<td>q4rot: When dealing with real estate the speed is crucial. If you want a site make an offer ASAP</td>
</tr>
<tr>
<td>17</td>
<td>q4rad: no</td>
<td>q4pbd: Assuming that I had already run the cost/benefit analysis I would move ahead with the project immediately.</td>
<td>q4rot: Cost/benefit analysis.</td>
</tr>
<tr>
<td>18</td>
<td>q4rad</td>
<td>q4pbd:</td>
<td>q4rot:</td>
</tr>
<tr>
<td>Step</td>
<td>q4rad</td>
<td>q4pbd</td>
<td>q4rot</td>
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<tr>
<td>19</td>
<td>no</td>
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<td></td>
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<tr>
<td>20</td>
<td>yes</td>
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<td></td>
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<tr>
<td>21</td>
<td>yes</td>
<td></td>
<td></td>
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<tr>
<td>22</td>
<td>no</td>
<td></td>
<td></td>
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<tr>
<td>23</td>
<td>yes</td>
<td></td>
<td></td>
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<tr>
<td>24</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>yes</td>
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</table>

**Check out the return on investment—**if it make sense (zero or above), go for it until the $ value where it becomes un-economical.

The sweetness of water depends upon the amount of sugar dissolved.

This is only true to a point after which the additional sugar makes the solution sour.

**19**

- **q4rad:** no
- **q4pbd:**
- **q4rot:**

**20**

- **q4rad:** yes
- **q4pbd:**
  - Move quickly on acquiring the space having set threshold limits to avoid the trap of an extreme bidding war.
- **q4rot:**
  - Act quickly on made decisions.
  - Set limits/boundaries on extent of commitments.

**21**

- **q4rad:** yes
- **q4pbd:**
  - If the plans have been on the books for some time, they ought to have some expression of cost/benefit.
  - If the lease space meets those criteria, make an offer for the space "subject to Shareholder approval"...and with a possession date significantly in the future.
- **q4rot:**
  - Make positive decisions based on your wants, needs, and goals.

**22**

- **q4rad:** no
- **q4pbd:**
  - Go for it... (but make sure it will not bankrupt the company...)
- **q4rot:**
  - Do we have the resources to make this work? - already know it's the right location, etc. - talk to the employees about the decision

**23**

- **q4rad:** yes
- **q4pbd:**
  - Make an offer on the space to see if I can get it on my own terms.
- **q4rot:**
  - Always have your own price (terms) in mind before engaging in a negotiation, and do not be afraid to walk away once exceeded.

**24**

- **q4rad:** no
- **q4pbd:**
- **q4rot:**

**25**

- **q4rad:** yes
- **q4pbd:** B
  - Bid to win.
  - (I'm assuming long term cost-benefits both
- **q4rot:**
  - Strike while the iron is hot.
monetarily and in business disruption have been already done)

<table>
<thead>
<tr>
<th></th>
<th>q4rad</th>
<th>q4pbd:</th>
<th>q4rot:</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>yes</td>
<td>In anticipation, the costs are all 'in the can', so a quick decision is made to move on the property with a minimum of 'subjects' so that our bid is superior.</td>
<td>Be prepared for both the best and worst events/opportunities.</td>
</tr>
<tr>
<td>28</td>
<td>no</td>
<td>I will go ahead to make an offer.</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>no</td>
<td>Get the facts from the real estate agent. Get the CFO in with the contingency plan we formulated for the expansion, and review the potential site data to see if this property makes sense to the plans. Depending on the significance of this project, consider bouncing our strategy off outside financial advisors, along with our real estate agent. The outside accounting firm might, for example have some ideas about how to present the offer that takes advantage of the vendor's position.</td>
<td>Do not jump before using the best information we have available, and the best minds around us to help make the decision.</td>
</tr>
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***
Scenario 5: Credit Line Raw Data

The fifth business scenario (Credit Line) asked the following question:

*Your bank manager has just called informing you that based on the last quarter’s financial performance of your company; your company’s line of credit is being reduced from $750,000 to $400,000. You have two weeks to comply or your demand loan (the whole amount) will become due. You are aware that your partner and yourself (sharing the company 60/40) have the required $350,000 in forms of portfolio and/or equity (house values). You have been reluctant to offer your house as collateral, mostly because your wife is strongly opposed to it.*

*Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case:*

*Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.*

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<tr>
<th>#</th>
<th>Yes/No</th>
<th>Suggestions</th>
<th>Heuristics</th>
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<tbody>
<tr>
<td>1</td>
<td>q5rad: no</td>
<td>q5pbd:</td>
<td>q5rot:</td>
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<td>2</td>
<td>q5rad: no</td>
<td>q5pbd: I have experienced this as a director, rather than an owner. For such a major decision, the spouse should be involved. I would try to find some money elsewhere, perhaps selling some of my interest</td>
<td>q5rot: Decide if you have an entrepreneurial, entrepreneurial of &quot;employee&quot; type personality. Then do not go outside your risk/comfort zone.</td>
</tr>
<tr>
<td>3</td>
<td>q5rad: no</td>
<td>q5pbd: I would speak with my partner, and wife.</td>
<td>q5rot: Listen to what the wife has to say!</td>
</tr>
<tr>
<td>4</td>
<td>q5rad: no</td>
<td>q5pbd: I would very likely side with my wife, being strongly opposed and advise my</td>
<td>q5rot: Business decisions of this nature are not simply 'business</td>
</tr>
</tbody>
</table>
partner that I cannot raise the necessary funds.
If he were willing to raise the whole amount, I would be prepared to give him some of my equity.

| 5 | q5rad: no | q5pbd: Determine reason for decrease, resolve issue and restore credit, shop for more credit. | q5rot: Risk vs. reward calculation. Family money is jointly controlled and I cannot make a unilateral decision. |
| 6 | q5rad: yes | q5pbd: 1. Seek other banks who would extend better terms 2. Seek new investors to bridge the gap 3. Seek extended credit from suppliers and clients 4. Pay down some of the debt from each partner's securities, and negotiate an extended schedule for a slower pay down of the LoC 5. I would not put up my home as collateral. | q5rot: Try other banks and lenders before using personal collateral Keep the personal debt at a manageable level. You have to survive a failure and be able to come back again. |
| 7 | q5rad: no | q5pbd: Contact other financial institutions to obtain a better line of credit | q5rot: 1. Keep personal assets out of business. 2. There is always a way to borrow money (everyone has his or her price). |
| 8 | q5rad: no | q5pbd: Consult with my business partner on the situation. | q5rot: I would not offer my house as collateral without the permission of my spouse. |
| 9 | q5rad: no | q5pbd: Using various search criteria, I would be | q5rot: |
looking for investment money from mortgage brokers, and on line banks.

There is a marvelous opportunity to switch to other methods of financing.

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<tr>
<td>10</td>
<td>q5rad : yes</td>
<td>q5pbd:</td>
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<tr>
<td></td>
<td></td>
<td>As this point, the problem is not the LOC, but deeper. Identify the real financial issue.</td>
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<td></td>
<td></td>
<td>q5rot:</td>
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<td></td>
<td>As a RoT, I will not use personal portfolio/assets/house to finance the business.</td>
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<td>As a RoT, banks do not benefit from your bankruptcy.</td>
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<td>As a RoT, they WILL extend credit but impose expensive restrictions on your business.</td>
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<td>Similar to the Mafia, their approach is that you are more useful alive than dead.</td>
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<tr>
<td>11</td>
<td>q5rad : no</td>
<td>q5pbd:</td>
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<td>In the event of financial collapse, the financial institutions can come after the owners personal assets whether they have been chattels to the loan or not.</td>
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<td>They are personally liable for the debts of the company even with limited liability companies.</td>
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<td>This is assuming that I am the owner or one of the owners of this small business. I would ask for more time to accommodate the new terms.</td>
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<td>q5rot:</td>
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<tr>
<td></td>
<td></td>
<td>I would be courteous and professional with the bank.</td>
</tr>
<tr>
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<td>I would remind them of the long-term relationship we have had with them (assuming this was the case).</td>
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<tr>
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<td>I would approach at least three other banks and see if they wanted my business.</td>
</tr>
<tr>
<td>12</td>
<td>q5rad : no</td>
<td>q5pbd:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ask the bank manager more details about why the loan came up.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assuming we are paying on-time there is no reason the bank and my company couldn't work out something, such as a lower payments about, such as $100K, or depending on the bank, a possible silent partnership.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>q5rot:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Safety and security of my business and family interests.</td>
</tr>
<tr>
<td>13</td>
<td>q5rad: no</td>
<td>q5pbd: Persuade partner to support</td>
</tr>
<tr>
<td>14</td>
<td>q5rad: no</td>
<td>q5pbd:</td>
</tr>
<tr>
<td>15</td>
<td>q5rad: no</td>
<td>q5pbd: No, I would not offer my house as collateral.</td>
</tr>
<tr>
<td>16</td>
<td>q5rad: no</td>
<td>q5pbd: If I know the reason for the bad performance and I believe we have the potential to overcome it I will explain to my husband that this is a temporary situation and the line of credit will be changed back to normal in xxx months and house won't be required as collateral. If I do not believe the business will recover I will look for other opportunities such as selling or reforming the business structure.</td>
</tr>
<tr>
<td>17</td>
<td>q5rad: no</td>
<td>q5pbd: The first thing I would do is talk to my partner because if he/she isn't willing to proceed with raising the money personally then there is no point in me trying to raise my end of the funds. The second thing I would do is talk to my wife, if and only if, the company decided that we were going to move ahead.</td>
</tr>
<tr>
<td>18</td>
<td>q5rad: no</td>
<td>q5pbd: I am pretty sure there will be other financial</td>
</tr>
</tbody>
</table>
|| institutions willing to get business. The bank manager's decision should not be based on individual quarter. It does not make sense to put any personal equity into a business. domains. Whatever, can't bring family out in the open even if the business flops
| 19 | q5rad : no | q5pbd: | q5rot: |
| 20 | q5rad : no | q5pbd: Meet with banker to renegotiate a favourable alternative arrangement. | q5rot: Honour wife's/partner's expectations. There is always another alternative. |
| 21 | q5rad : no | q5pbd: Talk with your partner. Review your financials. Explore if there any other ways to quickly raise the cash? If "no," but the future is still judged to be sound and the Partner is agreeable, then each person should go home and inform their spouse that action needs to be taken. Refinance and adjust your plans so that reliance on your Bank can be minimized. | q5rot: Every problem has a solution. |
| 22 | q5rad : no | q5pbd: Probably put up the portfolio and house as equity... | q5rot: Doesn't appear we have much of a choice do we? |
| 23 | q5rad : yes | q5pbd: Pinched my nose and got my wife to sign the spousal guarantee. | q5rot: If I do not believe in the success of my own business, why should anybody else? |
| 24 | q5rad : no | q5pbd: | q5rot: |
| 25 | q5rad : yes | q5pbd: Assuming we are fully into our line of credit, I would -not- put the house up. The LOC situation indicates in this case indicates improper fiscal control. | q5rot: Jeopardy to life balance. Effect on family. Ability to sustain bankruptcy and start over. |
| 26 | q5rad : no | q5pbd: If I believed in my business, (which I always do) I would offer to personally guarantee my pro-rata share of the credit facility, and communicate my turnaround plan with the banker. If not getting anywhere, I would ask to be assigned to the Special Credit desk where competent staff can monitor my workout. | q5rot: In for a penny, in for a pound! |
| 27 | q5rad : yes | q5pbd: Accept the collateral mortgage on your house and pull the proposal to 'shop' your account to other banks, if it's not already out there - you know this is coming; it's never a total surprise | q5rot: See above - anticipate the worst |
| 28 | q5rad : no | q5pbd: Explain to my wife that the situation needs to be resolved. | q5rot: Arrange repayment plan with the bank or other financial institutions. |
| 29 | q5rad : no | q5pbd: Discuss the matter with your partner. Then recommend that you contact your outside accountant to review the situation with him. | q5rot: Do not try to solve a major financial issue, particularly one that involves your personal |
He will probably come in to meet with you and your partner, and will discuss the options he can see, along with the tax implications of each choice.

Two weeks is a short fuse, but this is a not uncommon matter for a CA in public practice to have to deal with.

If personal assets are involved, it is possible that your partner and you have personal financial advisors other than the company’s accountants. If so, they should be consulted as well to ensure that the Queen's share of any transactions (income tax) can be minimized.

You need independent professional advice to solve the matter. The fees will likely be worth it.
Scenario 6: Collective Agreement Raw Data

The sixth business scenario (Collective Agreement) asked the following question:

*Your union representative has informed you that the union is ready to go on strike if their last demand regarding an increase in benefits concerning their RRSP contribution is not met. The final clause needs to include a 2% increase in company’s contribution to the employee’s RRSP, i.e. it is going up from the present 5% to 7%. The employee’s contributions remain at 5%. This means an increase in $200,000 in additional costs to the company or 20% of expected gross profit, all other things being equal. Furthermore, this is a three-year contract.*

*Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case:*

*Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.*

<table>
<thead>
<tr>
<th>#</th>
<th>Yes/NO</th>
<th>Suggestions</th>
<th>Heuristics</th>
</tr>
</thead>
</table>
| 1 | q6rad: no | q6pbd:  
Assuming I am operating in a highly competitive market with narrow margins, and the business is growing profitably, I would agree to the increase but incorporate language that would link it to a specified increase in productivity over the 3 year contract. | q6rot: ROT:  
Share but limit the gains, share but limit the declines. |
| 2 | q6rad: no | q6pbd:  
I have experienced a variation as a Dean in a public educational institution.  
I would bargain some alternative, with a baseline and an add-on dependent upon profitability, or some other option. | q6rot:  
An offer is a starting point that can generate, flexible, creative alternatives when not trapped by an "either/or" mentality. |
<table>
<thead>
<tr>
<th></th>
<th>q6rad:</th>
<th>q6pbd:</th>
<th>q6rot:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>no</td>
<td>Ask for a meeting to discuss the situation.</td>
<td>No rules.</td>
</tr>
<tr>
<td>4</td>
<td>no</td>
<td>I would have stood my ground on an equal 5% contribution unless they were prepared to increase their contribution to 7%.</td>
<td>While employees deserve most of the benefits that are provided, when it comes to contributing more to their retirement fund than do they, I would draw the line.</td>
</tr>
<tr>
<td>5</td>
<td>yes</td>
<td>Is the request reasonable? Can you afford it? What is the cost of not granting? Make decision</td>
<td>People count.</td>
</tr>
<tr>
<td>6</td>
<td>no</td>
<td>Bring in a good corporate labour negotiator to advise me. Look for changes to other areas of the collective agreement that had the potential to reduce the cost by an equal amount. Before I take a firm decision, I want to know the effect of a strike on the business as a whole. Can I afford to have a strike?</td>
<td>Collective agreements are a matter of give and take ... not all one way. If I take a stand, I have to be prepared to take the consequences. So I had better have informed myself well.</td>
</tr>
<tr>
<td>7</td>
<td>no</td>
<td>Enter into negotiations. Hire a mediator. Settle for 6%.</td>
<td>Show good will</td>
</tr>
<tr>
<td>8</td>
<td>no</td>
<td>Assess the cost of a strike versus the cost of an increase in contract costs factoring in a three year deal.</td>
<td>Need to do the analysis before agreeing to anything.</td>
</tr>
<tr>
<td>9</td>
<td>no</td>
<td>Locate a lawyer/union specialist for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q6rad:</td>
<td>q6pbd:</td>
<td>q6rot:</td>
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</tr>
<tr>
<td>10</td>
<td>no</td>
<td>I will analyze the state of the business, can we afford the strike? I will quantify business benefits. Higher or lower than $200K and present to the Board. I do not like unions. Cannot kill them though.</td>
<td>Develop parameters and present to the Board.</td>
</tr>
<tr>
<td>11</td>
<td>no</td>
<td>I would politely tell the union rep that I understand the unions concerns and that I was attending a board meeting today to attempt to find a way to meet their needs.</td>
<td>I would seek to change the union proposal by spreading the increase over five years. In the same way as the teachers union, I would suggest a signing bonus in an effort to get them to agree to a compromise on their terms. I would let all stakeholders know that both the union and company were still negotiating in good faith.</td>
</tr>
<tr>
<td>12</td>
<td>no</td>
<td>Shut the door of the plant, and let the union members sweat out the strike time. Unions are extremely dangerous organizations and if they see a weak CEO they are bring the company to its knees. from 5% to 7% is a 40% increase in contribution. NO WAY.</td>
<td>Morale fiber, I have no patience for unions</td>
</tr>
<tr>
<td>13</td>
<td>no</td>
<td></td>
<td></td>
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<tr>
<td>14</td>
<td>no</td>
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<td></td>
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<tr>
<td>15</td>
<td>no</td>
<td></td>
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</tr>
<tr>
<td>16</td>
<td>no</td>
<td>I will try to negotiate a 1% increase since I do not want a strike but also I am not ready to sacrifice the company results. I will explain to the union</td>
<td>RoT - try to negotiate lower but if not possible give the union what they want. If the workers are on strike, the company will not</td>
</tr>
<tr>
<td>q6rad:</td>
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<p>| 17 | representative why exactly I cannot offer more and how diminishing the gross profit by 20% will impact the overall business. | make the forecasted profit for sure. |
| 18 | It seems like a small business. Will stay with whatever the industry standard is If the increase is industry wide then I am ready to take the pinch. | Team play. |
| 19 | | |
| 20 | Counter with a 6 and 6 proposal. Provide a 1% increase provide the employees match with a 1% increase in their contribution (assuming the business can manage the increase in cost). | Quid pro quo. |
| 21 | Re-examine your financials. Are there opportunities to gain productivity and/or offset $200K worth of the expense? If &quot;yes,&quot; sit down and negotiate with the Union rep. Try to get them to agree to principle-based negotiations. (Examples: Would you agree that a)The company should look after its employees. b) The company needs to be profitable in order to look after its employees?; c) Shareholders deserve a return on their investment?) | If I give you...you give me. Shareholders and Stakeholders both benefit from a financially strong, productive, and rewarding work environment |
| 22 | Have to look at the overall impact of the strike vs. the loss of 20% profit. | |
| 23 | If the company were doing well, I would probably agree to this increase, especially given the number of labour shortages around. | Open the books, and negotiate on the basis of actual company financial position. |</p>
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<td></td>
<td>If the company were not doing well, I would attempt to continue negotiation to educate the union representative about why the company could not afford this increase along with everything else in the collective agreement. If this were important to them, I would attempt to have something else removed at an equivalent cost saving.</td>
<td>Also, try to be as sensitive and as supportive as possible to employees -- they are the heart, mind, and soul of the organization.</td>
</tr>
<tr>
<td>24</td>
<td>q6rad: no</td>
<td>q6pbd:</td>
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<tr>
<td>25</td>
<td>q6rad: no</td>
<td>q6pbd:</td>
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<tr>
<td>26</td>
<td>q6rad: no</td>
<td>q6pbd:</td>
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<tr>
<td>27</td>
<td>q6rad: no</td>
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<tr>
<td>28</td>
<td>q6rad: no</td>
<td>q6pbd:</td>
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<tr>
<td>29</td>
<td>q6rad: no</td>
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<tr>
<td></td>
<td>Negotiate. Calculate cost benefit including long term cultural issues</td>
<td>Dialogue Reasonable balance of company/employee needs</td>
</tr>
<tr>
<td></td>
<td>An unprofitable business is not a business. Negotiations need to be win-win.</td>
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<td></td>
<td>Offer a one-time 2% signing bonus as our final position. It does not affect long term costs, and we have done the math on the expected outcome</td>
<td>Always offer an alternative that is acceptable.</td>
</tr>
<tr>
<td></td>
<td>Negotiate with the union representative to bring the % down to a comfortable level or offer alternative offer over a certain period of time.</td>
<td>Need a mediator to help resolving the issues.</td>
</tr>
<tr>
<td></td>
<td>Discuss with your CFO and see if he/she has any positive suggestions. Consider locating other firms facing similar demands from this union, to see how they might have dealt with it. May not get a straight answer, but worth checking.</td>
<td>Get the best advice from those around you who can help deal with difficult situations.</td>
</tr>
</tbody>
</table>
Talk to an independent labour relations specialist, if there is one available, to see if this demand is getting traction in the area. It might turn out that it has, for example, in exchange for guarantees of higher measurable productivity by the employees covered in the agreement.

Discuss with the company's accountant (that is, the Partner in charge of your account), for his thoughts. Consider the information learned and make a rational well-documented decision.
Scenario 7: Project Slippage Raw Data

The seventh business scenario (Project Slippage) asked the following question:

*During your regular weekly meeting today with your client, your client has expressed concerns over the delivery date of the expected 72 ft top of the line power boat presently in construction.*

*You have seen the construction of this latest vessel slip steadily over the past six months.*

*Although the delivery date is still another six months away, you are aware that this is a fixed bid and that any delay in construction will affect the profitability of this project.*

*Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case:*

*Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.*

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<th>Yes/No</th>
<th>Suggestions</th>
<th>Heuristics</th>
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<tbody>
<tr>
<td>1</td>
<td>q7rad: no</td>
<td>q7pbd: Identify the key sources of delay and focus on getting these back on track. This may require dealing with specific employees who are not producing at the level required.</td>
<td>q7rot: Identify and address the source of the problem.</td>
</tr>
<tr>
<td>2</td>
<td>q7rad: yes</td>
<td>q7pbd: I have appealed to the professional work ethic, pitched in, and helped, though I do not see the latter as a good ongoing management style except in an emergence.</td>
<td>q7rot: Under-promise and over-deliver.</td>
</tr>
<tr>
<td>3</td>
<td>q7rad: no</td>
<td>q7pbd: Set up a meeting with all relevant stakeholders to understand why the delays, and discuss ways to resolve them.</td>
<td>q7rot: No rules.</td>
</tr>
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<td>Q</td>
<td>q7rad</td>
<td>q7pbd</td>
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<td>4</td>
<td>no</td>
<td>I would negotiate a firm delivery date based on firm estimates from my managers and commit to a reasonable penalty for late delivery beyond the agreed upon date. I would then attempt to transfer some of the penalty to my suppliers and or senior C-level execs. I would also offer them bonuses for early delivery.</td>
<td>People work best when confronted with a penalty for non-performance or reward for over-performance.</td>
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<td>5</td>
<td>yes</td>
<td>Discuss concerns with all who work on project. Determine how or if it can be resolved.</td>
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<td>6</td>
<td>yes</td>
<td>First, I have to understand the reasons for the slippage and decide whether the causes of the slippage are things that we control (e.g. our resources) and can do something about, or are outside our control. If they are within our control, we bring the team together and set out a new schedule that we are going to meet. If they are not within our control, we advise the client, and only assign the resources that will keep profitability in line.</td>
<td>Keep a sharp eye on our project management information to alert us to get on to the slippages and correct them before they become a problem. Enduring slippages for 6 months is not acceptable.</td>
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<td>7</td>
<td>no</td>
<td>Address schedule slippage and identify elements that have caused delays. Address those issues and put the project back on schedule. If this is not possible, document a change in schedule and get approval.</td>
<td>Document well; keep a project on track as much as possible</td>
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<td>Investigate the reason for the delays and begin remedial action.</td>
<td>Monitor progress to plan and take remedial action to avoid a late shipment.</td>
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<td>q7rot:</td>
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<td>10</td>
<td>q7rad: no q7pbd:</td>
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<td>Identify the problems; look for operational alternatives and procedures.</td>
<td>Outsource or sub-contract part of the job.</td>
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<td>Identify consequences of slippage.</td>
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<td>q7rad: yes q7pbd:</td>
<td>q7rot:</td>
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<td>Reduce the exposure of the company by maintaining draws from the client at regular milestones.</td>
<td>Have constant and regular communication with the client.</td>
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<td>Increase the frequency of the draws if necessary.</td>
<td>Inform the client of possible risks ahead of time.</td>
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<td>Propose solutions to deal with the new realities and let the client be involved with the final selection.</td>
<td>Inform the client of scope increases due to unforeseen events immediately.</td>
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<td>q7rad: no q7pbd:</td>
<td>q7rot:</td>
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<td>I would either try to rush the project, tell the client and compromise quality or inform the client that the boat will be delayed and unfortunately, there is nothing my company can do.</td>
<td>Honesty with the people you deal with.</td>
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<td>I will check what the current status is and I will brief the project team that I want a plan how to overcome the delay and deliver the vessel on time.</td>
<td>If you are not honest you will never get anywhere in business.</td>
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<td>q7rad: no q7pbd:</td>
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<td>I will explain them that it is a seal deal and we will lose money otherwise.</td>
<td>The vessel should be delivered on time or the client will require compensation and we will lose money on the deal.</td>
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<td>The vessel should be delivered on time or the client will require compensation and we will lose money on the deal.</td>
<td>We are still in the middle of the project and have time to</td>
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<td>q7rad: no</td>
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<td>Allocate additional resources and try level best to remove all bottlenecks so that the vessel is completed and delivered as scheduled.</td>
<td>Word of mouth... is important so if one client is dissatisfied can take away many more with him.</td>
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<td>q7rad: no</td>
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<td>Quit watching... Tell your Manager(s) you are going to MBWA.</td>
<td>Anything is possible.</td>
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<td>Roll up your sleeves.</td>
<td>It is usually just a function of money, time, and a sense of urgency.</td>
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<td>Walk down and ask the front line folks how things are going.</td>
<td>People who feel valued and included are generally more productive than those who are not.</td>
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<td>Also, ask what barriers they see between themselves and the goal.</td>
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<td>Gather knowledge and let them know you will come back and talk with them again ...over lunch next ______.</td>
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<td>Then meet with your Manager(s) and ask open-ended &quot;outcome frame&quot; questions: what do you want; when; what keeps you from...?</td>
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<td>Go back to the front line WITH your Manager(s). Explain the issues. Listen carefully and fully discuss the barriers as a group.</td>
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<td>Balance the shifting wants and needs.</td>
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<td>Try to achieve a consensus on the renewed goal.</td>
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<td>Knock down barriers and facilitate</td>
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|   | **resources of people, time, or money.**  
Provide incentives if appropriate.  
Increase frequency of measurement and ongoing communication.  
Adjust as necessary.  
Catch people doing things right. Praise publicly.  
Celebrate small wins. Achieve the goal |   |   |
| 22 | q7rad: no | q7pbd: - | q7rot: |
|    |   |   |   |
|    | **Not sure what 'business decision' you are asking for at this point...**  
**To stop the project and give the client his money back? (Not likely)** |   |   |
| 23 | q7rad: yes | q7pbd:  
Determine where the project slippage is coming from and rectify ASAP.  
Communicate the revised timeline to the client and ensure the expectations are reset accordingly.  
Most likely will increase this project's priority to be the top priority in the shop. | q7rot:  
**Whatever the root cause of the slippage is probably affects most, if not all, of the other projects in the shop.**  
**Find out what it is before it affects all of your clients.**  
**Deal with the customers openly and honestly.**  
**Resourcing decisions are dynamic based on the issues or opportunities, and be prepared to reallocate quickly if necessary.** |
| 24 | q7rad: no | q7pbd: | q7rot: |
| 25 | q7rad: no | q7pbd:  
**Financial health of company is paramount.**  
**Must break even so profitability will have to suffer. Examine the obviously poor planning and hold the person responsible accountable.** | q7rot:  
**Assuage the client.**  
**Ensure the company stays solvent.** |
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<th>If client has added 'extra' features, which is the norm, help him understand the scope-creep. Offer to knock a bit of money off. Even the hardest client will understand.</th>
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<td>26</td>
<td>q7rad: no</td>
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<td>27</td>
<td>q7rad: no</td>
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- **q7rad:** no
- **q7pbd:**
- **q7rot:**

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<td>q7rad: no</td>
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Point out to the client that the delays are attributable to demand/supply problems with components. Offer to work with him on alternatives that will speed production, but keep costs in line.

Get buy-in on the problem from the client.

Explain to client that things are working towards the delivery date but there is may be possible delay just in case something happens. However, we will have to try to eliminate the possibility.

Check progress and ensure that the vessel will deliver in time.

Consider that there are often choices for solving problems, and each choice should be evaluated and then compared on an even basis, to arrive at the best decision.

---

"HEURISTICS-BASED DECISION-MAKING"
Scenario 8: Quality Management Raw Data

The eighth business scenario (Quality Management) asked the following question:

*Your latest shipment of goods was returned today due to poor quality. This return represents a major revenue loss to you as well as a credibility problem with your client. You have had some minor quality problems in the past and delegated the responsibility of addressing them to your plant manager. Based on recent shipments, you thought that this problem was addressed by your plant foreman. This return shows that there are still flaws in the production process.*

*Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case:*

*Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.*

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<th>#</th>
<th>Yes/ No</th>
<th>Suggestions</th>
<th>Heuristics</th>
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<tr>
<td>1</td>
<td>q8rad: no</td>
<td>q8pbd: Replace the poor quality goods with an expedited shipment of replacements. Meet with the plant manager and foreman to assess and identify the source(s) of the problem(s) and implement new higher quality performance standards in the production process.</td>
<td>q8rot: Consider all factors and identify the problem(s).</td>
</tr>
<tr>
<td>2</td>
<td>q8rad: yes</td>
<td>q8pbd: I would meet with the people involved and place the problem in the situation. I would work with the folks initially (pizza et cetera) towards finding a solution.</td>
<td>q8rot: If you want a quality product, not only do you need quality people, but also you need quality processes. And, employees need a deep...</td>
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<tr>
<td>No.</td>
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<tr>
<td>3</td>
<td>no</td>
<td>Set up a meeting with all relevant stakeholders to understand cause of problems and ways to solve them.</td>
<td>No rules.</td>
</tr>
<tr>
<td>4</td>
<td>no</td>
<td>q8rad:</td>
<td>q8rot:</td>
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<tr>
<td>5</td>
<td>yes</td>
<td>Meet with the team determine causes and correct. Institute an in house quality system that will resolve issues prior to shipping or mass production.</td>
<td>q8rot:</td>
</tr>
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</table>
| 6   | yes   | 1. Bring the key team together to analyze the problem(s) and formulate the solution(s). If key players are not doing their jobs adequately, I may have to take disciplinary actions to ensure quality is maintained.  
2. Get back to the client quickly to repair the damage and maintain good relations. | q8rot:  
Our product is only as strong as the weakest link.  
High quality and reliability must be assured. |
| 7   | no    | Send an apology letter to concerned customers and inform that problem will be rectified.  
Meet with plan manager and review problem mitigation solution adopted and causes for recurrent failures. | q8rot:  
Focus on problem (not the person).  
Give benefit of the doubt to plant manager.  
Ensure customer satisfaction. |
| 8   | no    | Meet with the plant foreman. | q8rot:  
Need to discuss the situation with the responsible person. |
| 9   | no    | q8rad: | q8rot: |
| 10 | q8rad: no | q8pbd:  
Find an alternative to your senior executive. | q8rot:  
I will ensure to delegate to the right people but still keep control.  
I would have implemented, or will implement, a continuous QA process. |
|----|----------|-------------------------------------------------|
| 11 | q8rad: yes | q8pbd:  
Randomly sample the product before it is shipped and inspect it for flaws.  
Form a team from individuals from each department/unit and start a dialog on quality.  
To carefully measure and monitor the processes that creates perfect products. | q8rot:  
Discuss with the client.  
What is the problem with the product?  
Do whatever it takes to put it right. NOW. |
| 12 | q8rad: no | q8pbd:  
I would start to look for a new plant manager and give the current manager his notice.  
Either that or turn the plant managers salary into a ownership plan so that he/she could clearly understand how much money the company can lose for poor quality control. | q8rot:  
Benefit of the doubt - assuming that the plant manager did not do this on purpose he may deserve to keep his job. |
| 13 | q8rad: no | q8pbd: |
| 14 | q8rad: no | q8pbd: |
| 15 | q8rad: no | q8pbd:  
In order to ensure the quality of the production, production audit might be used. | q8rot:  
When producing something, it is important to make sure every single detail is adequately satisfied in accordance with the company's regulation.  
In addition, selling flawed product will not only affect sales but also affect the reputation of |
the company.

Moreover, while doing a production audit might look like a bad thing; it can at the same time create value for the company, such as increase the efficiency of the production.

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<td>I will address the quality issue myself in a big meeting.</td>
<td>Quality is #1 one priority since it is directly linked to client satisfaction and the image of the company.</td>
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<td>I am sure that no one in the company team wants bad image for the company and business decline. I will ask the plant manager to work with his team and present me tomorrow a plan how to overcome the situation.</td>
<td>Deal with situations immediately and personally.</td>
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<td>Investigate as to why the situation has gone from bad to worse</td>
<td>Stand up for your &quot;mistake&quot;...Duty calls.</td>
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<td>Get a new plant manager with QA experience and then fire the existing one.</td>
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|    |            | You have 2 problems:  
a) Customer Relations/reputation.  
b) Correctly a production-quality issue. | Avoid a "blame frame." |
<p>|    |            | 2nd Issue First: Call in the plant manager. Ask tough questions and give them a very short time frame to gather information and get back to you. What is the nature of the problem(s)? What caused the problem(s)? What prevented your quality assurance people from being aware and taking the | It is usually unproductive and the loss of people or commitment can cause a downward spiral. |
|    |            |                          | Use an &quot;outcome frame&quot; to problem solve. |
|    |            |                          | What do I want/need? |
|    |            |                          | How can I get it? |
|    |            |                          | What resources of people, time, |</p>
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<td>yes</td>
<td>Take full responsibility, incur whatever costs are necessary to make the customer happy, work with the customer (the parts are probably part of a greater whole assumption).</td>
<td>Customer service is critical; not only does it impact the current customer; it impacts the reputation of the company, which may impact future sales with others.</td>
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<td>yes</td>
<td>Examine systemic issue. This is more than a manufacturing issue. It could be lack of training, lack of standardized (written) processes, and lack of proper quality control. Work with your key staff to solve problem. Participate, do not just delegate.</td>
<td>Major problems that repeat are mostly systemic, not 'individual' related.</td>
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<td>yes</td>
<td>Coach the manager and train him to work more closely with the foreman, set quality targets and measurement criteria, and follow-up timelines</td>
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<td>q8pbd:</td>
<td>Warning will be given if this continues to happen and it may result to termination due to the lack of responsibility.</td>
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<td>q8pbd:</td>
<td>Isolate the cause of the problem, and replace the responsible staff if necessary.</td>
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quality of production.

Determine whether this was properly identified earlier, and that action assigned to fix the problem was in fact agreed upon in an accountable manner.

If someone is responsible for not having acted as promised or expected, consider replacing that individual/individuals with someone who can solve the problem.

Assure the client that this problem will be solved as quickly as possible, and provide an accountable action plan to replace the damaged goods.

Ensure the client is given a meaningful and prompt response that indicates concern and a commitment to solve his problem.

***
**Scenario 9: Crisis Management Raw Data**

The 9th business scenario (Crisis Management) asked the following question:

*You hear from your broker this morning that your investment in XYZ shares (one of your major clients) just lost all value. XYZ declared bankruptcy in Arizona yesterday. Not only have you invested in that company (not a major amount but enough to show interest in XYZ future since they choose your company as their main supplier of silicon belts) but also your latest shipment worth over $40,000 CDN was still not paid. Luckily, you had all your U.S. shipments insured by Export Development Canada (EDC). However, this will affect your cash flow as well as your line of credit with the bank.*

Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case:

Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.

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<th>#</th>
<th>Yes/No</th>
<th>Suggestions</th>
<th>Heuristics</th>
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| 1 | q9rad: no | q9pbd:  
Find out what happened to XYZ.  
Meet with my banker and explain what has happened and how I plan to deal with any fall out that affects my company.  
Re-assure the bank that although there will be a short-term impact it does not pose a serious threat to the company. | q9rot:  
Find out the facts and keep critical people informed. |
| 2 | q9rad: no | q9pbd:  
I would phone my broker for more information. I assume I would have a sense of the impact on potential sales, | q9rot:  
Diversify suppliers, customers, investments. |
but would bring in related staff to assess where we stand on this and on our diversification of customer based. Additionally, have flexible systems to allow for rapid change.

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<td>Meet with relevant people in the organization, and call EDC and the bank.</td>
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<td>No rules.</td>
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<td>q9rot:</td>
<td>Suck it up.</td>
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<td>q9rot:</td>
<td>1. Advise the bank right away that there may be a problem brewing.</td>
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<td>2. Try to recover your shipment.</td>
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<td>3. File a lien against the company.</td>
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<td>q9rot:</td>
<td>Most credit managers at banks are more willing to work with you on credit problems if you are upfront with them and keep them informed.</td>
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<td>Make attempts to recover your assets.</td>
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<td>Contact accountant and assume bad debt.</td>
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<td>Contact banker.</td>
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<td>Risk of doing business.</td>
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<td>Advise the bank and write it off.</td>
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<td>Shipment was insured.</td>
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<td>Get sales working on finding other clients who need your belts.</td>
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<td>Slow your payments to your suppliers to help cash flow.</td>
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<td>Explain what happened and the fact this cash squeeze is temporary due to the EDC insurance.</td>
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<td>Check with the bankruptcy trustee on line to get the financial data as well as</td>
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<td></td>
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<td>Do not panic.</td>
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</table>
the list of creditors, dates etc.

See whether there is any hope of a proposal to creditors and the chance of getting something on the dollar.

Keep in touch with the trustee to see if he is selling assets or the business and if there is the possibility of getting a new owner/client.

Check to see if you can buy your shipment back for 10 cents on the dollar.

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<td>no</td>
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<td>11</td>
<td>yes</td>
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<td>12</td>
<td>no</td>
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<td>14</td>
<td>no</td>
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10 q9rad: no
q9pdb:

11 q9rad: yes
q9pdb:

12 q9rad: no
q9pdb:

13 q9rad: no
q9pdb:

14 q9rad: no
q9pdb:
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<th>q9rad</th>
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<td>15</td>
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<td>16</td>
<td>no</td>
<td>q9pdb:</td>
<td>q9rot:</td>
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<td></td>
<td>Call the EDC and the bank immediately. It is better if your bank agent learns from you. You might come up with a solution before you become short in cash due to possible delay of payment of the insurance claim.</td>
<td>It is better to be proactive instead to hide from problems.</td>
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<td>17</td>
<td>no</td>
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<td>18</td>
<td>no</td>
<td>q9pdb:</td>
<td>q9rot:</td>
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<td></td>
<td></td>
<td>Look for alternate financing---fill gap scenario-- BUT.... concurrently Look for new openings</td>
<td>Do not put all eggs in one basket. Redundancy is not always bad.</td>
</tr>
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<td>19</td>
<td>no</td>
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<td>20</td>
<td>no</td>
<td>q9pdb:</td>
<td>q9rot:</td>
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<tr>
<td>21</td>
<td>no</td>
<td>q9pdb:</td>
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<td>Assuming the stock investment was personal, get over it and move on. Re-focus on the business. Get your most knowledgeable person to file the papers for the EDC insurance? Have them phone in and get estimates as to when? Do they know how, where, etc to do so? (Ensure &quot;yes&quot;) How long do they forecast before you see the insurance $? Quickly gather your F&amp;A folks. Explain the situation...ask their take on the severity of the problem? $40K is a hit, but may or may not be a calamity -especially if insurance will cover it at sometime within the next X months.</td>
<td>Stuff happens. What a person/group does when stuff happens...usually makes the difference between victory and failure.</td>
</tr>
</tbody>
</table>
Where can F&A see an opportunity to regain cash flow?
Are there some future purchases that can be delayed?
How many dollars?
Are there any payments that can be delayed by a day, week, month...without breaching any payment terms or incurring negative credit scores?
How many dollars?
Are there any Receivables that can be harvested early...with just a nudge or phone call?
How many dollars?
Get commitments from all parties to crystallize their estimates.
See where you are at.
How great if the remaining problem?
Do you need to:
- Meet with your Banker?
- Explain and negotiate with key Suppliers?
- Factor any outstanding invoices?
- Call upon the Shareholders for capital or a shore term loan?

This should be a totally manageable timing problem for the company.

Make better personal investment decisions in future.

| 22 | q9rad: no | q9pbd: | q9rot: |
| 23 | q9rad: no | q9pbd: | q9rot: |
| 24 | q9rad: no | q9pbd: | q9rot: |

Not sure. Once I have explored the avenues to see if all $40K would be written off, I would probably move on and not let this setback phase me.

Hopefully I would have already setup an allowance for doubtful accounts, and hopefully this is less than the allowance I set up.

This is an unfortunate reality in business, and you must be prepared for it.
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<th>q9rad:</th>
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<tr>
<td>25</td>
<td>no</td>
<td>Call EDC immediately.</td>
<td>Take immediate action.</td>
</tr>
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<td></td>
<td></td>
<td>Call bankruptcy trustee and get claim in.</td>
<td>Alert partners.</td>
</tr>
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<td></td>
<td></td>
<td>Find a short term funding source.</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>no</td>
<td>q9pbd:</td>
<td>q9rot:</td>
</tr>
<tr>
<td>27</td>
<td>yes</td>
<td>Kick your own butt for breaking investment rules and investing on emotion not econ. principles</td>
<td>q9rot:Never stray from effective client relations</td>
</tr>
<tr>
<td>28</td>
<td>no</td>
<td>q9pbd:</td>
<td>q9rot: Increase line of credit for the time being from another source of finance institution other than banks.</td>
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<td>Announce the loss due to XYZ shares. Report the claim.</td>
<td></td>
</tr>
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<td>29</td>
<td>no</td>
<td>q9pbd:</td>
<td>q9rot:Gather the facts, analyze what will likely happen, use your best advisors to do this, and finally bring your banker into the picture as quickly as possible, once you have reliable data to present him with.</td>
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<td>This sounds a little complicated, and I want our CFO to review the likely financial, cash flow and income tax implications.</td>
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<td>Use our accountants if necessary to determine this information.</td>
<td></td>
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<td></td>
<td>Then, arrange a meeting with your CFO and your account manager at the bank, to let them know what has happened, and what you will be doing about it.</td>
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<td></td>
<td>Hopefully, the manager will be able to react to this with a clear indication of what the bank will need to carry you past this scenario.</td>
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</table>
Scenario 10: Joint Venture Raw Data

The tenth business scenario (Joint Venture) asked the following question:

*Your technology training company with headquarters in Victoria has expanded nicely in the last three years, opening branches in Vancouver, Prince George, and Kelowna. You got a phone call from the dean of Okanagan College, inviting you to visit this institution in order to discuss a potential joint project in delivering technology training in that region. The meeting will need to be done the next day in order to meet the budget deadlines the institution is facing.*

*Regardless of your previous experience with the above described scenario, please describe briefly the most probable business decision you would have made in this case. Write down the most probable Rule(s) of Thumb you have applied or you will apply to assist you in your decision.*

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<tr>
<th>#</th>
<th>Yes/No</th>
<th>Suggestions</th>
<th>Heuristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>q10rad: <strong>yes</strong></td>
<td>q10pbd: Review the details, re-arrange my calendar, and make arrangements to attend the meeting.</td>
<td>q10rot: Respond to emergent opportunities where there are benefits to be gained.</td>
</tr>
<tr>
<td>2</td>
<td>q10rad: <strong>yes</strong></td>
<td>q10pbd: The credibility of academic institutions can gain some customers for the present and future. But their bureaucracy can be a pain. With experience in the industry, financial costing is boilerplate and academic institutions have guidelines. I would meet after sizing up the probability of success and/or trying to get travel money guaranteed.</td>
<td>q10rot: Decide what business you are in. In this scenario, is it marketing or training?</td>
</tr>
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<td>3</td>
<td>q10rad:</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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<tr>
<td>No</td>
<td>q10rad:</td>
<td>q10pbd:</td>
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<tr>
<td>4</td>
<td>no</td>
<td>q10pbd: Money talks, and BS walks.</td>
<td></td>
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<td>5</td>
<td>q10rad: yes</td>
<td>q10pbd:</td>
<td>q10rot:</td>
</tr>
<tr>
<td>6</td>
<td>q10rad: yes</td>
<td>q10pbd: A joint venture will take more than a day to sort out. Find time for it or forget it.</td>
<td>q10rot: Take advantage of every opportunity.</td>
</tr>
<tr>
<td>7</td>
<td>q10rad: no</td>
<td>q10pbd: Cannot meet and discuss potential joint project. Too rushed.</td>
<td>q10rot: No need to jump at this opportunity since business is going well.</td>
</tr>
<tr>
<td>8</td>
<td>q10rad: no</td>
<td>q10pbd: Proceed with the meeting.</td>
<td>q10rot: Why wouldn’t I meet with the Dean?</td>
</tr>
<tr>
<td>9</td>
<td>q10rad: no</td>
<td>q10pbd: Talk to whoever appears to be a key person to glean what their hopes are and how they envision the joint project. Try to figure out some costs of putting a training proposal together so you can see if the project is feasible when you meet with the college people.</td>
<td>q10rot: Make an agenda based on what you can offer, and what you cannot.</td>
</tr>
<tr>
<td>10</td>
<td>q10rad: no</td>
<td>q10pbd: A joint project with a College/University is a lengthy and expensive process. Do I want to go that route?</td>
<td>q10rot: Identify my + selling factors. What do I have to offer? As a Rot, I will ensure I have leadership of the project and costs/duration parameters. As a RoT, I would prefer a joint project with a for-profit organization.</td>
</tr>
<tr>
<td>11</td>
<td>q10rad: no</td>
<td>q10pbd: Discuss the opportunity with partners and</td>
<td>q10rot: Seek to listen and understand the</td>
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<td>key staff.</td>
<td>offer before committing anything right away. Seek to gain from the alliance without jeopardizing the company's current business. To be very receptive to their approach but cautious at the same time (do not sign anything).</td>
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<td>12</td>
<td>q10rad: no</td>
<td>q10pbd:</td>
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<td></td>
<td>I would get to them and assess the likelihood of my company being able to make a profit out of the situation while being able to meet their needs.</td>
<td>Opportunity for profit</td>
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<td>13</td>
<td>q10rad: no</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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<tr>
<td>14</td>
<td>q10rad: no</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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<td>15</td>
<td>q10rad: no</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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<tr>
<td>16</td>
<td>q10rad: no</td>
<td>q10pbd:</td>
<td>q10rot:</td>
</tr>
<tr>
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<td>I will meet the dean on the next day. This co-project will be beneficial for the business.</td>
<td>Skilled people coming out of training institution are always beneficial for the business.</td>
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<tr>
<td>17</td>
<td>q10rad: no</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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<tr>
<td>18</td>
<td>q10rad: no</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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<td>Interacting with academic institutions is never a bad idea. I will go ahead with the meeting. I presume at this level most of the people have enough understanding of basic principles...Can make an educated guess leading to a very reasonable estimate</td>
<td>Never let a good opportunity go.</td>
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<td>19</td>
<td>q10rad: no</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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<tr>
<td>20</td>
<td>q10rad: yes</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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<td>If the opportunity is aligned with company strategy, make time for the meeting. If not, decline.</td>
<td>Alignment to and impact on strategy.</td>
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<td>21</td>
<td>q10rad: yes</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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<tr>
<td></td>
<td>Say, &quot;yes, what time would you like to</td>
<td>Ready, fire, aim, - learn from</td>
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<tr>
<td>22</td>
<td>q10rad: no</td>
<td>q10pbd:</td>
<td>q10rot:</td>
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Arrange your travel plans.

Dust off older business plans for Vancouver, Prince George, and Kelowna.

Create a "From 10,000 feet" proposal, along with standard pricing models. While traveling, brainstorm over the phone with your Manager in Kelowna.

Discuss: If you got the deal, when, where, how and for how much? They called you on short notice.

The price should be less critical than the plan and the probability of effective, efficient roll-out. Price the opportunity accordingly.

Be prepared to say "Sorry, we just can't for that price under those time constraints."

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<th>q10rad: yes</th>
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You speak with the Dean about the best way of accomplishing his/her objectives. Is a face to face meeting required?

Is it required with me personally?

Ultimately, if this is a strategic opportunity for my company, I jump on an airplane and go meet with the Dean.

Every opportunity needs to be qualified.

Strategic opportunities usually require the CEO to be involved.

Sometimes, great things happen from unexpected (and unplanned) events, and you need to be able to go with the flow.

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Determine probability of getting business.

If good, then: Sit down that night and determine financial conditions.

Previous relationship with university.

Likelihood of business generating a profit.
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<th>Do a presentation about your capabilities. Engage University Staff the next day.</th>
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<tbody>
<tr>
<td>26</td>
<td>q10rad: no</td>
<td>q10pbd: I would have quickly reworked earlier proposals and jumped on a WestJet flight to Kelowna to get him what he needed.</td>
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<tr>
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<td></td>
<td>q10rot: Time pressure (whether real or not) gets deals done. Use it whenever you can.</td>
</tr>
<tr>
<td>27</td>
<td>q10rad: no</td>
<td>q10pbd: Jump on the plane</td>
</tr>
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<td></td>
<td>q10rot: Nothing ventured nothing gained. Talk is cheap.</td>
</tr>
<tr>
<td>28</td>
<td>q10rad: no</td>
<td>q10pbd: Get a better understanding of what exactly the meeting is about. Check my calendar to see if the schedule fits. If not, a conference call may be an option.</td>
</tr>
<tr>
<td></td>
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<td>q10rot: Check the flight schedule and prepare for meeting content as soon as possible.</td>
</tr>
<tr>
<td>29</td>
<td>q10rad: no</td>
<td>q10pbd: Obtain as much information on the project from the Dean as possible. Get your CFO and possibly your outside accountant in the picture, and see if you, as a team, can work out a strategy and project estimate going into the meeting. One or both of them should accompany you to the meeting, if possible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>q10rot: Use your best advisors in helping you respond to a problem.</td>
</tr>
</tbody>
</table>
References


Clausewitz, C. V. (1873). On war.


Kolbe, R. H. and M. S. Burnett (1991). "Content-Analysis Research: An Examination of
Applications with Directives for Improving Research Reliability and Objectivity."


Nielsen, J. (1995) "Ten usability heuristics." Volume, DOI:


Popping, R. (2009). "Some views on agreement to be used on content analysis studies." Qual Quant.


Strassmann, P. A. (2006). What is the worth of an employee?


Toulmin, S. (1990). *Cosmopolis; the hidden agenda of modernity*. Chicago, University of


Annotated Bibliography


ABSTRACT [by the authors]: This item documents over 170 knowledge management tools (names of the tools, a short summary, and where you can find extra information), and is intended to save hours of research time. As a preface to the actual tools listing we have introduced some of the critical components relating knowledge management and the nature of the tools that we may have at our disposal to manage knowledge.


ABSTRACT [by the authors]: The purpose of this paper is to analyze the epistemological foundations associated with the concept of IC. Different researchers on intellectual capital (IC) agree on the issue that at present, knowledge generates sustainable competitive advantage. However, the distinction between the theoretical perspective and its practical application is not yet clear. Seemingly, this dissociation may be explained by the absence of an epistemological analysis related to IC, which accounts for the low number of pertinent specific publications. This paper analyzes the named epistemological foundations associated with the concept of IC, from the point of view of the cognitive sciences, as well as its consequences in the design of methods and indicators of evaluation. The analysis employed is based on the cognitive groundwork of the representational and non-representational schools linked to the primeval concepts which
thus far support the definition of IC. The cognitive sciences contribute guidance in the face of the implications of including IC within the domain of representation and that of non-representation. The first operates in order to recover external elements and to project internal ones, making IC unviable as a process, and inevitably reduces it to the account of objects. In the second case, enactment ends up being incomplete due to the fact that it maintains the observer-setting duality, which makes it improbable to understand IC as a network relational process. The results enable the identification of new lines of development, which clarify and make explicit its epistemological foundations, but which differ from the prevailing ones.


ABSTRACT: Many kinds of learning are necessary for learning organizations to help them achieve and sustain a competitive advantage. Continuous learning is critical. Adaptive and generative thinking are both required. An enterprise that becomes a learning organization benefits from the vital knowledge and ideas of its people.


ABSTRACT: Aristotle introduces Rhetoric as an art of using language for persuasion. Rhetoric follows three methods of logos (reason or rational discourse), pathos (experience or story telling), and ethos (moral competence), as well as the five canons of memory, invention, delivery, style, and arrangement. Along with grammar and logic or dialectic, rhetoric is one of the three ancient arts of discourse.

ABSTRACT: US federal prosecutors are investigating the company for allegations of fraudulent marketing and accounting, made by a lawsuit brought by a former employee.


ABSTRACT: An easy to read introductory textbook for business students. Covers the major challenges managers face and describes the four functions of management: planning, organizing, leading, and controlling.


ABSTRACT: Tips and techniques, illustrative real-world examples, exhibits and best practices on knowledge management.


ABSTRACT: In economics, game theory, and decision theory the expected utility theorem or expected utility hypothesis is a theory of utility in which "betting preferences" of people with regard to uncertain outcomes (gambles) is represented by a function of the payout (whether in money or other goods), the probability of occurrence, risk aversion, and the different utility of the same payout to people with different assets or personal preferences. This theory has proved useful to explain some popular choices that seem to
contradict the expected value criterion (which takes into account only the size of the payout and the probability of occurrence), such as gambling and insurance. Daniel Bernoulli described the complete theory in 1738. John von Neumann and Oskar Morgenstern reinterpreted and presented an axiomatization of the same theory in 1944. They proved that any "normal" preference relation over a finite set of states can be written as an expected utility, sometimes referred to as von Neumann-Morgenstern utility.


ABSTRACT [by the author]: The concept of a decision, which is basic in the theories of Neyman-Pearson, Wald, and Savage, has been judged obscure or inappropriate when applied to interpretations of data in scientific research, by Fisher, Cox, Tukey, and other writers. This point is basic for most statistical practice, which is based on applications of methods derived in the Neyman-Pearson theory or analogous applications of such methods as least squares and maximum likelihood. Two contrasting interpretations of the decision concept are formulated: behavioral, applicable to 'decisions' in a concrete literal sense as in acceptance sampling; and evidential, applicable to 'decisions' such as 'reject Hi' in a research context, where the pattern and strength of statistical evidence concerning statistical hypotheses is of central interest. Typical standard practice is characterized as based on the confidence concept of statistical evidence, which is defined in terms of evidential interpretations of the 'decisions' of decision theory. These concepts are illustrated by simple formal examples with interpretations in genetic research, and are
traced in the writings of Neyman, Pearson, and other writers. The Lindley-Savage argument for Bayesian theory is shown to have no direct cogency as a criticism of typical standard practice, since it is based on a behavioral, not an evidential, interpretation of decisions.


ABSTRACT: This paper describes some of Bochenski's discoveries of extra-syllogistics laws in Aristotle.


ABSTRACT: Father Ong points out the weaknesses and strengths of orality and literacy. He introduces the concepts of primary oral culture, highly literate culture and secondary culture - such as the one based on electronic media. In this collection of essays, Father Ong argues that the Western society has modified its thought process from being based on oral exchanges to visual ones mainly because of the accelerated development of the mass media, such as print, radio, and television. In particular, he shows how technological innovation affect how people communication, not only in the way they communicate but also in the content of that communication.

ABSTRACT: Bontis discusses how to manage the intellectual capital of corporations. He proposes some definitions of intellectual capital; he describes growth of the professional services industry and emergence of knowledge-based firms, and introduces 4 components of intellectual capital.


ABSTRACT [from the author]: This paper reviews the literature pertaining to the assessment of knowledge assets. Since knowledge assets are at the crux of sustainable competitive advantage, the burgeoning field of intellectual capital is an exciting area for both researchers and practitioners. Unfortunately, the measurement of such intangible assets is difficult. A variety of models have surfaced in an attempt to measure IC and this paper aims to highlight their strengths, weaknesses and operationalizations.


ABSTRACT [by the author]: In the present article I attribute to the common topic in the Rhetoric a twofold suggestive function and a guarantee function. These three functions are possible because this type of topic, while often quite abstract, nevertheless contains thought steering, substantial terms, and formulates a generally empirical or normative endoxon [accepted opinion]. Assuming that according to Aristotle an enthymeme has at least two premises, it would appear that a common topic is the abstract principle behind the often implicit major premise. This means that the topic may be regarded as the –
generalizing – if-then statement in a modern argumentation scheme. Therefore it should be possible to see the enthymemes of Rhetoric 2.23 as a combination of a logical argument form (which can usually be reconstructed as modus ponens) and an argumentation scheme – even though we may not attribute this idea to Aristotle himself.


ABSTRACT [by the authors] The paper shows that applying social network analysis to small agricultural businesses to examine knowledge transfer is in itself innovative, particularly as the research draws upon a peer-group of businesses enabling some comparisons to be made.


ABSTRACT [by the authors]: This study surveys a broad spectrum of US manufacturer and service firms to examine the effect of tacit knowledge transfer on firm innovation capability. The authors present a set of hypotheses concerning the relationships between inter-firm relationship strength and tacitness of knowledge transfer, extent of tacit knowledge transfer and innovation capability, and innovation capability and innovation performance based on the theory of knowledge. Moderating roles of firm collaborative experience and firm size on the relationship between inter-firm relations strength and the extent of tacit knowledge transfer are considered. Empirical results generally support the predictions from the theory and managerial implications are included.

ABSTRACT [by the author]: This paper aims to provide a strategic perspective for professionals and practitioners to better understand necessary elements for building a successful knowledge capital and to demonstrate how holding conversations with key leadership evokes viewpoints and relevant information to take into account. The paper maps out a strategic perspective of the major elements of a knowledge capital and then integrates a series of conversational interviews with regional leaders who have backgrounds in policy, journalism, and technology. The conceptual scope of the paper dealt with mapping out essential principals and practices for the creation of knowledge capitals in general. The particular focus of the paper was on the Greater Phoenix region and the specific efforts underway there to transition into becoming a knowledge capital. The results are an integrated approach delineating the necessary perspective for developing a knowledge capital and a set of views from significant leadership of a region on what its problems are in becoming a knowledge capital.


ABSTRACT: De Oratore ("About oratory") is a discourse on rhetoric written by Cicero in 55 BC. It contains the first known description of the method of loci, a mnemonic technique.

Clausewitz, C. V. (1873). On war.
ABSTRACT: Clausewitz describes in detail what constitutes warfare. He relates war and politics. He summarizes some of the most common military heuristics which have been also suggested as important elements for corporate strategists.


ABSTRACT: A brief review of the historical relation between logic and ontology and of the opposition between the views of logic as language and logic as calculus is given. We argue that predication is more fundamental than membership and that different theories of predication are based on different theories of universals, the three most important being nominalism, conceptualism, and realism. These theories can be formulated as formal ontologies, each with its own logic, and compared with one another in terms of their respective explanatory powers. After a brief survey of such a comparison, we argue that an extended form of conceptual realism provides the most coherent formal ontology and, as such, can be used to defend the view of logic as language.


ABSTRACT: This book uses risk in its dictionary meaning as the probability of an undesirable outcome. It addresses two research questions: when managers make decisions, what leads them to choose a risky alternative? and: what determines whether the decision proves correct? Answers to these questions form a model of decision making that explains the process and results of managers' risk-taking in the real world.

ABSTRACT [by the author]: When an organization is confronting a wicked problem the familiar approaches don't work. For one thing, with a wicked problem there isn't even agreement about what the problem is, much less how to solve it. To make progress one must focus on creating maximum shared understanding and shared commitment among the stakeholders. Dialogue mapping is a proven technique for building that shared understanding and commitment, as efficiently and effectively as possible.


ABSTRACT: This book presents a discussion of the positivist origins of science and evaluation research. It details a range of quasi-experimental approaches suitable to research, together with respective statistical techniques. The book includes a realistic assessment of randomization barriers and includes the observation that true randomization is rarely used unless there is a substantive power differential


ABSTRACT: The authors present the three vital components of classical rhetoric—argument, arrangement, and style. Presenting its subject in five parts, the text consists of the elements and applications of classical rhetoric; the strategies and tactics of argumentation; the effective presentation and organization of discourses; the development of power, grace, and felicity in expression; and the history of rhetorical principles.
ABSTRACT: Using grounded theory as an example, this paper examines three methodological questions that are generally applicable to all qualitative methods. How should the usual scientific canons be reinterpreted for qualitative research? How should researchers report the procedures and canons used in their research? What evaluative criteria should be used in judging the research products? We propose that the criteria should be adapted to fit the procedures of the method. We demonstrate how this can be done for grounded theory and suggest criteria for evaluating studies following this approach. We argue that other qualitative researchers might be similarly specific about their procedures and evaluative criteria.


ABSTRACT: Knowledge management is a hot topic, but it is usually pushed by people who want to sell something. As a result, you can end up with a lot of technology that will not help you to manage your knowledge. As insurance against getting started in the wrong direction, I suggest you read Working Knowledge as a first step. Davenport and Prusak have examined 39 organizations that are well above average users of their knowledge. The case histories will give you a practical sense of what works that would take you years of false steps to duplicate in your organization. Then, even more helpfully, the authors outline the key lessons of these top performers for you to follow. I especially
recommend chapter 9 on The Pragmatics of Knowledge Management. Any new initiative will run into problems and fall back. A great book to read next is The Dance of Change, which focuses squarely on that issue. Any book has to narrow its focus to be successful. That focus creates a vulnerability. In this book, the vulnerability is not looking far enough ahead for more effective ways to do knowledge management that no one is yet doing. For example, the potential to share knowledge among top best practice organizations is enormous.


ABSTRACT [by the author]: Uniqema is the specialty chemicals arm of the Imperial Chemical Industries empire. With a minimal headquarters presence in central London and $1bn turnover, Uniqema sells to more than 90 countries with such customers as Roche, the Swiss pharmaceuticals and chemicals group, and Colgate-Palmolive, the US toiletries and personal products company. Richard Miller joined the Uniqema board with a background in industrial chemicals research in 1993. Today, the expert in soap technology is working as a chief knowledge officer. Mr Miller does not think of knowledge management as a new concept. "The apprentice system of the medieval guilds was a masterpiece of KM but it could only happen on a one-to-one basis," he says. Mr Miller has noticed that KM tends to be implemented from one of two directions. "Either people come at it from a human resources direction and say it's all about culture, or they believe it is all about IT and using Lotus Notes and databases." He thinks both these approaches are flawed.

[PUBLICATION ABSTRACT]: Purpose - There are several strands that cope with particular intangible resources, such as intangible assets, intellectual, human, and organisational capital, data and information, knowledge and capabilities. However, until now there have been no attempts to define and identify all intangible resources systematically in one framework. The purpose of this paper is to show how an exhaustive and exclusive categorial system of all intangible resources can be generated.

Design/methodology/approach - Following the idea of comparative analyses by grounded theory, it will be referred to relevant approaches which can be defined in academic literature. It is investigated how types of intangible resources, that share common attributes, can be grouped together, which categories emerge, and how these categories can be defined. This gradually leads to the creation of the whole categorial system based on empirical inductionism. At the same time, the categorial system is created based on logical deductionism. Having defined intangible resources as the objects of reasoning and by which leading principles will be looked at, the class of intangible resources will be broken down into categories or sub-classes with the help of precisely formulated attributes. Findings - Generation of a comprehensive, consistent, and complete categorial system of all possible types of intangible assets. Research limitations/implications - Solely a theoretical paper. Although empirical examples are provided it might be interesting to demonstrate the application of this categorial system. Practical implications - With such a categorial system we are in the position to identify and locate the uncountable number of "real world" types of intangible resources more precisely and
efficiently. Originality/value - With such an attempt it may become clearer how to cope with different types of intangible resources, how to gather, create, use, share and develop them more appropriately.


ABSTRACT: Drucker reviews the seven major assumptions that have been held by experts in the field of management for most of the 20th century, and shows why they are now obsolete. He goes on to give eight new assumptions for the 21st century, ones that are essential for viewing the roles of individuals and management in both profit and not-for-profit organizations. Neither individuals nor organizations can be successful if they stick with the old assumptions, according to Drucker, just as the horse and carriage can no longer compete with the automobile. If Drucker is right, then this has major implications for individuals, organizations, and management consultants who would use process models, personality type theory, and ideas of human consciousness to improve individual, team, and organizational performance. Personality type theories such as the MBTI® or Enneagram Personality Types similarly describe typical patterns of consciousness that result from strongly held preferences in individuals - fixed habitual mind-sets. And organizations themselves can be described in terms of Type theory.

Commenting from the point of view of psychology and personality theory, we demonstrate in our review of the six chapter of Drucker's new book how the analysis of one of this century's leading management thinkers is consistent with a model of information-sharing that values 'whole type'. [From a book review by Walter J. Geldart]

ABSTRACT: Duncker was the first person to propose the notion of functional fixity/fixedness in problem solving (i.e., the inability to find the solution to a new problem because one attempts to use old methods that are not suitable in the new situation). Similarly, set effects refer to solvers’ tendency to get stuck in a ‘mental rut’ where a familiar problem-solving approach continues to be applied even when it is no longer appropriate. (Credo Reference) [Not available online]


ABSTRACT [by the authors]: The purpose of this paper is to apply the self-efficacy model to compare knowledge-sharing activities in the Open Source community versus those in a traditional organization. Current literature on tacit knowledge sharing and information about the Open Source community is synthesized in the study with research concerning self-efficacy formation. The knowledge-sharing literature is applied in the paper to the self-efficacy model. Through a synthesis of different streams of literature, the paper concludes that the self-efficacy model serves as a useful framework for better understanding the effects of context on tacit knowledge sharing. Furthermore, it is concluded that the Open Source community may provide an ideal set of subjects to whom the model can be applied. Only propositions are offered, and the conclusions are suggestions for future research. The self-efficacy model has been successfully applied to other areas of research in early stages (e.g. entrepreneurship) and provides a valid, tangible framework that allows many research possibilities. This paper takes a highly
valid and respected model and applies it to individual tacit knowledge sharing, a field in which little cross-discipline work is done. This paper bridges a central organizational behavior/psychological theory with knowledge management research.


ABSTRACT: A classic book on management.


ABSTRACT: Behind-the-scenes descriptions of science and policy colliding in the presidential commission to determine the cause of the Challenger space shuttle explosion; and his elegant O-ring-in-ice-water demonstration.


ABSTRACT: Based on the researcher's discussion with CIBC branch management in Victoria (2008)


ABSTRACT: In this chapter (14) the author defines group work is, followed by describing the potential contribution of group work to meeting the employment needs of clients in rehabilitation settings. He then presents some general principles for working
with groups and examines the specific purposes that group work can fulfill in such settings.


ABSTRACT: Some examples of ethics violations by Wal-Mart.


ABSTRACT: Gigerenzer draws on his own research as well as that of other psychologists to show how even experts rely on intuition to shape their judgment, going so far as to ignore available data in order to make snap decisions. Sometimes, the solution to a complex problem can be boiled down to one easily recognized factor, he says, and the author uses case studies to show that the Take the Best approach often works.


ABSTRACT [by the author] The adaptive toolbox is a Darwinian-inspired theory that conceives of the mind as a modular system that is composed of heuristics, their building blocks, and evolved capacities. The study of the adaptive toolbox is descriptive and analyzes the selection and structure of heuristics in social and physical environments. The study of ecological rationality is prescriptive and identifies the structure of environments in which specific heuristics either succeed or fail. Results have been used for designing heuristics and environments to improve professional decision making in the real world.

ABSTRACT [by the authors] M. R. Dougherty, A. M. Franco-Watkins, and R. Thomas (2008) conjectured that fast and frugal heuristics need an automatic frequency counter for ordering cues. In fact, only a few heuristics order cues, and these orderings can arise from evolutionary, social, or individual learning, none of which requires automatic frequency counting. The idea that cue validities cannot be computed because memory does not encode missing information is misinformed; it implies that measures of co-occurrence are incomputable and would invalidate most theories of cue learning. They also questioned the recognition heuristic’s psychological plausibility on the basis of their belief that it has not been implemented in a memory model, although it actually has been implemented in ACT-R (L. J. Schooler & R. Hertwig, 2005). On the positive side, M. R. Dougherty et al. discovered a new mechanism for a less-is-more effect. The authors of the present article specify minimal criteria for psychological plausibility, describe some genuine challenges in the study of heuristics, and conclude that fast and frugal heuristics are psychologically plausible: They use limited search and are tractable and robust.


Chapter 19: 19.

ABSTRACT: Naturalistic inquiry is a paradigm of inquiry; that is, a pattern or model for how inquiry may be conducted. While it is frequently asserted that its distinguishing
features are: that it is carried out in a natural setting (and hence the term naturalistic), that it utilizes a case-study format, and that it relies heavily on qualitative rather than quantitative methods, none of these features define naturalistic inquiry. While all of these assertions are essentially correct, no one of them, nor indeed all of them together, capture the full significance of the term paradigm. Paradigms differ from one another on matters much more fundamental than the locale in which the inquiry is conducted, the format of the inquiry report, or the nature of the methods used. Paradigms are axiomatic systems characterized by their differing sets of assumptions about the phenomena into which they are designed to inquire.


ABSTRACT: Knowledge management implies a coding capability. Internal individual processes like experience and talent results in tacit knowledge that is difficult to code, therefore it cannot be managed and shared as explicit knowledge. Conversion of tacit knowledge to explicit or at least ability to share it offers great value to an organization.


ABSTRACT: The objective of the paper is to describe how tacit knowledge in particular, is acquired, shared and retained in small firms. Implied is the notion is that knowledge management is leveraged by organizations as a strategy to turn an organization’s intellectual assets into greater productivity, new value and increased competitiveness.

**ABSTRACT:** Purpose – (TKI) to assess the level of tacit knowledge within firms and its effect on firm performance. A sample of 108 US and Canadian firms that are using knowledge management was surveyed to determine each firm’s TKI. This measure includes both the degree of usage and the tacitness of the knowledge management method. Regression and correlation were used to statistically analyze the innovation and financial outcomes. Significant relationships were found between a firm’s level of TKI and the firm’s innovation performance. Less clear is the relationship between a higher TKI and financial measures. This research gives managers a way to structure their use of knowledge management methodology and use of resources in a way that may maximize performance, either as standalone systems or as part of the Balanced Scorecard. The use of this research could greatly reduce the uncomfortable gut feeling that many managers have in funding so-called soft tacit-based knowledge management systems rather than invest in easier to assess hardware systems. This pioneering research develops tacit knowledge as a measurable quantity and links this metric to firm performance.


**ABSTRACT:** In the knowledge management domain, the conversion of tacit knowledge to explicit knowledge is critical because it is a prerequisite to the knowledge amplification process wherein knowledge becomes part of an organization’s knowledge network. In this article, knowledge exchange protocols are examined as a vehicle for
improving the tacit to explicit knowledge conversion process. In an experiment testing the use of knowledge exchange protocols, it is learned that while structure may significantly improve the tacit to explicit knowledge conversion process, it also may matter how the structure is employed in this process.


ABSTRACT: Microsoft has paid the $600 million fine handed down by the European Commission in its antitrust ruling against the company.


ABSTRACT: This article focuses on the usefulness of heuristic models in business planning. The use of computer algorithms and stochastic processes are appropriate for certain sophisticated business models. However, such advance modeling can use resources such as time and money that may not be practical. The use of heuristic models allows many companies to approach decision-making based on less information. Heuristic models have been used to develop delivery schedules, airline schedules, certain aspects of marketing, and problems associated with warehouse storage.


ABSTRACT: The article presents on general purpose knowledge management (KM)
ontology, that can be used by practitioners, researchers and educators. Ontologies are useful because they explicate components that define a phenomenon and, thus, can help in systematically understanding or modeling that phenomenon. The ontology is characterized in terms of formal definitions and axioms that have evolved from a collaborative ontology design process. The ontology identifies and relates knowledge manipulation activities that an entity can perform to operate on knowledge resources. It introduces a taxonomy for these resources, which indicates classes of knowledge that may be stored, embedded, and represented in an entity. It recognizes factors that influence the conduct of KM both within and across KM episodes. The ontology is intended to stimulate further conceptual development in the KM field. The ontology can further evolve through added breadth and depth. It can be extended in a normative direction by adding elements that prescribe methods and technologies for the conduct of KM. Future research and practice will more fully determine the extent of this ontology's utility and applicability.


ABSTRACT: Prospect theory is a theory that describes decisions between alternatives that involve risk, i.e. alternatives with uncertain outcomes, where the probabilities are known. The model is descriptive: it tries to model real-life choices, rather than optimal decisions.

Kimble, C. and P. Hildreth (2005). "Dualities, distributed communities of practice and

ABSTRACT (adapted): The authors explore the relationship between knowledge management (KM) and communities of practice (CoPs) in general and virtual CoPs in particular, using theoretical constructs, the notion of a duality, and data from a case study. The case study of a virtual CoP was based in three geographically separate locations (the UK, the USA, and Japan). The case study covers the activities of the UK part of the CoP both at their UK base and during one of their regular trips to the USA. It highlights the importance of two particular aspects of virtual working: social relationships and the use of shared artifacts. The main contribution of this paper is in making an explicit link between KM and CoPs through the use of the notion of the duality of knowledge.


ABSTRACT (by the authors): A learning history is one of the most deliberate and effective ways of institutionalizing reflection in entire organizations. This history is a document that relates the organization's own story in an engaging manner to encourage reflective conversations that collect and spread learning throughout the organization. It does not propose any solutions as to how the organization can move forward, but instead seeks to provide a common context that promotes the development of a shared understanding among readers and enable them to come up with their own solutions. The three imperatives in the creation of an organizational history are staying 'true to the data' so that the history can be validated, staying 'true to the story' so that it gains people's
attention and staying 'true to the audience' so that the way it is presented helps propel the organization forward.


**ABSTRACT:** This article provides an empirical review and synthesis of published studies that have used content-analysis methods, Harold Kassarjian's critical guidelines for content-analysis research were used to examine the methods employed in 128 studies. The guidelines were expanded by providing an empirical investigation of multiple dimensions of objectivity. Reliability issues were also assessed by examining factors central to the replication and interjudge coefficient calculations. The findings indicate a general need for improvement in the application of content-analysis methods. Suggestions for calculating reliability coefficients and for improving the objectivity and reliability of research are offered. [ABSTRACT FROM AUTHOR]


**ABSTRACT:** When economics is normative—meaning that the objective is to make a policy recommendation—the evaluative criteria is economic efficiency. The basic idea is that scarce resources should be allocated to their most valued uses. Cost-benefit analysis (CBA) is the primary tool that economists employ to determine whether a particular policy, or policy proposal, promotes economic efficiency. At the most general and
comprehensive level, CBA is an aggregator of all impacts, to all affected parties, at all points in time. The impacts, both positive and negative, are converted into a common monetary unit, and the cost-benefit criteria is simply a test of whether the benefits exceed the costs. If the net benefits are positive, the policy promotes economic efficiency.


ABSTRACT [by the author]: In the most general terms, reliability is the extent to which data can be trusted to represent genuine rather than spurious phenomena. Sources of unreliability are many. Measuring instruments may malfunction, be influenced by irrelevant circumstances of their use, or be misread. Content analysts may disagree on the readings of a text. Coding instructions may not be clear. The definitions of categories may be ambiguous or do not seem applicable to what they are supposed to describe. Coders may get tired, become inattentive to important details, or are diversely prejudiced. Unreliable data can lead to wrong research results.


ABSTRACT [by authors]: This paper presents a general statistical methodology for the analysis of multivariate categorical data involving agreement among more than two observers. Since these situations give rise to very large contingency tables in which most of the observed cell frequencies are zero, procedures based on indicator variables of the raw data for individual subjects are used to generate first-order margins and main
diagonal sums from the conceptual multidimensional contingency table. From these quantities, estimates are generated to reflect the strength of an internal majority decision on each subject. Moreover, a subset of observers who demonstrate a high level of interobserver agreement can be identified by using pairwise agreement statistics between each observer and the internal majority standard opinion on each subject. These procedures are all illustrated within the context of a clinical diagnosis example involving seven pathologists.


ABSTRACT [by the authors] Research has demonstrated that relationships are critical to knowledge creation and transfer, yet findings have been mixed regarding the importance of relational and structural characteristics of social capital for the receipt of tacit and explicit knowledge. We propose and test a model of two-party (dyadic) knowledge exchange, with strong support in each of the three companies surveyed. First, the link between strong ties and receipt of useful knowledge (as reported by the knowledge seeker) was mediated by competence- and benevolence-based trust. Second, once we controlled for these two trustworthiness dimensions, the structural benefit of weak ties emerged. This finding is consistent with prior research suggesting that weak ties provide access to non-redundant information. Third, competence-based trust was especially important for the receipt of tacit knowledge. We discuss implications for theory and practice.

ABSTRACT [by the authors]: Transfer of learning is at the heart of social work training yet there has been very little exploration of what transfer of learning is and how it might be facilitated. From the perspective of literature review covering the fields of education, psychology, social work and nursing studies we examine the concept and process of transfer of learning. From a basic definition of 'prior learning affecting new learning or performance', we look at transfer of learning from the point of view of the learner, discussing the concept of the active learner striving to make connections between previous knowledge and new input. We look at cognitive models of learning which illuminate the transfer task-schema theory - the idea that knowledge is retained in the mind in terms of representations which are continually reconstructed according to new experience; and information processing theory which describes the active processes of generalization and abstraction through which such representations are reconstructed. We look at the importance of mindfulness, reflection and metacognitive awareness in the these processes. In conclusion we indicate ways in which transfer of learning may be facilitated in social work education. [ABSTRACT FROM AUTHOR]


ABSTRACT: Description of six learning patterns, all based on the way humans process auditory, visual, and kinaesthetic information. In The Open Mind Dr. Markova presents descriptions of each thinking pattern and teaches how to recognize them.
AVK - auditory smart, visually centered, kinaesthetically sensitive
AKV - auditory smart, kinaesthetically centered, visually sensitive
VAK - visually smart, auditory centered, kinaesthetically sensitive
VKA - auditory smart, kinaesthetically centered, auditory sensitive
KVA - kinaesthetically smart, visually centered, auditory sensitive
KAV - kinaesthetically smart, auditory centered, visually sensitive


ABSTRACT: We are on the cusp of a design revolution in business, says Dean Roger Martin. Competing is no longer about creating dominance in scale-intensive industries, it’s about producing elegant, refined products and services in imagination-intensive industries. As a result, he argues, business people don’t just need to understand designers better – they need to become designers.


ABSTRACT: Culture is often seen as the key inhibitor of effective knowledge sharing. A study of companies where sharing knowledge is built into the culture found that they did not change their culture to match their knowledge management initiatives. They adapted their approach to knowledge management to fit their culture. They did this by: linking sharing knowledge to solving practical business problems; tying sharing knowledge to a pre-existing core value; introducing knowledge management in a way that matches the
organization’s style; building on existing networks people use in their daily work; and encouraging peers and supervisors to exert pressure to share.


ABSTRACT: Robust scientific conclusions are too sparse to inform fully most of the choices that physicians must make about tests and treatments. Instead, ad hoc rules of thumb, or “heuristics,” must guide them, and many of these are problematic. Physicians extrapolate from the small samples studied by clinical trials to general populations, but they do so inconsistently. Many physicians live by rules that dictate “not treating the numbers,” correcting abnormalities slowly, achieving diagnostic certainty, and operating now to avoid “greater” risk in the future. Yet in each case, historical trends or statistical realities suggest either doing the opposite or investing in more discriminating heuristics. The heuristics of medicine should be discussed, criticized, refined, and then taught. More uniform use of explicit and better heuristics could lead to less practice variation and more efficient medical care.


ABSTRACT: There is an increasing recognition today that knowledge/intellectual capital is of greater significance to the success of a modern organization than physical capital.

ABSTRACT: Poliheuristic theory (PH) bridges the gap between cognitive and rational theories of decision making. PH postulates a two-stage decision process. During the first stage, the set of possible options is reduced by applying a non-compensatory principle to eliminate any alternative with an unacceptable return on a critical, typically political, decision dimension once the choice set has been reduced to alternatives that are acceptable to the decision maker, the process moves to a second stage, during which the decision maker uses more analytic processing in an attempt to minimize risks and maximize benefits. In this article, the author applies poliheuristic theory to individual, sequential, and interactive decision settings.


In his farewell address to the American people given in January 1953, President Truman referred to this concept very specifically in asserting that, "The President--whoever he is--has to decide. He cannot pass the buck to anybody. No one else can do the deciding for him. That is his job.


ABSTRACT: The problem for organizations is that reality keeps changing. This article explains the concept, processes and needs for strategic knowledge management (SKM),
which is about working within this continuously evolving reality and harnessing the
newest knowledge in the organization to continuously update strategies and business
plans. SKM is the deliberate selection and manipulation of different forms of knowledge
to create and implement successful and innovative strategies. The CEO's key role is to be
a masterful facilitator who can guide the organization through a continuous process of
strategic conversations that refocus the strategy on knowledge that is both current and
emergent. A leader managing a strategic conversation that constructs the rationale behind
the organization's SKM needs to understand and work across at least four types of
complementary innovating behaviors. These are: 1. creators, 2. implementors, 3.
stabilizers, and 4. navigators. SKM involves maintaining awareness of choices and
assumptions that can be manipulated to drive discontinuity.


ABSTRACT: General principles for user interface design. They are called "heuristics"
because they are more in the nature of rules of thumb than specific usability guidelines.

companies create dynamics of innovation), Oxford University Press.

ABSTRACT: According to the authors, "the success of Japanese companies is not due to
their manufacturing process; access to cheap capital; close and cooperative relationships
with customers, suppliers, and government agencies; or lifetime employment, seniority
system, and other human resources management practices....Instead, we make the claim
that Japanese companies have been successful because of their skills and expertise at
`organizational knowledge creation'. By organizational knowledge creation, we mean the capability of a company as a whole to create new knowledge, disseminate it throughout the organization, and embody it in products, services, and systems."


ABSTRACT: The authors assert that "there is no conclusion to managing knowledge and transferring best practices. It is a race without a finishing line." They are right, now and especially in years to come. In the concluding chapter, the authors share ten "Enduring Principles" which should inform and direct the formulation of any plan by which to manage knowledge and transfer best practices. During implementation of the plan, everyone involved must be willing and able to make whatever adjustments may be necessary.


ABSTRACT: Ong's book is a mix of small studies – one on Tudor rhetoric, another on primary vs. secondary orality, another on the pedagogy of Peter Ramus and his followers, a nice essay on Swift, quite a few on poetry, one is on orality, and the last on a ‘crisis in the humanities’ but they are all linked together.


ABSTRACT: The method used by Paul Strassmann, leading knowledge capital (KC)
consultant and former CIO, to determine a company's KC is discussed.


**ABSTRACT:** The presumably main goal of any empirical investigation is to reveal the association structure among the variables of concern and to interpret the associations in terms of causality. The latter, however, has been subject to numerous controversial debates, since there was and still is great doubt about the legitimacy of drawing causal conclusions from empirical results only.


**ABSTRACT** [by the author]: A recent conference in London addressed the issue of ‘Measuring Knowledge Value’. A series of presentations contributed to the ongoing debate on how the benefits of Knowledge Management can be evaluated and measured. In the current business climate, there is a growing need to spell out the concrete impact of knowledge projects on business performance. The conference showed once again that this is easier said than done.


**ABSTRACT:** Polanyi's conception of the tacit dimension provides a better understanding of what might be going when one applies tacit knowing in different situations. It is important to notice that Polanyi introduces the concept of "tacit knowing" and not "tacit
knowledge."


ABSTRACT: How to Solve is a small volume describing methods of problem solving. Pólya provides general heuristics for solving problems of all kinds, not only mathematical ones. The book includes advice for teaching students of mathematics and a mini-encyclopaedia of heuristic terms.

Popping, R. (2009). "Some views on agreement to be used on content analysis studies." Qual Quant.

ABSTRACT [by authors]: In content analysis studies texts might be coded three times or more, certainly in the training part. With respect to reliability several views on agreement can be used now, as these are found in the literature. These views are presented, and this is followed by a discussion resulting in the opinion that in research only one view, that of mean pairwise agreement, should be used.


ABSTRACT [by authors]: In recent years the expected utility model of choice under risk has been generalized to cope with phenomena such as probability weighting. In the present paper, one such generalized approach, the rank-dependent expected utility model, is applied to the problem of lottery gambling. The model is used to derive an optimal prize structure for lotteries, involving a few large prizes and a large number of small prizes. Other forms of gambling, such as racetrack betting, are discussed in the light of
this result.


ABSTRACT [by authors]: This research explores the appropriateness of the search paradigm as a framework for harvesting and mining information needed to make legal arguments. We discuss how we tackled the problem of evaluation of BankXX from both the case-based reasoning (CBR) and task-performance perspectives. In particular, we discuss how various system parameters- start node, evaluation function, resource limit-affected BankXX from the CBR perspective and how well BankXX performs its assigned task of gathering information useful for legal argumentation by running BankXX on real legal cases and comparing its output with the published court opinions for those cases.


ABSTRACT: Bolzano's presentation of logic is embedded in the vast body of the Theory of Science (henceforth TS). His logic is based on the abstract concepts of proposition in itself (an such) and idea in itself, which are both independent of thought and language. His logic of ideas contains a new treatment of their content and extension and, among other things, yields an analysis of ideas without objects. A purely logical definition of intuitions as simple singular ideas allowed Bolzano to distinguish them from concepts and to complete the traditional epistemological distinction between a priori and a posteriori by the logical distinction between conceptual and empirical propositions (and sciences). The main innovations of Bolzano's logic consist in the definitions of validity,
analyticity and logical truth and the creation of a complete system of extensional relations between propositions, the most important of these being compatibility, deducibility (= consequence), and equivalence. Bolzano discovered the link between deducibility and conditional probability, according to which deducibility and incompatibility appear as two limit cases of conditional probability (this idea was taken over or reinvented by Wittgenstein in the Tractatus). Deductive logic is thus extended to inductive logic based on probability. Bolzano's theory of the grounding relation leading to the hierarchical order of theorems is the first modern study of axiomatic systems. Moreover, the thorough discussions of concepts of logic and many other insights contribute to make the TS one of the classical works in logic and epistemology, on a par with those of Aristotle, Leibniz, and Frege. The extensive historical notes contained in it are a unique source for the history of logic. Although written in natural language, Bolzano's logic represents a decisive breakthrough in the development of modern logic.


ABSTRACT [by the authors]: This article examines and illustrates the use and interpretation of the kappa statistic in musculoskeletal research. The reliability of clinicians' ratings is an important consideration in areas such as diagnosis and the interpretation of examination findings. Often, these ratings lie on a nominal or an ordinal scale. For such data, the kappa coefficient is an appropriate measure of reliability. Kappa is defined, in both weighted and un-weighted forms, and its use is illustrated with examples from musculoskeletal research. Factors that can influence the magnitude of
kappa (prevalence, bias, and non-independent ratings) are discussed, and ways of evaluating the magnitude of an obtained kappa are considered. The issue of statistical testing of kappa is considered, including the use of confidence intervals, and appropriate sample sizes for reliability studies using kappa are tabulated. The article concludes with recommendations for the use and interpretation of kappa.

ABSTRACT: One of the most important laws of qualitative structure applying to physical symbol systems, computers and the human brain include: Because of the limits on their computing speeds and power, intelligent systems must use approximate methods to handle most tasks. Their rationality is bounded. Historically, human adaptiveness (that is to say, rationality) has preoccupied economists even more than psychologists. Modern mainstream economic theory bravely assumes that people make their decisions in such a way as to maximize their utility. Accepting this assumption enables economics to predict a great deal of behavior (correctly or incorrectly) without ever making empirical studies of human actors.

ABSTRACT [by the author]: This paper reports on an experiment that distinguishes between learning rules that produce substantively rational behavior in more situations and learning simple rules that do not. The experimental task is a simplification of many naturally occurring search problems. The experiment manipulates individual choice
problems such that simple rules produce substantively rational behavior in one condition but not in subsequent ones. Choice data indicate subjects may learn to use more rational rules since subjects successfully transfer what they learn in one condition to another. However, verbal protocols indicate subjects learn to selectively use simple rules in order to make more substantively rational choices.


ABSTRACT: The authors describe four functions of affect in decision making (as information, as a spotlight, as a motivator, and as common currency) . They also examine the role of arousal or specific emotions in decision making.


ABSTRACT [by the authors]: The Brief Implicit Association Test (BIAT) consists of two blocks of trials with the same four categories and stimulus-response mappings as the standard IAT, but with 1/3 the number of trials. Unlike the standard IAT, the BIAT focuses the subject on just two of each block’s four categories. Experiments 1 and 2 demonstrated that attitude BIATs had satisfactory validity when good (but not bad) was a focal category, and that identity IATs had satisfactory validity when self (but not other) was a focal category. Experiment 2 also showed that a good-focal attitude BIAT and a self-focal identity BIAT were psychometrically similar to standard IAT measures of the same constructs. Experiment 3 presented each of six BIATs twice, showing that
procedural variables had no more than minor influences on the resulting implicit measures. Experiment 4 further demonstrated successful use of the BIAT to measure implicit stereotypes. (PsycINFO Database Record (c) 2009 APA, all rights reserved) (from the journal abstract)


ABSTRACT: Canadian Annual Business Insolvency Rates by Province and Economic Region for the period of 2000-2008


ABSTRACT: The valuation of knowledge capital makes it possible to assess the worth of the people who possess the accumulated knowledge about an organization. They are the individuals who leave the workplace every night (and may never return), storing in their heads the know-how acquired while receiving full pay. Their brains are repositories of knowledge accumulated over untold hours of listening and talking while not delivering any goods or services to paying customers.


ABSTRACT: The Skandia Navigator and Balanced Scorecard both rely on subjective evaluations of corresponding indicators. Shortcomings of these methods become apparent
when you try to convince skeptical budget review committees why Knowledge Management deserves a hefty allocation. You may get encouragement but little money until you can produce evidence why KM is valuable as well as demonstrable.

Strassmann, P. A. (2006). What is the worth of an employee?

ABSTRACT: Lecture by P. Strassmann on the value of knowledge capital to a company.


ABSTRACT (by the author): When a choice must be made between simultaneously-available options, minimal information in the form of binary recognition (whether or not each time is recognized) can be used in the recognition heuristic to choose effectively. When options are encountered sequentially one at a time, minimal information as to whether or not each option is the best encountered so far is sufficient to guide agents using a simple search-cutoff rule to high performance along several choice criteria.


ABSTRACT: Discussion on modernity and post-modernity. Toulmin shows us just how far the the academic/social community will sacrifice truth and knowledge for certainty when social climates dictate it. Understanding this dynamic allows us to realize that times of crisis need not be resolved by a Quest for Certainty which operates on principles of timeless truths or single domain methods. As Toulmin constantly advises us, there are no
timeless methods which do not have an oppressive underbelly.


ABSTRACT [by author]: Because of the growing interest in and use of the concept mapping methodology, it is important to define rigorous and feasible standards of quality. This paper addresses the issue of the reliability of concept mapping. Six different reliability coefficients that can easily be estimated from the data typically available from any concept mapping project were defined and estimated for 38 different concept mapping projects. Results indicate that the concept mapping process can be considered reliable according to generally-recognized standards for acceptable reliability levels. It is recommended that the reliabilities estimated here be routinely reported with concept mapping project results.


ABSTRACT [by the author]: There is wide disagreement about the usefulness of kappa statistics to assess rater agreement. At the least, it can be said that (1) kappa statistics should not be viewed as the unequivocal standard or default way to quantify agreement; (2) one should be concerned about using a statistic that is the source of so much controversy; and (3) one should consider alternatives and make an informed choice.

ABSTRACT [by author]: The author presents several organization management tips.

The objective of organization is to set up relationships and procedures in which employees can obtain the best results from their combined efforts. Organizing consists of analyzing, identifying and defining the work to meet the company's goals. The procedure of organizing includes specifying how capital, machines, equipment, and people are most effectively used.


ABSTRACT [by the author]: This paper explores the relationship between operations research (OR) as practiced during the Second World War and the claims of many of its proponents that it constituted an application of scientific method. It begins with an examination of the pre-war work of two of the most notable leaders in wartime OR, the British experimental physicist Patrick Blackett and the American theoretical physicist Philip Morse. Despite differences in their scientific work, each saw science as an essentially creative act relying on the skill and judgment of the individual scientist in the deployment of rational methods for the development of legitimate conclusions. When scientists began to study military operations, their investigations were defined by the technically sophisticated heuristic practices already surrounding military planning. They did not seek to replace these practices with their own rational methods. Rather, they became scholars of the military's methods and adapted their pre-war experience by shifting their self-disciplined attitude to their own work to bodies of military knowledge. Thus scientists learned so well to navigate an alien heuristic system that investigations
they conducted within it took on the characteristics that they judged defined scientific work.


ABSTRACT [by the author] The transaction cost approach to the study of economic organization covers the transaction as the basic unit of analysis and considers transaction cost as central to the study of organizations. This approach applies both the determination of efficient boundaries between firms and markets, and to the organization of international transactions, including the design of employment relations. The approach is compared and contrasted with selected parts of organization theory literature.


ABSTRACT: This book is divided in three sections dealing with vision, manipulation and machine design. v. 1. Expert problem solving, natural language understanding, intelligent computer coaches, representation and learning -- v. 2. Understanding vision, manipulation, computer design, symbol manipulation. Each section contains chapters written by various MIT researchers. In general, each chapter describes recent (as of the original date of publication) MIT research in the particular areas. Each section also provides a nice overview and summary by the editors.

Young, R. and G. M. Mentzas (2001). "Knowledge asset management- strategy, processes and
ABSTRACT [by the authors]: Traditional approaches to knowledge management have centered around two distinct perspectives: that of knowledge as a product and knowledge as a process. Ron Young and Gregoris N. Mentzas believe that for a KM initiative to be truly effective, a fusion of the two approaches should be adopted. To this end, they describe the Knowledger project, one of the world’s first truly holistic and integrated knowledge management solutions.


ABSTRACT [by the author]: There have been suggestions that the unity of consciousness may be related to the kind of holism depicted only in quantum physics. This argument will be clarified and strengthened. It requires the brain to contain a quantum system with the right properties - a "Bose-Einstein condensate". It probably does contain one such system, as both theory and experiment have indicated. In fact, we cannot pay full attention to a quantum whole and its parts simultaneously, though we may oscillate between the two. In a quantum theory of consciousness, emergent meanings arise as an inevitable consequence of Heisenberg’s Uncertainty Principle.


ABSTRACT: Of main interest is the new method applied. In a number of aphorisms on knowledge and human understanding, the author presents principles of a new theory of knowledge, different from current theories based mainly on Immanuel Kant.