

Chapter 1.1

Risk, Risk Management and Safety

The purpose of this chapter is to outline some of the basic concepts dealing with risk and to layout the systems approach to how we think about risk management.

It would be exceedingly difficult to find a professional who is not familiar with risk management in the outdoor or adventure field, education or the not-for-profit sector. Indeed, risk management has been the buzz word in these quarters since the 1990s.

While the term “risk management” is linked to everything from falling rocks to insurance policies, the term is widely misapplied and misunderstood.

The root word “risk” causes the problems. Mainstream interpretation of this word would equate to something similar to “Risk: potential for loss”. This is not without argument, as there are dozens of formal definitions in print, and the word itself traces its history back to Plato’s time. What is missing from the mainstream interpretation is the flip side of the word; the potential for gain. For fields such as outdoor education and humanitarian organizations, this aspect is particularly important, to balance the potential for loss and for gain. Rather than wade into this philosophic and semantic debate, this book will simply consider risk as the potential for loss or gain.

Management, as a profession, is widely viewed as planning, organizing, directing and controlling.

Conceptually, risk management is about planning, organizing, directing and controlling uncertainty. However, every sector that uses the term risk management—be it finance, health care or aeronautics—has developed its own meaning. It has grown into something greater than its parts, carrying individual interpretation and bias.

RISK VS. UNCERTAINTY

The economist Frank Knight differentiated risk and uncertainty in the 1920s. Risk can be quantified absolutely with probability, while uncertainty has no calculable probability, he argued. The adventure and education field deals almost exclusively with uncertainty.

Risk
is the potential for loss or gain

The outdoor and adventure field is no different. Here too, risk management as a term, concept, field of study and practice has evolved.



Risk Management

a systems-based approach to sustainably managing uncertainty within an operating environment

The scope of risk management is large, encompassing seven key operating systems:

1. Organizational Planning System
2. Program Planning and Development System
3. Client Information System
4. Equipment Management System
5. Crisis Management System
6. Staffing and Human Resources System
7. Business Management System

Risk management looks outward to identify operational uncertainty and integrate it into the system's preventive, controlling or mitigating mechanisms to offset potential loss and support potential gain, all within limits tolerated by the organization.

Safety

the state of being safe; freedom from injury or loss

Frontline guides, instructors or field workers regularly confuse risk management with safety precautions. The act of insisting a client fastens her helmet strap is not risk management, nor is insisting tent guide lines be flagged to make them more visible. Both are good ideas because they contribute to safety—one of the guide's primary concerns. Indeed, in most situations, frontline guides and instructors have only limited interaction with risk management systems, but have extensive responsibility for client safety (Figure 1.1-1).

Figure 1.1-1 Safety as a Component of Risk Management



Upper management of adventure tourism operations or outdoor education programs often view risk management as steps by which to gain greater legal protection. However, insurance policies and waivers are only one small piece of only one of the seven systems within the systems-based risk management approach; the overall effectiveness of which the manager is responsible to plan, organize, lead and control.

Risk management is about systems. The creation, implementation and evaluation of the seven systems adventure operations rely upon is the key to systems-based risk management (see Figure 1.1-2). The planning process is the true value of risk management, for the planning process stacks the uncertainty toward potential gain, and focuses on prevention through robust and resilient systems.

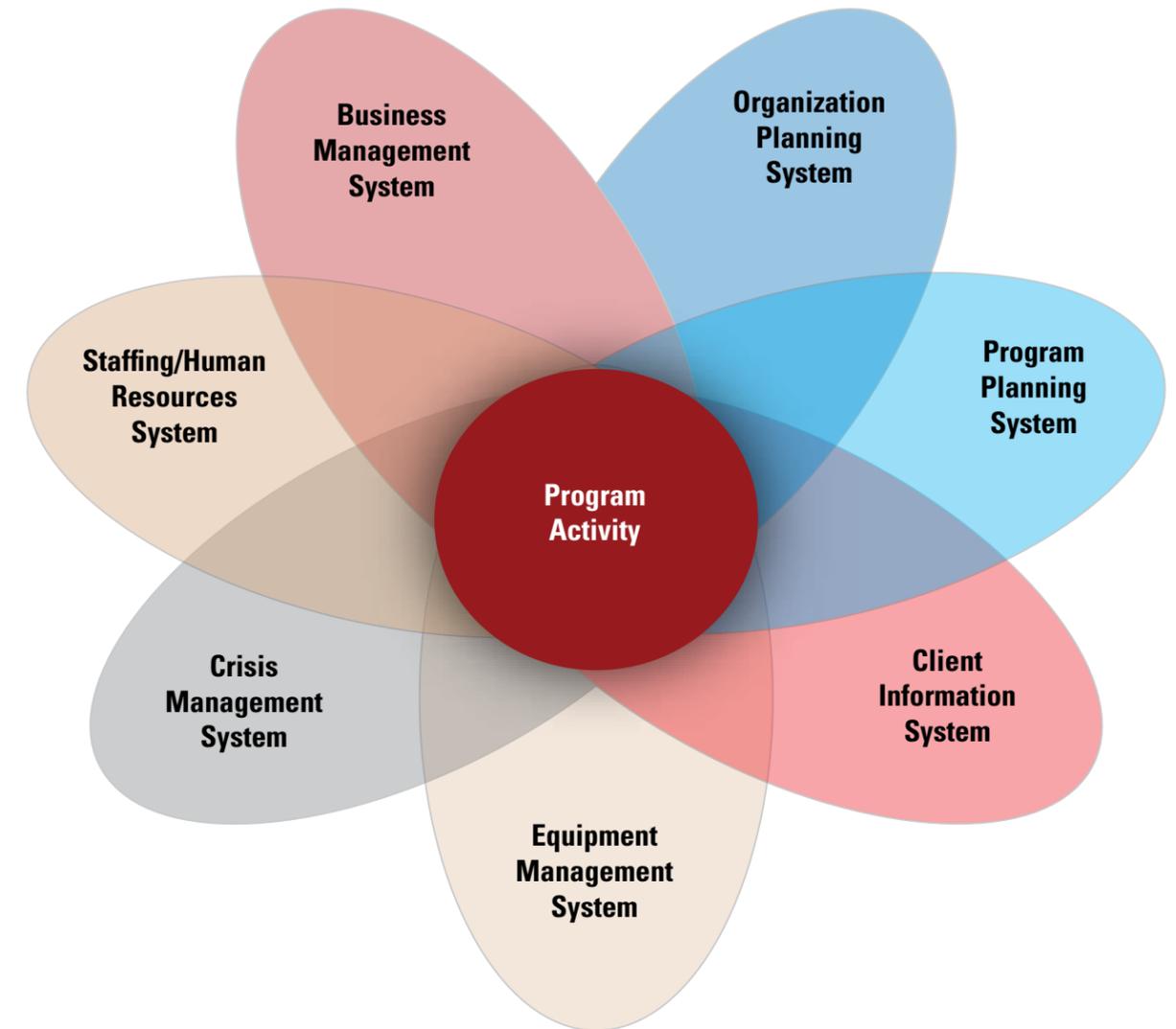
Traditional Risk Management Planning

Risk management planning has a long history, pioneered in the insurance and finance sectors, and adapted to a host of other industries. Traditional risk management planning involves:

1. Identifying the risk, uncertainty or the potential for loss or gain
2. Assessing the implications of the risk or uncertainty
3. Managing the outcome to minimize loss and maximize gain

The assumptions upon which this financial risk management model are based create issues the

Figure 1.1-2 The Seven Systems of Risk Management



further their application strays from their financial origins. The model is based on quantifiable probability—that the outcome can be known with varying degrees of certainty. Typically in finance, every chance of loss has an inverse relationship with the chance for gain, usually stated in dollars. The whole of insurance and finance is based upon this relationship. Armies of actuaries have the sole purpose of calculating probabilities with statistical confidence.

Operational risk management, on the other hand, has difficulty with this drive toward certainty. The

outdoor and adventure world, in particular, operates in a world quite different from that of the financial risk management model. While typical hazards are often obvious, the exposure level, probability of realization, and magnitude of loss (or gain) revolve around so many unquantifiable and subjective variables that risk becomes difficult to calculate.

Since outdoor risks cannot be reliably quantified, the default position is a subjective, complex, and highly individual sense known as risk tolerance.



Organizational Risk Tolerance

In his book *Target Risk*, Gerald Wilde explains that all individuals have a desired level of risk in their life, some position on the spectrum between absolute safety and absolute danger that they accept, and in fact seek (Wilde, 1994). He calls this risk homeostasis, and helps explain why some climbers seek out harder alpine climbs that are often exposed to avalanches or falling rock and ice while other highly skilled alpinists avoid the north faces and stick to ridge lines or even clip bolts at the crags. Individuals choose the level of risk to which they are willing to expose themselves to.

In other words, target risk involves an individual's decision making, risk tolerance and internal sense of balance between loss and benefit. For any given benefit, such as skiing an untracked slope, some are willing to accept the potential for great loss (such as an avalanche), while others will tolerate little to no potential for loss opting instead for less exposure in the trees.

There is much study of individual tolerance and tendencies toward risk, but risk tolerance has a different tone and gravity when applied to corporations, educational institutions, or commercial guiding operations.

Risk Tolerance

stated limits of the nature and magnitude of hazards and uncertainty to which an organization will expose its clients, staff and itself

Every organization has a certain risk tolerance, present in every single decision that is made. If not stated expressly, then it is buried deeply in the assumptions that underlie the organization's mission, values and history. These base-level assumptions may or may not be universally shared throughout the organization.

The first step in systems-based risk management is to put these founding assumptions on paper for

all to see. This is of most benefit to decision makers and frontline guides and instructors, as it creates goalposts for the game. It is also useful to share with clients, to frame expectations and help clients understand the risks they are about to undertake. As for the process of risk management, stating the mission is step one.

One of the basic models for organizing and understanding risk proposes that risk is a combination of hazards and exposure.

Risk = Hazard x Exposure

As such, then it can be the basis for understanding risk tolerance as a combination of hazards and exposure limits.

Risk Tolerance = Defined Hazards x Limits on Exposure

Choice is inherent in the idea of risk tolerance. An organization is not at the mercy of the environment in which it finds itself—it must choose where it will position itself, choose in what direction it will and will not go, choose the hazards it deems beneficial to confront, and choose the terms on which it will expose its clients, staff and self to particular uncertainty (risks). This can be applied to strategic business decisions, day-to-day business affairs, and programming decisions in the field. Risk tolerance gives an organization's decision makers the ability to act, and makes no assumptions about what must or must not happen.

Organizational risk tolerance has substantial ethical implications. Normal accident theory, proposed by Charles Perrow directly addresses this issue, and argues that risk tolerance is not about corporate culture—those articulated or imbedded assumptions—but about power (Perrow, 1999). Risk tolerance is about who gets to decide. Who gets to decide what hazards a program will willingly confront? Who gets to decide the exposure level? Rarely is it the clients. Often even the guides don't get to decide.

Adventure tourism in particular is implicitly based

on a caveat emptor/come at your own risk philosophy. Clients deciding on an active vacation rarely have the understanding to assume the hazards and exposure level an operator has imbedded in their programs.

Systems Thinking: Incorporating a New Paradigm

The classic example to illustrate systems thinking imagines a team of design engineers who want to improve the braking ability of a car. Traditional analysis would start with examining the brake shoe compound, the surface area of the brake rotors, the piston volume of the hydraulic pump, and so on; the system would be dismantled and examined for ways to improve it. Analysis takes a problem apart.

System

an organized and highly integrated arrangement of parts operating toward a specific goal

Systems thinking would start with questions such as: "What kind of road surface does the car travel on? Does the driver know how to use the brakes? How heavy is the car?" The braking ability of the car is considered within its environment—the problem is expanded to include all possible elements that may affect it. Rather than improving the brakes themselves (the analytical solution) braking could also be improved with better tires, slower driving speeds or driver training all of which are systems-based approaches to solving the same problem.

Systems thinking is not just about solving problems. It is a way of seeing the world as interconnected relationships, with cause and effect crossing traditional boundaries.

Common Elements in Complex Systems

Subsystems: Often called systems themselves. More complex systems have more subsystems, with higher levels of integration and sophistication.

Self-regulation: A complex system self-adjusts when one of the subsystems falters or fails. Truly sophisticated systems recognize and cover a subsystem failure seamlessly.

Feedback: Complex systems typically have built-in measurement, output, or feedback mechanisms to ensure that the subsystems are working properly. A car has warning lights on the dash, while large corporations measure productivity and have regular meetings to stay on target. Often, feedback comes in the form of the realization that something isn't working optimally, and that investigation is needed.

Dependent output: If one part of the greater system changes, the output will change. Consider a guide team, which would be a subsystem of an adventure company. If one of the three guides is replaced, the nature of what that group produces will be altered by the new person's skills and different interaction with the other two guides and the clients. This guide team's trip will alter slightly and will affect the overall system's output to some extent.

Affected by environment: Technically categorized as open systems, changes in the operating environment change the way the system works. Returning to the

continued on page 21



Systems Thinking

an approach by which to gain insight into a process by considering the interactions between components

Systems thinking creates a mental default position that always searches for the “integrated arrangement of parts” and considers their role in “operating toward a specific goal.”

Systems thinking is a means by which to organize complex processes—such as managing wilderness trips or outdoor education programs—and understanding the integrated nature of the many ingredients it takes to provide successful, quality programs.

•• Key Idea ••

The key to adventure risk management is understanding it as a system. Risk management is not something done as an afterthought or from the side of a desk. It is not just about checklists, first aid kits and waivers. These are parts of the system and it is the system we must keep our eyes focused on.

Equally important is an understanding that risk management is good business management. The seven systems of risk management are the same systems that run an operation, program or business in the adventure field. By managing the seven systems, a business is directed toward its specific goals. These individual systems are presented in detail in the following chapters.

Basic Features of a System

The word “system” can have many interpretations and could apply to such diverse things as river systems, monetary systems, or home entertainment systems. Regardless, all of these things have basic features in common (see sidebar on page 19-20).

Systems range from simple to complex. A zipper is a simple system; few parts, but highly integrated. Its simplicity is its basic interaction, few subsystems, ability to absorb error, and single purpose. A zipper system is made only of teeth that fit together tightly and a pull tab to seat them—two subsystems.

A combustion engine is a more complicated basic system. There are several subsystems such as fuel, electrical, and exhaust. Within each of those there are further sub-subsystems. If one of those subsystems malfunctions, the whole system falters, and the engine runs poorly or not at all.

The ultimate system in terms of complexity could be the federal government or the military. There are numerous levels of subsystems, each with different goals, needs and agendas. In order for it to work smoothly, there must be tremendous communication and coordination. Any one subsystem can alter the course of the task at hand by performing under par, missing a deadline, or politically influencing the outcome. Such a complex system is organic and continually in flux (unlike a zipper or an engine) and is equally influenced by the environment in which it interacts. Complex systems mimic nature in many ways. Re-read this paragraph and substitute the word “river” for “government”—while rivers don’t have deadlines, there are a myriad of factors that influence the behaviour of a river system at any one moment. It, too, is always evolving.

Risk Management and Systems Thinking

Risk management is a system incorporating seven key subsystems, each classified as a system in and of itself. While this is a straightforward concept, it is a leap to view risk management from the perspective of systems thinking. The adventure and outdoor industry’s current view of risk manage-

ment is the opposite of systems thinking. Seeing risk management through the eye of systems thinking is a true paradigm shift.

The business world has adopted systems thinking as a fundamental principle, and its benefits have become obvious over time. Systems thinking has proven to be an effective means of organizing and addressing the most difficult types of decisions or problems, be they dealing with the stock market or assessing avalanche conditions. It is particularly effective in decisions involving many complex variables or those affected by external (environmental) factors. Systems thinking can tackle recurring issues, communication or coordination challenges, and even for “ghostbusting” invisible problems—all of which are scenarios commonly faced by outdoor companies in their day-to-day operations.

Furthermore, this approach facilitates an environment where quality programs flow from the systems. The systems have built-in quality control parameters and adapt to new conditions seamlessly. This is known in business circles as organizational learning. As a program or company grows from a mere concept to a thriving concern with dollars and lives at stake, the addition of staff, logistics, finances and liability considerations necessitate systems to keep the organization on track. After all, the owner or manager can’t be everywhere or do everything once a program grows beyond a certain level.

Organizational Learning

the way an organization learns and adapts

Part 2 of this book provides a concrete means by which to identify systems and looks at each of the seven systems of outdoor adventure risk management planning. Part 3 offers a framework which integrates the seven systems into an existing program or organization, using systems as a management and performance tool.

continued from page 18

subsystem of a guide team, if the weather abruptly changes for the worse, the team will alter their original plan and continue on. Likewise, if the client group’s skill exceeds expectations, the guide team may revise the trip itinerary on the fly and seek a more challenging route. The opposite of an open system is the closed system; unaffected by its environment (a zipper, for example).

An open system disguised as a closed system would be the guide who has no back-up plan and will press on with the original plan in spite of severe changes to the environment.

Leverage points: All systems have key areas where small changes will have large impacts, and other areas that are more resistant to change. Leverage points are considered large impact areas, and one exists within every system and subsystem. For example, replacing a founding CEO or veteran guide will likely have a large impact and leave a gaping hole—these positions are leverage points. This concept is covered in great detail in Part 3: Implementing and Managing Systems.