

LECTURE TWENTY THREE: Risk Management

Remark: This lecture covers an overview of issues that are important in order to minimize risk and litigations in the professional life of an engineer. Perhaps the title of this lecture should read “Risk Management – Professional Liability for Engineers,” since we really are just touching the surface as far as the Risk Management concepts in business are concerned. However, that sub-area is under the umbrella of Risk Management, and we would like to maintain the above title for the sake of our overall mosaic of an engineering enterprise that is introduced in the summary of these lecture notes. As a part of this presentation, professional liability insurance is discussed, although the approach of seeking insurance is only a part of the solution for the overall Risk Management strategy.

Special thanks are due the following individuals. Ms. Deanna L. Dietrich, Esq., of the College of Engineering at the University of Wisconsin-Madison for bringing the special resource [1] to the attention of the author. Ms. Monica Adams of CNA insurance company, for proposing the above title initially, and putting the author in touch with experts in this area. As well as Mr. Richard B. Garber of Victor O. Schinnerer & Company, Inc. (<http://www.schinnerer.com>), who is a leading expert as pertains to “Risk Management – Professional Liability for Engineers,” and has made a major contribution to the following presentation and has provided us with [2].

Special Resources:

[1] *Lessons in Professional Liability: A notebook for design professionals*. (Formerly titled “Untangling the Web of Professional Liability,” by E.B. Howell and R.P. Howell). Monterey, CA: Design Professionals Insurance Company, Security Insurance Company of Hartford, The Connecticut Indemnity Company, 1980.

[2] The Risk Management Committee of the American Institute of Architects (AIA), and Professional Liability Committee of the Professional Engineers in Private Practice Division of the National Society of Professional Engineers (NSPE/PEPP), Richard B. Garber, Ed., *Understanding and Managing Risk: A Guide and Voluntary Education Program for Design Professionals, level 1 and level 2 student booklets*. Chevy Chase, MD: Victor O. Schinnerer & Company, Inc., 1998. [Periodically, this source is revised, but it is used as educational materials continuously. Its reading is a must for anyone interested to pursue this subject from technical point of view.]

Synopsis

Before presenting our discussions based on the literature from insurance and business societies, we give the following explanation of *risk* as control scientists know it. The author is specialized in theory of sensitivity and robustness in dynamic systems, which is a subset of control theory and applied mathematics, and has a lifetime interest in the theoretical foundation of this topic. Setting up the following optimization problem in its many variations and possibilities (deterministically or stochastically) forms the starting point for theoretical study of this subject as is well known to most control and optimization specialists.

- Given a specific dynamic system, find the control strategy, *per se*, that **minimizes the maximum error** resulting from a specific effect.

The reason we are presenting this “**MinMax**” optimization problem is to reemphasize that just as any such problem which can be set in a number of metrics (mathematical spaces) for measuring various objective functions as well as optimization strategies. To minimize a “Risk,” subject to a “maximum error,” or a “worse” condition scenario, we must define each of the corresponding variables with its own metric and parameters. Thus, one optimal solution in one setting may not be acceptable in all cases. Now, the structure of the lecture is clear. We start by defining possible risks, then present strategies to reduce or minimize its worse effects – on the financial well being of the interested parties – all from the business point of view.

Introduction

The following presentation covers the basic concepts of risk management, followed by some general remarks on managing the professional liability for engineers. This lecture note centers on presenting guidelines for the avoidance of some possible conflict resulting from not so much as technical aspects of the engineering profession, but rather from non-technical and human aspects of working as an engineer. We hope to elucidate these human aspects of working as an engineer and try to minimize or manage the corresponding and inevitable risks of this profession. All in all, a few good lessons for a productive life.

Concepts on Risk Management

The following materials closely follow the discussion in [2]. All projects are, essentially, investments – resources are allocated in the present in anticipation of favorable outcomes in uncertain futures. What is *risk* and how do we manage it?

The tenth edition of Webster's Collegiate Dictionary defines risk as "possibility of loss or injury." This definition reflects the most common way we view risk's potential materialization in a given situation – as a threat. However, for our purposes, we define risk simply and broadly as the ***probability of an unfavorable outcome***. Now, what is considered unfavorable is relative to what is expected. The ***distance*** between expectation and outcome is complex and often misunderstood. Here, is an excellent example of how quickly we may get into a quagmire. In the former sentence, we had the word distance, which is what we mean by a metric or a mathematical space. What is the best way to measure this distance? Just using the word complex is not going to answer that, although it flags trouble for us. Also, the term unfavorable is not well defined either. There are infinitely many ways to describe unfavorable, but again we are not going to press those issues herein. All in all, managing risk is a complex issue. It is a MinMax optimization of a dynamic problem, which is often multi-input, multi-output, non-deterministic and nonlinear. Fortunately, the conceptual framework for such a process exists and a number of tools have been developed to support the rational allocation and management of risk in project delivery [2].

Similarly, and before we discuss some technical concepts, Risk Management must be defined. According to [2], this is defined as ***the process of minimizing the probability and severity of an unfavorable outcome at the lowest long-term cost to the organization***. This process involves three interactive steps: Risk Analysis, Risk Response, and Risk Control.

A. Risk Analysis [2]

This topic entails a problem-seeking activity, which involves identifying the sources of risks applicable to the project, assessing their probable impact on the project, and creating a "short list" of the more problematic sources of risk for specific response. In theory, the sources of risk that could potentially impact a project are virtually infinite in number. In practice, the number of statistically significant sources of risk is relatively small. Once the probable sources of risk have been identified, a realistic assessment considers both the probability and potential severity of a given risk event. For example, some problems may occur infrequently, but when they do, the results can be catastrophic. Other problems may occur frequently, but their occurrence is of relatively minor consequence. Intuitively, these situations deserve different responses. Under a given set of circumstances, the ***magnitude*** of risk is a function of the probability of an unfavorable outcome and the severity of the consequences of that outcome.

B. Risk Response [2]

This step entails the following options: retaining and mitigating the risk; transferring it wholly or partially to another party; or avoiding it completely. It is unrealistic for design professional, or any other project stakeholder, to think that it is possible to avoid all risk. Careful planning to mitigate the risk that has been identified and retained is a good business practice. Currently, there is also much talk about “partnering.” Although, that term seems to have multiple meanings, the substance is generally the same. Partnering in its many forms is about communicating and working together to anticipate, identify, and solve problems as quickly as possible. Partnership is an attitude: it requires a commitment on the part of all those involved with the project – owner, design professionals, and contractors – to work toward a successful project and avoid adversarial relationships. A “partnered” project can pay dividends to all participants by reducing the probability of disputes. However, partnering cannot be expected to undo the damage done by an inequitable or inappropriate allocation of risk among project participants.

Another option available for management of risk is to transfer that wholly or partially to another party – say, through insurance or contract. Insurance should not be perceived as a “silver bullet” solution for the management of all risks. Contracts are another vehicle for transfer or allocation of risk. Unfortunately, contracts are a much-abused vehicle for risk transfer. Some clients of design professionals, and contractors, try to allocate all risk to other parties, which is unrealistic. It seems any given risk should be borne by the party best able to control the circumstances creating the risk and best able to insure against the risk. As a general rule, if a party has the power and authority to carry out its duties, it has the best opportunity to minimize the risk associated with those duties. Conversely, parties should not be allocated responsibilities over which they have no control. Sometimes design professionals should consider asking the client to retain or assume an equitable amount of risk. Many times, the real risk is not that the design professional will ultimately be held liable for problems that were not within his/her reasonable control. Rather, the risk is that he/she will be embroiled in litigation about problems that will prove to have been caused by others, but that will sap the time and money of the design professional. Many if not most professional liability claims are predicated, to some degree, on communication failure between the design professional and the client.

Two common ways of addressing these problems are: (1) indemnification, and (2) limitation of liability. These are two different but related concepts.

Indemnification occurs when one party agrees to pay for liabilities incurred by another party.

It is also possible, either alone or in conjunction with indemnification provisions, to negotiate a **limitation of liability** provision for inclusion in the professional services agreement. Under such a provision, one party agrees that it will not seek more than a limited amount of damages from the other party for certain actions or failures to act regardless of the actual amount of the damages. Such an agreement only binds the two parties who have agreed and does not limit a third party’s right or ability to recover damages that is due under the law. However, an indemnification in the design professional’s favor is not completely adequate for risk allocation or transfer mechanisms. Thus, avoid the risk as much as possible, even when one needs to pass a project.

C. Risk Control [2]

Risk control says that it is not enough to identify the sources of the risk applicable to the project, assess their probable impact, and develop specific response strategies. Those strategies must be implemented and monitored. Furthermore, during project execution, the design professional must analyze and respond to new sources of risk introduced by changed conditions or changes in the design professional’s scope of services. Effective control of risk will only be accomplished through continual risk management planning and replanning. Maintaining open and frequent communications and promptly responding to problems during project execution is also essential to the effective control of risk. Avoiding a client complaint or potential liability problem will not cause the problem to go away and, in most situations, will increase the probability of an unfavorable outcome for the design professional and exacerbate the situation.

Legal Liability of Design Professionals

Clearly, rigorous legal discussion is outside the scope of this lecture note and we strongly advise to consult with an attorney should you need one and have additional questions. Thus, the following remarks should be considered as some sort of general information rather than legal advice.

Professional liability consists of those obligations which are or will be legally enforceable, and that arise out of the performance of, or failure to perform, professional services by the design professional [2].

Experience teaches that legal claims against design professionals are usually based on the law of contracts or the law of torts. Torts are civil wrongs, i.e., violations of the personal, business, or property interests of private citizens.

Detailed written contracts for services are more prevalent between design professionals and their clients than in the case with practically any other profession.

As an engineer, whether you are self-employed or work for an organization, you must reduce your vulnerability to any kind of litigation, because even an unfounded lawsuit can damage your reputation and financial well being. The root cause of most misunderstanding is in miscommunication. One must try to minimize that by avoiding failure in interpersonal relationships. It is always to the best interest of all parties involved to avoid litigation, though is not completely avoidable. The insurance policies issued for various forms of professional liability are the last resorts to minimize loss resulting from professional liability, but certainly not the best recourse.

Although professionalism brings respect to our judgments and decisions, we should protect ourselves against possible allegations through some sort of insurance policies, depending on specifics of our activities. For instance, many of us may benefit from a policy on **errors and omissions**. In general, most clients show some understanding and forgiveness when we are conducting ourselves in professional manner. But they may not forgive us always and we should not put our guard down and stop protecting ourselves. All engineers are highly vulnerable to claims from clients, because human nature is very complex and unpredictable. One must be above reproach in every aspect of his/her dealings with clients. However, do not rely on anyone, things change in a blink of an eye. In the following we present some points of views on the importance and procedures of effective communications, contractual words and phrases and other similar practices in order to minimize disputes.

Effective Communication

It is the nature of engineering profession to work as a team comprising diverse personalities from a host of people from around the world. We need to communicate and interface with these people to resolve inevitable conflicts. There is no global set of acceptable rules to define the protocol of proper communicating or etiquette. People from certain parts of the world are more sensitive to certain gestures or ways of communicating than others. Perhaps the best way to open up a dialog is to build trust and there is one magical word, which will do that miracle quite often. That word is the simple first hello, which helps to open the needed trust.

A large number of lawsuits are brought against engineers not for the quality of their technical work, but rather because of the lack of trust and deterioration of personal relationship between engineers and their clients. Particularly, when the initial disputes are not properly handled. These simple and perhaps forgivable

errors are then accumulated to bring the relationships to the meltdown stage. As an engineer we need to anticipate and prepare ourselves to deal with possible misunderstanding with our clients. As stated before – engineering is truly a global profession, and one must realize that logics, habits and traits are not globally uniform. Prejudices exist and a simple misunderstanding may snowball itself into many years of litigation. Thus, do whatever it takes to prepare working with all sorts of people. It is a well-known fact among psychologists that most science-based professionals lack sufficient interest in people-oriented vocations. When they are forced to work together the stress comes into surface. Interpersonal skills are critical in dealing effectively with others and this course, we hope to think, has served this purpose to some extent. Effective technical writing that we have emphasized in this course is helpful, but we still need to be effective in our presentation and verbal communication. Words we use quite innocently to describe a situation may have different effects on our audience, because first of all many words have different and often contradictory meanings and we must be certain to convey the right meaning. Secondly, our presentation and body language may give different meaning to a word from the intended written document. Thus, do not assume that you have reached a common understanding with your clients unless they say so. One will be surprised how often these misunderstandings exist without anyone knowing about them.

Contractual Words and Phrases

In almost every country what finally stands in the court of law is a signed contract and even that the corresponding judge may interpret the clauses in the contract his/her way. In setting up a contract do not use extreme words, or words with multiple meanings, or promising words. These types of words leave room for interpretation and therefore encourage litigations. Avoid using dangerous words as much as possible. For instance, consider the following statement.

We complete our task with the best possible final outcome that covers all facets of this job such that each and every one of its components is in full compliance with all applicable standards of excellence now and in the foreseeable future.

This blank check kills indiscriminately its author and/or signatory. No matter how we look at this sentence, we have dug ourselves deeper and deeper into a situation that can become a nightmare. Thus, modify those clauses in a contract that may become troublesome in a possible court proceeding. Sometimes we may entangle ourselves in our own optimism and use promising words that later add to our risk. These promising words should be curtailed as much as possible. Be pragmatic and anticipate court hearings – thus choose words in a contract very carefully. Ask for expert help.

Do not leave behind a sloppy paper trail that can haunt you. Read the contract before signing and get all your responsibilities in writing. Ask others (at least two) to read your contract/writing and give you feedback before releasing. Especially ask people with experience to read and evaluate critical words used in a contract. There are at least four advantages to being careful about using proper words.

- When you establish yourself as a careful and meticulous reader (first step before good writing is good reading), the people who work with you pay more attention in their correspondence with you.
- When you say what you mean, you eliminate ambiguities and that puts all people around you on notice. If a word creates ambiguities and problems, avoid using it altogether.
- When you write correctly and pay particular attention to basic grammar and spelling, you eliminate errors and portray yourself consistently as a professional.
- The above conduct reduces the risk of defamation suits involving libel or slander and possible technical ambiguities.

Drawing symbols and legends, which are part of a contract should be prepared within the standard of the discipline or explained as clearly as possible to avoid any future misunderstanding. Keep track of symbols, abbreviations and acronyms – particularly in drawings. This way you make the job of other people easier and that is always welcomed.

One area that often leads to litigation is giving an estimate for a task. The client always assumes that estimate means the maximum cost under the worse scenario. Thus, instead of using the word estimate, say “projected minimum cost, which, in our opinion, represents only that, the minimum cost, and the actual cost may be more than the projected.” Ask an expert to draft your contract, it pays in the long run.

Conference Discussions

When meeting your clients, be well prepared and keep a complete log of your conference discussions. Send a confirmation and letter of understanding to the client in order to avoid any possible miscommunication. A progress report after that meeting also helps to keep the good faith between you and your client.

Behavior under Stress

It is a well-known fact that people do not function effectively under stress and that may add to creation of risk and subsequent litigation. Avoid decision-making under stress. Being able to control one's stressful condition avoids further escalating of crises. Here are a few suggestions to calm the situation when under stress and thus minimize risk of future litigation.

- (1) Remain calm and collected no matter what – remember things can get even worse than this situation.
- (2) Do not blame yourself nor assume any guilt – remember you have done as best as you can.
- (3) Do not withdraw – remember to quit communicating will not help, always face your adversary.
- (4) Ask a confidant to evaluate the situation for you and really sort things out – remember there are experts whose jobs are being intermediaries.
- (5) Face your adversary with documents and facts – remember there is always a chance that your adversary also had a bad day and cannot recall all earlier agreements with you.
- (6) Remain flexible to alternative solution – remember you may avoid litigation by making some minor changes. “Half a loaf is better than no loaf.”
- (7) Try to seek mediation by getting help from experts and avoiding expensive litigation through the court systems that are often overworked and biased. There are procedures on seeking help from either *mediation*, which is a sophisticated form of negotiation, made a powerful tool by the participation of a third party called a *mediator*, who facilitates the discussion between you and your adversary. Or *arbitration*, which is less costly, but possibly more efficient and fair than litigation. The legal structures of these tools are described in law books of different States. Your counsel can describe and advise you should a need arises.

There are many other ways of resolving a conflict, but in the final analysis the best approach is not having one. Conflict resolution, in whatever shape and form, must avoid the ravaging effects of a professional liability lawsuit. Early resolution of any professional conflict is always beneficial. However, when facing the inevitable, make every effort to settle as soon as possible with the help of your professional liability carrier. Judges and other legal professionals may not have taken any engineering course, and certainly they do not think like engineers – remember that! What we have covered thus far are warnings on how to minimize conflict with clients. These are just the tips of the icebergs. There are many more issues to cover that are beyond the scope of this lecture note.

Finally, we particularly warn you to watch out for various contracts that you will be asked to sign when starting a new job. Do not sign any contract – as much as you may love the job – until you have asked a counsel to read it through. Remember, as much as you may want and need the job – so does your employer who needs to fill the vacancy. Take your time and read all papers in your own time and at your own convenience. Big corporations may try to protect their future liabilities by your involvement. So should you – protect yourself by not making a hasty decision under stress.

Recruitment

Although you may not be in a position to hire anyone soon, you need to realize that best organizations treat their new employees very special – not necessarily because they want to – but because in the long run it is to their best interests. The main purpose of this section is to emphasize the other side of the coin and thus teach you a few lessons of life in reverse order!

Hiring staff is a three-step process, whether you do it or it has been done for you. Those are as follows.

- (1) Describe the position as accurately as possible.
- (2) Find a pool of qualified candidates to meet the job description.
- (3) Hire the most qualified person for the job – irrespective of all other possible factors. Remain objective!

Good organizations plan their hiring well in advance, and provide a good orientation seminar for new employees. However, on many occasions these are done at the last minute with little or no preparation to orient the new employees. If that has been your experience in your current job – try to watch for possible risks that are possibly awaiting you, as the result of a sloppy corporate culture. If you are not getting what you were promised – get out as fast as you can. Similarly when you are supervising someone, be aware that if you do not deliver what you have promised you have an unhappy employee who may cause you a professional liability. There is a Persian saying that do not abuse the trust that has been vested on you on the assumption that you are dealing with your friends, because the person that you abused will not remain your friend. Treat people who work with you as nice as you want to be treated yourself – otherwise they will not maintain loyalty towards you.

From time to time, the author sees certain people or organizations boast about their hiring style. In the following we go to the source and express one famous policy to hire staff that is attributed to Dean Everitt's approach (Dean Everitt served University of Illinois at Urbana, College of Engineering). According to Dean Everitt's – the role of the principal person who hires is to locate the most brilliant and creative people that can be found, and provide them with all the necessary resources, then will get out of their way and cheer their successes.

There is also this golden rule of the American business procedure that is practiced by the best in the field continuously. A first-rate person (company) hires a first-rate person, but a second-rate person (company) hires a third- or a fourth-rate person, because a second-rate person does not even want to have someone with capabilities beyond his/hers on the staff.

We hope the above thoughts have given you a good platform to sort the status of your career (when you will start hopefully soon), by reversing the hiring procedures that you went through and realizing where are you standing.

Business Procedures

This is really the heart of your situation, and a major area of discussion. To avoid professional liability, and minimizing your risk, you must conduct your business within the proper standard of State and other local laws and practices. This must be done such that it minimizes the litigation and will provide compliance with the laws. Ask professional accountants and public relation managers to assist you with your business plan. Never ask a relative to do this part for you, especially when you are starting up.

Technical Procedures

Every task comes with a set of specifications, which is the main source of professional liability claims. Try to write your specifications in the contract as clearly as possible – then deliver. Insurance companies issue policies on “Errors and Omissions,” but you must be as specific as you possibly can in your contract without leaving out any detail. You should prepare a list of all you need to deliver as a part of your task contract. Recall that the potential for errors and omissions is always present. Therefore to have a good minimum insurance policy gives you a safety net. But the best safety net is your mutual working relationship with your client and your overall attitude of facing a conflict.

Insurance

Professional liability and risk management culminates in an insurance policy that must be set up to meet the major professional liability and possible lawsuits. Many insurance companies issue such policies and often those documents are not easy to understand. The insurance concepts are often complicated. Thus, we must seek help from our broker or the underwriting agent. One needs to know, however, what is the best coverage for the type of the work that one conducts, irrespective of who pays the premium. One must also know how to maintain the premium at a reasonable level, in other words, one will not put the firm under risk of paying more for premiums than it should. In certain instances, one may lose his/her job if the insurance cost exceeds a certain level, even if the employee has not created an actual liability. Thus, it is important to know a few insurance concepts. The following discussion is not complete as far as the insurance industry is concerned, but it is sufficiently generic that it may serve as a good starting point to learn about these topics.

Insurance policies are not easy to comprehend, but every engineer must be cognizant of the contents of his/her professional insurance policy. One needs to know what clauses are in the policy and what they mean. In other words, ***one must know which activities are insured and which are not***. Similarly, which activity may increase liabilities and thus add risk to the firm. This information is important also for selecting projects. That means, one will not accept a job if the risk is larger than one can afford. Thus, we must look at the insurance policy as the boundaries of our activities. Also, one must know well that buying an insurance policy is not a science, thus one must shop around for the best coverage at the least price.

There are two categories in most coverage policies: (1) “claims-made;” and (2) “expense within the limit” [1]. In recent policies these names are slightly changed, but the following introductory concepts remain intact. The claims-made policy covers only those claims that are reported to the insurance company during the term of the policy. When the term expires the liabilities expired as well. Policies based on indemnification, however, will pay for tortious actions committed during the policy term even if discovered after the policy expired. The expense within the limit policy is a provision that limits the cost of allocated claims expenses during the term of the policy. Claims-made policies are defined differently by different insurance companies. For instance, “some policies define claims as knowledge of circumstances, which could reasonably be expected to lead to a demand for money or services. Other policies define a claim as a demand for money and services [1]. The second definition means that even though you know someone is likely to ask you for money or services in connection with problems on a project you have worked on, it is not considered a claim until the person actually makes the demand” [1].

“If your policy has the second, and narrower, definition of claims it is important ***not*** to change underwriters if you know of circumstances that could lead to a claim. If you do, it could lead to loss of your insurance coverage for that incident, because a new insurer always asks about situations for which “you have knowledge” which could lead to a claim. You must wait until either the dispute develops to the point where there is a demand, or you can safely conclude that circumstance will not produce a claim” [1].

“A claims-made policy can, and usually does, apply to claims arising from negligent acts, errors or omissions committed prior to the inception date of the policy. This is called “prior acts coverage.” The prior acts coverage usually begin on a specific date, called “retroactive dates,” and extends to the inception date of your policy. Claims made for negligent acts errors or omissions committed prior to the “retroactive date” will not be covered. Some claims-made policies provide “discovery periods,” which allow the reporting of claims after expiration of the policy if such claims are for negligent acts, errors or omissions committed during or prior to the policy period” [1]. ***Each policy is different, it is however important that one buys professional liability insurance continuously to cover both current activity and prior acts completely.***

Expense within the limit policies puts limit on liability that includes most expenses (legal included) and all losses or settlements paid for all claims made under the term of a policy. Thus, if the overall cost exceeds the limit, then that becomes the responsibility of the policyholder. Therefore claims management that avoids unnecessary legal expenses becomes very critical in this approach and should be considered at the outset.

Partial List of Essential Issues Not Included

The lecture note does not address a number of essential risk management processes in project delivery such as pre-project planning, scope management, contract administration, *etc.*. An excellent overview of risk management processes and terms is contained in Chapter 11 of “A Guide to the Project Management Body of Knowledge,” which was published by the Project Management Institute, Four Campus Boulevard, Newtown Square, PA 19073-3299, in 1996.

The legal context of professional practice and project delivery is not addressed. A basic understanding of the sources of duty – tort law, statute law, and contract law – is essential to understanding the applicability of insurance in managing risk. Tort negligence is not addressed herein, but is the trigger for professional liability coverage. For additional information refer to Module 1-2 of [2].

The discussion on professional liability insurance is not complete. For more information refer to CNA's Professional Liability and Pollution Incident Liability Insurance Policy, and other pertinent literature, for instance, Module 2-3 of [2].

We close this section with full understanding that what we have covered in this lecture note may serve only to raise the interests of our students in these highly technical matters. There are many other equally important issues in this vast area of risk management, such as bidding, worker compensation insurance, which have not been looked at even briefly.

Final Thought

Insurance policies have two major sets of provisions, which can be categorized into **“insured”** and **“not insured.”** The coverage agreement of a typical policy specifies conditions under which the insurance company will indemnify the insured – that is you or your firm. This is due errors, omissions or negligent acts. Thus, the insurance company is at risk on your behalf for damages resulting from your acts. The insurance company may choose to litigate, but often they settle to minimize cost. Professional liability insurers will not insure activity that they cannot measure or quantify. They also shy away from claims that are contrary to the public policy or opinion.

There are also **“exclusions”** sections in a professional liability policy that limits or exclude insurance liability for certain activities. One must negotiate on the scope of exclusion with the underwriters. Insurance companies have their own personnel who evaluate their risk in selling various policies for different professional activities. The key issue is to know what is or is not covered in a given policy.

Make sure that you understand “who is insured,” where is insured,” and “when is insured?” In other words, is it you, the firm, or any other legal entity that is insured. The place that insurance applies also must be specified. For instance, if someone uses your product in a foreign country, then does insurance cover liability outside of the United States. One must also know that insurance lapses may create problems, so do change of underwriters. Be aware of the time line (before and after) of a policy.

Finally, whatever you wish to do in your life, do it with utmost care and diligence and rely on no one but only on yourself, which is your best protection and the greatest insurance policy. However, you still need a safety net. **Thus, read and learn your insurance policy thoroughly.**

Closure

The class ends with a great anticipation of the forthcoming design presentation to incorporate all these ideas in that final event and the final course report.

Essential thoughts in this lecture

Issues.	Applicability to your project, if any.
Is your project an asset or a liability?	Analyze as these issues pertain to your case.
Do you want to add anything else?	Please elaborate.