

Engineering is the process of developing an efficient mechanism which quickens and eases the work using limited resources, with the help of technology. Ethics are the principles accepted by the society, which also equate to the moral standards of human beings. An engineer with ethics, can help the society in a better way.

Hence the study of Engineering ethics, where such ethics are implemented in engineering by the engineers, is necessary for the good of the society. Engineering Ethics is the study of decisions, policies and values that are morally desirable in engineering practice and research.

Morals

The word "Morality" originates from the Latin word "mos" meaning "custom". Morals are the principles or habits with respect to right or wrong of one's own conduct. They are not imposed by anyone. Morals are what you think is good and bad personally.

Though morals are not imposed, they can be understood as the preaching of our inner self. Depending on a few factors, our mind filters things as good or bad. These are the ideas that help frame our personality so that we can distinguish between what is right and what is wrong.

A moral is the code of conduct that you develop over time and set for yourself to follow, just like

- Being good to everyone
- Speaking only the truth
- Going against what you know is wrong
- Having chastity
- Avoid cheating
- Being a nice human being etc.

Morals are always defined by one's own personality. Morals can be changed according to one's beliefs as they are completely dependent on one's perception towards the ethical values.

Ethics

The word "Ethics" originates from the Greek word "ethos" meaning "character". Ethics are a set of rules or principles that are generally considered as standards or good and bad or right and wrong, which are usually imposed by an external group or a society or a profession or so.

Ethics can be understood as the rules of conduct proposed by a society or recognized with respect to a particular class of human actions or a particular group or culture. Ethics are dependent on others definition. They may or may not vary from context to context.



A person who strictly follows a set of ethical principles, may not have any moral at all while a person who violates ethical principles at times, may maintain a high moral integrity. The ethical theories include duty ethics, right ethics, virtue ethics and so on. A best example that can explain ethics is utilitarianism.

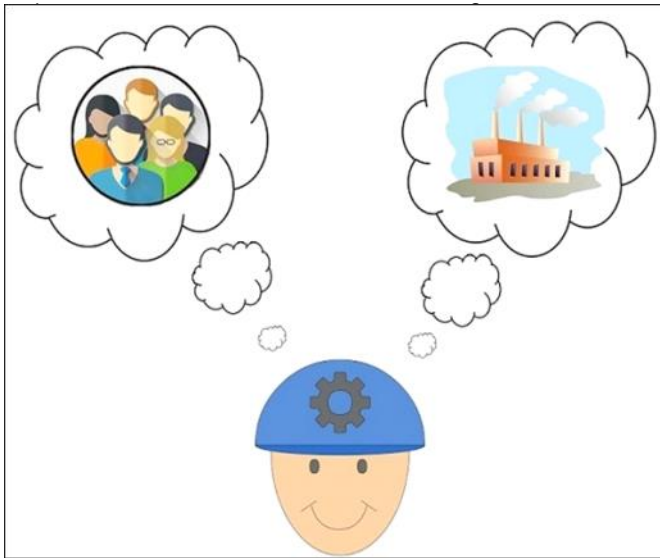
Utilitarianism is the philosophy which explains that the happiness or pleasure of a greatest number of people in the society is considered as the greatest good. According to this philosophy, an action is morally right if its consequences leads to happiness of the people and wrong if the action leads to their unhappiness. This theory moves beyond the scope of one's own interests and takes into account the interests of others.

Ethics in Engineering

Ethics are principles followed depending upon the moral responsibility that a person feels. The study of related questions about moral ideals, character, policies and relationships of people and organizations involved in technological activity, can be termed as Engineering ethics.

An engineer whether he works individually or works for a company, has to go through some ethical issues, mostly under the conditions such as, conceptualization of a product, issues arising in design and testing departments, or may be on the issues involving the manufacturing, sales and services. Questions related to morality also arise during supervision and team works.

The ethical decisions and moral values of an engineer need to be considered because the decisions of an engineer have an impact the products and services - how safe they are to use, the company and its shareholders who believe in the goodwill of the company, the public and the society who trusts the company regarding the benefits of the people, the law which cares about how legislation affects the profession and industry, the job and his moral responsibilities and about how the environment gets affected, etc.



Not only an engineer, but everyone has to follow a set of morals in order to keep away from getting morally degraded. Our behavior should include the following –

- Respecting others and ourselves.
- Respecting the rights of others.
- Keeping promises.
- Avoiding unnecessary problems to others.
- Avoiding cheating and dishonesty.
- Showing gratitude towards others and encourage them to work.

Morality commands respect for persons, both others and ourselves. It involves being fair and just, meeting obligations and respecting rights and not causing unnecessary harm by dishonesty and cruelty or by hubris.

Steps to Deal with Issues

Whenever there occurs an issue, one should possess a few skills in order to sort out the problem. The issues that engineers face, have to be dealt with patience and few moral goals have to be kept in mind while dealing with such issues. They are as follows –

- Moral Awareness – One should be able to recognize the moral problems and issues that occur in Engineering. The analysis on the problem is necessary in order to differentiate and judge according to ethics or according to the rules to follow.
- Cogent Moral Reasoning – In order to come to a conclusion on an issue, the argument has to be assessed and comprehended. The argument on both sides has to be considered with all the probabilities and the nature of the argument should be logical and moral.
- Moral Coherence – After having gone through all the logical and moral facts, consistent and comprehensive view points are to be formed based upon a consideration of relevant facts.
- Moral Imagination – The moral issues and the practical issues have to be dealt separately. Alternative responses are to be found out for dealing with moral issues while creative solutions should be found out for practical difficulties.
- Moral Communication – The language to communicate about one's moral views should be so precise and clear, that the expression or words should not alter the original meaning.

Though one has all these moral goals, the ethical reasoning for achieving moral conduct with responsibility and commitment is obtained by a few skills that are described below.

Important Skills for Ethical Reasoning

Let us now discuss the important skills for ethical reasoning –

- Moral Reasonableness – The ability and willingness to be morally reasonable that one should have while dealing such issues. Unless one is willing and improve such ability, justice cannot be done.
- Respect for Persons – The persons involved in the issue, should be treated with genuine concern by one. Such concern should also be there with oneself along with being there for others.
- Tolerance of diversity – One should have a broader perspective towards ethnic and religious differences that the people have. Every person differs with another when compared on grounds of moral reasoning. The acceptance of those differences is really important.
- Moral hope – The moral conflicts can be resolved by using better communication and having rational dialogue which is evident-based and open-ended which is acceptable and appreciable by both the parties.
- Integrity – The moral integrity has to be maintained. Being honest and having strong moral principles helps one to resolve an issue in an efficient manner. An individual also needs to consider other's professional life and personal convictions while solving a problem.

A moral issue can be understood as an issue to be resolved not only by considering the technical stuff but also by keeping moral values in mind. To be more precise, let us consider the definition in general.

"Moral issue is a working definition of an issue of moral concern is presented as any issue with the potential to help or harm anyone, including oneself."

Types of Moral Issues

There are mainly two types of Moral issues that we mostly come across while keeping the ethical aspects in mind to respond. They are –

Micro-ethics

This approach stresses more on the problems that occur on a daily basis in the field of engineering and its practice by engineers.

Macro-ethics

This approach deals with social problems which are unknown. However, these problems may unexpectedly face the heat at both regional and national levels.

Examples

Let us now understand a few examples related to moral issues.

Example 1

After a recent collapse of a structure in which many people died, an Engineer came to know about a bridge which is marginally safe. He informed his superior who asked him to stay calm and not to discuss with anyone, while waiting for the next year budget sessions to get some financial help for the repair required. What should the engineer do?

Example 2

What should an Engineer who observes his colleague copying confidential information unauthorized, do immediately? If he chooses to stop his friend, what if this gets repeated without his notice? If he chooses to report the management, what if his friend loses the job? Which is morally correct?

Example 3

An engineer who develops a proto-type for the project, loses it due to a mishap exactly the day before the submission. Is it morally correct to outsource the prototype of the project and reduce the risks of job insecurity? What should he do?

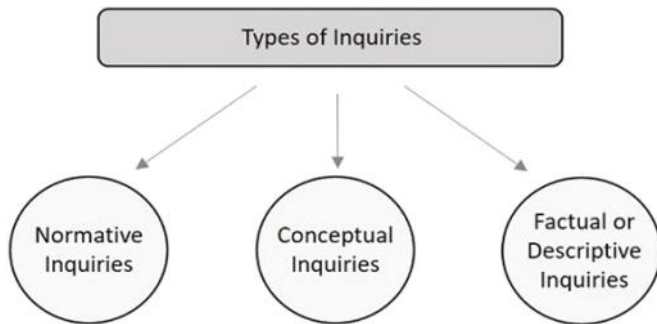
These are the few examples just to understand the kind of moral dilemmas. There might be one or more correct answers at times. There can be some other way around to deal with the issue, which one can't easily notice. However, the decisions have to be made by following a slow and clear process in order to avoid further problems and also to solve this in a manner that leads to no regrets.

Types of Inquiries

The issues can be resolved by following an investigation procedure, step by step in order to have a clear understanding towards the issue. Here we have three different types of inquiries.

Judging the issues has to be followed by a systematic procedure to avoid any flaws. Engineering ethics involves investigations into values, meanings and facts. Following are the different types of inquiries made for this.

- Normative inquiries
- Conceptual inquiries
- Factual or descriptive inquiries



Normative Inquiries

Normative Inquiry refers to the description that describes what one ought to do under a specific circumstance. This is the expected ideal response, which might differ from what one believes to be right or wrong.

This list identifies and justifies the morally desirable nature for guiding individuals or groups. This includes the responsibility of engineers to protect the public safety and how they should respond under such dangerous practices. Normative inquiries also quote the laws and procedures that affect the engineering practice on moral grounds. They refer to the thought process where the moral rights are to be implemented in order to fulfill their professional obligations.

Conceptual Inquiries

Conceptual Inquiry refers to the description of the meaning of concepts, principles and issues related to engineering ethics. The ethics that an engineer should possess to protect the safety, health and welfare of the public, etc. are described under conceptual inquiries.

It describes what safety is and mentions the marginal issues of safety along with the precautions an engineer should take to avoid risk. Conceptual inquiries mention the moral aspects of bribery and how its effects, along with the professional ethics and professionalism.

Factual and Descriptive Inquiries

Factual Inquiry or the descriptive inquiry help to provide the facts for understanding and finding solutions to the value based issues. The engineer has to conduct factual inquiries by using scientific techniques.

This helps in providing the information regarding the business realities such as engineering practice, history of engineering profession, the effectiveness of professional societies, the procedures to be adopted when assessing risks and psychological profiles of engineers.

Let us now go through the concept of Moral dilemma that a person faces when confronted with a situation.

WEEK 3

Tuesday, October 26, 2021 9:56 AM

Ethics is that branch of philosophy that deals with morality. An engineer with ethics is a person who is expected to possess the moral integrity with rich ethical values. The ethics are mainly divided into two categories depending upon the morality of humanity. They are –

Consequential Ethics

The Consequential ethics are values the outcome of which determine the **morality behind a particular action**. A lie which saves a life, comes under this.

Non-consequential Ethics

The non-consequential ethics are values followed where the source of **morality comes from the standard values**. The moral law which states that a lie is a lie, and shouldn't be done, though it ends in a good deed can be taken as an example of non-consequential ethics.

Types of Ethical Theories

Depending upon the ethics a person is intended to follow, four theories were postulated by four different philosophers. These theories help to create the fundamentals of obligation suitable and applicable to professional and personal conduct of a person in his everyday life.



Let us discuss each theory in detail.

Golden Mean

The Golden Mean ethical theory was proposed by Aristotle. According to this theory, **the solution to a problem is found by analyzing the reason and the logic**. A "Mean value of solution" which will be between the extremes of excess and deficiency.

For example, the solution to the problem of environment pollution is neither by avoiding industrialization and civilization, nor by neglecting the environment completely. A mean solution that will work towards controlling the pollution and protecting the environment will also help.

Problem in Application

The application of this theory varies from one person to another with their powers of reasoning and the difficulty in applying the theory to ethical problems.

What is Golden Mean?

The Golden Mean virtue can be understood as the virtue of reaching a proper balance between extremes in conduct, emotion, desire and attitude. This theory phrased by Aristotle states that virtues are tendencies to find the golden mean between the extremes of too much (excess) and too little (deficiency) with regard to particular aspects of our lives.

The most important virtue is practical wisdom, i.e., morally good judgment, which enables one to discern the mean for all the other virtues. There are internal goods such as products, activities and experiences should never clash with the external goods such as money, power self-esteem and prestige. The standards of excellence enable internal goods to be achieved. The external goods when extremely concerned, though by individuals or by organizations, threaten the internal goods.

Rights-based Ethical Theory

The Rights based ethical theory was proposed by John Locke. According to this theory, **The rights of a person towards life, health, liberty, possession, etc. are taken care of under this theory.**

For example, any action in terms of Capital punishment, Jails, Income taxes and Medical charges etc. come under this category.

Problem in Application

One rights of a person may be in conflict with rights of the other.

What does it mean?

Rights-based ethics is the recognition of human dignity at its most basic form. The ethics refer to the basic human rights whether they are positive or negative. Everyone has a right to live, liberty and the pursuit of happiness. Beauchamp and Childress, authors and ethical theorists, have defined the term "right" to be a "justified claim that individuals and groups can make upon other individuals or upon society; to have a right is to be in a position to determine by one's choices, what others should do or need not do."

The natural law states that human laws are defined by morality and not by some authority. This law is derived from the belief that human morality comes from nature. Any action done by a person that would prevent a fellow being from living a good and happy life, is considered immoral or unnatural. Any law should have some morals. Moral duty is the obligation to act based on ethical beliefs.

Duty-based Ethical Theory

The duty-based ethical theory was proposed by Immanuel Kant. According to this theory, **every person has a duty to follow which is accepted universally, with no exceptions.**

An example of this can be expecting all to be honest, kind, generous and peaceful.

Problem in Application

The universal application of this theory can be misleading.

What are these ethics?

Kant observed that everyone is bound to follow some moral laws. It is the choice we make to be morally sound though we have chances to do anything. This theory

can also be called as Deontological theory or the Absolutist theory. According to this, it is our duty to obey the categorical imperative rules. To have good will, is to perform one's duty for the sake of duty and for no other reason.

The categorical imperative law states that "**Act only according to that maxim by which you can at the same time will that it should become a universal law.**" There are four virtues that come under this law, which have to be discussed here.

Prudence

The quality of prudence states that every individual has a life that should be respected and every individual has duties which should be done without any exception. One should always be cautious to perform one's duties.

Temperance

Temperance is the voluntary self-restraint from the attractions. The temptations that might lead to the violation of duties and ethics have to be restrained. No false promises are to be made as they contradict the principles of duties.

Fortitude

Fortitude is the sense of having tolerance. **No perfection can be maintained if happiness alone is sought and no happiness is achieved if perfection alone is sought.** Both may or may not go with each other.

Justice

Every individual is a human being with a set of intrinsic values and morals. Truth and fairness are the aspects one should always bear in mind. People should be treated as separate individuals but never as a mere means of existence.

A free will and a will under moral laws are one and the same. We are free only when we act in accordance with our own best natures, while we are slaves whenever we are under the rule of our passions and wills. There should be a universally valid will, under which everyone can be free.

Utilitarian Ethics

The Utilitarian ethics was proposed by John Stuart. According to this theory, **the happiness or pleasure of a greatest number of people in the society is considered as the greatest good.** According to this philosophy, an action is morally right if its consequences lead to happiness of people and wrong if they lead to their unhappiness.

An example of this can be the removal of reservation system in education and government jobs, which can really benefit the talented. But this can have an impact on the rights of the minorities.

Problem of Application

Qualification of the benefits can be difficult.

What are these ethics?

Consider the cost-benefit analysis in engineering. A typical cost-benefit analysis identifies the good and bad consequences of some action or policy in a monetary aspect. It weighs the total good against total bad and then compares the results to similar tallies of the consequences of alternative actions or rules. This supports the idea of maximizing benefits against cost.

There are two main types of Utilitarianism. They are –

Act Utilitarianism

The Act Utilitarianism focuses on each situation and the alternative actions possible in the situation. Act Utilitarianism states that "**A particular action is right if it is likely to produce the higher level of good for the most people in a given situation, compared to alternative choices that might be made.**"

In accordance with this theory, the good done is only considered but not the way how it is done. For example, looting the richer to feed the poor, can satisfy and make a group of poor people, happy. But looting is not a way of morality. Hence act-utilitarianism seems to justify the wrong-doing.

Rule Utilitarianism

The Rule Utilitarianism states that "**Right actions are those required by rules that produce the higher level of good for the most people.**" We need to consider a set of rules, where they interact with each other. This was developed to clear the problem that occurs with act-utilitarianism.

Engineers with ethics should follow the rule-utilitarianism considering the point, "**Act as faithful agents or trustees of employers**". So, engineers should abide by it even when an exception might happen to be beneficial. Like in the above example, one should seek the help of law and order to prove the guilt of richer and let see that the poor get benefitted.

Formulation of Ethical Theories

After having gone through the various ethical theories, one can understand that these ethical theories have to be formulated considering the following points –

- The concepts of the theory formulated must be coherent.
- The tenets of the theory should never contradict the other.
- The theory should never be defended upon false information.
- The theory should guide in specific situations comprehending all aspects possible.
- The theory should be compatible with individual's moral convictions in any situation.

Uses of Ethical Theories

Ethical theories help in the following areas –

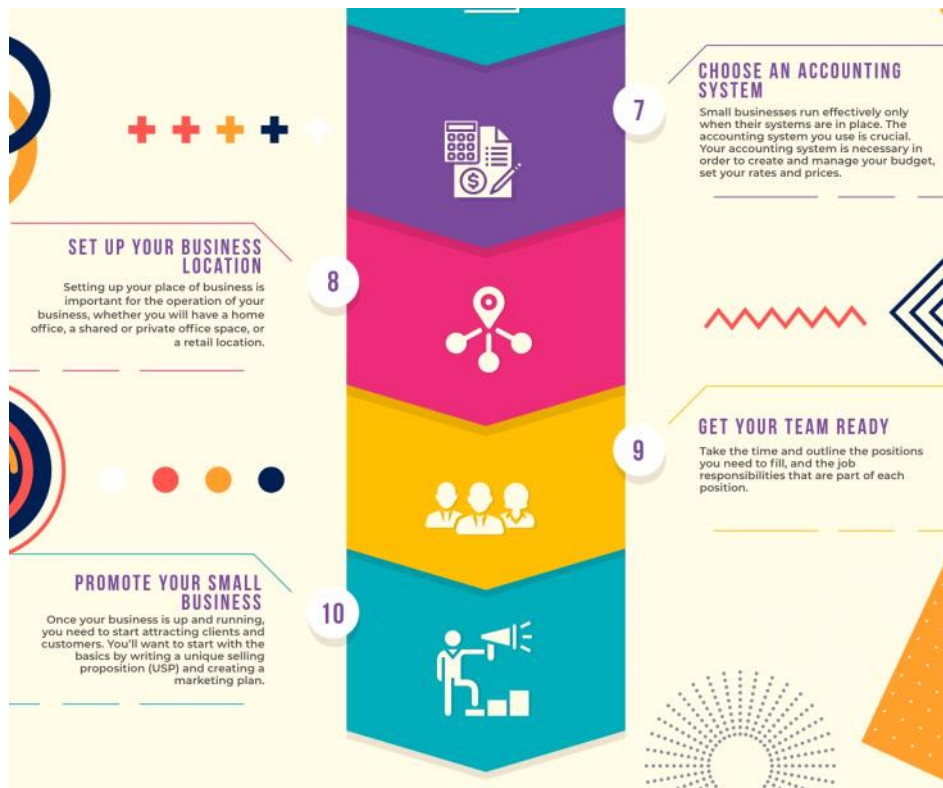
- Understanding moral dilemmas.
- Justifying professional obligations and ideas.
- Relating ordinary and professional morality.

From <https://www.tutorialspoint.com/engineering_ethics/engineering_ethical_theories.htm>



A Step by Step Guide on How to Start a Business?

- 1 RESEARCH**
Run your business idea through and validate it before you go further. For a small business to be successful, it must solve a problem, fulfill a need or offer something the market wants.
- 2 PLAN OUT**
You need a plan in order to make your business idea a reality. Your business plan is a blueprint that will guide it from the start-up phase through establishment and eventually business growth, and it is a must-have for all new businesses.
- 3 PLAN YOUR**
Put together a spreadsheet that estimates the one-time startup costs for your business. Keep 12 months of expenses as a reserve. You need to be able to survive at least 12 months with no
- 4 CHOOSE ITS STRUCTURE**
Your business can be a sole proprietorship, a partnership, a limited liability company (LLC) or a corporation. This will impact many factors from your business name, to your liability, to how you file your taxes.
- 5 PICK YOUR BUSINESS NAME**
Your business name plays a role is important for your business, so you want it to be a good one. Make sure you think through all of the potential implications as you choose your business name.
- 6 GET LICENSES AND PERMITS**
Paperwork is a crucial part of the process when you start your own business. There are a variety of small business licenses and permits that may apply to your situation, depending on the type of business you are starting and where you are located.



How to Resolve Ethical Dilemmas

- Identify relevant facts
- Identify relevant issue(s)
- Identify primary stakeholders
- Identify possible solutions
- Evaluate each possible solution
- Compare and assess consequences
- Decide on solution
- Take action

Effective Questions types

Friday, November 12, 2021 10:00 AM

"Let's start with everyday types of questions people ask, and the answers they're likely to elicit."

1. Closed questions (aka the 'Polar' question)

Closed questions invite a short focused answer- answers to closed questions can often (but not always) be either right or wrong. Closed questions are usually easy to answer - as the choice of answer is limited - they can be effectively used early in conversations to encourage participation and can be very useful in fact-finding scenarios such as research.

Closed, or 'polar' questions generally invite a one-word answer, such as 'yes' or 'no'.

For example, 'do you drive?' or 'did you take my pen?' They could also include answers to factual or multiple choice questions, such as 'what's your name', or 'would you like tea, coffee, or water?' They're popular as **icebreaker questions** in group situations because they're easy to answer. Of course, most questions can be opened up for further discussion, including closed questions — but more on that later.

Useful for: warming up group discussions, getting a quick answer

2. Open questions

By contrast, to closed questions, open questions allow for much longer responses and therefore potentially more creativity and information. There are lots of different types of open question; some are more closed than others!

Open-ended questions require a little more thought and generally encourage wider discussion and elaboration. They can't be answered with a simple yes or no response.

For example: 'what do you think of your boss?' Or 'why did you choose that car?'

Useful for: critical or creative discussion, finding out more information about a person or subject

3. Probing questions

These questions are useful for gaining clarification and encouraging others to tell you more information about a subject. Probing questions are usually a series of questions that dig deeper and provide a fuller picture.

For example: 'when do you need the finished project, and is it ok if I email it to you?'

Useful for: seeing the bigger picture, encouraging a reluctant speaker to tell you more information, and avoiding misunderstandings

4. Leading questions

A leading question, usually subtly, points the respondent's answer in a certain direction.

These questions are designed to lead the respondent towards a certain desired positive or negative route.

In the workplace, you might encounter leading questions such as: '**do you have any issues with the project?**', or '**did you enjoy working on that project?**' The former subtly prompts the respondent towards a negative response; the latter towards a positive. Asking 'how did you get on with that project' will get you a more balanced answer.

Leading questions could also involve an appeal at the end that's designed to coerce the respondent into agreeing with the speaker.

For example, 'this project is going well, isn't it?' encourages the respondent to say 'yes'. This works particularly well because psychologically, we prefer saying yes over no. So when we're put on the spot, we'll usually opt for the former.

Useful for: building positive discussions, closing a sale, steering a conversation towards an outcome that serves your interest

A word of warning: It's important to use leading questions carefully; they can be seen as an unfair way of getting the answer you want.

5. Loaded questions

Loaded questions are seemingly straightforward, closed questions — with a twist: they contain an assumption about the respondent. They're famously used by lawyers and journalists to trick their interviewee into admitting a fundamental truth they would otherwise be unwilling to disclose.

For example, the question: 'have you stopped stealing pens?' assumes the respondent stole a pen more than once. Whether she answers yes or no, she will admit to having stolen pens at some point. Of course, the preferred response would be: 'I have never stolen a pen in my life' But it's not always easy to spot the trap. These questions are quite rightly seen as manipulative.

Useful for: discovering facts about someone who would otherwise be reluctant to offer up the information

6. Funnel questions

We can use clever questioning to essentially funnel the respondent's answers – that is ask a series of questions that become more (or less) restrictive at each step, starting with open questions and ending with closed questions or vice-versa.

As with a funnel, these questions begin broadly before narrowing to a specific point — or vice versa.

When meeting someone new, we usually begin with specific, closed questions, such as 'what's your name?' and 'what do you do?' – before broadening out into more open-ended questions, such as 'why did you choose to be a firefighter?' as you become more comfortable talking to each other.

The reverse — beginning with a broad question before honing in on something specific — is often used when questioning witnesses to gain the maximum amount of information about a person or situation.

For example, 'what do you do for a living? Do you work nights? Did you see a break-in? Was there more than one person?' And so on.

Funnel questions can also be used to diffuse tension: asking someone to go into detail about their issue distracts them from their anger and gives you the information you need to offer them a solution, which in turn calms them down and makes them think something positive is being done to help them.

Useful for: building relationships, discovering very specific information, diffusing arguments

7. Recall and process questions

Questions can also be categorised by whether they are 'recall' – requiring something to be remembered or recalled, or 'process' – requiring some deeper thought and/or analysis.

Recall questions require the recipient to remember a fact.

For example, 'what's seven times seven?' and 'where did you put the keys?' or 'What's your login password?' Process questions, on the other hand, require the respondent to add their own opinion to their answer. These types of questions can be used to test the respondent's depth of knowledge about a particular topic.

For example: 'what are the advantages of asking a closed question?' or 'why are you the right person to lead this project?'

Useful for: encouraging critical thought and in-depth evaluation of a subject in tests, interviews or discussions

8. Rhetorical questions

These are a different beast altogether because they don't really require an answer. They're simply statements phrased as questions to make the conversation more engaging for the listener, who is drawn into agreeing with you.

Rhetorical questions are often humorous and don't require an answer.

For example, 'isn't it nice working with such a friendly team?' is more engaging than 'this team is friendly', which doesn't require any mental participation from the respondent.

Rhetorical questions are often used by coaches or public speakers for effect to get the audience thinking and agreeing. In this way, they're a not-too-distant cousin of the leading question.

Useful for: persuading people, building engagement

A word on tone

Tone, context, intonation, and body language all help us make sense of what is being asked of us. But what happens when you throw technology into the mix and place a digital screen between the interlocutors?

Emojis and gifs have made their way into the workplace, and they're here to stay. Moreover, there's no denying that they enhance interpersonal communication and go some way towards fulfilling our need for something a little more human.

Resp usually want to achieve from asking their question.

- **A lie** – the respondent may lie in response to a question. The questioner may be able to pick up on a lie based on plausibility of the answer but also on the non-verbal communication that was used immediately before, during and after the answer is given.
- **Out of context** – The respondent may say something that is totally unconnected or irrelevant to the question or attempt to change the topic. It may be appropriate to reword a question in these cases.
- **Partially Answering** – People can often be selective about which questions or parts of questions they wish to answer.
- **Avoiding the answer** – Politicians are especially well known for this trait. When asked a ‘difficult question’ which probably has an answer that would be negative to the politician or their political party, avoidance can be a useful tact. Answering a question with a question or trying to draw attention to some positive aspect of the topic are methods of avoidance.
- **Stalling** – Although similar to avoiding answering a question, stalling can be used when more time is needed to formulate an acceptable answer. One way to do this is to answer the question with another question.
- **Distortion** – People can give distorted answers to questions based on their perceptions of social norms, stereotypes and other forms of bias. Different from lying, respondents may not realise their answers are influenced by bias or they exaggerate in some way to come across as more ‘normal’ or successful. People often exaggerate about their salaries.
- **Refusal** – The respondent may simply refuse to answer, either by remaining silent or by saying, ‘I am not answering’.

Unity, Integrity & Solidity



Kohlberg theory & Gilligan

Monday, November 22, 2021 9:50 AM

Kohlberg's Theory of Moral Development

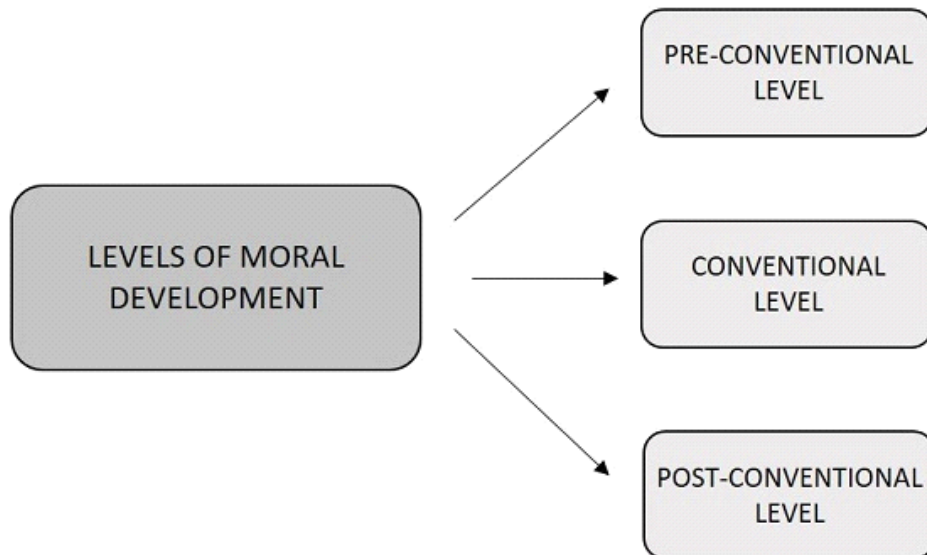


Lawrence Kohlberg was a professor at Harvard University during the early 1970s and was famous for his works on developmental psychology. He conducted many studies at Harvard's Center for Moral Development and proposed a theory on moral development which is popularly known as Kohlberg's theory. His theory of moral development was dependent on the thinking of the Swiss psychologist Jean Piaget and the American philosopher John Dewey. He was also inspired by James Mark Baldwin. These men had emphasized that human beings develop philosophically and psychologically in a progressive fashion.

Lawrence Kohlberg's Theory

Kohlberg proposed that people progress in moral reasoning based on their ethical behavior. He postulated this theory based on the thinking of younger children throughout their growing period as adults. He conveyed that younger children make judgment based on the consequences that might occur and the older children make judgment based on their intuitions.

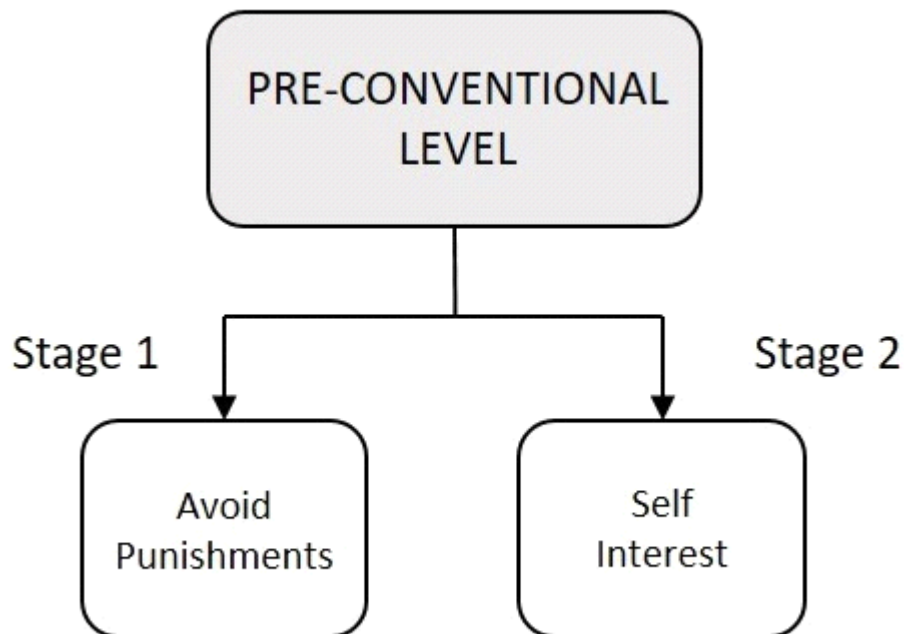
He believed that there are six stages of moral development which are further classified into three levels. The following illustration shows the different levels.



The process being discussed here is about the judgment made by the thinker about the protagonist in a given situation. The steps of the thinking process show the moral development of the thinker.

Pre-conventional Level

This can be understood as the first level of moral thinking, which is generally found at Elementary school level. The thinker at this stage tends to think and behave based on the direct consequences that might occur. There are two sub-stages in this.



Avoid Punishments

A thinker at this stage generally thinks and believes that the judgment are to be made as per the socially acceptable norms as they are said so by some higher official (a teacher or a parent). This is a child-like obedience, in order to avoid punishments.

These thoughts are based on the idea that the protagonist should not disobey the law or rules.

Self-interest

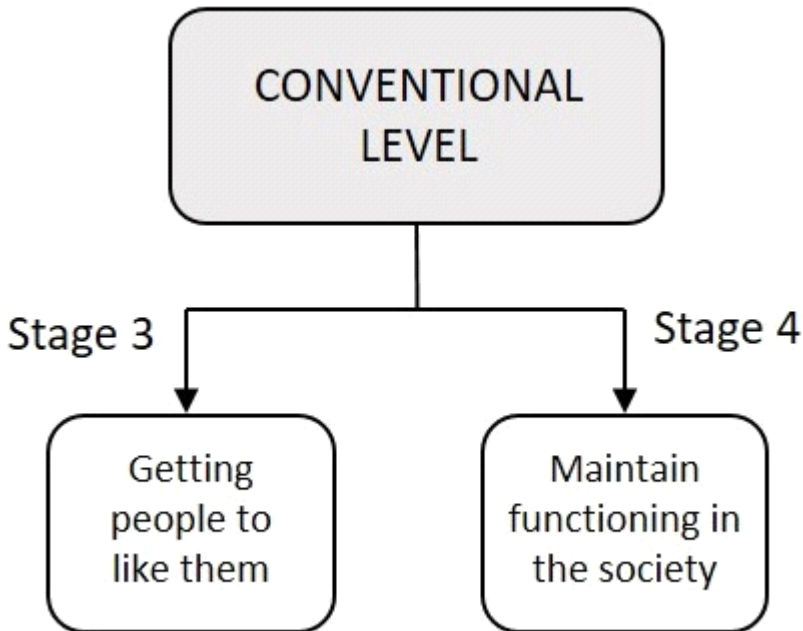
A thinker at this stage, shows interest in making decisions according to the

rewards they get in exchange. This second stage is characterized by a view that right behavior means acting in one's own best interests.

In this stage, they tend to follow the rules of authority because they believe that this is necessary to ensure positive relationships and societal order.

Conventional Level

This can be understood as the second level of moral thinking, which is generally found at the primary and high school level. The thinker at this stage tends to think and behave based on the want to please others. There are two sub-stages in this.



Getting people to like them

At this stage, the ideas of the society are considered. This level can be that where the protagonist behaves on account of the moral grounds which people decide for decision making. This decision may or may not support the law. Whatever the result is, the thinking process is based on how to impress others or society and on how to please the people around.

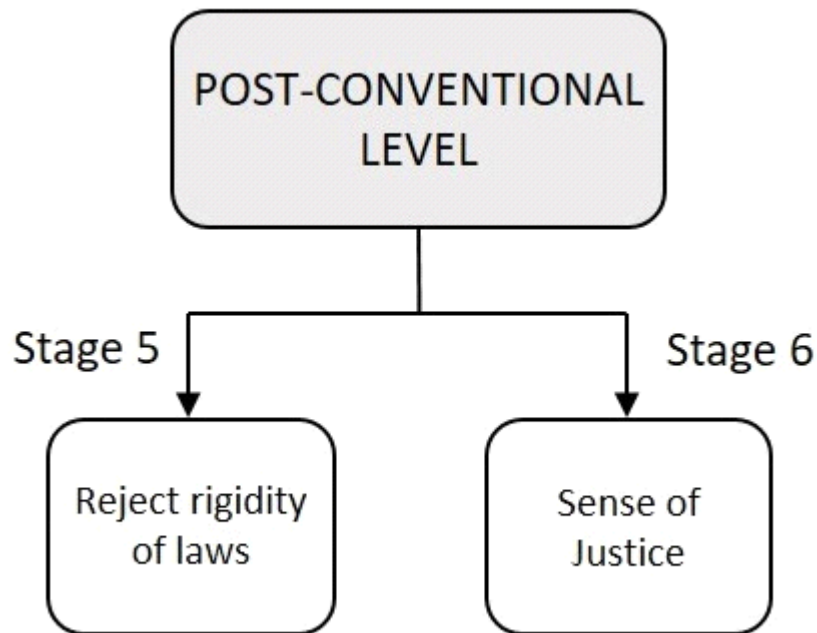
Maintain functioning in society

A thinker at this stage, considers to follow the rules for the good of the society. The moral grounds on how people in the society will consider the job done will be the priority, because the thinker believes that a social order is maintained by abiding by the rules.

Hence a thinker sticks to the idea that the protagonist should follow the moral values. The thinker's behavior is driven by the authority while his thinking conforms to the social order.

Post-Conventional Level

This can be understood as the third level of Moral thinking, which is generally found after the high school level. The thinker at this stage tends to think and behave based on a sense of justice. There are two sub-stages in this.



Reject rigidity of laws

In this level, the thinker uses his moral thinking skills at a commendable pace. He starts to feel for the protagonist based on moral grounds. He also might have an opinion that the rules have to be changed according to humanitarian values. The thinker rejects the rigidity of the existing laws and rules at this stage.

Sense of justice

This is the pinnacle stage of Moral development where the thinker feels a sense of justice for the protagonist. The thinker has great moral values that he keeps himself free from the external factors that might influence his thinking process. These are the three main sections of moral development proposed by Lawrence Kohlberg. Let us now try to have some detailed idea on this with an example.

Gilligan Theory

This is an advancement of Kohlberg's theory. It had been observed that Kohlberg's theory was proposed based on the moral thinking of privileged white men and boys. Hence this theory was popularized by taking both male and female thinking capabilities into account.

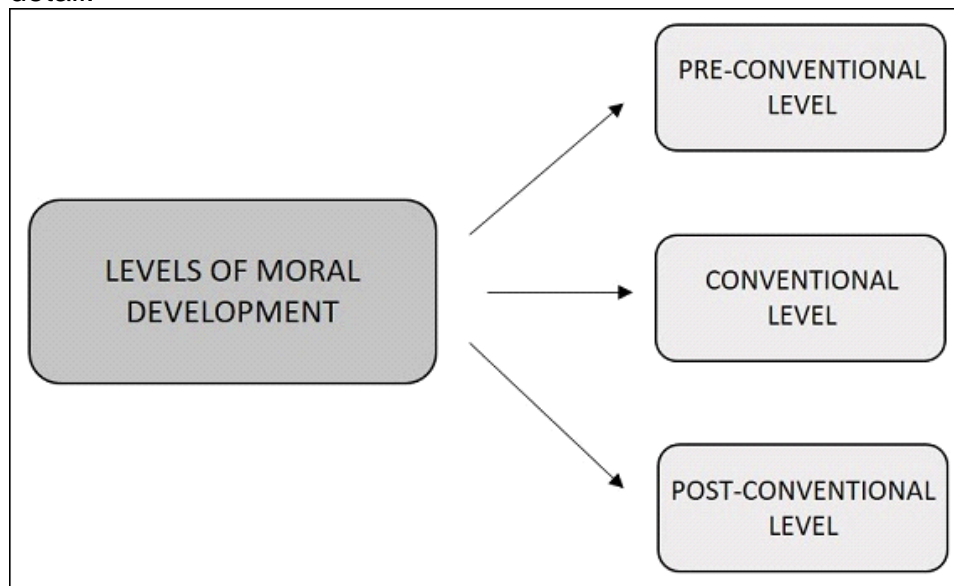
Carol Gilligan, a psychological theorist was born on Nov 28, 1936 in the New York city. She pursued her doctorate degree in Social Psychology from the Harvard University. Gilligan was a research assistant for Lawrence Kohlberg, but she eventually became independent and criticized some of his theories.

Gilligan's Theory

Carol Gilligan opines that Kohlberg's theories are biased upon the male thinking process. According to Gilligan, Kohlberg seemed to have studied

only privileged men and boys. She believed that women face a lot of psychological challenges and they are not moral widgets. The women's point of view on moral development involves caring which shows its effect on human relationships.

Hence she proposed a theory which has the same three stages of Kohlberg but with different stages of moral development. Let us understand the stages in detail.



Though the names of the stages are the same, the stages differ in this method. The moral development in Gilligan's theory are based on pro-social behaviors such as Altruism, caring and helping and the traits such as honesty, fairness and respect.

Pre-conventional Level

- A person in this stage cares for oneself to ensure survival.
- Though the person's attitude is selfish, this is the transition phase, where the person finds the connection between oneself and others.

Conventional Level

- In this stage, the person feels responsible and shows care towards other people.
- Carol Gilligan believes that this moral thinking can be identified in the role of a mother and a wife. This sometimes leads to the ignorance of the self.

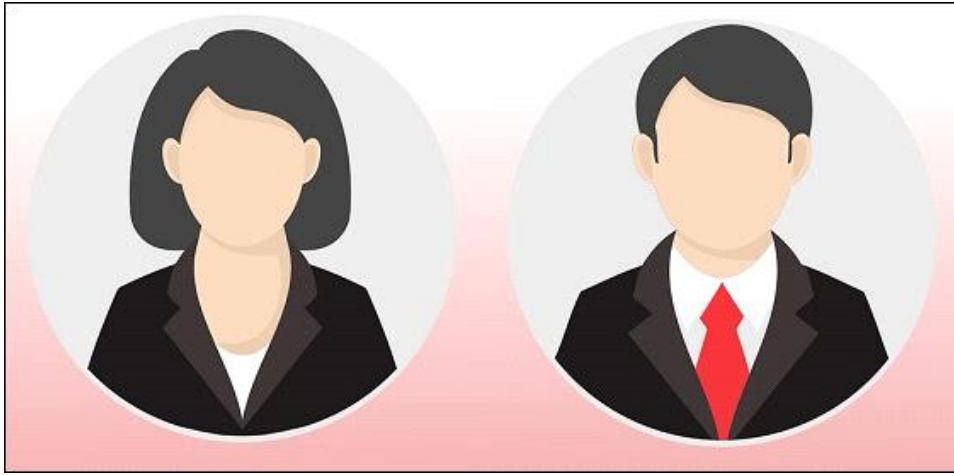
Post-conventional Level

- This is the stage, where the principle of care for self as well as others, is accepted.
- However, a section of people may never reach this level.

According to the Carol Gilligan's theory of moral development, changes occur due to the change of self rather than the critical thinking. It was stated that the post-conventional level of Kohlberg is not attained by women. But Carol Gilligan researched and found that the post-conventional level of thinking is not being easy for women to go through because they care for the relationships.

Levels of Thinking

Carol Gilligan states that the post-conventional level of moral thinking can be dealt based on the two types of thinking. Gilligan's theory is based on the two main ideas, the care-based morality (usually found in women) and the justice-based morality (usually found in men).



Care-based Morality

Care-based morality is the kind of thinking found in women. This is based on the following principles.

- More emphasis is given to inter-connected relationships and universality.
- Acting justly focuses on avoidance of violence.
- Women with this are usually interested in helping others.
- More common in girls because of their connections to their mothers.
- Because girls remain connected to their mothers, they are less inclined to worry about issues of fairness.

Justice-based Morality

Justice-based morality is the kind of thinking found in men. This is based on the following principles.

- They view the world as being composed of autonomous individuals who interact with one another.
- Acting justly means avoiding inequality.
- Individuals with this are usually interested in protecting individuality.
- Thought to be more common among boys because of their need to differentiate between themselves and their mothers.
- Because they are separated from their mothers, boys become more concerned with the concept of inequality.

The Carol Gilligan's theory can be better understood if explained with an example.

Example of Gilligan's Theory

In order to understand Gilligan's theory, a popular example is usually considered. A group of moles give shelter to a porcupine. But they are being continuously stabbed by the porcupine's quills. Now, what should they do?



The Pre-conventional level of thinking states that to think for the good of oneself, either the moles or the porcupine only can live there. The other has to leave the place.

According to the Conventional level of thinking, which brings a transition, from self to the good of others and which might even lead to sacrifice, either the moles or the porcupine has to sacrifice and again this leads to a stage where only moles or the porcupine can live in the burrow.

According to the Post-conventional level of thinking, which states that the good of both the parties has to be considered, both the moles and the porcupine come to an agreement that both will have separate places in the same burrow, where they limit to behave themselves and will not cause any trouble to other. This helps both of them to live in the same place with peace.



The researchers found that the solution to this scenario is different with different individuals; gender also plays an important role. The thinkers were observed viewing the problem in two different perspectives, the care-based and the justice-based.

In a Justice-based perspective, the solution to the problem is viewed as a conflict between two individual groups. Only one of them can have the property. Either moles or the porcupine will get the place in the burrow. Hence the solution to the dilemma, is not a resolution of the conflict, it is a verdict.

In a Care-based perspective, the approach differs. The problem is viewed as a difficult situation faced by both the parties together, rather than a fight between both of them. Hence the solution is sought in a way around the problem or to remove the problem completely. The solution may sound compromising but not damaging. The relationship will still be the same, after the resolution.

Researchers found that Justice-based perspective is pre-dominant among males while Care-based prospective is among females.

Consensus and Controversy

The moral judgment may lead to conflicts if they are not delivered properly without hurting the feelings of the persons involved. There are two stages after the judgement. The stages are described below –

Consensus

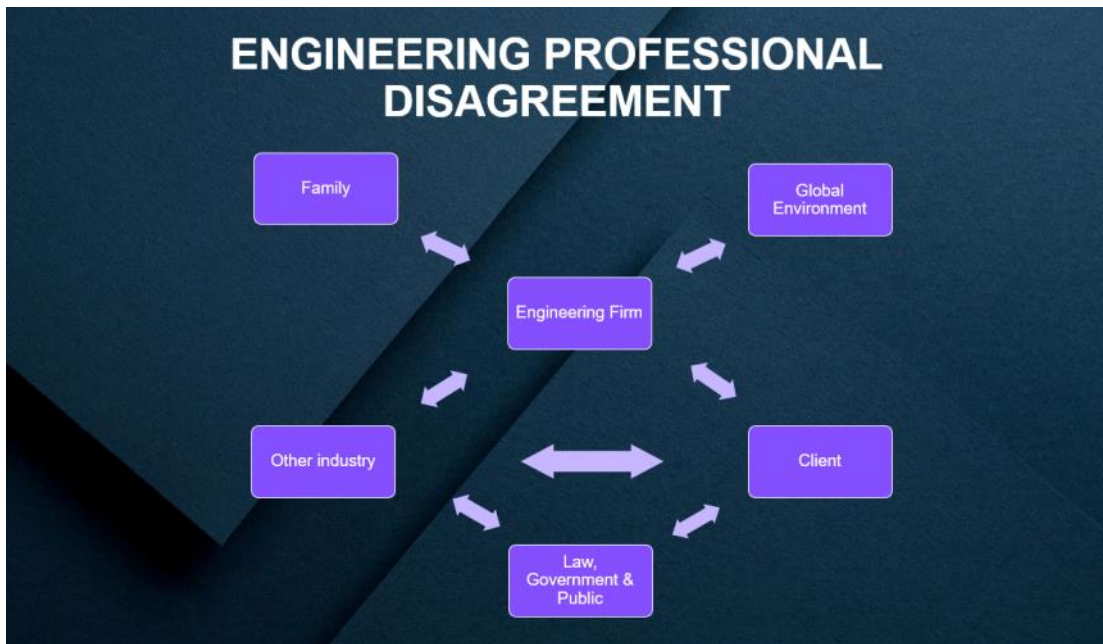
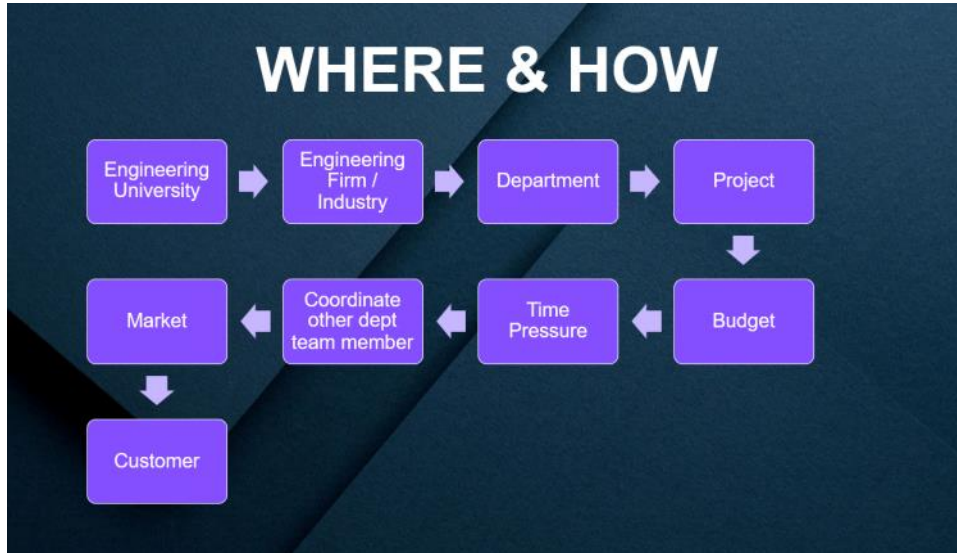
This is that state where people come into agreement with the judgement given by getting convinced with the moral reasons. This will leave the persons with a feel that justice has been done, the verdict may favor any party.

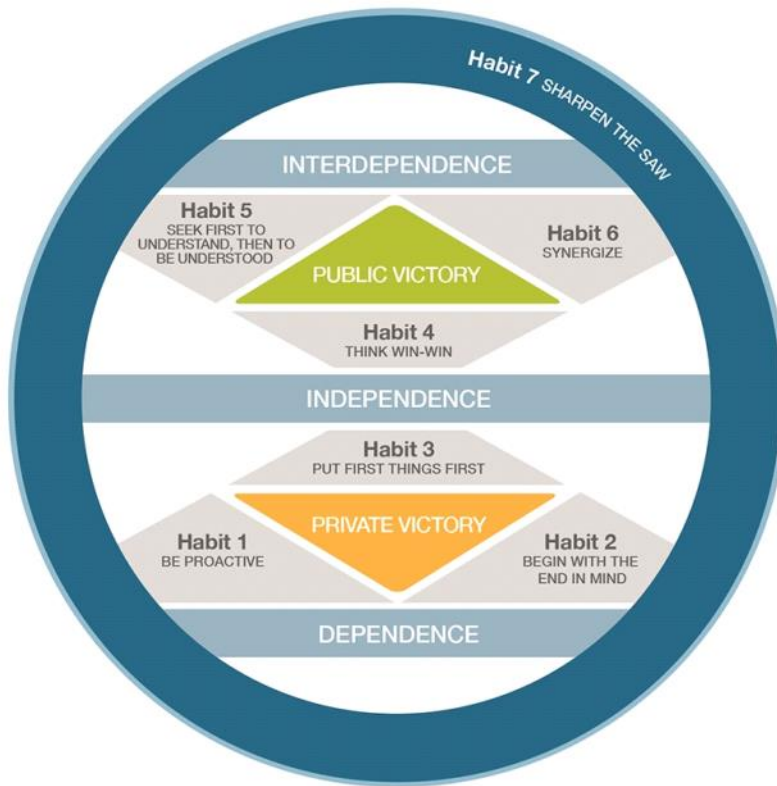
Controversy

This is that state where the persons involved in an issue are not satisfied by the verdict and might feel that it was decided on partial interests. This will leave the people with a sense of dissatisfaction that justice was not done, which might lead to another conflict.

Engineering Professional problem & Disagreement

Wednesday, November 24, 2021 8:45 AM





Leadership & moral leadership

Monday, December 20, 2021 9:44 AM

Profession

Profession means a job or an occupation, that helps a person earn his living. The main criteria of a profession involves the following.

- **Advanced expertise** – The criteria of a profession is to have sound knowledge in both technical aspects and liberal arts as well. In general, continuing education and updating knowledge are also important.
- **Self-regulation** – An organization that provides a profession, plays a major role in setting standards for the admission to the profession, drafting codes of ethics, enforcing the standards of conduct and representing the profession before the public and the government.
- **Public good** – Any occupation serves some public good by maintaining high ethical standards throughout a profession. This is a part of professional ethics where each occupation is intended to serve for the welfare of the public, directly or indirectly to a certain extent.

Professionals

A person who is paid for getting involved in a particular profession in order to earn a living as well as to satisfy the laws of that profession can be understood as a Professional. The definition of a professional is given differently by different experts in the field. Let us see the following definitions –

- *“Only consulting engineers who are basically independent and have freedom from coercion can be called as professionals.”* – Robert L. Whitelaw
- *“Professionals have to meet the expectations of clients and employers. Professional restraints are to be imposed by only laws and government regulations and not by personal conscience.”* – Samuel Florman
- *“Engineers are professionals when they attain standards of achievement in education, job performance or creativity in engineering and accept the most basic moral responsibilities to the public as well as employers, clients, colleagues and subordinates.”* - Mike martin and Ronald Schinzinger

Models of Professional Engineers

An engineer who is a professional, has some tasks to perform by which he acts as any of the following, which can be termed as Models of Professional Engineers.

- **Savior** – A person who saves someone or something from any danger is called a Savior. An engineer who saves a group of people or a company from a technical danger can also be called a Savior. The Y2K problem that created problems for computers and computer networks around the world was solved by engineers who were the saviors.
- **Guardian** – A person who knows the direction towards a better future is known to be the Guardian for the same. An engineer who knows the direction in which there is scope for the technology to develop can also be called a Guardian. This engineer provides the organization with innovative ideas for technological development.
- **Bureaucratic Servant** – A person who is loyal and can solve problems when they occur using his own skills, is a Bureaucratic servant. An engineer who can be a loyal person to the organization and also the one who solves the technical problems the company encounters, using his special skills can be termed as a Bureaucratic servant. The company relies on his decision-making capability for the future growth.
- **Social Servant** – A person who works for the benefit of the society without any selfish interest and does not work on any business grounds, is called a Social servant. An engineer who receives a task as part of the government’s concern for the society considering the directives laid by the society and accomplishes the assigned tasks can be termed as a Social Servant. He knows what the society needs.
- **Social Enabler or Catalyst** – A person who makes the society understand its welfare and works towards the benefits of the people in it, is a Social Enabler. An engineer who plays a vital role in a company and helps company along with society to understand their needs and supports their decisions in work can be termed as a Social Enabler or Catalyst. This person quickens the procedure and helps maintain good environment in the company.
- **Game Player** – A person who plays a game according to the rules given is a Game player in general. An engineer who acts as neither a servant nor a master, but provides his services and plans his works according to the economic game rules in a given time, can be termed as a Game player. He is smart enough to handle the economic conditions of the company.

Professionalism

Professionalism covers comprehensively all areas of practice of a particular profession. It requires skills and responsibilities involved in engineering profession. Professionalism implies a certain set of attitudes.

The art of Professionalism can be understood as the practice of doing the right thing, not because how one feels but regardless of how one feels. Professionals make a profession of the specific kind of activity and conduct to which they commit themselves and to which they can be expected to conform. Moral ideals specify virtue, i.e., desirable feature of character. Virtues are desirable ways of relating to other individuals, groups and organizations. Virtues involve motives, attitudes and emotions.

According to Aristotle, virtues are the “acquired habits that enable us to engage effectively in rational activities that defines us as human beings.”

Professional Ideals and Virtues

The virtues represent **excellence in core moral behavior**. The essentials for any professional to excel in the profession are behavior, skills and knowledge. The behavior shows the moral ideology of the professional.

The moral ideals specify the virtue, i.e., the desirable character traits that talk a lot about the **motives, attitude and emotions of an individual**.

- Public spirited virtues
- Proficiency virtues
- Team work virtues
- Self-governance virtues

The virtues mentioned above show the professional responsibility of an individual. Hence, the professionalism that comes in with these virtues is called Responsible Professionalism. Let us now understand each virtue in detail.

Public-spirited Virtues

An engineer should focus on the good of the clients and the public at large, which means no harm should be done intentionally. The code of professional conduct in the field of engineering includes avoiding harm and protecting, as well promoting the public safety, health and welfare.

Maintaining a sense of community with faith and hope within the society and being generous by extending time, talent and money to professional societies and communities, an engineer can maintain the public-spirited virtue. Finally, justice within corporations, government and economic practices becomes an essential virtue that an engineer should always possess.

Proficiency Virtues

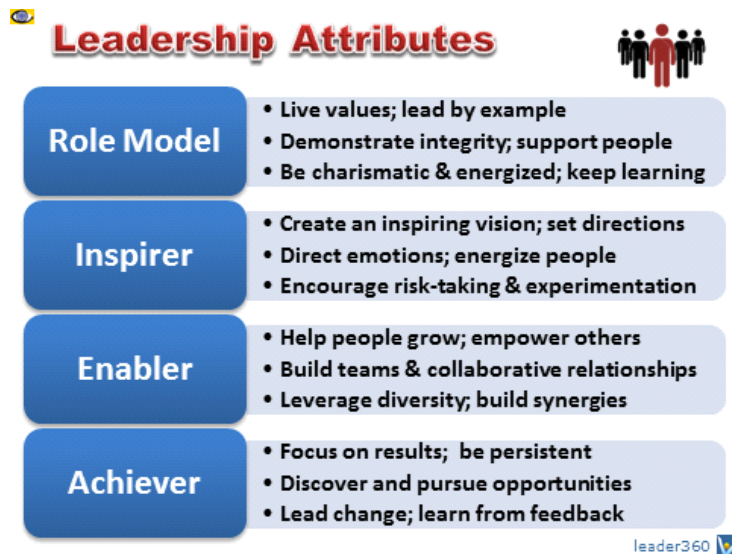
These refer to the virtues followed in the profession according to the talent and intellect of an engineer. The moral values that include this virtue are competence and diligence. The competence is being successful in the job being done and the diligence is taking care and having alertness to dangers in the job. Creativity should also be present in accomplishing the assigned task.

Teamwork Virtues

These virtues represent the coordination among team members which means working successfully with other professionals. These include cooperative nature along with loyalty and respect towards their organization, which makes the engineers motivate the team professionals to work towards their valuable goals.

Self-governance Virtues

These virtues are concerned with moral responsibilities which represent integrity and self-respect of the person. The integrity actually means the moral integrity which refers to the actions, attitude and emotions of the person concerned during his professional period. The self-governance virtues center on commitment, courage, self-discipline, perseverance, self-respect and integrity. The truthfulness and trustworthiness which represent his honesty are the crucial moral values to be kept up by a professional.



Moral Engineering

Engineers, within their communities and professions contribute to technological process, as managers, business entrepreneurs, corporate consultants, academics and government officials they provide many forms of leadership in developing and implementing technology. Leadership can be understood as success in moving a group collectively, towards goals.

Moral leaders, are the individuals who direct, motivate, organize, creatively manage, or in other ways move groups towards morally valuable goals. Leaders might be in position of authority within a corporation, or they might not be. Leadership can be shown by individuals participating at all levels of organizations.



Morally creative leaders

Moral leaders are morally creative. This does not mean that they discover or improvise new moral values from scratch. Moral values are the product of centuries and millennia of gradual development, not instantaneous invention. Moral creativity consists in identifying the most important values that apply in a particular situation, bringing them into focus through effective communication within groups and forming workable commitments to implement them.

Moral creativity is achieving success through new ways of thinking with standard moral values. This is achieved by identifying new possibilities for applying, extending and putting values into practice rather than inventing new values for temporary comforts. But, this requires fresh moral insights with deeper commitments grounded in integrity.

Participation in Professional Societies

Professional Societies do more than just promoting continuing education for their members. They also serve to unify a profession, and to speak and act on behalf of it. Professional societies provide a forum for communicating, organizing and mobilizing change within and by large groups, which has a moral dimension. After few incidents, many of the tensions existed in professional societies are because of the uncertainties about their involvement in moral issues.

Effective professional activity whether in Engineering or any other profession, requires a substantial degree of trust from clients and the public. Total absence of such trust would undermine the possibility of making contracts, engaging in cooperative work, exercising professional autonomy free of excessive regulation and working under humane conditions. Building and sustaining that trust is an important responsibility shared by all engineers. It is also an area where moral leadership within professional societies is really important.

Leadership in Communities

In communities and groups, the issues that bother and that are important should be informed to everyone. But the stronger obligations arise for those who by professional background are well grounded in specific issues as well as for those who have time to train themselves as Public advocates. It shows that there is certainly a need for moral leadership in identifying and expanding the areas of possible good that can be achieved.

Ideals of Voluntary service

The need for moral leadership in Engineering, emphasizes the need for involvement in professional societies and in community service. The leadership should have substantial involvement in professional societies which, in addition to furthering technical knowledge and representing engineers collectively, help establish high standards of moral integrity within the profession. The moral leadership should also have some involvement in community service. Moral leadership does not consist of moral elitism and dominance, but instead moral creativity in helping to guide, organize and stimulate groups toward morally desirable goals.

Sample Code of Conduct

The professional societies for engineers have formulated few codes of ethics which are expected to be followed by an engineer of the particular discipline. Following are a few societies that look into the discipline in Engineering –

- NSPE – National Society of Professional Engineers
- IEEE – The Institute of Electrical and Electronics engineering
- AIChE – American Institute of Chemical Engineers
- ASCE – American Society of Civil Engineers
- ASME – American Society of Mechanical Engineers
- ACM/IEEE/CS – Joint Task Force on Software Engineering Ethics and Professional Practices

All these societies have proposed different codes of ethics expecting adherence from the Engineers, to the highest standard of ethical conduct. This not only helps the societies but also the Engineers.

The NSPE (National Society of Professional Engineers) has formulated codes as engineering has a direct and vital impact on the quality of life for all the people. Accordingly, the services provided by engineers require honesty, impartiality, fairness and equity and must be dedicated to the protection of the public health, safety and welfare.

The fundamental things to be kept in mind, while engineers fulfill their professional duties are the following –

- Hold paramount the safety, health and welfare of the public.
- Perform services only in area of their competence.
- Issue public statements only in an objective and truthful manner.
- Act for each employer or client as faithful agents or trustees.
- Avoid deceptive acts.
- Conduct themselves honorably, responsibly, ethically and lawfully so as to enhance the honor, reputation and usefulness of the profession.

All the other societies have proposed the code of ethics to be followed in their respective disciplines, by the engineers. The professional ethics should be accompanied by moral concerns, in acting responsibly towards the profession while being in ethical limits.

>

What is risk management and why is it important?

Risk management is the process of **identifying, assessing and controlling** threats to an . These risks stem from a variety of sources including financial uncertainties, legal liabilities, technology issues, strategic management errors, accidents and natural disasters.

A successful risk management program helps an organization consider the full range of risks it faces. Risk management also examines the relationship between risks and the cascading impact they could have on an organization's strategic goals.

This holistic approach to managing risk is sometimes described as *enterprise risk management* because of its emphasis on anticipating and understanding risk across an organization. In addition to a focus on internal and external threats, [enterprise risk management](#) (ERM) emphasizes the importance of managing *positive* risk. Positive risks are opportunities that could increase business value or, conversely, damage an organization if not taken. Indeed, the aim of any risk management program is not to eliminate all risk but to preserve and add to enterprise value by making smart risk decisions.

"We don't manage risks so we can have no risk. We manage risks so we know which risks are worth taking, which ones will get us to our goal, which ones have enough of a payout to even take them," said Forrester Research senior analyst Alla Valente, a specialist in governance, risk and compliance.

Thus, a risk management program should be intertwined with organizational strategy. To link them, risk management leaders must first define the organization's [risk appetite](#) -- i.e., the amount of risk it is willing to accept to realize its objectives.

The formidable task is to then determine "which risks fit within the organization's risk appetite and which require additional controls and actions before they are acceptable," explained Notre Dame University Senior Director of IT Mike Chapple in his article on [risk appetite vs. risk tolerance](#). Some risks will be accepted with no further action necessary. Others will be mitigated, shared with or transferred to another party, or avoided altogether.

Every organization faces the risk of unexpected, harmful events that can cost it money or cause it to close. Risks untaken can also spell trouble, as the companies disrupted by born-digital powerhouses, such as Amazon and Netflix, will attest. This guide to risk management provides a comprehensive overview of the key concepts, requirements, tools, trends and debates driving this dynamic field. Throughout, hyperlinks connect to other TechTarget articles that deliver in-depth information on the topics covered here, so readers should be sure to click on them to learn more.



Risk appetite and risk tolerance are important risk terms that are related but not the same.

Why is risk management important?

Risk management has perhaps never been more important than it is now. The risks modern organizations face have grown more complex, fueled by the rapid pace of globalization. New risks are constantly emerging, often related to and generated by the now-pervasive use of digital technology. Climate change has been dubbed a "threat multiplier" by risk experts.

A recent external risk that manifested itself as a supply chain issue at many companies -- the coronavirus pandemic -- quickly evolved into an existential threat, affecting the health and safety of their employees, the means of doing business, the ability to interact with customers and corporate reputations.

Businesses made rapid adjustments to the threats posed by the pandemic. But, going forward they are grappling with novel risks, including how or whether to bring employees back to the office and what should be done to make their supply chains less vulnerable to crises.

As the world continues to reckon with COVID-19, companies and their boards of directors are taking a fresh look at their risk management programs. They are reassessing their [risk exposure](#) and examining risk processes. They are reconsidering who should be involved in risk management. Companies that currently take a reactive approach to risk management -- guarding against past risks and changing practices after a new risk causes harm -- are considering the competitive advantages of a more proactive approach. There is heightened interest in supporting sustainability, resiliency and [enterprise agility](#). Companies are also exploring how artificial intelligence technologies and sophisticated governance, risk and compliance ([GRC](#)) platforms can improve risk management.

Financial vs. nonfinancial industries. In discussions of risk management, many experts note that at companies that are heavily regulated and whose business is risk, managing risk is a formal function.

Banks and insurance companies, for example, have long had large risk departments typically headed by a [chief risk officer](#) (CRO), a title still relatively uncommon outside of the financial industry. Moreover, the risks that financial services companies face tend to be rooted in numbers and therefore can be quantified and effectively analyzed using known technology and mature methods. Risk scenarios in finance companies can be modeled with some precision.

For other industries, risk tends to be more qualitative and therefore harder to manage, increasing the need for a deliberate, thorough and consistent approach to risk management, said Gartner analyst Matt Shinkman, who leads the firm's enterprise risk management and audit practices. "Enterprise risk management programs aim to help these companies be as smart as they can be about managing risk."

Traditional risk management vs. enterprise risk management

Traditional risk management tends to get a bad rap these days compared to enterprise risk management. Both approaches aim to mitigate risks that could harm organizations. Both buy insurance to protect against a range of risks -- from losses due to fire and theft to [cyber liability](#). Both adhere to guidance provided by the major standards bodies. But traditional risk management, experts argue, lacks the mindset and mechanisms required to understand risk as an integral part of enterprise strategy and performance.

For many companies, "risk is a dirty four-letter word -- and that's unfortunate," said Forrester's Valente. "In ERM, risk is looked at as a strategic enabler versus the cost of doing business."

"Siloed" vs. holistic is one of the big distinctions between the two approaches, according to Gartner's Shinkman. In traditional risk management programs, for example, risk has typically been the job of the business leaders in charge of the units where the risk resides. For example, the CIO or CTO is responsible for IT risk, the CFO is responsible for financial risk, the COO for [operational risk](#), etc. The business units might have sophisticated systems in place to manage their various types of risks, Shinkman explained, but the company can still run into trouble by failing to see the relationships among risks or their cumulative impact on operations. Traditional risk management also tends to be reactive rather than proactive.

"The pandemic is a great example of a risk issue that is very easy to ignore if you don't take a holistic, long-term strategic view of the kinds of risks that could hurt you as a company," Shinkman said. "A lot of companies will look back and say, 'You know, we should have known about this, or at least thought about the financial implications of something like this before it happened.'"

Risk exposure at a glance



Here's a primer on risk exposure and how it is calculated.

In enterprise risk management, managing risk is a collaborative, cross-functional and big-picture effort. An ERM team, which could be as small as five people, works with the business unit leaders and staff to debrief them, help them use the right tools to think through the risks, collate that information and present it to the organization's executive leadership and board. Having credibility with executives across the enterprise is a must for risk leaders of this ilk, Shinkman said.

These types of experts increasingly come from a consulting background or have a "consulting mindset," he said, and possess a deep understanding of the mechanics of business. Unlike in traditional risk management, where the head of risk typically reports to the CFO, the heads of enterprise risk management teams -- whether they hold the chief risk officer title or some other title -- report to their CEOs, an acknowledgement that risk is part and parcel of business strategy.

In defining the chief risk officer role, Forrester Research makes a distinction between the "transactional CROs" typically found in traditional risk management programs and the "transformational CROs" who take an ERM approach. The former work at companies that see risk as a cost center and risk management as an insurance policy, according to Forrester. Transformational CROs, in the Forrester lexicon, are "customer-obsessed," Valente said. They focus on their companies' brand reputations, understand the horizontal nature of risk and define ERM as the "proper amount of risk needed to grow."

Risk averse is another trait of traditional risk management organizations. But as Valente noted, companies that define themselves as risk averse with a low risk appetite are sometimes off the mark in their [risk assessment](#).

"A lot of organizations think they have a low risk appetite, but do they have plans to grow? Are they launching new products? Is innovation important? All of these are growth strategies and not without risk," Valente said.

To learn about other ways in which the two approaches diverge, check out technology writer Lisa Morgan's "[Traditional risk management vs. enterprise risk management: How do they differ?](#)" In addition, her article on [risk management teams](#) provides a detailed rundown of roles and responsibilities.



Risk management process

The risk management discipline has published many bodies of knowledge that document what organizations must do to manage risk. One of the best-known sources is the [ISO 31000 standard](#), *Risk Management -- Guidelines*, developed by the International Organization for Standardization, a standards body commonly known as ISO.

ISO's five-step risk management process comprises the following and can be used by any type of entity:

1. Identify the risks.
2. Analyze the likelihood and impact of each one.
3. Prioritize risks based on business objectives.
4. Treat (or respond to) the risk conditions.
5. Monitor results and adjust as necessary.

The steps are straightforward, but risk management committees should not underestimate the work required to complete the process. For starters, it requires a solid understanding of what makes the organization tick. The end goal is to develop the set of processes for identifying the risks the organization faces, the likelihood and impact of these various risks, how each relates to the maximum risk the organization is willing to accept, and what actions should be taken to preserve and enhance organizational value.

"To consider what could go wrong, one needs to begin with what must go right," said risk expert Greg Witte, a senior security engineer for Huntington Ingalls Industries and an architect of the National Institute of Standards and Technology (NIST) frameworks on cybersecurity, privacy and workforce risks, among others.

When identifying risks, it is important to understand that, by definition, something is only a risk if it has impact, Witte said. For example, the

following four factors must be present for a negative risk scenario, according to guidance from the NIST Interagency Report ([NISTIR 8286A](#)) on identifying cybersecurity risk in ERM:

1. a valuable asset or resources that could be impacted;
2. a source of threatening action that would act against that asset;
3. a preexisting condition or vulnerability that enables that threat source to act; and
4. some harmful impact that occurs from the threat source exploiting that vulnerability.

While the NIST criteria pertains to negative risks, similar processes can be applied to managing positive risks.

Top-down, bottom-up. In identifying risk scenarios that could impede or enhance an organization's objectives, many risk committees find it useful to take a top-down, bottom-up approach, Witte said. In the top-down exercise, leadership identifies the organization's mission-critical processes and works with internal and external stakeholders to determine the conditions that could impede them. The bottom-up perspective starts with the threat sources (earthquakes, economic downturns, cyber attacks, etc.) and considers their potential impact on critical assets.

Risk by categories. Organizing risks by categories can also be helpful in getting a handle on risk. The guidance cited by Witte from the Committee of Sponsoring Organizations of the Treadway Commission (COSO) uses the following four categories:

- strategic risk (e.g., reputation, customer relations, technical innovations);
- financial and reporting risk (e.g., market, tax, credit);
- compliance and governance risk (e.g., ethics, regulatory, international trade, privacy); and
- operational risk (e.g., IT security and privacy, supply chain, labor issues, natural disasters).

Another way for businesses to categorize risks, according to compliance expert Paul Kirvan, is to bucket them under the following [four basic risk types for businesses](#): people risks, facility risks, process risks and technology risks.

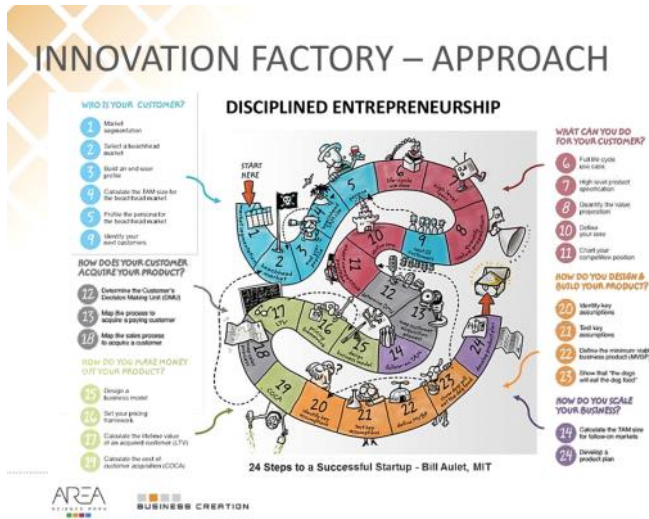
The final task in the risk identification step is for organizations to record their findings in a risk register. It helps track the risks through the subsequent four steps of the risk management process. An example of such a risk register can be found in the NISTIR 8286A report cited above.



CV War class activity

Thursday, December 30, 2021 10:11 AM





WHO IS YOUR CUSTOMER?

- 1 Market Segmentation
- 2 Select a Beachhead Market
- 3 Build an End User Profile
- 4 Calculate the TAM Size for the Beachhead Market
- 5 Profile the Persona for the Beachhead Market
- 9 Identify Your Next 10 Customers

WHAT CAN YOU DO FOR YOUR CUSTOMER?

- 6 Full Life Cycle Use Case
- 7 High-Level Product Specification
- 8 Quantify the Value Proposition
- 10 Define Your Core
- 11 Chart Your Competitive Position

HOW DOES YOUR CUSTOMER ACQUIRE YOUR PRODUCT?

- 12 Determine the Customer's Decision-Making Unit (DMU)
- 13 Map The Process to Acquire a Paying Customer
- 18 Map the Sales Process to Acquire a Customer

HOW DO YOU MAKE MONEY OFF YOUR PRODUCT?

- 15 Design a Business Model
- 16 Set Your Pricing Framework
- 17 Calculate the Lifetime Value (LTV) of an Acquired Customer
- 19 Calculate the Cost of Customer Acquisition (COCA)

HOW DO YOU DESIGN & BUILD YOUR PRODUCT?

- 20 Identify Key Assumptions
- 21 Test Key Assumptions
- 22 Define the Minimum Viable Business Product (MVBP)
- 23 Show That "The Dogs Will Eat the Dog Food"

HOW DO YOU SCALE YOUR BUSINESS?

- 14 Calculate the TAM Size for Follow-on Markets
- 24 Develop a Product Plan