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ABSTRACT

Six thinking hats is a recently introduced technique which outlines different thinking styles associated with analysing a given problem in an effective way. Six hats correspond to six different thinking styles used in a systematic problem solving procedure with different approaches. Alternately, by conceptualizing each type of hat with a different colour, the person focuses on the predominant style of thinking associated with each colour so that the problem can be analysed from different angles or frame of references. This method supports lateral thinking possibilities and enables new outcomes during problem solving sessions so that the optimum solution can be reached. Each type of hat generates plenty of solutions to any situation/problem based on neutral quantitative judgement, humanistic thinking, optimistic, creative, negative or managerial thinking and choosing the best solution among each possibility is the first stage. The best solution thus chosen gives a set of optimum solutions. The best out of all these optimum solutions is the ideal solution. In this paper, we have tried to examine how six thinking hats technique could be used in the ideal analysis for decision making in critical situations.

Keywords: Six thinking hats methods, Critical Situations, Decision making, Ideal analysis.

1. INTRODUCTION :

Managers face problems which should be solved as fast as possible for organizations to function effectively. Hence decision making capability is an essential requirement for such position. Different people make different solutions to a given issue or problem. It could be presumed that the personality of the individual influences his thinking. This could be utilized to explore decision making styles also. That is to say decisions or solutions to problems are associated with the personality and thinking style of the person and not just his /her inner capabilities and outer environment. Edward de Bono introduced a simple, but powerful lateral thinking technique called the Six Thinking Hats [1]. Six hats represent six thinking styles associated with attempting to solve a problem. By conceptualizing each type of hat, the person focuses on the style of thinking associated with corresponding colour.

For instance, by assuming WHITE hat, the person adopts neutral judgement based on facts and figures, RED hat represents humanistic thinking filled with emotions and feelings, YELLOW hat focus on the positive aspects of the situation, BLACK hat stands for pessimistic or negative thinking based on comments, criticism, caution & carefulness, GREEN hat represents creative thinking, and BLUE hat is thinking based on planning, organizing and controlling. The Six Hats thinking is productive and adopting it in ideal analysis can result in improved solutions [1-5].

2. ADOPTING SIX THINKING HATS TECHNIQUE FOR IMPROVED SOLUTIONS :

Adopting the Six Thinking Hats technique in problem solving sessions can achieve a number of outcomes [2], including efficient meetings - where time is cut by two thirds of traditional meetings, productive meetings – where outcomes generated can be explored further, quickly identifying alternatives to solve problems, and effective thinking process where participants experience different perspectives during divergent parallel thinking. We find the six hats thinking extremely useful in

decision making process both in personal and professional life.

For instance, taking a decision about hiring a candidate for a mid-size position in a strategic role, two options could yield two sets of decisions – conventional way and alternative way.

I. (1) Confine to budget to reduce cost.

(2) Simply do not stick to the budget. Increase it and hire the person with the right skill set as it is rare, and demand years of experience to hone the skill. It may cost double, but the benefit will be even greater in the long run.

II. (1) Choose a raw hand and train. Cost of training would be less than cost of compensating an experienced hand.

(2) Hiring a person from similar industry with required skill set, and experience may be a cost saving decision.

III. (1) Investment in training is lost if the person leaves the organization after he acquires the skill.

(2) Higher compensation can increase the probability of the person remaining long with the organization.

The summary of the role of six thinking hats in analysing a situation is given in table 1.

Table 1 : Six thinking hat styles.

S. No.	Thinking Hat	Role of thinking hat
1	White Neutral hat	White Neutral hat rely on facts, data, statistics and concrete information for solutions to problems.
2	Red Intuitive hat	Red Intuitive hat uses feelings, emotions, values, and intuition while finding appropriate solutions to the problems.
3	Yellow Optimistic hat	This hat inspires to logically present positive plans of action that will help overcome the problems.
4	Black Pessimistic hat	The black hat is characteristic of negative and pessimistic approach. However, it is one of the most important styles of thinking as will help to better understand the pitfalls of thinking.
5	Green Creative hat	Green Creative hat tend to bend the rules, think outside-the-box and expand the possibilities of the improbable in unique ways. The Green hat will come up with brilliant creative solutions — opening the doors to new opportunities and unique solutions.
6	Blue Managerial hat	Blue Managerial hat uses managerial techniques to direct the thinking process.

3. DECISION MAKING IN CRITICAL SITUATIONS :

Critical situations arise when time and money are important considerations. In such situations, information at hand is limited and risk of a wrong decision is high. When we take certain decision about important things in our life, it does not become easy to come to final and constructive conclusion. Decision making becomes difficult because it is usually not lateral and opposing. Especially when an individual or team decision needs to be taken it should be collaborative, supportive, 360 degrees thinking, understanding from all angles and then taking a decision. Six major thinking styles can be defined in the approach to arriving at a solution to a problem or critical situation. But the question then is which is the best of this. This takes us to the issue of an ideal solution.

4. IDEAL SOLUTIONS FOR CRITICAL SITUATIONS :

The concept of ideal systems is used in many books and research publications to represent a system which has ideal characteristics [6-18]. The ideal model of a system is expected to contain certain characteristics. It should be capable of taking new formulations into account without having any changes in its frame, the assumptions made in the system model should be as small as possible, the variables used in the model must be less in number ensuring that it is simple and coherent, should be open to the parametric type of treatment, and the model should not take much time in its construction

for any problem [6]. The significant advantage of using such ideal system model is that problems under consideration become controllable through a model that provides a logical and systematic approach to the problem. Ideal systems should have ideal solutions for system related problems. Ideal solutions are the best solutions at every time independent of internal and external factors. Ideal solutions have following characteristics:

- (1) Ideal solutions are the best solutions at any given time.
- (2) Ideal solutions are independent of time.
- (3) Ideal solutions are independent of internal and external factors to the system.
- (4) Ideal solution for a given problem can easily handle critical situations.
- (5) Ideal solutions do not consider the constraints and limitations of the system.
- (6) Ideal solution completely solves a given problem so that it is the complete solution.
- (7) Ideal solution will take care of the objectives of the system while solving the problem.
- (8) Ideal solutions while implementing will not consume resources like material, energy, and time.

5. IMPLEMENTING IDEAL SOLUTION :

Ideal solutions, even though attractive, are difficult or even impossible to achieve. But based on innovative strategy, one can reach close to it. The different ways of identifying ideal solution depend on the type of the system/problem. As per definition, the ideal solution to any problem in any system, should not consume any material resource and time while implementing. But in practice, no solution can be implemented for tangible systems without consuming either material resource or time resource. In the case of intangible systems or problems related to them, ideal solutions can be achieved without the need of either material resource or time resource.

Ideal solution can be determined for any problem related to a system, even if they are not achievable in practice. The ideal solution for tangible problems cannot be achieved due to practical constraints in real systems. Such solutions are called optimum solutions with practical constraints. By continuously eliminating or diluting the constraints, one can improve optimum solutions continuously. Thus ideal solution concepts will certainly help the individuals or teams to continuously improve the solutions towards ideal solutions while making decisions towards a problem. Six thinking hats method can be used in identifying ideal solutions to practical problems during handling critical situations by developing many alternative solutions in each thinking approach, choosing the best among them, comparing it with similar best solutions from other thinking approaches and finally choosing the best or ideal solution from among them.

6. HOW SIX THINKING HATS METHOD IS USEFUL :

- (1) Optimum solution using White Thinking hat :

Any problem and its solution are viewed at in terms of its consequences namely cost. This leads to a neutral approach through making a numerical analysis. Solutions centre around facts and figures. Critical situations demand neutrality with numerical cost benefit analysis. White thinking hats enables to think quantitatively while making objective judgements in decision making.

- (2) Optimum Solution using Red thinking hat :

Every problem involves human issues and so also any solution. The gain of the one is a worry for another. For instance, filling a senior position with a new recruit worry existing aspirins who find their chances lost. Cutting down cost may prove to be adverse to the beneficiaries although organization stand to gain. Similarly, cutting down production could lead to layoff or entrenchment. Setting targets may disappoint those who feel they are overworked. An ideal solution in critical situations through red hat tries to eliminate human impact to the maximum.

- (3) Optimum Solution using Yellow thinking hat :

The consequence of a decision is unpredictable especially if it is made in a lot of uncertainty. Optimum alone comes to help in such times. More particularly, critical situations are very decisive, time and inform at hand is limited.

- (4) Optimum solutions using Black thinking hat :

People are worried about what would be the possible impacts of a decision. This leads to a negative thinking to minimize risks that could be possibly the by-product of the decision. They seek safety in

following existing practices because any major departure from this would invite criticism. They tend to be excessively careful and too much cautious. This may result in the black hat thinking where solutions are largely in conformity to precedence. The bad side of this way of thinking is that there is a tendency to play safe in their decision. However, this may suit routine decisions but cannot eliminate anarchy, lethargy or corruption. However, it can diffuse the severity of a critical situation by not attempting critical decision.

(5) Optimum solution using Green thinking hat :

Finding new solutions to old or new problems is always a passion for challenge seekers. The quest for new and original ideas dominates such people. Certain critical situations demand green thinking hat solutions because existing practices have become redundant or unappealing. The very novelty of the solution makes a big change. Optimum solutions are born through out of the box thinking. This is applicable to both individuals and organizations.

(6) Optimum solution using Blue thinking hat :

Managerial thinking becomes relevant because it is founded on systematic problem solving techniques. For any person or organization every minute involves making a decision. Many do not realize this because it goes largely as stereo type. Managers are trained in decision making through case study exercises, in-basket exercises etc. and the successful manager is a good decision maker. In day today life managerial decision making is called for if the optimum solution calls for well structured and well ordered solution. Six thinking hats technique for different type of people and their critical situation types are mentioned in table 2.

Table 2 : Six thinking hats technique for different type of people and their critical situation types.

S. No.	Colour of hats	Description	Type of People	Type of Critical situations
1	White	Quantitative thinking using facts & Figure	Administrator	Defeat
2	Red	Humanity based Thinking based on ethics, Values emotions & feelings	Sage /Religious leaders	Deprivation
3	Yellow	Optimistic Thinking based on hope, positive & speculative	Leader	Delay
4	Black	Negative thinking based on comments, critics, cautious & careful	Politician	Diplomacy
5	Green	Creative thinking based on ideas and lateral thinking	Innovator/ Scientist	Discovery
6	Blue	Managerial thinking based on planning, organizing and controlling aspects	Manager/ Executive	Danger

It follows from the above that six hats thinking process helps to take best decisions in critical situations if it is applied through ideal analysis technique.

7. USING SIX THINKING HATS FOR IDEAL SOLUTION :

Six thinking hats technique can be used to get an ideal solution to a given problem or critical situation. While using six hats techniques the decision maker who wants it to analyse the given problem or critical situation has to analyse it using all six frame of reference. The problem has to be discussed in detail using the white hat whose primary role is to collect facts, data, statistics and concrete information that lay the groundwork and foundations for his thinking. The collected information in the form of facts, data, and statistics can be used in finding alternative solutions without any partiality and prejudice. Out of many alternative solutions obtained by white thinking hat technique, the optimum solution should be identified using any optimization technique. Alternately, the problem has to be discussed using the Red Intuitive hat using the feelings of intuition of the decision maker to find

appropriate solutions to the given problem. The problem should be discussed in details using beliefs, feelings, intuition, values, emotions, etc. to find various alternative solutions and by analysing them further, to find the optimum solution.

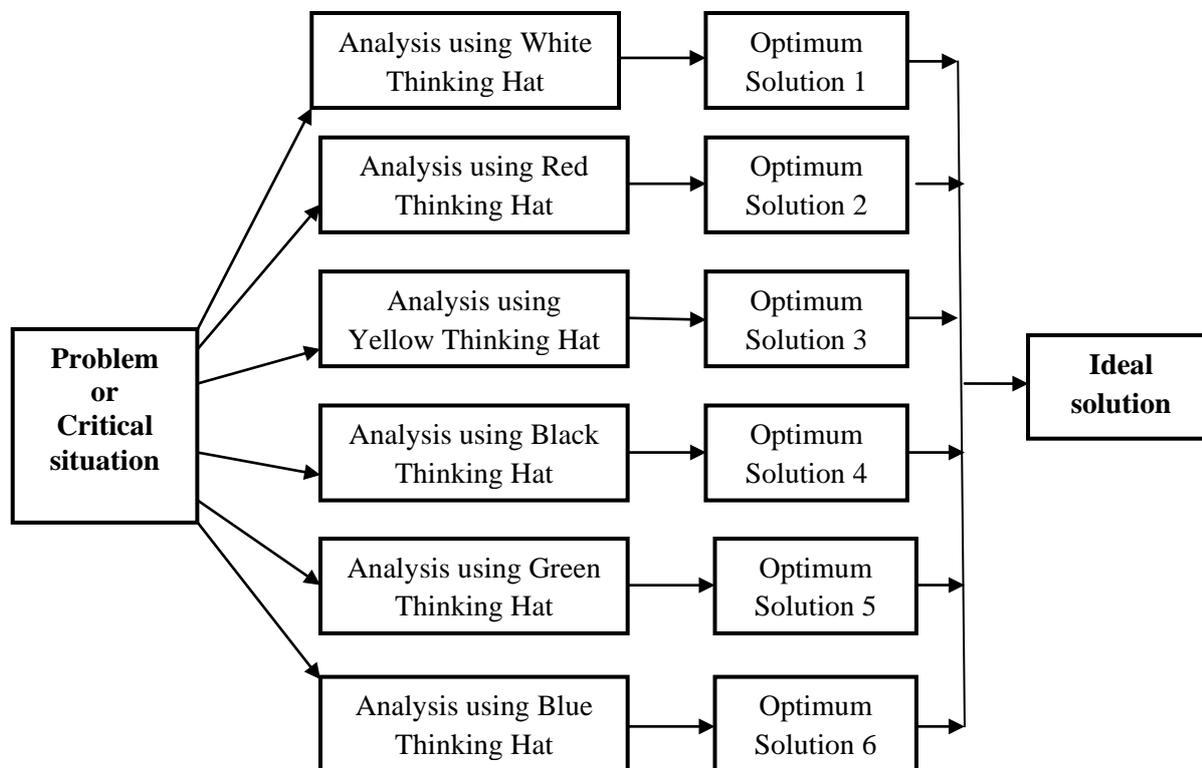


Fig. 1: Conceptual model of developing Ideal solution using six thinking hats method.

Similarly, the problem may warrant using optimism, hope, and speculation. This brings in a positive attitude wherein risks are ignored giving way to confidence and logical reasoning. The outcome is anticipated as appropriate with a reasonable amount of positive speculation sassing yellow hat. Black hat is just the opposite of yellow. Here, all possible comments and criticism are taken with caution and carefulness. The repercussions of the decision are well thought out. Adopting the green hat, involves challenges, finding original and creative solutions. Out of the box thinking as it is called can bring surprising decisions which radically alter the problem scenario while solving it. Blue managerial hat thinking is to manage and direct the thinking process. The blue hat thinking to find the various alternative solutions involves planning, organizing, coordinating and controlling. The conceptual model of developing an ideal solution using six thinking hats method is given in figure 1.

From among many alternative solutions generated in each thinking, the best to be adopted could be called optimum solution. Out of six such optimum solutions obtained under six thinking hat analysis, the best called ideal solution should be determined by weighing each optimum solution in detail against the other to arrive at an ideal solution.

7.1 Developing Optimum Solution with White hat Thinking :

Quantitative property of the white hat leads to reasoning and logical basis for thinking. Hence, solutions tend to be disconnected from consequences. Solutions reflect balanced effects with equity derived from fair and judgemental standards. Besides, the numerical emphasis renders substantive thinking resulting in rationality for solutions.

Table 2 : Properties and characteristics of white hat solutions

Critical situation	Properties of hat	Basis for Thinking	Characteristics of Optimum solution
	Quantitative	Reasoning & Logic	Reduced implications
	Neutral	Fair & Judgemental	Equity

	Objective	Value free & Ethical	Balancing of effects
	Numerical	Substantive	Rational

7.2 Developing Optimum Solution with Red hat Thinking :

Humanistic concern is the hallmark of this kind of thinking. It arises from deep seated emotions and feeling. Ethical basis and value judgements are characteristic properties of this hat. Solutions have reduced the impact on those affected. Tendency to focus on self affords limited bandwidth to manoeuvre.

Table 3 : Properties and characteristics of Red hat solutions

Critical situation	Properties of hat	Basis for Thinking	Characteristics of Optimum solution
	Emotions	Humanistic Concern	Limited bandwidth
	Feelings	Empathetic Consideration	Portraying of self
	Values	Identification with situation	Expression of Aggrieved
	Ethical bias	Leniency	Reduced Impact

7.3 Developing Optimum Solution with Yellow hat Thinking :

Yellow thinking hat is characterised by hope and optimism. Therefore, the decision maker is confident of the outcome of the solution. This is characterized by closer to real understanding of solutions with perspective orientation. He is guided by futuristic outlook and high expectations. This leads to solutions which fetch faster returns.

Table 4 : Properties and characteristics of Yellow hat solutions

Critical situation	Properties of hat	Basis for Thinking	Optimum solution
	Hope	Confidence & Trust	Reduced influence
	Optimism	Futuristic outlook	Perspective orientation
	Positivism	Honesty of purpose	Closer to real
	Confidence	High expectation	Faster returns

7.4 Developing Optimum Solution with Black hat Thinking :

Critical situations addressing black hat are based on comments, criticism, caution, and carefulness. This leads to reactive and adaptive thinking. Solutions will have reduced side effects to invite criticism, increased acceptability, more convincing and subtlety of errors.

Table 5 : Properties and characteristics of Black hat solutions

Critical situation	Properties of hat	Basis for Thinking	Optimum solution
	Comments	Reactive	Reduced side effects
	Criticism	Adaptive	More convincing
	Caution	Speculative	Mindful of errors
	Carefulness	Reformative	Creating acceptability

7.5 Developing Optimum Solution with Green hat Thinking :

Quest for creativity in addressing challenges is characterized by lateral and out of the box thinking and newer ideas. Such properties of the green thinking hat give way for innovation, intuition, investigation, and introspection. Result is originality in solutions, radically different from conventions with a higher probability of success.

Table 6 : Properties and characteristics of Green hat solutions

Critical situation	Properties of hat	Basis for Thinking	Optimum solution
	Ideas	Innovation	Exploratory nature
	Lateral thinking	Investigation	Radical outlook
	Creative thinking	Introspection	Novelty & originality
	Out of the box thinking	Intuition	Higher Probability

7.6 Developing Optimum Solution with Blue hat Thinking :

Managerial problem solving style rely on planning, organizing, coordinating, and controlling elements and this characterise the property of blue hat. Solutions tend to anticipate circumstances and

synchronize context, keeping grip on consequences.

Table 7 : Properties and characteristics of Blue hat solutions

Critical situation	Properties of hat	Basis for Thinking	Optimum solution
	Planning	Foreseeing requirement	Anticipation of circumstances
	Organizing	Sequencing arrangement	Synchronization of context
	Coordinating	Establishing interdependent	Integration of efforts
	Controlling	Collecting result	Grip on consequences

8. CONCLUSION :

The world today is characterized by huge and complex organizations. Six thinking hats technique is a multidimensional thinking approach relevant to decision making in complex organizations. It may be conceived in three different ways. One is in a group problem solving session where different people come with different perspectives which reflect different hats and thereby leading to a mature decision considering all possibilities from all angles. Secondly, it may represent an individual manager who thinks through all the six sets of possibilities and then arrives at viable decisions. It could also mean that each of the six hats represent six approaches which would represents different personality types and therefore people tend to take certain sort of decision. Critical situations are decisive for the person or establishment which warrant the most prudent decision. Application of six thinking hats in ideal analysis yields the following. Generating a large number of possible solutions through each thinking hat approach is the first stage. Choosing one optimum solution from each set is the second stage. Choosing the ideal solution from all optimum solutions is the final stage. However, there is no situation which has a pre-conceived, mysterious or unique decision. The idea is to reckon the best possible decision as an ideal decision which has maximum gain and minimum loss.

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