ESTABLISHING AN ENTERPRISE CRISIS MANAGEMENT MODEL (ECMM)

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ABSTRACT

A company aims to maintain profit margins and develop an overall future strategy; meanwhile, it should be ready to face and deal with an unexpected crisis. This means that management needs to prepare for the crisis management, so that they can continue to prosper and develop steadily.

Crisis management consists of five phases of managerial action – production, marketing, human resource, development and finance, conceived and implemented by management, through periodical and step by step checking in the process of managerial development, to discover and plan for the future scenarios and compensate for any variance from the goal. If an unforeseen event occurs, which affects strategy of a company, this is known as "the fact phenomena". If this event remains and becomes more serious and leads to a crisis, this is known as "the crisis factor". The purpose of this research is to suggest use of the ECMM in management strategy to prevent or minimize the damage caused by the unforeseen event.

After reviewing relevant research, a 6 σ quality management planning model and QCC (Quality Control Circle) was employed by the authors. We established a model of enterprise crisis management. By conducting in depth interviews with experts and 30 scholars, we collected data from both the practical and academic worlds. The first set of data was collected from the managers of the top 1000 enterprise rank in Taiwan. The research uses case study analysis and comes to a conclusion.

The authors found that companies should set up a system of crisis management to prevent any unforeseen crises. We established the following levels of crisis: light crisis, heavy crisis, serious crisis and crash crisis. The ECMM should help companies with the following: (1) establish an independent faculty with

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authority; (2) set up a plan of crisis management, including a definition of the crisis factor, the level of crisis and the criteria and procedure of the dealing crisis. (3) involve the employees in the company, and (4) set up the crisis management. We also found that the role of the administration is responsible for: P (Planning), D (Discover), A (Analysis), R (Remove), and T (Training) of the ECMM. Finally, we suggest that local government may assist, and support implementation of the ECMM to companies. If a company adopts the ECMM, this will help ensure the survival of the company into the future.

Key words: Enterprise Crisis; Crisis Management; Crisis Factor; Quality Research; Quality Control Circle; Total Quality Management; 6σ

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1. INTRODUCTION

1.1 Aims of the Research

A company is vulnerable to crises, which can affect company's ability to grow. This can result in a company experiencing production problems resulting in bottlenecks, which have to be overcome. Jheng-Guan Syu (1992) states "How to make a crisis of be a chance is the most tactic mission of the members of the company. However, only a small proportion of companies that have faced a crises actually survive. This research aims to establish an enterprise crisis management model (ECMM) to examine if the crisis has affected a company and how to resolve it. The ECMM can be compared to an X-ray, which allows doctors to see problems within a human body. Therefore, a course of action can be drawn up to solve the crises before it becomes serious.

The ECMM measures factors that are vulnerable to crises within a company, these are: production, marketing, human resource, research and development, finance and administration. The aims of the ECMM should be: (1) predicting possible crisis in advance; (2) preventing and/or limiting damages from a crises (3) minimizing risk for crisis, and (4) continuing the business while affected by the crises.

1.2 Definition of Crisis Management

The meaning of "enterprise crisis" is that a company can not expect events which have come or can not control in a un-stable situation or phenomena to continue while the growth of the business, i.e. any event that come from different channels would allow business to operate as normal. (Christine, 1993) The enterprise crisis is just like the flu which, if occurs, impedes the companies ability to grow. To conclude the researchers' view, the authors state that: "in all levels management (production, marketing, human resource, research and development, finance and administration), through periodically and occasionally examining the management activities, managing to find out the severity of the crises. If the permitting severity has been exceeding, or if the events have impacted the results, inside or outside the company, an un-expectable event appears which could influence negatively upon the result of the business, it is called "crisis management". On the other hand, the authors also define "the classification of the level of crisis" to be:

1.   Light crisis: the crisis appears and might affect the results of a business within one month.

2.   Heavy Crisis: the crisis appears and might affect the results of a business from one month to within half a year.

3.   Serious crisis: the crisis appears and might affect the results of a business from half a year to within one year.

4.   Crash crisis: the crisis appears and might affect the results of a business and cause it to shut down.

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2. LITERATURE REVIEW

Quality Control Circle (QCC) is a philosophy of continuous improvement of all the employees in an organization, so that they perform their tasks a little better each day. The quality circle concept first originated in Japan in the early 1960s, following a postwar reconstruction period during which the Japanese placed a great deal of emphasis on improving and perfecting their quality control techniques. As a direct result of work carried out to train foremen during that period, the first quality circles were conceived, and the first three circles registered with the Japanese Union of Scientists and Engineers in 1962. Since that time the growth rate has been phenomenal. The concept has spread to Taiwan, the USA and Europe, and circles in many of these countries have become successful.

Oakland (1995) recognized that 'Total Quality Management' (TQM) is an approach to improving the competitiveness, effectiveness and flexibility of a whole organization. It is essentially a way of planning, organizing and understanding each activity, and depends on each individual at each level. For an organization to be truly effective, each person and each activity affects and in turn is affected by others. TQM is also a way of ridding people's lives of wasted effort by bringing everyone into the processes of improvement, so that results are achieved in less time.

To distinguish the crisis management, we should know other management activities that had been very famous. Such as '' (Pande, Neuman and Cavanagh, 2000), 'Total Quality Management' and 'Quality Control Circle'. Pande et. cl. declared that '6σ' is 'a whole and elastic system that is used to catch, maintain and enlarge the success of the enterprise. The drive factors of the 6σ are to find out the customer's needs, the strict used fact, data or statistical analysis, and to carefully watch the administration process of the management. The processes of the factors are: 'define', 'measure', 'analysis', 'improve' and 'control'.

Sih-Hua Wu (1996) classified the crisis of a business to be two different factors and five levels: (1) political crisis. Included political instability and policy's instability. (2) Statutory crisis: economical crisis, natural crisis and social crisis. Yi Ciou (1999) pointed out the different factors from organization theory, they are: 'outside cause', it included mankind factors and natural factors; 'inside cause', it included all the phases of the management issues. Yan-Jhih Jhu(2002) from the view of the crisis sources, classified into two categories: the subsidy's cause and fundamental cause. Mitroff (2001) classified the enterprise crisis into four categories: (1) inside business and non-mankind crisis, e.g. the industrial accident damage, the event of industrial safety, the financial problems, the bankruptcy of a business and serious computer crash. (2) outside business and non-mankind crisis, e.g. natural cause, including earthquakes, typhoons, drought, global warming, international event like war, government's crisis, environment damage, banking crises, etc.

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3. RESEARCH METHODOLOGY AND ANALYSIS

3.1 Qualitative Research

The research was provided with the opinions of scholars, and the managers from the academic and practical worlds.   To express the necessity of the research, measurement of the research methodology and structure was conducted with a questionnaire.   To assess the reliability of the questionnaire, 30 people in the Collaborating Establishment, which included different levels of experts, were assigned to answer the questionnaire.   The author used the results to measure and to express the confidence of the research.

3.2 Questionnaire Survey Method and Collaborating Establishment Analysis

Questionnaire Design and Survey

The researchers considered the experience of the 30 experts to establish a practical reference guide that offers an easy-to-follow approach for any business - small , medium and international to "establish an enterprise management crisis system".   With business success stories and examples to help confirm the research methodology and structure that will encourage them to establish an enterprise management crisis system that will work for their organization.   For this purpose, the author designed a constructive questionnaire.   The questionnaire was divided into two parts, the first part of the questionnaire was be used for the in depth interview, the other part was used for the mailed questionnaire.   The author designed some different questions in the two questionnaires in order to get a result for the research.

1.   The author collected a sample by a depth interview of the managers.   The managers served in the top 1000 enterprise rank in Taiwan. With their business success or fail stories and examples to apply the concepts and techniques of crisis management; specifically for small and medium sized business when they intended to approach to be an international enterprise.

2.   With the scholars opinion, and the mailed questionnaires returned questionnaires to the top 1000 enterprise rank in Taiwan, is 400 of the questionnaires were sent, and 122 copies were returned and completed.   Thus, the collection rate was above approximately 30%.   This is an acceptable and appropriate figure.

The data collected is used to obtain the following results

The data collection phase consisted of two steps.   Step one, the collection of data used for person-to-person interviews.   The questionnaire was reviewed with the experts, the scholars, and the managers and vice general managers of 30 companies.   The data obtained was treated as monitoring material to enable rephrasing and regrouping of the model.   The results were shown as follow:

1.   On the concept and identification of the "Enterprise management crisis".   We obtained with the corresponding crisis concept from most of the professional experts.   Some different viewpoints existed from the criteria of our enterprise management crisis assumption.   Now we analysis the

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differences as follows:

(1) According to the characteristics of the enterprise, and the goal of the developing a business project. These will include different standards.   Therefore, some experts thought that the criteria can afford to apply the ECMM enterprise to prevent crisis from happening, 35% thought they didn't need the ECMM.   Also, classifying what crises belonged to light, heavy, serious and crash crises also resulted with different viewpoints among the experts.

(2) From the prevention point - Most of the enterprises experts considered that unforeseen reasons were too much to prevent and that they shuold only consider the enterprise characteristics and financial costs. It is impossible for a company to prevent every crisis from happening completely.

(3) The concept of the enterprise management crisis training education is helpful for communication, advertising, and learning.   Training needed a sequential and logical operation procedure, otherwise it may be a burden on a company, and give the ECMM enterprise a bad reputation.

2.   Concerned with the enterprise management method: some documents revealed that most of the managers had the same opinions.

(1)   On the point of the enterprise management crisis method: Some different viewpoints existed. Some managers recognized the enterprise crisis management system was a key word for the enterprise developing.   Some managers recognized when companies were on the way to implementing the crisis system , they might need some external supporting system to help .   The conditions for the external consultant system were had to know the procedure and understand the company developing system in detail.

(2)   On the point of the research model theory: When a company was involved in a crisis, the organization of the enterprise system must have some impact on the enterprise. It is helpful for the enterprise to get some professional analysis and some advice from the external consultant system to solve the threat.

3.   Concerned with the enterprise management crisis management structure:

From the point of the management strategy structure, there existed some different viewpoints. Nowadays, the enterprise managers feel very upset, because they have no alternative, no routine rules and no documentation when they needed to manage a crisis.

4.   The Standard Operation Procedure (SOP) was resourced from a complete different plan, but it depended on their staff officer to assist and plan their work, and how effective it is to do the operational procedure was up to the executive management. Therefore, how to train professional experts, and how to use the external system to continually improve the all system was an important factor.

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3.3 The Result of the Questionnaire

The real statement of the "enterprise crisis management" for the mailed questionnaire is shown as follow:

1. Most of the companies had have crisis experience when they was growing.   65% of large companies had predicament stories, they survived from the crisis fortunately and turned their companies into the large sized companies.   In these large sized companies 80% had their crisis management plan. With their experience, it was good for sampling for the small and medium enterprise.

2. 60% of large sized companies had "crisis management circle".   From the message provided by us that companies couldn't have crisis idea when they developed into larger sized companies. Highlight on the "crisis management circle" system structure, 34% permanently had the system, 76% temporarily had the system.   From this point of view, we can find that the management was active.

3. Towards "Establishing" the enterprise management crisis system, 65% managers were ready to do so. The managers had assigned clients from a wide range of management department such as production, marketing, human resource, research and development, finance, administration, etc.   From the high percentage message we can see that the ECMM was be accepted by the companies in proper.

4. Support from the external consultants to establish the enterprise management crisis system: more than 50% managers considered it was needed.   But for the small and medium companies since they can't afford the luxury of full-time permanently experts to guide them through the steps of implementation.   The author considered it more necessary for small and medium sized enterprise to rely on the external consultants.

5. The importance of having good experience for the enterprise management crisis experts was noted. Larger companies that could afford this training and then started training program to pass on this experience.   From the questionnaire, more than 55% of large companies supported the authors' idea. The research considered the professional processing ability, human resource management developing plan, which needed a logical sequential training for all companies and the high level of the manager experience also was a professional expert for doing the enterprise management crisis.

3.4 The response of the person -to-person interview

From the interview, we obtained some data, and described, analysis it as follows:

1. Concerned with establishing the enterprise crisis management system – "the goal and function": we collected the results from the three sides-scholar's opinions, the enterprise manager's opinions, and the expert's opinions.

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Table 1 The results of "the goal and function" factor in enterprise crisis

Statement	Scholars	Enterprise managers	Experts opinions
1. Need to prevent the crisis happen.	100%	90%	93%
2. Need to identify the levels of the crisis just in time.	90%	60%	70%
3. Need to solve the crisis immediately.	90%	90%	90%
4. Can reduce the management possible loss.	100%	85%	90%
5. Can subtract the management risk.	100%	90%	93
6. Can train the professional experts.	70%	100%	90%
7. Can improve the management function.	90%	80%	83%

All experts accepted that the above seven items are the goals and functional targets for establishing the enterprise crisis system.　And from the targets the companies could obtain an multiple functions and concepts to establish the goal and function for the crisis system..

2.　Concerned with the key to establish the enterprise crisis management system – "factors and reasons".

Table 2 The results of "factors and reasons" factor in enterprise crisis

Statement	Scholars	Enterprise manager	Experts opinions
1. Definition and function (according to the ranking development).	70%	80%	76%
2. System (ranking structure, emergency plan).	100%	85%	90%
3. Authority (responsible level - people and department).	90%	65%	90%
4. Experts (internal training, external consultants)	80%	75%	76%

Mentioned about the above 4 items of the establishing factors and reasons.　Most of the experts had the same viewpoints, they accepted the system items with a high percentage, but the company managers were all embarrassed in the factors of the authorities.

3.　Concerned with the key to "establish" the enterprise crisis management system - Specifically for the Small and Medium Sized Enterprise.

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Table 3 The results of "establish" factor in enterprise crisis

Statement	Scholars	Enterprise manager	Experts opinions
1. To declare the conscious of crisis -necessity.	90%	90%	90%
2. To establish the "enterprise crisis management system"-necessity.	90%	95%	93%
3. To train professional expert-necessity	80%	80%	80%
4. Rely on external experts such as professional advisers, lawyers, and financial experts.	90%	80%	83%
5. To improve achievement, and competition-increase loan reputation, financial resource.	90%	85%	86%

3.5 Summary Discussion of empirical results

1. Concerned with the conscious and identification of crisis:

Table 4 Summary of the conscious and identification in enterprise crisis

Statement	Questionnaire	Interviewer
1. Any potential reason and possible questions for running the business we can consider that were enterprise crises.	95%	100%
2. Within the company developing, that a crisis was evitable to be happened.	89%	83%
3. The potential of the crises, and how can the company prevent it.	85%	86%
4. According to the influence levels of running business, we classify the crisis into light crisis, heavy crisis, serious crisis, crash crisis	88%	83%
5. The conscious crisis is what we can learn, and communicate from the education training.	88%	93%
6. The score of managing crisis is determined by preventing, discovery, manage in and reflection with the every member in the enterprise.	96%	97%

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2.   Concerned with the enterprise crisis – manage method:

Table 5 Summary of manage method in enterprise crisis

Statement	Questionnaire	Interviewer
1. Enterprise crisis could happen in every department of the company.	90%	93%
2. If the strategy was be done inefficiently, then the enterprise crisis would occur.	97%	97%
3. "Prevention" is the first thing for managing crisis.	97%	97%
4. The enterprise management can work through the system, such as production, marketing, finance and administration to establish a preventing management circle.	94%	93%
5. When a company had a crisis, it should have a special department to handle with responsible to do so.	90%	93%
6. The managing crisis ability could be helped by the professional experts and also could increase ability by professional training.	87%	90%
7. When a company had a crisis, the enterprise needed external consultants to support and to help manage it.	87%	83%
8. To manage the crisis at first time, it could reduce and decrease the company loss and risk.	97%	100%

3.   Concerned with the managing crisis system:

Table 6 Summary of managing system in enterprise crisis

1. The managing crisis system should have a SOP (Standard Operation Procedure) plan concerning crisis management, dealing team, definition, goal, operation procedure, operation handbook, and efficiently measure the performance of management.	92%	100%
2. The plan of " A managing crisis system" should include: prevention, discovery, analysis, remove, and training.	93%	90%
3. The strategy of "The managing crisis system", will be made by the company board. Then, they will give staff a definitive	80%	83%

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plan and budget to follow.		
4. The executive part of "The managing crisis system" needed to audit and check in regularly; otherwise it cannot correspond with the enterprise developing.	91%	96%
5. The goal of establishing " The managing crisis system" is a timesharing system for reducing enterprise risk.	93%	96%
6. To establish" The managing crisis system "will help enterprise to raise their competition and manage capacity.	90%	93%

4. RESEARCH RESULTS AND MODELING

4.1 The SOP (Standard Operation Procedure)

For the research theory and structure, we can point to the enterprise business activities: the management structure such as production, marketing, human resource, research and development, finance, and administration department to audit the enterprise goal target , and design the plan to do the "Enterprise management crisis" .

The steps of the SOP (Standard Operation Procedure):

1.   Rules for execute department's rules: Boards of management committee to pass the rule and achieve the goal.   Then give authority to the rank of department with the responsibility to follow.

2.   Elect the members of the "Crisis Management Team".

3.   Design an "Enterprise management crisis" system.

There are five steps about how to design the SOP (Standard Operation Procedure):

1.   To design the "Enterprise management crisis" plan:

(1) To advertise and definite the goal to let the member in the enterprise understand how to find the enterprise crisis in time, and realize when is the first time situation of the enterprise management crisis and how to manage.

(2) Give a definition to classify the crisis levels and to identify the emergency signals: (a) Light Crisis. (b) Heavy Crisis. (c) Serious Crisis. (d) Crash Crisis.

(3) To Publish the Crisis Management Manual - CMM: List all the possible crisis factors in the enterprise department such as production, marketing, people, research, development, finance, and administration department.   The CMM also has the management procedure for possible crisis factors and essential management to achieve the crisis.

(4) To arrange: (a) the normal training course and teaching material for the company; (b) the professional training course and teaching material.

(5) The enterprise correlated members such as customer, shareholder, staff, firm and creditor.   If the

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companies are in crisis, how to communicate and connect with those correlated member.

2. Method: Present the "Enterprise Crisis" plan and justify a standard for all the departments in the company.   With these standards the members can follow on to do the managing procedure.

  (1) All members in the company can follow quality circle activities.   The quality circle normally gathers or divides all the company members into several groups.   These groups have the power to do the managing crisis work.

 (2) All members in the company can follow quality circle activities.   With the quality circle production type to do the prevention Planning, Discover, Analysis, Remove, Training (PDART) circle system were proceeded exactly and in sequence.   We can utilize the PDART to find the reason(s) that caused the Crisis Factors, and we also can manage use it to the crisis properly.

3.   Check and audit: Corresponding with the "Enterprise management crisis" plan, to make the auditing properly.

(1) The continue check is the function that not only provides continuous improvement but also establishes the plan and system.

(2) A very important step in the auditing procedure is recording every part of the step.   From the records we can realize and reveal the plan is completely done or not, and qualify the capability of the executive member.   The records also were a good training handbook for correcting and teaching "Enterprise management crisis".

4.   The PDART theory and PDART circle management system.   PDART is the verification of "six standard deviation quality plan (6 σ quality plan)-DMAIC, D (Define), M(Measure), A(Analysis), I (Improve), C (Control).   Application the DMAIC theory we can continue to correct and improve the system.

5.   Crisis Management Manual-CMM is the standard handbook for processing, prevention crisis, recording and managing any kinds of crisis that were described in the SOP.   The standard manual included the all detail sheets such as the responsible level sheet, the occupation replacement sheet and internal and external supporting sheet, the list of emergency member and working sheet, business out of working sheet, executive control sheet, the factor analysis sheet, etc.
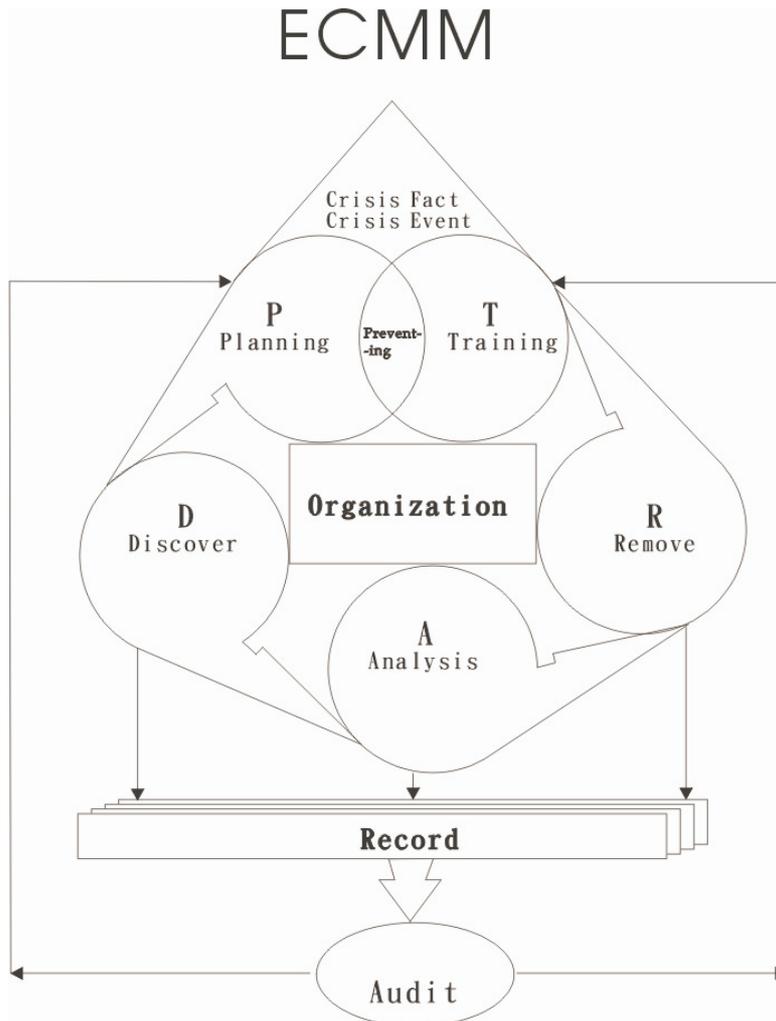
4.2 Research Results

The viewpoint of the "Enterprise management crisis" system: According to the PDART circle management system theory.   Key elements of any problem-solving procedure are: (1) to select structure and design plan. (2) to administrate training and prevention crisis. (3) QCC activities and recording all the activities. (4) to check and audit the records and continue to improve. The results of the research showed that:

1.   It is important for a company that if they have an "enterprise management crisis" concept.   The

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company should, according to their ranking developing, and with their enterprise structure and capability to establish a suitable "enterprise crisis management system".

2. The definition of the "enterprise management crisis "- The enterprise running procedure is concerned with the shape of management (production, marketing, people, developing, and financial etc.). The shape of strategy should be assigned with the ordinary and ranking audit system to make a procedure result.   The enterprise should discover some distances between the goal target and real system.   The distance might exceed the enterprise permitting range.   The distance might reflect the business running results, or influence on the enterprise running results.   This condition is what we call "enterprise management crisis".

3. "Enterprise management crisis system" can go against the enterprise management and strategic activities such as production, marketing, human resource, developing, and financial etc. Analysis of these possible results, might show the reason of the enterprise management crisis factors.   We call it "Crisis Factors".   With "Crisis Factors" to analysis, combine, and design.   Then we have the definition criteria for the degree of the "enterprise management crisis", and the "enterprise management crisis" SOP operating procedure, and method to effective reduce the "enterprise management crisis" indeed.

4.   Companies should convert their crisis into four conditions: Light Crisis, Heavy Crisis, Serious Crisis, and Crash Crisis.

5. "Enterprise management Crisis system" should work with the quality circle activities, to execute the enterprise management crisis system, such as Planning (P), Discover (D), Analysis (A), Remove (R), Training (T)-PDART circle operation procedure.   This system should discover the "Crisis Factors" in time.   And also help the company maintain a good reputation as a quality business.

6. The handbook of the "Enterprise management Crisis system" - Is a handbook for planning the enterprise management crisis system.   Corresponding with the enterprise handbook should be the enterprise "Crisis Factors", and how the enterprise crisis could be prevented form happening. Recording the operating procedure is the standard handbook for the SOP operation procedure.

7. The "Enterprise management crisis" plan should be designed in detail, especially for audit and rewards system.   To advertise the education system, quality circle activity, enterprise management crisis capacity, these instruments can make the enterprise to discovery, analysis, and reduce the "Enterprise management crisis".   With that PDART circle system, the company also can operate the "Enterprise management crisis" in proper, and maintain running a quality business.

8. Taiwanese Small and Medium sized companies, face weaknesses when they any trouble strikes.   We should give them a prefect "Enterprise management crisis" plan, the plan would correspond with their business ranking needs at first, and then they can afford to do their "Enterprise management crisis" system. Follow this system procedure enterprise could raise their business competition, maintain their business, retain their profit capacity and move towards developing into an international company.

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ECMM

Crisis Fact
Crisis Event

P
Planning

Prevent-
-ing

T
Training

D
Discover

Organization

R
Remove

A
Analysis

Record

Audit

5. CONCLUSION AND SUGGESTION

5.1 Conclusion

As we know, in the circumstance of the economic activities. A company that is growing would face the critical mass of existing and challenges for crisis.   A few percent of companies could survive from an enterprise crisis.   How to accept the mass crisis and invert it into the challenge we face and to assure us significant growth.   Is there a heavy commission for the all members in the enterprise?   Therefore, The research aims to help the company in the business of per share earning, increasing and maintenance of market share and also matching the developing growth to establish "The enterprise management crisis system".   Managers should consider "The enterprise management crisis system" as a scientific management method for the traditional enterprise to improve efficiency in the administrative and manufacturing areas of the company to assure that the company continues to grow.

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5.2 Suggestion

The research should meet the requirements of the increasing number of enterprises that need to understand the scientific administration in reality.   The following two suggestions were the aims to meet in my research:

1.   Further research: "The enterprise management crisis system" is a practical method in the methodology and structure world.   I hope that those engaged in the pursuit of professional qualifications in the management of management assurance, such as ISO, of the quality assurance system.   I believe it should behave within scholar circumstances for the intending person to engaged in.

2.   Research method: The research was confined in the resource and research time, only can use Qualitative Research for the research method.   I hope that other researchers can analysis other complicated methods.   With further analysis to compare factors in detail, then the crisis system may become an accurate and perfect theory model in the management field.

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