Risk Management and Organizational Adaptability-Strategic Framework for Corporate Crisis Recovery: The Study of Oil and Gas Industry

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Abstract

Organizations, today, are confronted with the turbulence of internal and external environments. Significantly, theorists under contingency, perceived that "no one best way to manage organization" (Galbrath, 1979). The best way to manage organizations will therefore rest upon the ability to adapt themselves to both normal and crisis situations. As this is important, the aim in this paper is about proposing a corporate crisis recovery conceptual framework conducted through a qualitative approach. Based on crisis and risk management standards as well as best practice for listed companies in Thailand, this paper presents four phases of crisis recovery. Initially, listed companies should considerably identify critical functions by conducting business impact analysis (BIA). With critical functions, uncertain events that deviate them could be posited as risks; accordingly, a high impact of risk can be perceived as a crisis. During the crisis time, the authors recommend organizations to have sub plans that they activate at different times. At the time of crisis, an emergency management plan should first interact and, later on, the incident team should access the situation and report to the crisis management committee. After a period of crisis, organizations should continuously be aware of especially critical activities through a business continuity management (BCM) framework. In BCM, normally, organizations should conduct a virtual destruction (alternative site), virtual shutdown (through the conduction of a disaster recovery plan), virtual strike (human plan) and virtual isolation (contingency for service providers).

Keywords: Organizational Adaptability; Strategic Framework; Corporate Crisis Recovery

Introduction

Organizations, currently, interact with the environment under an open-system. The best way to manage organizations, under contingency theory, depends on the nature of the environment to which they relate (Scott, 2003). To be precise, organizations should be capable of adapting themselves to a very turbulent environment. One required characteristic for today's organizations is the ability to adapt. They, significantly, need to adapt themselves with the changes in both internal and external environments (Pathranarakul, 2002).

When the environment somehow deviates from the goal of the organization, risk will occur (Davidson, 2003). Organizations therefore require *risk management* function-managing risk- as a compulsory function. The intensification of risk management in corporations will incline as they need to mitigate internal and shareholder risks. Moreover, there are several types of risk, for example, strategic, operation, financial, compliance risk and so on (COSO, 2004). Different types of risk have distinctive impacts. Theoretically, not all risks lead organizations into crises, except the high impact risks. This means that a minimal effect of risk could be mitigated with day-to-day control activities while a huge impact of risk may bring about the organizational adaptability. In addition, if such adaptation is inappropriate, a crisis will occur.

There are two causes of crises: internal and external factors (Pathranarakul, 2002). For the former, a crisis may occur from the change of culture, structure, leaders, strategy, way of work and so on. For the latter, crisis may be brought about from natural disaster, instability of politics and economics, competition, globalization and so on. Nevertheless, the Organization for Economic Co-operation and Development (OECD) proposed a new form of crises and stated that localization needs an innovative form to interact with such crises (Baubion, 2013). The OECD concluded that "new crises differ significantly from the past in several respects: unexpectedly large scale, the fact that they are new or unprecedented their trans-boundary nature."

It is possible to have a new form of crises, normally, steps to manage them are precise by stating with *preparedness*, once a crisis actually materializes, the *response phase* begins and ultimately, how *organizational adaptability and for corporate crisis recovery* in the end. With new forms of crises, such three broad steps still remain; yet, the detail could be altered. Importantly, the objective of this conceptual paper, firstly, is about to analysis the lessons-learned on how to manage crises from well-known listed companies in Thailand. Secondly, for the significant aim in this paper the authors propose a strategic framework for corporate crisis recovery by trying to connect a risk management plan with the capability of an organization to adapt themselves with the turbulent environment. Although studying about crises will be correlated with the role of government, the limitation of this paper is about studying the crises at the organization level. However, the benefits of this conceptual paper will be deliverable to both private and public organizations as well as the government.

Enterprise Risk Management and Crisis Management

Risk management itself, today, has shifted the paradigm from traditional risk management (TRM) to enterprise risk management (ERM) (Sara et al., 2014). For the former, the TRM approach relates the disaggregated methods, in which it identified, assessed, mitigated and monitored risk different units of firms (Liebenberg & Hoyt, 2003). The problem of TRM concerns the mitigating of particular risks somehow and it needs to cross business functions. While ERM, for the latter, rectifies the piece meal approach of TRM by using a comprehensive risk management process across entities and functions.

There are some strands of the ERM standard, the well-known standards nowadays are COSO (Committee of Sponsoring Organizations of the Tread way Commission) and ISO. COSO is more likely famous in financial institutions as they offer not only the guideline of ERM, but they propose many standards: internal control, fraud detection and so on. By definition, COSO, defined ERM as…

"a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives."

Figure 1 Standard of Enterprise Risk Management

Source: COSO

Key Concept of ERM and Linkage to Corporate Crisis Management

From the COSO ERM definition, there are two contributions of the ERM process compared to other principles. Firstly, ERM focuses on a top-down approach by incorporating the concept of the internal environment initially from the board of directors and management. Secondly, the risk process should function across firms from entity level to subsidiary. Even COSO posits somehow the distinctive guideline, as the key concepts they propose to firms in ERM is the same, accounting for the precondition of risk environment, risk identification, risk assessment, risk response and mitigating and risk monitoring. The details of the key concepts of ERM and some details of the linkage between risks and crisis are the following (Drennan, McConnell, 2007):

- First and the foremost, *precondition* is a concern. COSO (2004) stated that the internal environment incorporated ERM policy, ERM determination of risk tolerance, ERM governance and risk management committee are the compulsory components before sophisticated ERM processes start.

- Next, when organizations are ready to implement a risk management system, *risk identification* is an important process. Problems, risks and crises are distinctive. To be precise, not all negative events posit as a risk. Additionally, not all risks are called crises. Risk accounts for many facets because of its definition. Segal (2011: 18- 24) agreed that the definitions of risk should indeed be a distinction; nevertheless, there are three fundamental aspects of risk. Risk is defined as uncertainty in which it is different from the problem. Accordingly, risk may be possible whether it occurs or not. The problem, then, focuses on day-to-day current negative events. Secondly, risk, mostly, relates to upside volatility. Thirdly, risk is about the events that deviate from corporate goals while the problem is far away from them. However, not all risks become a *crisis*. Crisis, normally, is perceived as a particular type of risk. Drennan and McConnell (2007: 14) defined a crisis as a macro level of risk effecting an organization with a huge consequence, for example, terrorist attacks, instability of politics and economics, natural disaster (hurricanes, floods…), chemical explosion as well a business scandal and so on. It is too hard to divide the type of crisis, however, crisis expertise substantially agrees that three conditions lead normal risk to deemed necessary for an existing crisis: severe threat, high level of uncertainty and urgent need for actions.
- Prioritization of risk through *risk assessment* becomes the next step. Generally, Fraser, Simkins and Narvaex (2010) stated that risk assessment is divided by two approaches: qualitative and quantitative methods. Both methods, most often, conducted through likelihood and impact (consequence) of risk. For the former, it quantifies the frequency of the risk events while, for the latter, it measures variations from the consequence of risk dimension. To be precise, an impact can be clarified through human, financial, reputation, safety impact and so on. After assessment of risk, a risk matrix is displayed. In addition, after assessment of risks, negative events could be posited as crises when the risk is located in a red zone (high impact) as in the following risk matrix (5 levels of likelihood and impact).

			Potential Consequences				
			L6	L5	L4	L3	L2
			Minor injuries or discomfort. No medical treatment or measureable physical effects.	Injuries or illness requiring medical treatment. Temporary impairment.	Injuries or illness requiring hospital admission.	Injury or illness resulting in permanent impairment.	Fatality
			Not Significant	Minor	Moderate	Major	Severe
Likelihood	Expected to occur regularly under normal circumstances	Almost Certain	Medium	High	Very High	Very High	Very High
	Expected to occur at some time	Likely	Medium	High	High	Very High	Very High
	May occur at some time	Possible	Low	Medium	High	High	Very High
	Not likely to occur in normal circumstances	Unlikely	Low	Low	Medium	Medium	High
	Could happen, but probably never will	Rare	Low	Low	Low	Low	Medium

The located of crisis and disaster

Figure 2 Risk Matrix

- Once potential risks have been prioritized, decision making can be taken on how to *respond and what control activities* are to be considered to cope with such risks. COSO and ISO are both well-known ERM standards proposed for four types of risks: *tolerating (acceptance), terminating, transferring and treating risk*. Indeed, as described, almost a crisis posits as a high consequence that would promptly need action. Therefore, the suitable responce to crisis is – treating. To manage corporate crises, there are three treatment plans: contingency planning and crisis preparedness, managing the acute phase of crisis and crisis recovery (Baubion, 2013). The objective in this paper is about proposing strategic corporate crisis recovery in the aspect of the capability of organizational adaptability under an ERM umbrella, which the authors will offer in the last section.
- Ultimately, risk should be dynamic. By this it means that risk, normally, should not be static in which it needs some level of *monitoring and examining* of the effectiveness of control activities.

However, in practice, risk and crises are solely developed by different standards, theorists and so on. This paper tries to find the convergence of them given the ERM framework. The comparisons between risk and crisis concepts are the following:

Table 1 ERM components

ERM component	Risks	Crises
Risk identification	Uncertainty, deviated corporate goals, upside volatility	Corporate high risk, severe threat, high level of uncertainty urgent need for actions
Risk assessment	Spread throughout risk matrix	Located in red zone in risk matrix (risk with high negative impact)
Risk response and mitigating	▪ Tolerating ▪ Terminating ▪ Transferring ▪ Treating	Treating through corporate crisis management-preparedness, acute crisis and recovery
Risk monitoring	Regularity	Urgency and real time

Risk Factors Affecting Organizational Performance

Generally, corporations or listed companies have continually improved their performance over-time. Performance can be defined with a multifaceted-meaning. Importantly, not only about the variety of its meaning, but organizational performance measurement is various (Armstrong and Baron, 2007: 115). Under the variety of ways of measuring a firm's performance, all models are commonly mentioned about financial performance (Venkatraman and Ramanujam, 1986).

However, financial performance could not cope with the diversity of an organization. With this significance, a balanced scorecard model has then offered shareholder performance as one important factor to measure organizational performance. To incline performance, risk-uncertainty events should be considered before sophisticated adaptation proposes the occurring crisis.

There are many types of risk factors affecting organizational performance. COSO suggests four broad types of risk affecting organizational performance: strategic, operational, financial and compliance risk. With unique listed companies, they need to enhance external performance and shareholder performance, in which four mentioned types of risk could not be deemed enough. Indeed, to study risk types in a piece-meal way (Marchetti, 2012: 30) as it accounts for distinctive concepts, theories. To rectify the piece-meal way of studying types of risk, the authors, ultimately, incorporate and comprehend two types of risks to scale down factors affecting organizational performance as in the following.

Firstly, macro level risk, the authors define it as the common risks that all listed companies in Thailand are confronted by. For example, all industries will face the risk of dependency of influential shareholder or even the risk of control dilution. Secondly, on the other hand, the micro level of risk can be identified as risks that are various across industry. Simply put, the risk of the shortage of material will confront industry while the financial sector will not confront this risk.

To illustrate, the data from listed companies in Thailand (http://www.thailca.com/en/), with eight industries, (agro and food, consumer product, finance, industrial, property and construction, resources, service and technology) the example of macro and micro level of risk that somehow effect organizational performance in which corporations acquire some level of adaptability is displayed below.

Table 2 Types of Risk

Type of Risk	Example
Macro	▪ Natural disaster ▪ Spread of disease ▪ Instability of economics and politics ▪ Proactive encounter with the opening of AEC ▪ Government regulation change ▪ Disruption due to severe incidence ▪ All financial risk-credit, liquidity, the fluctuation of interest and exchange rate ▪ Shareholder risk ▪ Reputation risk or loss of goodwill ▪ Delay of corporate project
Micro level of risk	▪ Operational risks (varying across business) (ex: new product development risk, inventory risk, efficiency of material resource, shortage of profession staff, distributional risk and so on)

- Strategic risks (strategic contents and strategic implementation)
- Business compliance risks
- Human error risks

Corporate Crisis Recovery and Organizational Adaptability in Crisis: Cases of Global Oil Crisis.

One required characteristic for organizations today is about the ability to adapt during crises. In addition, one performance indicator for organizations posits as recovery time. The good way to learn from crises is to study the real case of organizations incorporating risk management standards, crisis theories are the objective in this paper. Practically, some organizations handled crises without any school of thought. They, then, cracked the crisis with trial-and-error without any systematic standards and approaches. With such limitations, importantly, the authors will analyze and learn from corporate crisis recovery and organizational adaptability in leading companies, where they have some systematic approaches to cope with crises.

Date back to April 2010, the Deepwater Horizon oil spill (also referred to as the BP oil spill, the BP oil disaster, the Gulf of Mexico oil spill, and the Macondo blowout) was a severe industrial disaster in US history as it affected the environment, the death of eleven crews. Moreover, in term of financial and economic impa ct, the company shares fell to its lowest level since 14 years in which 50 per cent of its market capitalization was lost on July 2010.

Apart from tangible negative impact, one on the most intangible negative impact throughout BP oil spill crisis is about the reputation (MEJRI Mohamed, DE WOLF Daniel, 2013). Experts said that it was unsure that whether BP interacted with crises having success or failure; yet, throughout crisis management theory, BP was sound systematic given three phase of crisis responding: pre-crisis, response and post-crisis phase.

Table 3 Phases of Crises

Phase	Activities
Pre-Crisis	1. **Crisis Prevention**: Throughout the Occupational Safety and Health Administration but theorists ended up that the failure in this phase was about the cutting out budget. 2. **Preparation to the crisis**: BP's contingency plans were not enough. To be precise, throughout Gulf oil disaster, they interacted the crises day-to-day by trail-error. However, successful preparation is because the good relationship between BP and NGO from the donation.
Response	1. **The Initial Response**: BP did not response the oil disaster promptly. It took four days. Moreover, significantly, crisis communication is the most vital in this phase but BP former CEO-Tony Hayward- made a series mistakes while communicating about the crisis. Instead of saying about the environment effect as well as how BP response to such disaster, he truly talked about *"the complained that he wanted his life back stating to reporter that — there's no one who wants this thing over more than I do, I'd like my life back‖, and went to watch his yacht race while oil spews into the Gulf".* 2. **Reputation Repair**: Executive management immediately launched vast public relations campaign with some tools: print ads campaign in US well-known newspaper giving compensation victims. BP also communicated crisis through major social media like facebook, twitter, youtube and flicker. Importantly, primary stakeholder considered of high priority.
Post-Crisis	This paper focuses on how organization recovers their mission critical processes or products. To BP, this phase was began on September 19, 2010. Compared to other phases, this phase is a questionable and unsystematic.

To BP, in conclusion, even the well-known global oil company, there are some room of improvement in term of recovering crisis that why the author will then focus on how the organization recovers after responding the crisis. However, we can learn from BP three things. First and the foremost, CSR (corporate social responsibility) and crisis are interconnected. Secondly, initial response accounts for the communication and reputation. Lastly, company should consider stakeholder.

Apart from BP crisis, global oil crises in and its timeline are stated below.

Figure 3 Lists of Global Crises

In Thailand context, one of the most systematic crisis management approaches accounts for the resources industry - *PTT Public Company Limited*-. Mr. Chanvit Amatamatucharti, chairman of Enterprise Risk Management Committee, revealed that 2015 was a tough year as PTT confronted significant challenges to sustain impacts on the business from both domestic and abroad. To handle crises and risk, Board's responsibility, the Enterprise Risk Management Committee performs supervision, manage corporate risks aligned with the corporate risk tolerance as well as acceptable levels under corporate governance.

Based on the 2015 PTT annual report(Governance of Sustainability, n.d.), the Enterprise Risk Management Committee discloses the coverage corporate risk factors of varied types: strategic, business, operation and financial risk. To strategic risks, the ERM committee concerns the failure of strategic implementation, risks concerning investment efficiency, risks from human development to serve business growth, reputation risks from diminishing natural gas outputs and rising price trends. Business risks themselves account for mismatch oil demand and supply, oil price volatility and instability of government policy. For operation concerns, it is about the risk of disruption to business and production operation, risks due to the change of environmental and safety regulation, ultimately, operations concerning delays for project construction. Finally, financial risks are about the fluctuation of currency and risks from financial support to affiliated companies.

Even the oil and gas industry is confronted with internal and external risks, and PTT has its comprehensive mitigation as in the following.

Table 4 Role of Risk Management Committee in PTT.

PTT ERM committee role	Detail
1. Reviewed the risk mitigation framework and amended the enterprise risk mitigation to accommodate uncertainty	Employ key risk indicators that serve as alarms when applied in case of significant risk severity change; therefore, PTT can promptly adjust its risk response measures.
2.Screen and provide recommendations on risk mitigation plans	PTT ERM committee screens the quality of the mitigation plan and inserts some corrections as well as additional control to cope with business turbulence.
3. Monitor the progress of risk mitigation and trends that could significantly affect PTT	PTT then monitors the external situations that affect PTT business strategies that the shareholders' confidence might be stimulated with PTT's effective risk mitigation, supporting achievement of business goals.
4. Screen the corporate risk lists of 2016	PTT ERM committee initially checks up identification risks, assesses and enhances the formulation of risk mitigation plan.

Source: PTT Annual Report 2015

While the ERM process itself is strictly embedded in the PTT corporate strategies as well as day-to-day operation, with the turbulent external environment, crises could occur in the past and the next in the future. Crises can be divided into business crises and unexpected situations. For the former, during a few years, the worldwide petroleum industry has been confronted with the plunging oil price due to market gluts brought about by the rise in shale oil production in the US. Moreover, the OPEC continued to reserve their outputs to preserve their market shares. Accordingly, the success of the agreement relating to Iran's nuclear project capability downgraded and the global economy in which China's economy shrank, which would incline crude oil demand; hence, supply of it had to be preserved in stock. Moreover, business crises will derive from the sensitivity of the exchange rate. For the latter, unexpected events, problems in the oil crisis of PTT at Ao Phrao beach, Rayong province-oil spread-, is an example of the activation of the crisis management plan.

The next stage is about how PTT could be possible to cope with situations and survives till today. Based on the documentary disclosure, to survive among the turbulent environment, PTT initially conducts an Enterprise Risk Management (ERM) framework (figure 3) that attempts to cope with the internal and external risks. Such a framework deploys from both standard criteria of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), Enterprise Risk Management (ERM) and ISO 31000 Risk Management. Corporate risks that are systematically embedded in strategic planning and managed based on across business functions as in the diagram below.

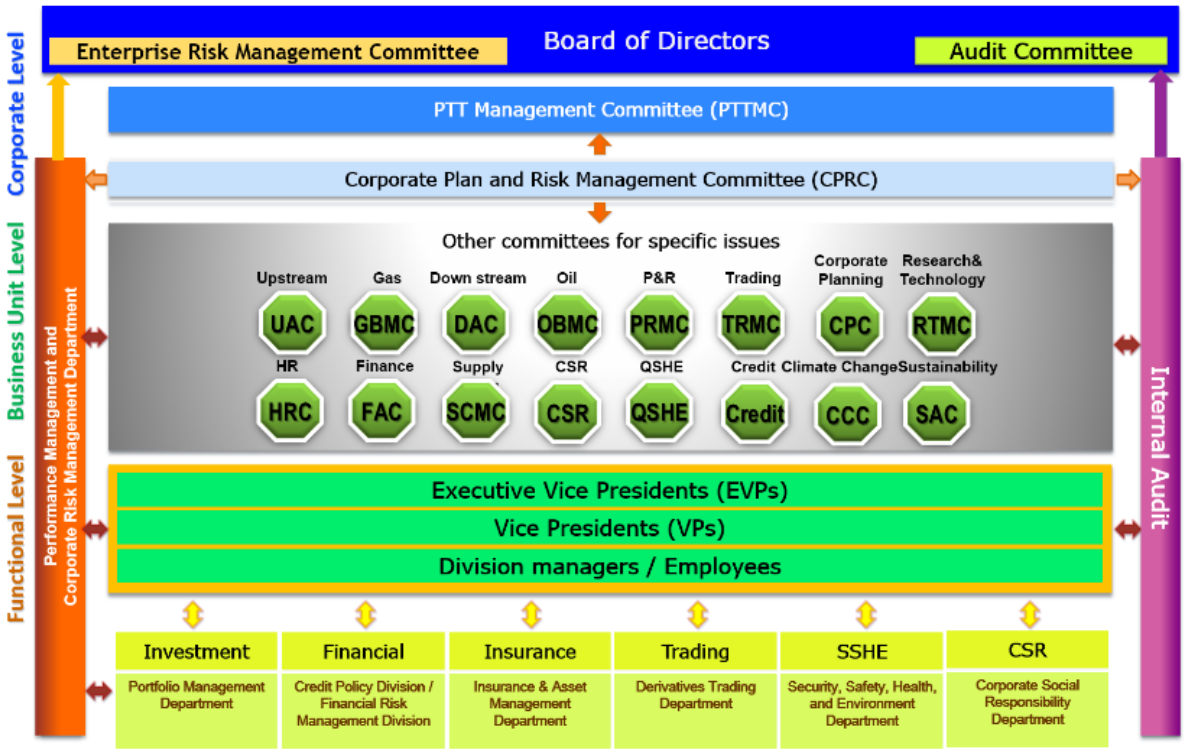


Figure 4 PTT Enterprise Risk Management Committee
Source: http: / / www. pttplc. com/ en/ Sustainability/ PTT-Sustainability/Governance/Pages/Risk-Crisis-Management.aspx

To illustration, PTT normally identifies risk through the usage of the local as well as global economy and politic situation from various stakeholders covering strategic, operation, compliance and financial risk. After the prioritization of such risks through the assessment from the likelihood and impact of the events, some control activities and mitigation are analyzed and proposed. Finally, identify Key Risk Indicators (KRIs) that are indispensable to the process of risk monitoring.

Moreover, the ERM framework would be inadequate to handle the crisis, disaster and emergency event. Therefore, PTT conducts a *Business Continuity Plan* (BCP) embedded as one of the mitigations for unexpected events. BCP generally protects business operation and maintains the trust, safety and security to all stakeholders. PTT developed a Business Continuity Management System (BCMS) under mainly ISO 22301 and other standards. The mechanism of BCMS accounts for prevent/prepare, response/resume and recovery/restore.

This paper focuses on how corporates recover themselves during a crisis, PTT covers the whole process of crises handling. PTT divides four levels of crises based on the severity level. Initially, level 1 refers to the events that PTT could manage crises on its own, in which the Emergency Command Center (ECC) takes the role to resolve the emergency events. Supposing, in the events that PTT requires some assistance from external, local, provincial and nation levels, emergencies will be transmitted to levels 2, 3, 4, respectively, and the Emergency Management Center (EMC)

or Crisis Management Center (CMC) will be set up to handle conditions as appropriate. Indeed, BCP at PTT has five steps of crises handling as in the following.

Table 5 PTT five steps of crisis handling.

Crisis handling steps	Detail
Emergency Response	It is about the plan that handles crises during the time of crises: fire escape plan, evacuation plan.
Incident Management	After emergency response is activated, next, it is about the time to communicate. Incident management, hence, defines the crisis communication plan and the transfer to work on an alternative floor plan.
Business Recover	To continue the critical or core process, business recover steps are about the considerable continuity of mission critical activities of the organization. Some activities will then be continuous from automatic or the rest will be continuous from manual.
Business Resumption	Business Resumption Planning or BRP addresses the restoration of business functions after an emergency.
Return to Normal	Return to normal refers to the move to work as the primary place as well as transferring back for staff. All infrastructure or even about any equipment are returning to the normal.

Source: http://www.pttplc.com/en/Sustainability/PTT-Sustainability/Governance/Pages/Risk-Crisis-Management.aspx

Another listed company-Banpu Public Company Limited (2009)- got a sustainability award in 2015 from the Stock Exchange of Thailand (SET). Banpu is concerned with three pillars of economic, social and environmental aspects by reporting to the management of Occupational Health, Safety, Environment, and Community Development (HSEC). Importantly, to sustain business, they manage risks and crises.

Banpu has its vision to "be an energetic Asian energy provider of quality products & services and be recognized for its fairness, professionalism, and concerns for society and environment". From such vision, a management committee deploys the mission of "development of businesses in the fields of energy, to provide variety of quality products and service commitment, to conduct business in a socially, ethically and environmentally responsible manner, to build sustainable value for shareholders, customers, business partners, employees, local communities, and to be a good citizen to host governments". Nonetheless, to achieve such vision, the mission, risks and crises should be controlled beneath the corporate risk appetite.

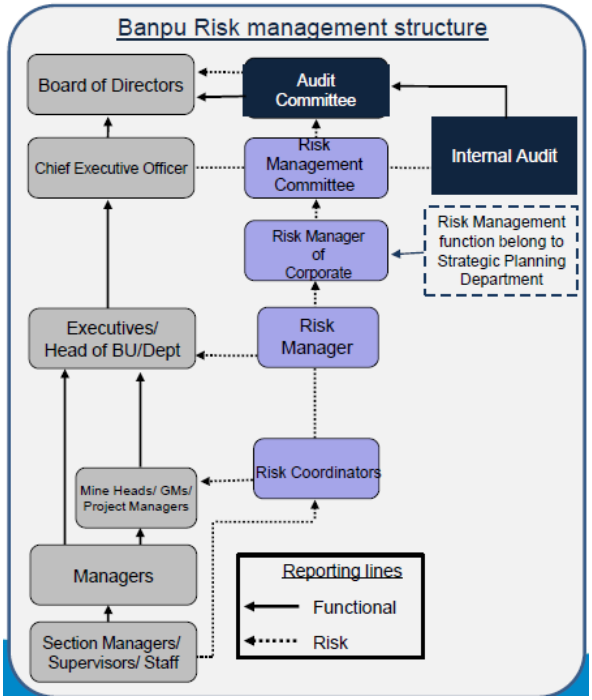
Based on the information disclosure, Banpu confronts normally similar types of risks compared to other listed companies: strategic, financial and compliance. However, the challenge and variety to Banpu's vision and mission are faced by the management committee; therefore, the identifies,

assessed as other particular types of risk, for example, risk associated with coal, power business, occupational health, safety and environment risk, risk from social and community impact. Even Banpu attempted to cover risk types, with the turbulent internal and external risks, emerging risks as well as crises that exist.

Historically, the Asian economic crisis in July 1997 was the first major crisis for the company since its establishment. With a depressed share price and restrictions on new lending, based on financial disclosure, Banpu "agreed to bring in Sith Energies Inc as a strategic equity partner, reducing Banpu's shareholding from 56% to 33% in 1998. In 2000 the company's shareholding in COCO was further reduced to 11% and then in 2001 to zero." Moreover, Banpu mostly experienced crises at the site level, for example, the situation of an oil spill from drilling in Indonesia. However, organization wide, previous crisis situations when Banpu activated a crisis plan accounts for the following as in the picture below.

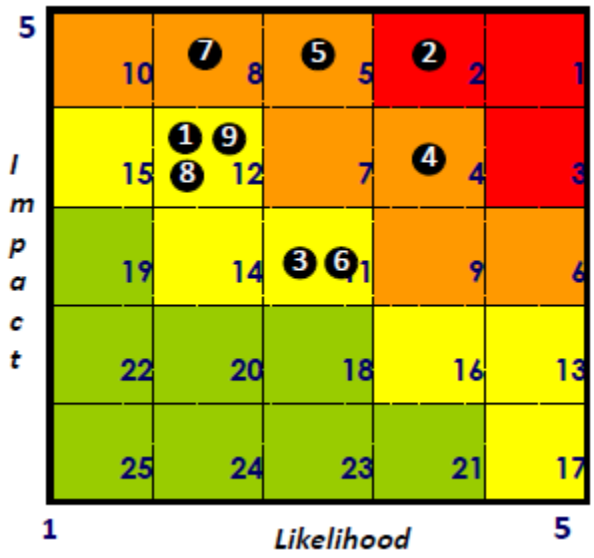
Figure 5 Crisis situations
Source: http://www.banpu.com/backoffice/upload/banpu_25th_year_en.pdf

As mentioned in some examples of crises, it stimulates Banpu to produce an Enterprise Risk Management System in which it incorporates the mitigation of crises. Initially, Banpu disclosed the Risk Management structure as in the following.



Banpu believes that to implement risk management successfully, organizations should create a risk based culture. With this importance, the risk management system should embed in a strategic planning process, which is why the risk management function at Banpu belongs to the strategic planning department. The risk management process at Banpu is common to others composed of identifying, assessment, mitigation and monitoring (picture below).

Figure 6 Banpu Risk Management Structure
Source: Stock Exchange of Thailand



Banpu categorized risks with severity levels. Its mitigation differs due to the location of them as in figure 6. Risk located in the red area is a critical event that requires intermediate intervention from senior managers to eliminate or reduce the risk. Indeed, if such events have a wide impact that affects the dimension of infrastructure, staff, customers, critical processes, finance and reputation, Banpu will then activate *Business Continuity Management (BCM)* similar to PTT as described above. Hence, corporate crisis recovery from Banpu embeds BCM.

Figure 7 Banpu Risk Matrix
Source: Stock Exchange of Thailand- Sustainability Award

To illustrate, as a global company, Banpu establishes a BCM infrastructure as in the following picture that covers corporate, country and site levels.

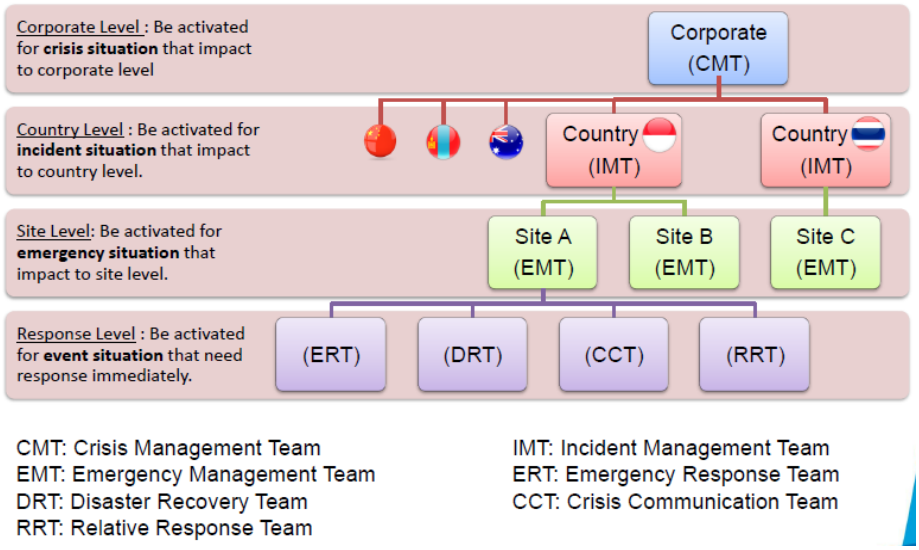
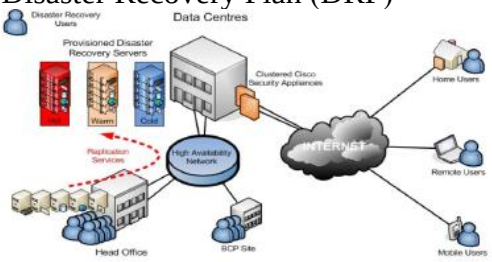


Figure 8 BCM Infrastructure
Source: Stock Exchange of Thailand-Sustainability Award

To serve the BCM infrastructure, apart from team and relating parties, for corporate recovery, Banpu produces a sub-plan to handle the crisis and who is in charge is as in the following.

Table 6 Banpu's subplan of crises

Order	Under BCM Umbrella	Detail	Responsibility
T=0	Emergency Management Plan (EMP)	Organizations need this plan to survive at the time of crises and disaster.	Head of Sites / Manager -Safety
T=1	Incident Management Plan (IMP)	This is about how to continue critical processes	Country Head / SVP-HR
T=2	Disaster Recovery Plan (DRP) 	DRP concerns how to recover IT systems during the crisis time. For example, it is a time to switch from the main to an alternative server.	Head of IT
T=3	Crisis Management Plan (CMP)	CMP emphasizes mostly the communication process, both internal and external, via media	Chief Executive Officer (CEO)

Strategic Framework for Crisis Recovery: Evidence from Leading Listed Companies

Based on a systematic approach for the handling of corporate crisis recovery strategies from well-known listed companies: PTTPLC and Banpu as mentioned, the authors consolidate such a mechanism, including the theories of enterprise risk management (ERM) and crisis management as well as standards and propose a strategic framework for corporate crisis recovery. The authors agree that the ability to adapt should initially start before the time of the crisis-preparation phase; therefore, the strategic framework for crisis recovery in this paper focuses on four phases, as follows (Chong, 2004) (ISO 22301) (BCM Pedia, n.d.).

Phase 1: Scanning Organization: Business Impact Analysis

Macro/ Micro Level of Risk

Critical Functions/Activities

Non Critical Functions/Activities

Phase 2: Prioritization throughout organizational risk profiles

Red flag zone of risks creating crisis

Phase 3: Decision Making Phase: Trigger Points

Level 1	Normal Times
Level 2	Crisis Watch
Level 3	Crisis Warning
Level 4	Crisis Occurred

Phase 4: Strategic Framework for Crisis Recovery

Emergency and Incident Response

Incident Response

Business Recovery

Return to be normal

Crisis Time

Figure 9 Conceptual Framework for Corporate Crisis Recovery

Table 7: Details of Crisis Response

Phase	Detail
1. Scanning Organization: Business Impact Analysis	Normally, previous articles on crisis recovery framework ignored the organizational scanning. Yet, modern crisis theories or even about crisis and risk management standards incorporate the framework. One tool to understand organizations themselves is about conducting Business Impact Analysis (BIA) to perceive the critical functions. Based on OEDC and ISO standards, critical business function should prioritize multiple dimensions accounting for the effect to stakeholders, legal/regulatory, financial and reputation impacts. To be precise, when macro and micro risks onslaught the critical function, business will be disturbed and cannot continue as it impacts affect stakeholders, violating regulations, loss of capital and bad image. The author intentionally suggests organizations should not treat all levels of activities the same as they have the limitation of resources at the crisis time.
2. Prioritization throughout organizational risk profiles	After categorizing activities or functions, organizations need to prioritize risks through the product of its likelihood and impact against the critical business functions. According to part II, organizations do not mitigate all risks with the same solution. COSO ERM proposes four mitigating ways: tolerating (acceptance), terminating, transferring and treating risks. Low impact of risk as well as non-critical business functions can be somehow tolerated (acceptance) or terminated. However, for a high impact of risk as well as critical functions, organizations have two alternative ways: transferring and treating, through crisis management in phases 3 and 4.
3. Decision Making Phase: Trigger Points	From the literature review of Thai listed companies, they separately divide multiple crisis levels. Therefore, decision making in trigger points will be different. Each trigger point is decided from the severity level. Supposed in triggers 1 or 2, such crises can be managed within the emergency command center and crises occur at a very limited scope. However, if such crises still continue and organizations require some external assistance; organizations should initially activate the crisis management plan or Business Continuity Management (BCM) to cope with such turbulent situations and announcements at the time of the crises.

Phase	Detail
4. Strategic Framework for Crisis Recovery	Organizations require multiple levels of plans to recover critical functions as in the following. ▪ Emergency Response: It is a plan that is activated at time=0. Most of such plans are related to the operational level accounting for fire, flood, power failure, political violence, pandemic, earthquake and network disruption plans. ▪ Incident Response: During the crises, apart from the operational level in the emergency response, organizations need tactical level plans that report the situations to the crisis management team. Normally, the incident response will relate to the supportive team from, for example, human resources, IT and communications department. ▪ Business Recovery: Modern research field in crisis and risk management, currently, focuses on how to continue organizational critical functions through conducing "Business continuity Management" (BCM). The BCM standard (IS22301), generally, recommends a strategic framework to organizations to create such as below to recover critical functions as in the following. 1) Virtual Destruction: In case of an inaccessible main site, for example, the 2011 flooding in Bangkok, the worst flooding yet in terms of the amount of water and people affected, this situation highlighted the awareness of alternative sites for listed companies. To recover business functions, alternate sites will be activated while the main site cannot be entered.

Phase	Detail
4. Strategic Framework for Crisis Recovery **(con't)**	2) Virtual Shutdown: Currently, all critical functions operate with IT. Suppose particular threats affect IT functions, listed companies should have a disaster recovery plans (DRP) that accounts for "the process an organization uses to recover access to their software, data, and/or hardware that are needed to resume the performance of normal, critical business functions after the event of either a natural disaster or a disaster caused by humans." Basically, DRP is separately divided into three types: hot, cold and warm sites.

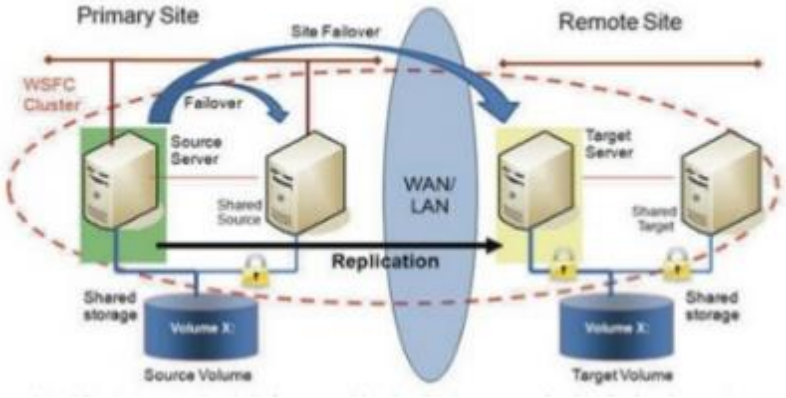


Figure 10 Disaster Recovery Plan (DRP)
Source: (http://www.disasterrecovery.org/).

3) Virtual Strike: Most of the threats are impacts to staff; as a consequence, organizations will then have a lack of adequate staff while the crisis lasts. Listed companies should define key persons that relate to the operated critical functions and support and facilitate them.
4) Virtual Isolation: For some non-critical functions, organizations decide what not to do and hire some service provider-outsource- to operate such tasks instead, for example, facility management. During the crisis time, the service providers need to have BCP themselves to support organizations.

- Return to be normal: This is about the last phase of the recovery. Organizations should assess the crisis situations and report to the CMT (Crisis management committee). However, if the crises are rectified, staff will then move to the main site. In addition, all critical functions operate with the same IT infrastructure.

Conclusion and Implications

From qualitative analysis via reliable documents encapsulates the risk and crisis management theories, and the authors come across four phases of corporate crisis recovery: *scanning organization, prioritization key risks throughout organizational risk profiles, decision making through trigger points and strategic framework for recovery process*. Historically, listed companies as well as crisis and risk theories focus on phases 3 and 4; however, the authors try to incorporate phases 1 and 2 as a preparation phase for crisis handling in the organization.

First and foremost, organizations should understand themselves through business impact analysis (BIA) in the process of scanning organizations. The aim in this phase is about dividing critical functions and non-critical functions. Next, focusing on critical functions, any situation could be somehow harmful to critical functions, enterprise risks are materialized. According to COSO, all risks are not perceived as crises; yet high impact risks are possible to be crises. Crises could occur from internal and external uncertain events-macro and micro levels of risk-. Moreover, listed companies need to create trigger points to monitoring processes of crises.

However, if organizations announce such severe situations as a crisis, well-known listed companies today rectify crises by activating a *Business Continuity Management (BCM)* framework as one of the strategic frameworks for corporate crisis management, as described in phase 4 explained in this paper. In this phase, there are four sub plans. Initially, at the time of the crisis, especially for natural disasters as well as man-made threats, listed companies should have emergency response plans. The incident management team should assess the situation and report to the crisis management committee. Ultimately, the contribution in this paper is about designing business continuity through the business recovery process. Based on risk and crisis management standards, critical functions can be recovered by designing virtual destruction (creating portfolio alternate sites), virtual shutdown (disaster recovery plan), virtual strike (selecting and facilitating key person) and virtual isolation (contingency plan for service providers).

In terms of future research, the authors propose a conceptual framework on how organizations can adapt themselves during corporate crises; however, it might not ensure the success of organizational adaptability. The authors will therefore recommend researchers to empirically study critical success factors (CSFs) in corporate recovery across business sectors. Currently, the stock exchange and Securities and Exchange Commission, Thailand force listed companies to have long-term existence, and this is the combined result of their business performance, the people and corporate culture throughout *conducting a sustainability report*. Importantly, to sustain organizations and integrate all functions together, the author agree that the ability to adapt themselves for corporations is the main part.

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