CHAPTER 4
FINDING, RESULTS AND DISCUSSION

4.1 Chapter Introduction

To produce a framework modelling the GRC environment of Thailand's faculty public affiliated universities, there was a need to gather the GRC knowledge requirements. This chapter provides the results of the knowledge capture undertaken to gather these requirements. Both tacit and explicit knowledge were considered important and thus experts and appropriate literature/ documents were analysed to capture knowledge requirements. Literature suggests that GRC should be considered holistically, and not split into its component parts (Suvannasarn, 2010; Racz et al. 2010; OCEG, 2009; PricewaterhouseCoopers, 2004), but for ease of presentation and discussion, this chapter separates the components of GRC before integrating them to create the knowledge requirements and relationships for an integrated GRC model for CAMT and the Thai faculty public affiliated universities. This chapter discusses the results of knowledge capture in three sections: governance, risk management, and compliance. The chapter then analyses this knowledge and integrates it to create the proposed GRC model for Thai faculty public affiliated universities. A model for CAMT based on the MBNQA is created and tested before generalising and creating a model for the faculty of Thai public affiliated universities Figure 4.1 shows the key knowledge requirements the corresponding section in this chapter, and the associated data sources for capturing this knowledge to create the integrated faculty GRC model.

4.2 Experimental Report and Initial Finding

This part of the results shows the initial findings and a summary of sample report. Then, the next parts of this chapter provide an in-depth and detailed analysis of these results, including discussion. The framework and justification of the chapter is presented in Figure 4.1, which shows how the initial findings provide an overview and context to the research, while the detailed analyses and discussion of results

provides clear perceptions, which then generate into the wider context and implications of the study.

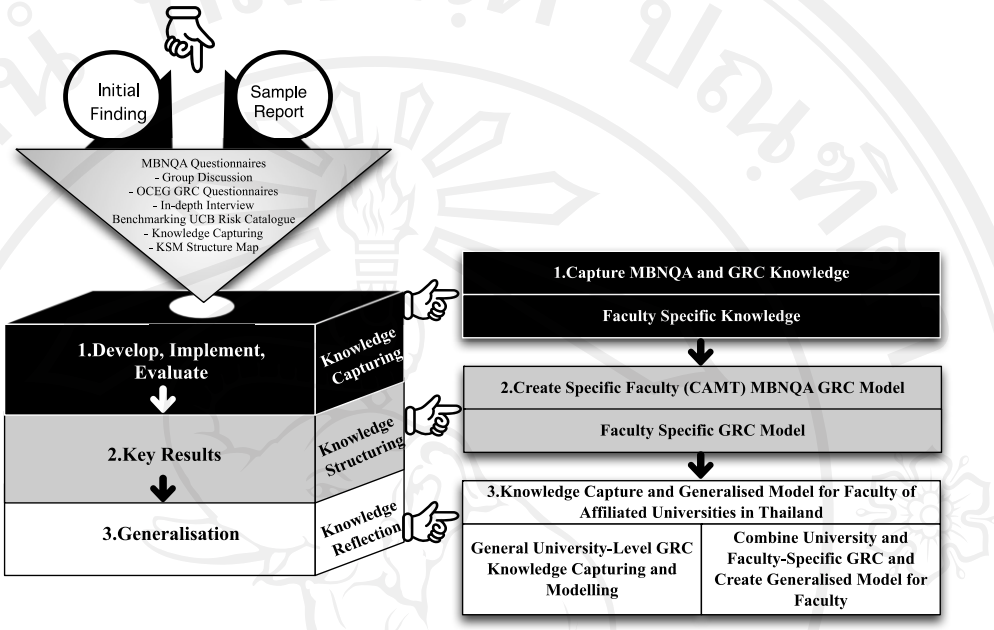


Figure 4.1 The Framework of the Results Presented Knowledge Requirements and Data Sources for the Integrated Faculty GRC Model

Figure 4.1 shows the overview of this chapter and displays that the chapter starts with the initial research findings, and then describes to a more detailed analysis, which provides key understandings and relates to the broader generalisation and context of the study. Figure 4.1 presents that the initial findings and sample reports are summarised to provide an overview. Also, It emphasises that each part of this results chapter represents a different part of the knowledge management foundation. The presentation of the initial findings and sample groups relates to capturing and organising GRC related knowledge, before being concentrated into the main discussion and analysis, where the results are analysed in a specified structure and assessed in relation to the overall research aim and objective, as well as the generalised context.

The detailed and structured analysis according to the implement, develop and evaluate stages next links to knowledge application as well as distribution and the creation of the GRC model related knowledge. Definitively, the generalised context

and benefits of the research are related to knowledge reflection. The first part of the chapter illustrates the initial findings and sample reports from this study.

4.2.1 Initial Findings from Educational Management

The first part of the research interviewed university two university administrators and one university council who have experience in educational management. There were unstructured questionnaires, but topics are about current situation of educational management in Thai university and global change especially higher educational risks. The following initial results were determined:

- The world has change from natural resources based to knowledge based
  - Different economy
  - Different skills
  - Different learning
- In a knowledge-based world, universities need to
  - Preparing students for jobs that have not been crated
  - Using technologies that have not been invented
  - Solving problems that may not event yet exit
  - It's not just about academic outcome. Universities need to equip students with the right skill to learn how to learn, adapt and innovate
- To change from public university to affiliated university. Thai universities must self-funding and change management.
- Some lecturers and staff are fearful of losing their perceived permanent employment status due to new infrastructures and systems.
- There is a legacy of bureaucracy where there is a habit to blindly follow leaders rather than be creative and productive at work. Such a mentality is not commensurate with the new affiliated status.
- Challenging budget allocation, which aims for balanced and sustainable development
- Challenge to retain knowledge of retiring academic staff

- Shortage of labor or lack of appropriate skills (brain drain)
- Smaller number of students wishing to study in Thai higher education
- International mobility puts pressure on university competitiveness and domestic/global ranking such as mobility of students and academic staff requires new skills to increase mobility of labor both domestically, regionally, and internationally
- Declining birth rate in Thailand
- Information Technology becomes an instrument for public understanding and consumer protection
- Dominant labor force works in international service and industrial sectors
- University must change to meet technology transformation in productivity and innovation in manufacturing and services
- Universities must adhere to information technology accountability
- International education level
- To ensure good and meaningful employment
- Lack of harmony in relationships with community
- Socialisation platforms need to be created within and outside of universities
- Information-based society, knowledge-driven society, life-long education, and learning environment will affect university teaching and research
- Proactive leaning infrastructure
- Public expects universities to contribute to national competitive advantage
- Educational change namely;
    - Paradigm shift
        - Local to the AEC 2015
        - Control by council to contribution with council such setting direction, coaching and evaluation
        - Technology to social media
        - Human to generation gap
    - Time to Change
        - Vision to actions

- Tradition to modern management
- Rules to delegation

- Dream Team
  - Actions to first things first
    - Consensus builders
    - Construction foremen
    - Talent Poachers
    - Visionaries-in-action
    - Fund raisers
    - 21st century skills
    - world class university
  - Think globally to act locally
  - Leadership to level 5
    - Position (Rights; people follow because they have to)
    - Permission (Relationships; people follow because they want to.
    - Production (Results; people follow because of what you have done for the organisation)
    - People development (Reproduction; people follow because of what you have done for them)
    - Pinnacle (Respect; people follow because of what your are and what you represent)

4.2.2 Initial Findings from Discussion at the University Case

The second part of initial finding from one-affiliated universities in northern of Thailand. This part collected results finding from one university administrator and one council member. The initial finding showed in 3 perspectives namely:

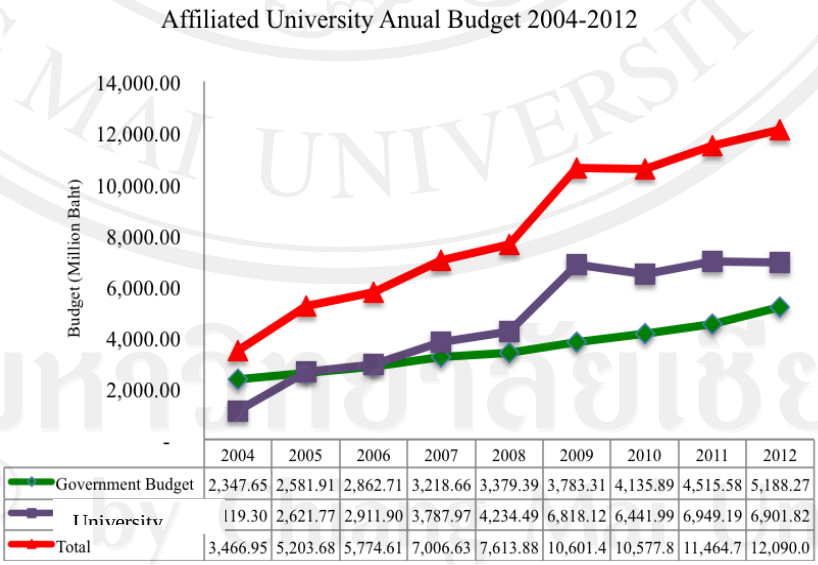
- People: Generation Gap

- The personnel information showed that this university has 11,277 staffs. 7,876 people are affiliated university staffs and 3,401 staffs are used to be government officers (some of government officers changed their status to be affiliated university staffs by affiliated university Act , but five years from now 1,102 of ex-government officers or 32.40% of will retire. This Problem showed risk in personnel section.
- Today, these young generations run university. University's management is Gen X, 32-52 years old. They are different from the 'Baby Boomer' generation.
- New technology changes the way we live and doing things. It changes everything. A whole new paradigm.
- To manage CMU nowadays, one must understand its people (Gen X,Y,Z) and technology inside-out and outside-in.

- Culture : New Movement
  - There is an increasing trend in 'mob activities' nowadays.
  - Sooner or later, it will be a normal practice, a character.
  - Change is required before it's too late.
- Ranking
  - The whole campus is worried and requests changes the way we are doing today:
  - Management style
  - Old and obsolete practices.
  - Bad culture.
  - Financial need to encourage efficiency.
  - A need to switch to a 'modern management' with good and capable teamwork.

- A need to have a total campus information system as information to knowledge to wisdom. Everyone needs it for effective management and a better decision.
- There are also many challenges laying ahead, e.g. a Research University, Readiness for the AEC 2015, English Proficiency, etc.
- Last but not least, a fundraiser to support university growth.

- Financial: Resource
  - As an affiliated public university, this university has recently become more independent, with autonomy over budgetary control (Thanalerdsopit et al. 2010). Such autonomy represents pressure to earn revenue, remain competitive and reach international standards in education and research, which are particularly important when considering the AEC 2015. Figure 4.2 indicates university's revenue sources over the past nine years and indicates the importance of students as a revenue source against the relatively stable governmental income and therefore illustrates the need to remain competitive as an institution.



	2004	2005	2006	2007	2008	2009	2010	2011	2012
Government Budget	2,347.65	2,581.91	2,862.71	3,218.66	3,379.39	3,783.31	4,135.89	4,515.58	5,188.27
University	119.30	2,621.77	2,911.90	3,787.97	4,234.49	6,818.12	6,441.99	6,949.19	6,901.82
Total	3,466.95	5,203.68	5,774.61	7,006.63	7,613.88	10,601.4	10,577.8	11,464.7	12,090.0

Figure 4.2 Sample of Affiliated University Revenue Sources Over the Past Nine Years

- The expenditure budget of university showed that more than half of budget is 53.88 %or 2,036,817,700 baht goes to salary. That is one of challenge point of university to reduce the cost of salary and encourage high performance of limited personal resource.
- The left budget is good enough for salary and wages of the whole university.
- At present, 2/3 of budget is for hospital and medical school.
- A little budget is left for the investment and research.

The initial finding of university case study presented significant requirement of effective management. In third section of initial finding acts as a microcosm of Thailand's higher education to highlight management challenges, and how individual organisations or faculties might identify and respond to them.

4.2.3 Initial Findings from Focused MBNQA Questionnaires at the Faculty Case

The third part of the research interviewed administrator and staff from College of Arts, Media and Technology (CAMT), Chiang Mai University (CMU). As part of CMU, the College of Arts, Media and Technology (CAMT) was established in 2003, and is one of 21 CMU faculties. At the time of writing, CAMT has 874 undergraduate students, 156 postgraduate students, 115 staff (65 lecturers and 50 support staff), and is subject to the same challenges as other faculties and higher education establishments throughout Thailand. While the management challenges might be specific and nuanced towards individual faculties and universities,

A sample size, which are illustrated in Figure 4.3, the following initial findings:

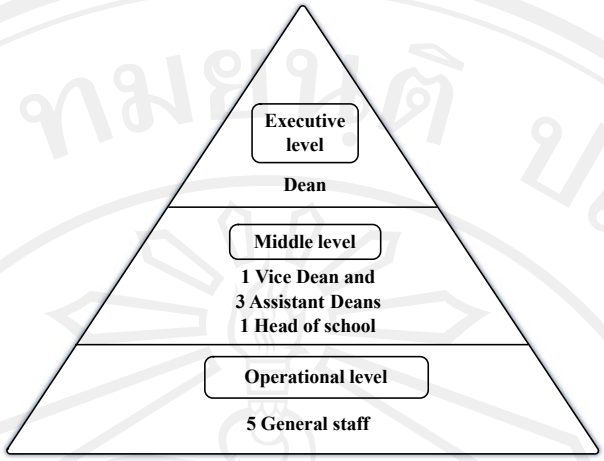


Figure 4.3 The Three Organisational Levels of CAMT and Associated Interviewees

In-depth interviews and group discussions took place with the Dean (executive level) and also extended to middle and operational levels. At the middle level, the Vice Dean, three Assistant Deans and the Head of Academic School were interviewed. Data collection at the operational level included the head of administrative department, ten lecturers and fifteen general staff in CAMT. The lecturers and general staff were specifically chosen based on recommendations from CAMT management on their knowledge of the organisation. The focus of the interviews and group discussions varied according to the organisational level (Figure 4.2), with the aim of providing a comprehensive overview of CAMT's current management status and challenges. The structure of questions was based on MBNQA criteria. The data collection process determined the current situation of administration and management at CAMT through self-assessment questions described in this framework. Following the MBNQA analysis, meetings, group discussions and interviews, The dean of CAMT specified challenge on how CAMT ensures the quality and availability of needed data, information, software, and hardware for workforce, students and stakeholders, partners and collaborators. The quality of data, information, and knowledge were of accuracy, integrity, reliability, timeliness, security and confidentiality. The key management findings were identified:

- Leader as a designer to cover all of information
- CAMT focused on category four, which is measurement analysis, and knowledge management because this section is foundation of all categories of MBNQA. Every category links by information and knowledge management. Also, they use must be measured in each category.
- Challenging of category four showed how to manage quality of information and knowledge management, namely comprehensiveness, quickness, accuracy, modernity, connection, reliability, access, auditing, coordinated data, safety, confidentiality.
- CAMT will apply results of category four, which focuses on risk management to be the one of the planned to use COSO-ERM to reduce risks in organisation.
- The key challenge identified how to align stakeholders' expectations with effective processes by using technology to meet organisational objectives.
- The aspects where CAMT is currently performing competently are focusing on risk management and effectively using technology in the organisation. For example, a program evaluating student risk to reduce drop out rates and promote high grades, and a business intelligence program to help decision making in CAMT.
- The vital steps for future sustainability are good governance, which is related to the alignment of management and policy and is ultimately related to the compliance of all sections in the organisation.
- The need for compliance once again highlights the potential usefulness of a GRC program to universities and faculties faced with challenges of the affiliated status. Staff and student skill at CAMT are increased through placement opportunities with international universities and companies, while community links are cultivated through support for

local communities. Throughout all projects, there is a focus on revenue to promote self-funding and self-sufficiency.

Despite CAMT's current solutions, there is still a need to improve and respond more appropriately to the challenges. After these initial results from MBNQA, the research then focused more specifically on the GRC case study.

4.2.4 Initial Findings from Governance, Risk Management and Compliance (GRC) University Experts

CAMT provided the GRC meeting with Thai GRC expert who has experience this field in famous both Thai public and private organisations. The result findings showed:

- GRC will be key performance indicators to measure risk management at the top level.
- In Thai education sectors, there are no institutions, which use GRC in its organisation particularly, an affiliated public universities that manage themselves under supervision of state, so that quality and transparency in management are mainly point to drive sustainable organisations.
- A significant number of management tools have been applied to universities in Thailand (e.g. TQA, PMQA, Results-based Management). These tools are mainly concerned with piecemeal and reactive improvements in quality management for specific university stakeholders, and have achieved limited success.
- A new trend in risk management for private and state enterprises, which is to use governance, risk management and compliances (GRC) model.
- GRC model is potential model, which attempts to integrate organisational ethos and allow universities to successfully identify and meet their objectives is.
- The key advantage of GRC is that people, process and technology are central aspects of the framework and are in alignment with the philosophy of the affiliated status, as well as its aim of achieving successful and sustainable management.

- If Thai affiliated universities can successfully implement and maximise the potential of GRC, the gap between current and desired management scenarios could be reduced to secure their future as higher education institutes in Thailand, and beyond.

To understand current status of governance, risk management and compliance in Thailand, this research uses OECG framework, which is international accepted GRC model from well-known international organisations to provide questionnaires in context and culture of governance, risk management and compliance. The fourth initial finding showed in section 4.2.4.

4.2.5 Initial Findings from OECG Questionnaires: Universities in Thailand

This part of the results focuses on the categorised GRC requirement base on OECG framework in Thai universities. One Thai higher education expert was interviewed governance topic. Two experts in risk management answered Thai educational risk culture. Two experts who have experience in law academic teaching also, they are administrative faculty and one the director of law department in affiliated university gave detail in context and culture of university law. The initial finding presented:

- **Governance**
  - Despite such autonomy, a university's organisational culture in Thailand can often act as a constraint, for example, in terms of staff seeking long-term civil service careers, which represent job security than innovation. In Thai public affiliated universities however, staff are now being considered as employees rather than civil servants.
  - In the past, Thailand's public affiliated universities tended to copy existing and legacy aspects of governance rather than rethinking governance and responding to the needs of Thailand's higher education. This represents a key reason why the integrated GRC model is required in Thai higher education, especially for public affiliated universities. In essence, Thai

public affiliated universities have the appropriate structure, but rely on traditional aspects of governance.

- While the Thai public affiliated universities are organised and managed differently to traditional public universities, the distinction is less clear than in the past. The main difference between public and affiliated public universities is now in terms of financial control and autonomy.
- Financial governance is thus especially important to Thai public affiliated universities.

- **Risk Management**
  - As with governance and compliance, Thai public autonomous universities represent a new organisational structure, but significant risk exists from the legacy culture and civil service mentality of the majority of staff.
  - Risk management is therefore particularly important for Thai public affiliated universities as they face significant challenges and opportunities (risks), but with a constraining legacy culture, may not have the capability to appropriately respond to these risks.
  - This represents the need for the integrated GRC model to ensure that risks are responded to quickly and efficiently, and that the legacy culture of the newly transformed public affiliated universities does not affect their ability to respond to risk.
  - The key objectives of risk management within Thai public affiliated universities are to ensure that people, process and technology are risk aware and are empowered to respond appropriately to risks. This requires an effective framework, which is provided in the form of the integrated GRC model.
- **Compliance**
  - Compliance in Thailand's public affiliated universities should have clear objectives and clear meaning so issues of compliance can be fully understood by stakeholders. Compliance should also enable the university to be flexible in responding to change, facilitate effective management and

should promote the development of the university in a rapidly changing global economy and education system.

- In principle, the concept of compliance in Thai public affiliated universities compares to international universities and higher education systems, but in reality, as with governance, there are issues related to the legacy civil service culture.
- This has contributed to bureaucracy and sometimes increased aspects of compliance beyond that required in a traditional public university.
- An integrated GRC model for the affiliated public universities of Thailand must therefore encompass appropriate compliance issues, while minimising aspects associated with a bureaucratic legacy culture.

The initial results show the overall effectiveness of the approach to GRC in university, but do not align and produce the results together. The next part of this chapter provided the initial results according to develop, implement and evaluate, which was presented and described in Chapter 3.

4.3 The Develop, Implement and Evaluate Stages: Detailed Analysis and Discussion

The initial findings and sample reports are used as a foundation for detailed analysis and discussion to show the new perspective into university management provided by the GRC on MBNQA with knowledge management approach. This section describes the creation of the faculty specific GRC model. To create the model, two main components were used. These were the CAMT MBNQA results, which were then analysed to capture the parts appropriate to the CAMT GRC. The second component was the information and knowledge derived from the CAMT GRC expert. Together these formed the CAMT GRC model.

Figure 4.4 presents the overview of the detailed results and discussion, which presents results according to develop, implement and evaluate stages, which were described in Chapter 3.

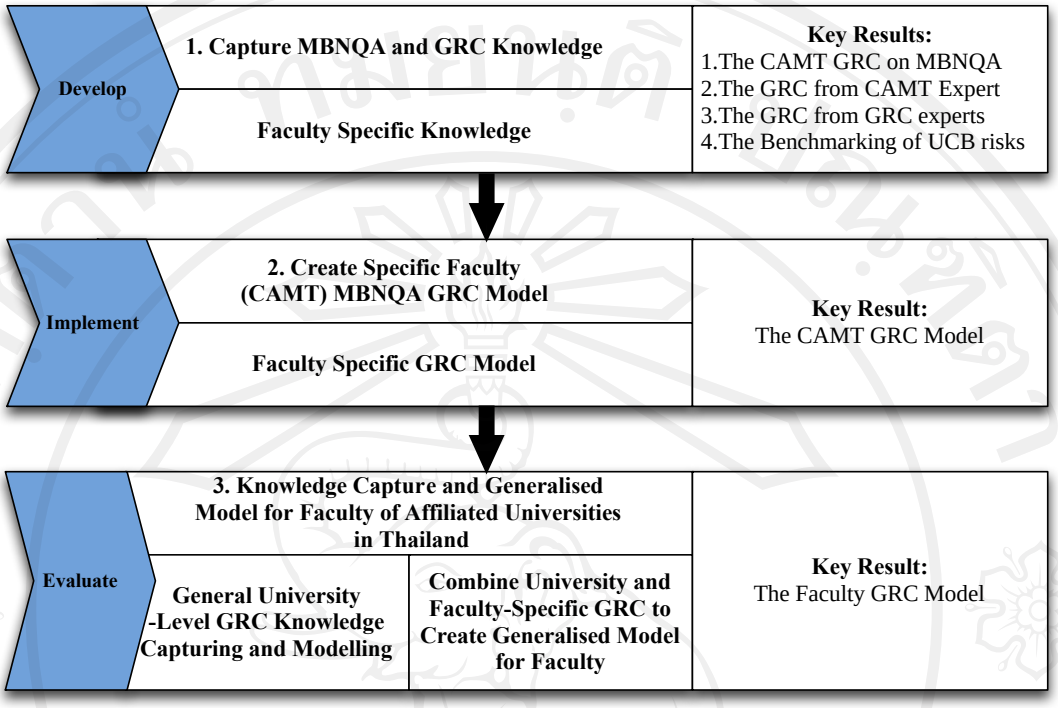


Figure 4.4 Knowledge Requirements and Data Sources for the Integrated Faculty GRC Model

4.4 Stage One: Develop

Figure 4.5 shows the results presented in this section, which relate to the develop stage of this research. This stage captured relevant knowledge via MBNQA and OCEG questionnaires in order to develop the research problem before designing a proper knowledge solution.

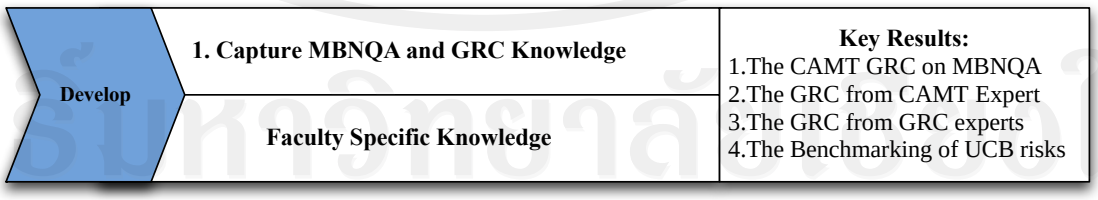


Figure 4.5 The Develop Stage of the Results and Main task of capturing knowledge

Chapter 3 has already scoped the purpose of the develop stage, which is to ensure this research problem of university management is effectively identified and assumed before attempting to solve it. This stage used the MBNQA, OCEG framework to create questionnaires and used to interview experts. The MBNQA questionnaires provided to interview the 6 administrators and 5 staff in CAMT, CMU. The OCEG questionnaires used to interview 1 governance, 2 risk and 3 compliance experts. Then this research specified in-depth interview GRC on the MBNQA criteria with the CAMT expert. The last section of the research benchmarked risks in CAMT with university of California Berkley (UCB) risk catalogue. The research university is in United State of America. UCB released university risk catalogue, which collected fundamental risks in higher education. The research categorised appropriated risks with CAMT under scope of the MBNQA framework. Figure 4.6 illustrated detailed stage one.

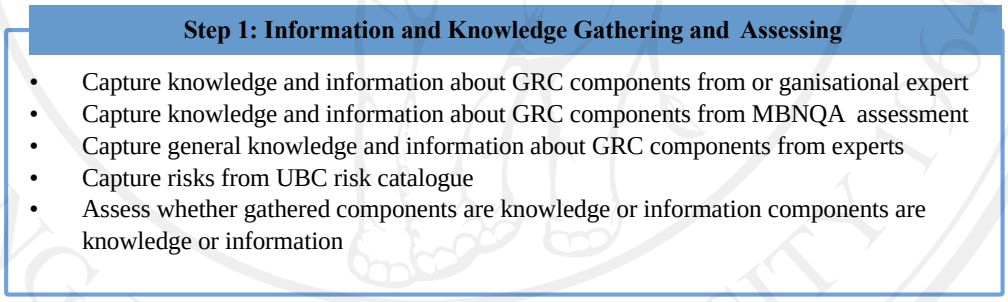


Figure 4.6 Knowledge Requirements and Data Sources of Develop Stage for the Integrated Faculty GRC Model

4.4.1 Knowledge Requirements and Data Sources; Capturing GRC Knowledge from CAMT MBNQA

This part of the results focuses on the categorised GRC on MBNQA framework at CAMT. According to MBNQA from sample size of section 4.2.2. Tacit knowledge of CAMT administrators and staff were captured to create the faculty GRC model. After the MBNQA assessment of CAMT, the components directly related to GRC were captured to gather the CAMT MBNQA GRC information and knowledge from the MBNQA assessment. The key initial findings from these specific MBNQA questionnaires were as follows:

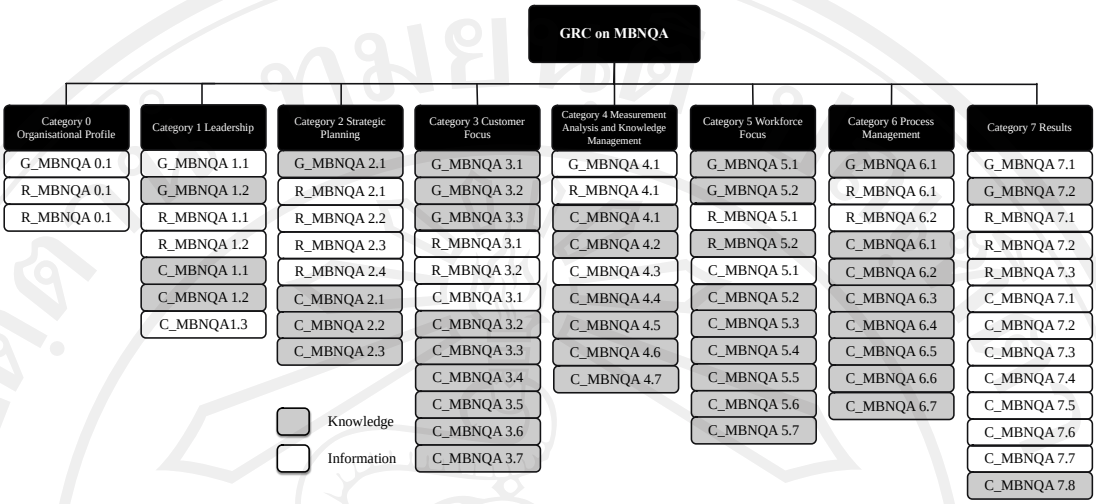


Figure 4.7 The GRC Components on the CAMT MBNQA

Figure 4.7 presented seven categories of MBNQA including organisational profile category. Figure 4.8 showed the percentage of GRC components. Also, Figure 4.9 illustrated and separated information and knowledge of CAMT GRC on MBNQA. All figures of this section were displayed on Table 4.10 in summary. More details showed in Appendix E.

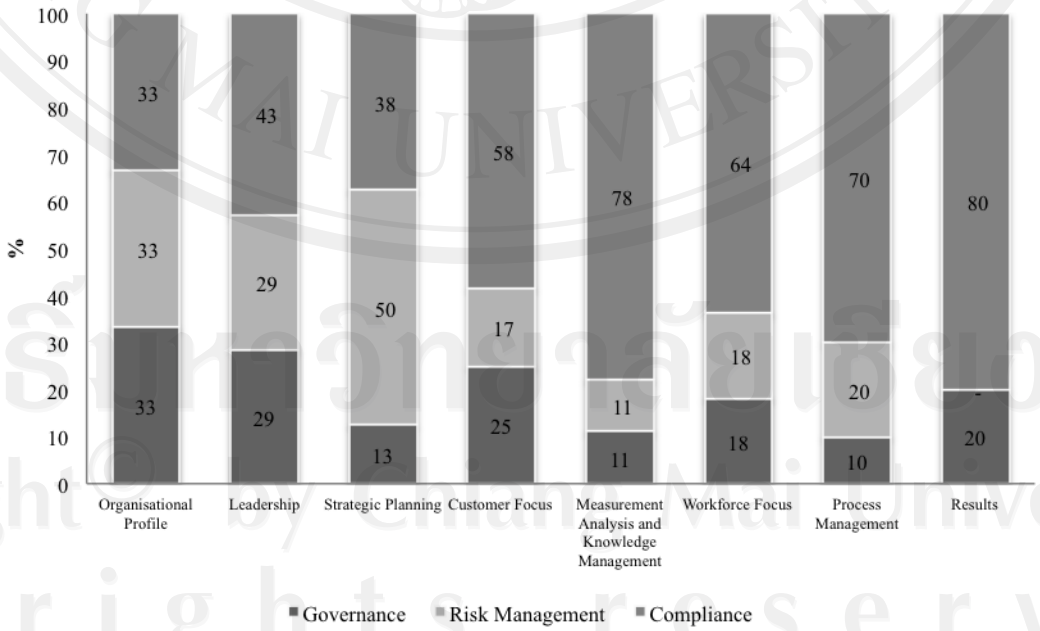


Figure 4.8 The Percentage of GRC Components on the CAMT MBNQA

Figure 4.8 shows 33% governance, risk management and compliance of organisational profile. The leadership has 29% as governance and risk management, 43% are compliance. The strategic planning shows governance 13%, risk management as 50% and compliance as 38%. The customer focus presents 25% as governance, 17% as risk management and 58% as compliance, The measurement analysis and knowledge management indicates 11% as governance and risk management, 78% are compliance. The workforce focus is 18% as governance and risk management, 64% as compliance. The process management has 10% as governance, 20% as risk management and 70% as compliance. The result shows 20% as governance and 80% as compliance.

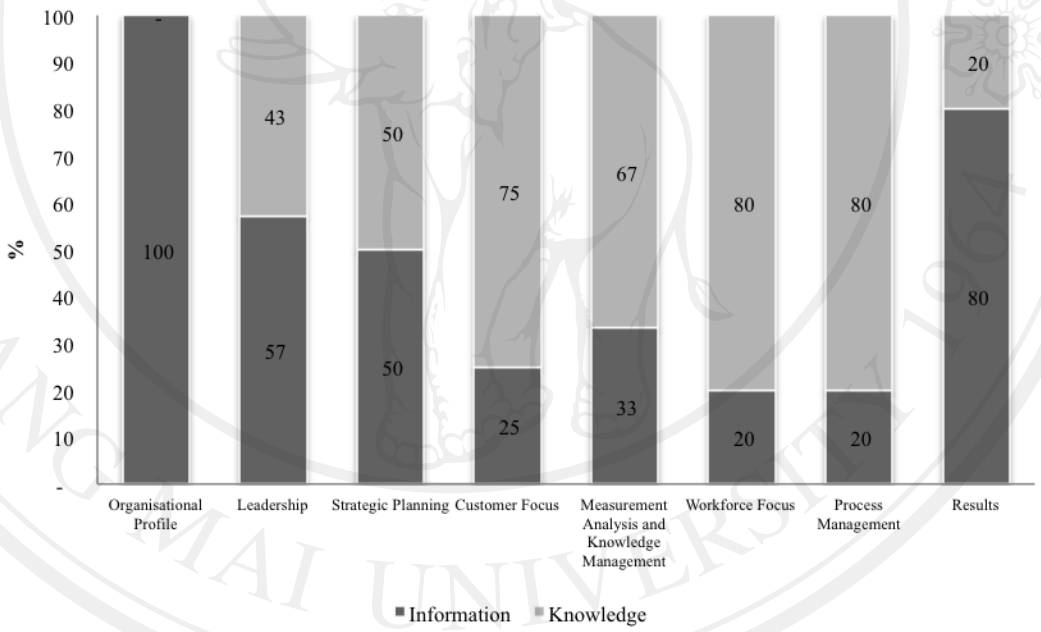


Figure 4.9 The Percentage of GRC Information and Knowledge on the CAMT MBNQA

Figure 4.9 shows 100% of organisational profile as information. Leadership shows 57% as information and 43% of knowledge. Strategic planning is information 50% and knowledge as 50%. Customer focus is 25% of information, 75% of knowledge. Measurement analysis and knowledge management presented 33% as information, 67% were knowledge. Workforce focus has 20% as information and 80% as knowledge. Process management has 20% as information and 80% of

knowledge. Results show 80% as information and 20% as knowledge. The nature of these experts and rationale for choosing them is showed in Table 4.1. The detail of GRC components on the CAMT MBNQA shows in appendix E

Table 4.1 Summarised GRC Components on the CAMT MBNQA

MBNQA	GRC Component		
	Governance	**Risk Management**	**Compliance**
Organisational Profile	• Thai governance rule	• The AEC 2015	• Government information
Leadership	• Responsibility • Being the role model	• Illegally authority • Being new administrators	• Being mentor • Changing in CAMT • Evaluation administrators
Strategic Planning	• Being assistances stakeholders	• Risk in strategic / operational-financial/ compliance	• Setting CAMT strategy - Transferring action plans • Achieving in strategic human resources
Customer Focus	• Student's benefit and quality • Relationships with stakeholders • Expectations of stakeholders	• Risk of quality students/ stakeholder requirements and expectations	• Categorises customers and stakeholders • Proving quality of students • Designing student activities • Measuring satisfaction/ solving negative impacts on society • Maintaining relationship • Supporting communities • Financial information • Managing BSC • Managing software and hardware

Table 4.1 Summarised GRC Components on the CAMT MBNQA (Continued)

MBNQA	GRC Component		
	Governance	**Risk Management**	**Compliance**
Measurement Analysis and Knowledge Management	• Information characters	• Information Risk	• Information technology regulations • Uses information
Workforce Focus	• Professional ethics • Personnel with happiness	• Lack of experience	• Training new staff • Developing local workforce • Promoting knowledge • Developing staff to achieve goal • Supporting and give intensive or welfare • Evaluating personel effectiveness
Process Management	• Value, culture and braning	• Risk in financial and compliance	• Archiving in Thai governance rules • Creating, designing and implementing value • Success in objectives of business processes • Manage CAMT finance - Share experience • Design quality assurance (QA) • Be international college
Results	• Rate of trust, transparency, ethics		• Efficiency and effectiveness of CAMT academic management • Academic service

Table 4.1 Summarised GRC Components on the CAMT MBNQA (Continued)

MBNQA	GRC Component		
	Governance	**Risk Management**	**Compliance**
Results (Continue)	• Producing international graduated students		• Preservation of cultural • Stakeholder's satisfactions and expectations • Workforce results • Financial results Preventing error and fail of result

The CAMT GRC on MBNQA presents in Table 4.1. This step is one parts of CAMT GRC Model. This next section presented according to capture knowledge from CAMT expert. It shows in section 4.4.2.

4.4.2 Knowledge Requirements and Data Sources; Capturing GRC Knowledge from CAMT Leadership Expert

The next step in creating the CAMT GRC model is to capture GRC information and knowledge from a CAMT GRC expert. This information is collected according to the same MBNQA categories and is coded as either information or knowledge. The key initial findings from this section are as follows:

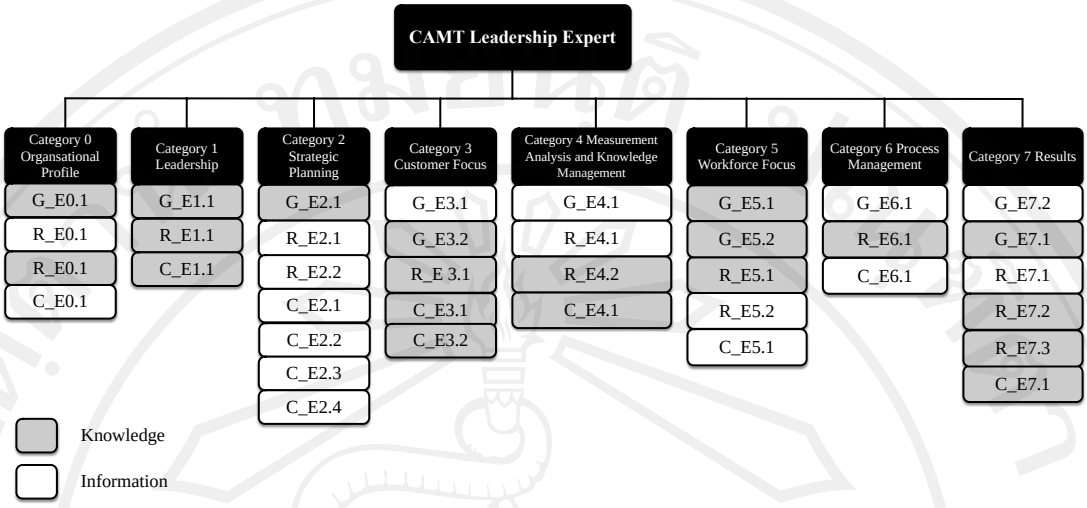


Figure 4.10 GRC Components on the CAMT MBNQA from CAMT Leadership Expert

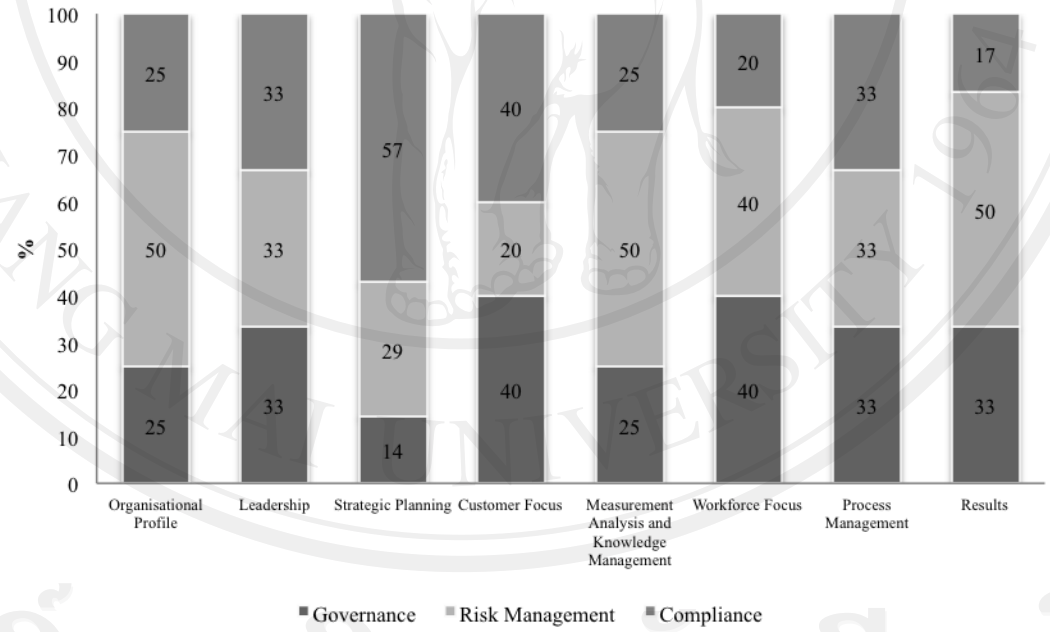


Figure 4.11 Proportion of GRC on the CAMT PMQA from CAMT Leadership Expert

Figure 4.11 offers 7 categories of MBNQA including organisational profile category. It shows GRC components and separated information and knowledge of CAMT Leadership Expert. Furthermore, Table 4.3 releases GRC components on

MBNQA framework. The detail of GRC components on the CAMT MBNQA shows in appendix F.

This stage provides GRC on MBNQA, which demonstrates more understanding for GRC management. After categorised GRC on MBNQA from CAMT leadership expert. The next step is defined knowledge and information to point useful knowledge from expert's experience in management and shows related information, which support knowledge of faculty management. These are showed in Figure 4.12.

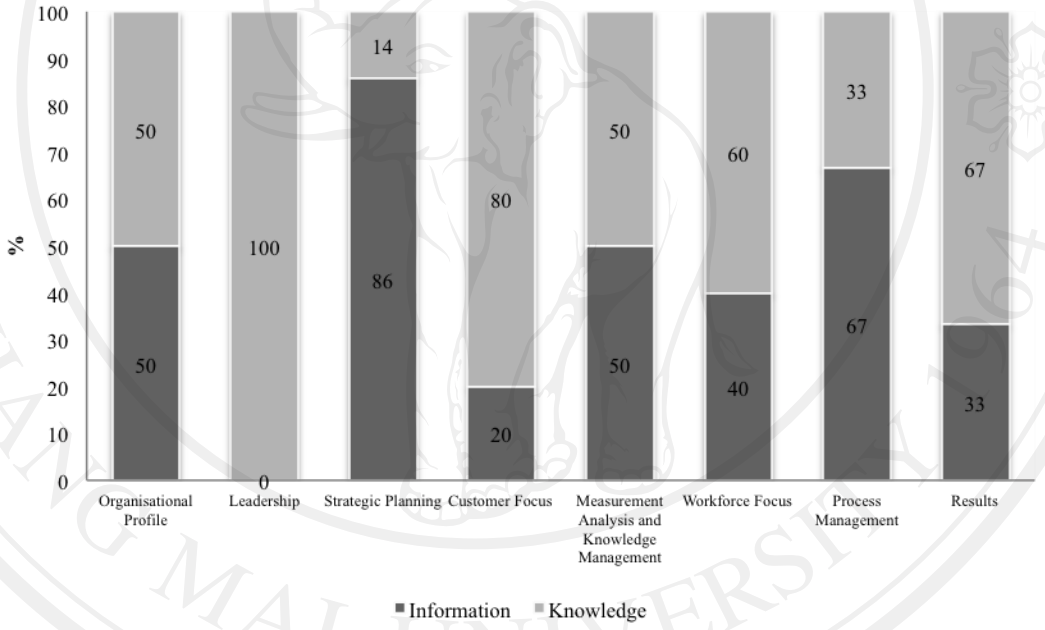


Figure 4.12 Proportion of GRC on the CAMT PMQA from CAMT Leadership Expert

Figure 4.12 organisational profile shows governance 25%, risk management as 50% and compliance as 25%. Leadership category has 33% as governance, risk management and compliance. Strategic planning shows governance 14%, risk management as 29% and compliance as 57%. Customer focus category presents 40% as governance 20% as risk management and 40% as compliance. Measurement analysis and knowledge management category indicates 25% as governance, risk

management as 50% and 25% as compliance. Workforce focus category are 40% as governance, risk management as 40% and 20% as compliance. Process management had 33% as governance, 33% as risk management and 33% as compliance. Results show 33% as governance, risk management as 50% and 17% as compliance.

This phase illustrates information and knowledge experience in faculty management. The summarised of GRC on MBNQA from CAMT Leadership expert presents in Table 4.2. Also, the detail of knowledge and information shows in Appendix H.

Table 4.2 The GRC Components on the CAMT MBNQA from CAMT Leadership Expert

MBNQA	GRC Component		
	Governance	**Risk Management**	**Compliance**
Organisational Profile	• Being affiliated university	• AEC completion and less renew assets risk	• University law
Leadership	• Relationship of leadership and staff	• Inappropriate requirement	• Being a role model
Strategic Planning	• Empowerment	• Real information/ lack of capital investment	• Research budget • Salary budget • Ratio of lecturer and staff • Government budget and university revenue
Customer Focus	• Academic Standard • USR	• No process for supporting English to students	• Lecturers don't understand role of being advisor • Not have time to advice Ph.D students

Table 4.2 The GRC Components on the CAMT MBNQA from CAMT Leadership Expert (Continued)

MBNQA	GRC Component		
	Governance	**Risk Management**	**Compliance**
Measurement Analysis and Knowledge Management	• Challenge KPIs	• No or wrong information • Replacement of human resources	• Effective implement of human resource
Workforce Focus	• Assessment staff by Dean • High salary to employment professional staff	• New staff • Uncontrollable risks	• Work full time
Process Management	• QA as major standard	• Lecturers can't develop their work	• Follow financial regulation
Results	• Showing financial budget • Educational business should invest in staff	• Showing net profit • Open new resource of fund • Finding new blue ocean and align with big picture	• Measurement intellectual capital rather than business gain

Table 4.2 shows knowledge perspectives how to manage governance, risk and compliance on MBNQA in CAMT. There are two knowledge sources of management inside CAMT. The first on is the CAMT GRC on MBNQA (See section 4.4.1). The second stage is the GRC on CAMT leadership expert (See section 4.4.2). The next step to create the GRC model is captured knowledge source from outside faculty. To focus on risks as international level, CAMT selects the University of California Berkeley (UCB) risk catalogue to benchmark with CAMT risk. This stage demonstrates in Section 4.4.3

4.4.3 Benchmarking with University of California Berkeley Risk Catalogue

The University of California, Berkeley (UCB) is a public research university located in Berkeley, California, United States. Total current fall enrollments in 2012 are 35,899 (Office of UCB Plan and Analysis, 2012). The university provides risk catalogue, which is used to benchmark the CAMT GRC risks and ensure appropriate risks for the faculty of Thai public affiliated universities.

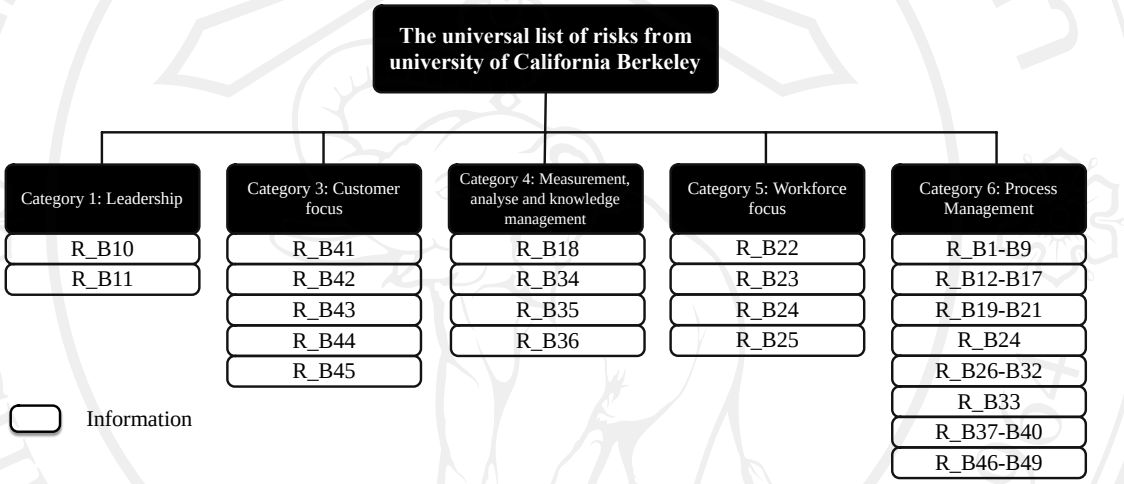


Figure 4.13 The Universal List of Risks from University of California Berkeley and MBNQA Framework

CAMT uses UCB risks to benchmark with CAMT risks for wider and international risk management. The risks from UCB are categorised base on MBNQA, which is standard framework. The useful risks were selected in to one part of the CAMT GRC model. Table 4.4 shows risks, which relates and matches with CAMT.

Table 4.3 Benchmarking Risk based on the Universal list of Risks from University of California Berkeley and MBNQA Framework

Risk Code	Descriptions
	1 Leadership
R_B 10	Ineffective auxiliary management
R_B 11	Insufficient oversight over third-party vendors
	3 Customer Focus
R_B 41	Acts of Intolerance
R_B 42	General safety and security of students and visitors, on and off campus
R_B 43	Inappropriate athletic recruiting
R_B 44	Sports/public event disturbances
R_B 45	Student mental health
	4 Measurement Analysis and Knowledge Management
R_B 18	Lack of common data definitions
R_B 34	Effort reports inaccurate, insufficient, or incomplete
R_B 35	Failure to maintain equipment inventories in accordance with grant requirements
R_B 36	Inconsistent application of compliance policies and investigation techniques
	5 Workforce Focus
R_B 22	Employee recruitment and retention
R_B 23	Liability (Patents, Property, etc)
R_B 24	Personnel issues or workplace violence
R_B 25	Workers' compensation claims
	6 Process Management
R_B1	Catastrophic natural event (earthquake, fire, etc.)
R_B 3	Facilities and grounds safety
R_B 4	Laboratory safety
R_B 5	Pandemic
R_B 6	Budget impairment

Table 4.3 Benchmarking Risk based on the Universal list of Risks from University of California Berkeley and MBNQA Framework (Continued)

Risk Code	Descriptions
R_B 7	Conflicts of interest in financial transactions and agreements
R_B 8	Improper governmental activities including fraud, embezzlement, or misuse of university resources
R_B 9	Improper Use of Funds
R_B 12	Loss of federal/state or private healthcare funding due to quality of health care issues and / or noncompliance with funding source requirements
R_B 13	Non-compliant cost transfers
R_B 14	Decentralization of systems leading to data inconsistencies and fragmentation
R_B 15	Disclosure of confidential information (personally identifying information (PII) or health care info)
R_B 16	Inability to recover from system loss or extended downtime
R_B 17	Lack of comfort with third-party vendor system security
R_B 19	Obsolescence of systems/technology
R_B 20	Security Breaches, including unauthorized access
R_B 21	Unauthorized/Inappropriate data modification
R_B 26	Inadequate lab processes and practices for the promotion of environmental health and safety
R_B 27	Intellectual property infringement
R_B 28	Research misconduct, such as falsification of data or results, or non-disclosure of research dangers
R_B 29	Threats to safety of researchers
R_B 31	Agreement terms and conditions not met, but funds used
R_B 32	Assumption of inappropriate liability exposure
R_B 33	Cost sharing procedures are not compliant with government requirements

Table 4.3 Benchmarking Risk based on the Universal list of Risks from University of California Berkeley and MBNQA Framework (Continued)

Risk Code	Descriptions
R_B 37	Insufficient response to new regulation
R_B 38	Non-compliance with sponsoring agency regulations and agreement terms and conditions
R_B 39	Regulatory fines or penalties
R_B 40	Sub-recipients not managed appropriately
R_B 46	Deferred maintenance
R_B 47	Equipment/facility malfunction
R_B 48	Increase in energy costs
R_B 49	Property Damage/Loss from fire

The UCB risks are adapted in one part of the CAMT model. To create the GRC model, knowledge requirement from governance, risk management and compliance experts are captured with the international accepted GRC model, which is 'OCEG' model. The next outside knowledge of faculty management is defined in section 4.4.4 - 4.4.6.

4.4.4 Knowledge Requirements and Data Sources; Capturing Knowledge from Governance Expert

Governance knowledge for the Thai public affiliated universities is captured through semi-structured interviews with an expert who is a committee board member of a number of public affiliated university councils and is president of the board of committee in a traditional Thai public university. This allows knowledge of governance to be gathered and a comparison between traditional public and the new public affiliated universities. The expert has published many papers about management and governance in Thai higher education and Thai public affiliated universities, and was a Secretary General of the Higher Education Commission. Also, this step relates analysis of appropriate documentation.

According to Figure 4.6 experts' tacit knowledge was captured to create the GRC model. In terms of capturing expert knowledge, the OCEG GRC framework acted as a guide when constructing questions and the expert was asked about governance according to the eight main aspects of the OCEG GRC framework. The interview was split into these eight sections, as described below:

- **Section One: Context and Culture** – Questions in this section related to the external and internal context of governance in Thai universities as well as the culture, values and objectives of effective governance.
- **Section Two: Organize and Oversee** – The questions in this section relates to the overall governance approach and the related roles and responsibilities.
- **Section Three: Assess and Align** – The questions in this section is about how governance aligns with risk and a wider GRC framework.
- **Section Four: Prevent and Promote** – This section includes questions regarding the promotion of governance throughout Thai universities and the prevention of issues relates to governance.
- **Section Five: Detect and Discern** – This part relates to notifications, surveys and inquiries in terms of governance in the organisation.
- **Section Six: Respond and Resolve** – This section relates to internal measures to control governance, as well as responses to third-party inquiries or investigations.
- **Section Seven: Monitor and Measure** – Questions in this section pertains to monitoring and evaluating performance relates to governance.
- **Section Eight: Inform and Integrate** – This section is about information management, technology and infrastructure.

The full questionnaire and expert responses are presented in Appendix B, while the key results from the questionnaire are summarised below according to each of the eight OCEG categories, a detailed summary of knowledge for each of the eight

OCEG categorise a structural knowledge map was created for the governance category in Thai public affiliated universities.

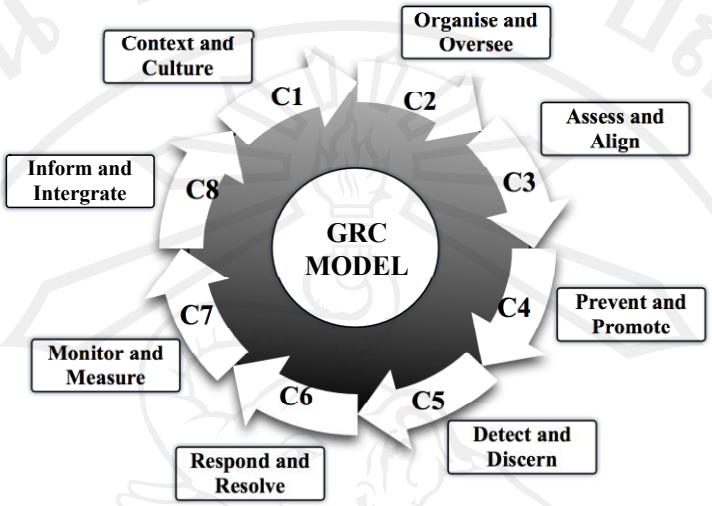


Figure 4.14 Eight Key Parts of an Effective GRC Capability (OCEG, 2009)

- **Summary of Expert Knowledge Capture (Governance): Context and Culture**

Governance in Thai higher education has two main parts, consisting of internal and external university governance. In terms of internal governance, there are three main pillars consisting of finance, workforce and academic governance issues. According to the expert and relevant literature, internal governance should be appropriately addressed by the organisation before it looks outwards to external governance. Appropriate management of these three aspects of governance should lead to continuous improvement of a high education organisation. Figure 4.14 illustrates the relationship between internal and external governance in Thai public affiliated universities and the three key pillars of effective governance.

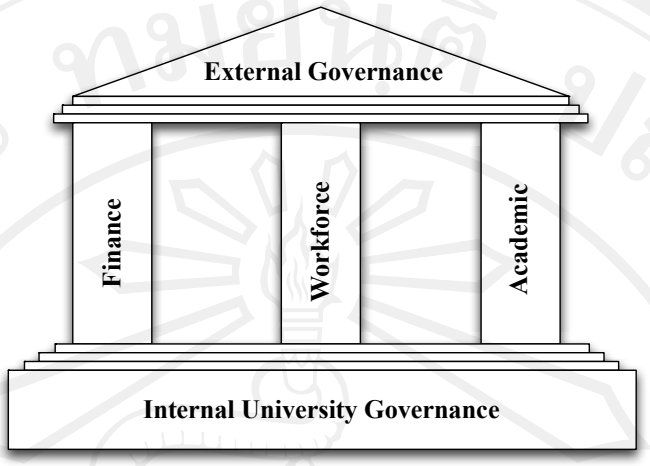


Figure 4.15 Internal and External Governance and the Three Key Pillars of Governance Necessary in Thai Public Affiliated Universities

For public affiliated universities in Thailand, governance has an increasingly important role due to increased autonomy and accountability. For example, when compared to Japan and Malaysia, the level of autonomy in Thai public affiliated universities is more extensive (Mok, 2006). Despite such autonomy, a university's organisational culture in Thailand can often act as a constraint, for example, in terms of staff seeking long-term civil service careers, which represent job security than innovation. In Thai public affiliated universities however, staff are now being considered as employees rather than civil servants.

In the past, Thailand's public affiliated universities tended to copy existing and legacy aspects of governance rather than rethinking governance and responding to the needs of Thailand's higher education. This represents a key reason why the integrated GRC model is required in Thai higher education, especially for public affiliated universities. In essence, Thai public affiliated universities have the appropriate structure, but rely on traditional aspects of governance.

While the Thai public affiliated universities are organised and managed differently to traditional public universities, the distinction is less clear than in the past. The main difference between public and affiliated public universities is now in terms of financial control and autonomy. Financial governance is thus especially

important to Thai public affiliated universities, and particularly to the case study presented in chapter 4, which is approximately 93% self funded.

- **Summary of Expert Knowledge Capture (Governance): Organise and Oversee**

Responsibility for governance in Thai public affiliated universities is dependent on the individual organisation, with two models representing either a strong presidential style of leadership, or a strong university council/board. This also impacts the communication of governance information across the university and who is responsible for governance within the organisation. For example, with a strong president, the responsibility for governance may lie with one individual (the president), but if there is a model of leadership with a strong council or board, then members of that council or board may take responsibility for individual aspects of the key governance pillars (finance, workforce, academic). In terms of dialogue and communication within Thai public affiliated universities, board meetings and official management meetings are often formal, structural and functional as opposed to encouraging open dialogue and free communication regarding governance.

Thai public affiliated universities are not required to follow governmental controls and can create their own individual acts and control mechanisms, but often emulate existing governmental guidelines and regulations, which can sometimes constrain the university in its development. While the affiliated universities must be accountable to the external governance requirements set by the Thai Ministry of Education, they should set an appropriate internal governance system first, as represented by Figure 4.9.

Currently, governance is not diffused across the whole organisation within Thai public affiliated universities and there is a need to encourage communication and consideration of governance issues though dialogue rather than structural or functional systems. All parties within the organisation should be encouraged to communicate without the boundaries of specifically defined roles, and this should be considered in creating the integrated GRC model. In terms of setting an appropriate organisational tone for GRC, dialogue and communication should be encouraged

through the organisation; something which knowledge management could be leveraged to provide.

- **Summary of Expert Knowledge Capture (Governance): Assess and Align**

Aligning governance to issues of risk is challenging, as many types of risk exist, but any risk other than finance is inherently difficult to quantify. As such, risk other than finance is often overlooked or not assessed. This provides justification for the creation of the integrated GRC model presented in this thesis, which aims to align governance with risk in a structured way so public affiliated universities can ascertain how they are performing in areas of risk not related to finance. Ultimately, the integration of governance with risk in an effective model should lead to an enhanced level of sustainability for Thai public affiliated universities.

In the future, more autonomy is expected in Thailand's public affiliated universities (Kirtikara, 2002; Liefner and Schiller, 2008) along with a further shift from civil service guidelines to create governance guidelines suited to individual organisations. While there may be a continued move away from the civil service legacy, external audit will naturally become more important for Thai public affiliated universities and thus there is a strong need to link governance with issues of compliance. This again provides justification for the integration of governance, risk and compliance in the integrated GRC model developed in this thesis. For example, a primary source of income for public affiliated universities is students, and as such universities must be accountable to students, parents and the government to ensure the university is managed correctly with appropriate resource allocation.

Issues of governance must also be aligned with the forthcoming ASEAN Economic Community in 2015, which should be seen as an internationalisation tool for Thai universities, but again requires appropriate governance to ensure that public affiliated universities respond appropriately to the AEC 2015.

- **Summary of Expert Knowledge Capture (Governance): Prevent and Promote**

Governance is promoted throughout public affiliated universities via a variety of methods specific to the individual institution, but the common focus should be on

continuous improvement throughout the organisation. In this sense, an integrated GRC model would provide an appropriate tool to promote such continuous improvement. Rather than create new bespoke policies, existing governmental guidelines and policies are still emulated in public affiliated universities, with a need for more specific policies suited to the needs of individual organisations. This again reinforces the need for an integrated GRC model which can provide a dynamic and flexible method to consider issues of governance in a way which is specific to an individual organisation, while also considering the external governance environment. The integrated GRC model should also provide a tangible way to consider the often intangible and qualitative aspects of governance.

- **Summary of Expert Knowledge Capture (Governance): Detect and Discern**

Governance weaknesses should be detected through effective management of the higher education institution, and currently this depends on the strength of the organisation's management. Both internal and external auditing serves as methods to detect and discern undesirable behaviour in the organisation and should be a part of the integrated GRC model.

- **Summary of Expert Knowledge Capture (Governance): Respond and Resolve**

Internal measures to control governance within the Thai public affiliated universities consist of auditing and key performance indicators (KPIs). However, it is argued that there are currently too many auditing and KPI processes and a focus on quantitative data with a lack of consideration for qualitative indicators. As such, the integrated GRC model designed in this research considers how to respond and resolve issues of governance, not just through quantitative measures of auditing and KPI, but a consideration of other important qualitative aspects of governance in the Thai public affiliated universities.

- **Summary of Expert Knowledge Capture (Governance): Monitor and Measure**

Governance is currently monitored through KPIs and audits. KPIs are often argued as being too quantitative and easily manipulated to hide the true performance of an organisation (Dixon et al., 1990). There should also be a focus on qualitative aspects of evaluating governance and an inclusion of peer assessment. This again provides appropriate input for the creation of the integrated GRC model.

- **Summary of Expert Knowledge Capture (Governance): Inform and Integrate**

Governance is an essential component of an effective university, particularly for Thai public affiliated universities who have relatively more autonomy than public universities. Governance provides information within the two areas of internal and external governance and provides information across the three main pillars of governance: finance, workforce and academic quality. When using governance to inform the organisation and provide information related to decision-making, there should be a balance between qualitative and quantitative aspects in order to achieve appropriate understanding and collect appropriate knowledge. In the GRC model, governance should be considered in relation to the three central components of finance, workforce and academic quality issues in order to achieve appropriate internal governance before looking outward to achieve external governance compatible with meeting the challenges from the forthcoming AEC 2015 and achieving organisational stability. To achieve effective governance and make appropriate organisational decisions requires an understanding of risks, yet higher education institutions in Thailand currently focus predominantly on financial risk, as it is easily quantifiable. However, there is significantly less focus on the more intangible, less quantifiable aspects of risk. This provides appropriate information and impetus to effectively integrate governance with risk in the GRC model. According to expert information and a review of appropriate literature in the context of Thailand's higher education system and with specific reference to the Thai public affiliated universities.

Knowledge structural mapping was used to structure the governance knowledge collected from the expert.

A knowledge map represents a visual display of captured information and relationships that quickly and easily allows visualisation and understanding of the captured knowledge (Vail, 1999). There are a variety of knowledge mapping techniques, each with a different purpose, for example knowledge asset maps (Eppler, 2004), knowledge source maps, and knowledge application maps. In this research, knowledge structure mapping (KSM) was used as it is effective at outlining the global architecture of a knowledge domain (Mok, 1996) and the knowledge relationships and overlaps within in the domain. Knowledge structure mapping allows knowledge managers to effectively understand and interpret the domain of an expert and subsequently answer questions related to that domain (Eppler, 2004). KSM has been shown as highly effective way to investigate a concept from a knowledge perspective (Davision et al. 2005). In this research, governance, risk and compliance were each treated as a separate knowledge domain.

While KSM provides a structured overview of the governance, risk and compliance knowledge domains, the related text also describes in detail the key components of GRC and their relationship to the proposed GRC model for the Thai affiliated universities.

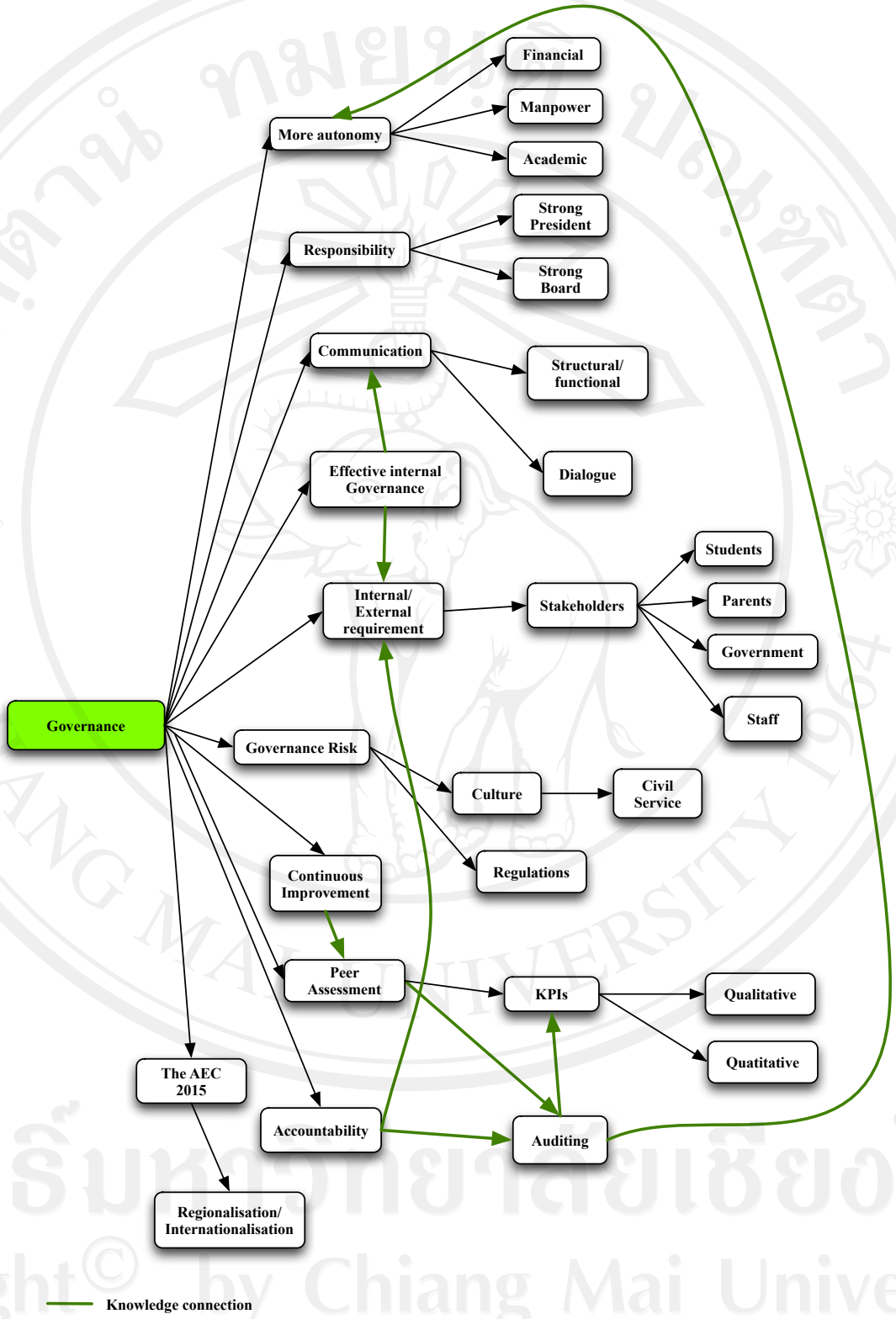


Figure 4.16 Structural Knowledge Map for Governance in Thai Public Affiliated Universities

4.4.5 Knowledge Capture and Requirements: Risk Management

Risk management knowledge for the Thai public affiliated universities was captured through semi-structured interviews with the expert who is a specialist in IT governance, IT audit, and enterprise risk management areas. As well as a freelance consultant on risk the expert is a committee member of various leading risk organizations; for example, the audit committee. The expert is a former vice chairman of the Institute of Internal Audits, Thailand and currently serving as an audit chair at ISACA Bangkok, Thailand and a vice chairman at TISA-Thailand information security association. The rationale for selecting this expert relates to considerable public and private sector risk experience from a Thai perspective. Another expert is member of the CMU risk committee and university administrator with experience of providing risk advice to industries in Thailand. The expert is also a member for international cooperation. This risk expert was able to provide a higher education perspective with a particular focus on the forthcoming risks from internationalisation. The interview was split into eight sections following the OCEG model and in the same structural form as the governance questions, namely:

- **Section One: Context and Culture –** Questions in this section relates to the external and internal context of risk management in Thai universities as well as the culture, values and objectives of effective risk management.
- **Section Two: Organize and Oversee –** The questions in this section relates to the overall risk management approach and the related roles and responsibilities.
- **Section Three: Assess and Align –** The questions in this section is about how compliance aligns with risk and a wider GRC framework.
- **Section Four: Prevent and Promote –** This section includes questions regarding the promotion of risk management throughout Thai universities and the prevention of issues relates to risk management.
- **Section Five: Detect and Discern –** This part relates to notifications, surveys and inquiries that relate to risk management in the organisation.

- **Section Six: Respond and Resolve –** This section relates to internal measures to control risk management, as well as responses to third-party inquiries or investigations.
- **Section Seven: Monitor and Measure –** Questions in this section pertains to monitoring and evaluating performance relates to risk management.
- **Section Eight: Inform and Integrate –** This section is about information management, technology and infrastructure

- **Expert Knowledge Capture (Risk Management) : Context and Culture**

In the context of Thai higher education, risk can be defined by risk experts as events, which are unexpected, but destroy or affect goals. Risk can be separated into four categories: academic, financial, staff and assets. Risks are unexpected, but can provide opportunities as well as adverse impacts. For example, the AEC 2015 is a risk to Thai higher education, but can also be viewed as an opportunity to expand and internationalise Thai higher education, particularly for the Thai public affiliated universities which possess the autonomy to respond in a flexible and efficient way to the AEC 2015.

As with governance and compliance, Thai public autonomous universities represent a new organisational structure, but significant risk exists from the legacy culture and civil service mentality of the majority of staff. Risk management is therefore particularly important for Thai public affiliated universities as they face significant challenges and opportunities (risks), but with a constraining legacy culture, may not have the capability to appropriately respond to these risks. This represents the need for the integrated GRC model to ensure that risks are responded to quickly and efficiently, and that the legacy culture of the newly transformed public affiliated universities does not affect their ability to respond to risk.

While risk can be separated into four management categories (academic, staff, finance and assets), from a functional perspective there are five components of risk which affect the public affiliated universities:

- Financial risk
- Operational risk

- Strategic risk
- Risks of compliance
- IT risk

The key objectives of risk management within Thai public affiliated universities are to ensure that people, process and technology are risk aware and are empowered to respond appropriately to risks. This requires an effective framework, which is provided in the form of the integrated GRC model.

- **Expert Knowledge Capture (Risk Management): Organise and Oversee**

In Thailand's public autonomous universities, risk management is considered by executive management (e.g. the university council) and affects every part of the organisation. In comparison to traditional public universities, risk management is arguably more important to the public affiliated universities. This is because with more autonomy comes more risk, and in terms of budget, there is a requirement to earn income as well as receiving governmental support. This constitutes a risk to the public autonomous universities, as without earning appropriate income, the sustainability of the university will be affected. This corroborates the crucial need for risk management in the form of an integrated GRC model, which allows Thai public affiliated universities to consider risk within an appropriate framework. It is also suggested that Thai culture is not particularly risk aware (Thanasankit and Corbitt, 2002, Thanalerdsopit et al. 2010) and therefore awareness and a suitable risk framework is critical for Thai higher education's future growth.

Currently, within Thai public affiliated universities, risk committees are responsible for identifying and analysing risks, but risk should be the responsibility of everyone within a higher education organisation (COSO, 2004). The risk committee is set by the university president and approved by the university council. In reality, the risk committee is a legacy structure from the Thai MOE, and was established in traditional public universities. As with governance and compliance the newly transformed public affiliated universities have been slow at adopting frameworks and structures that suit their autonomy, instead preferring to continue to use or adapt

measures implemented in public universities and ones, which may not be well-suited to the new public affiliated universities. Risk management requirements are recorded and distributed throughout the organisation via a variety of methods, including:

- Risk management manual
- Regular risk meetings
- Risk committee and audit
- Departmental/faculty risk management committee
- Risk management through appropriate quality assurance (QA) measures

- **Expert Knowledge Capture (Risk Management): Assess and Align**

The AEC 2015 is one of the key factors currently affecting risk management for Thai public autonomous universities and a central component of research presented in this thesis aims to create a model suited to preparing Thai public autonomous universities for the AEC 2015. The AEC 2015 represents risk brought about from increased staff and student mobility and a free flow of academic services. Therefore a need exists to integrate aspects of risk management with aspects of governance and compliance. As explained by a wide variety of literature (chapter 2), GRC should consist of a synergistic combination of all three components, and not simply a piecemeal approach. As with governance and compliance, risk management in the Thai public affiliated universities should be proactive on issues related to ASEAN, not reactive.

- **Expert Knowledge Capture (Risk Management): Prevent and Promote**

The main mechanism for ensuring effective risk management in Thai public affiliated universities comes from quality assurance (QA). QA provides a framework based on governance and compliance, which allows risk within the public autonomous universities to be considered.

- **Expert Knowledge Capture (Risk Management): Detect and Discern**

Risk is currently assessed using individual risk management processes across the public affiliated universities and their individual departments and faculties. This

represents an opportunity for the integrated GRC model, which can provide a standardised framework from which to consider risks within the public autonomous universities.

- **Expert Knowledge Capture (Risk Management): Respond and Resolve**

While there is no standard framework for managing risk within the public autonomous universities of Thailand, an appropriate risk management framework is a mandatory requirement of the National Education Act, 1999 (MOE, 2008) and its amendments in 2002. External audits from the office for national education standards and quality assessment aim to ensure that an appropriate risk management strategy is followed, but as yet, a standard framework for risk management does not exist and is commonly conducted within other management tools such as balanced scorecard (BSC), QA and TQA. While these tools do provide a framework for assessing and managing risks, they are not effectively integrated with governance and compliance and have several other weaknesses, including a focus on lacking indicators, which show past risks rather than preparing for future risks.

- **Expert Knowledge Capture (Risk Management): Monitor and Measure**

The tools used as a framework to manage risk in Thai public autonomous universities are also used to monitor and check the effectiveness of risk management.

- **Expert Knowledge Capture (Risk Management): Inform and Integrate**

Information about risks is captured in a university risk manual and using a management information system. However, the use of the management information system is limited and the predominant method of recording and disseminating risks is through the risk management manual, which is unresponsive and slow in comparison to the potential tools and frameworks offered by a knowledge management GRC approach proposed in this thesis. The current methods of disseminating risk management information within Thai public affiliated universities are highly dependent on individual departments and management within an organisation. The methods of disseminating risk information are through meetings, traditional documentation and the management information system. Figure 4.6 shows the general

backbone of risk management in Thai public affiliated universities which is currently based on COSO ERM, but should more toward a COBIT framework for risk management, as COBIT reflects risk from an increasingly important IT perspective. Thai public universities act upon risk information primarily through reports from risk committees, but again, there is potential to increase the speed and efficiency of responding to risk and making risk-aware decisions which is; a key aim of the integreated GRC model produced based on the information in this chapter and subsequently tested at the College of Arts, Media and Technology (CAMT), Chiang Mai University.

Figure 4.17 Risk Management Backbone (COSO, 2004; ISACA, 2012)

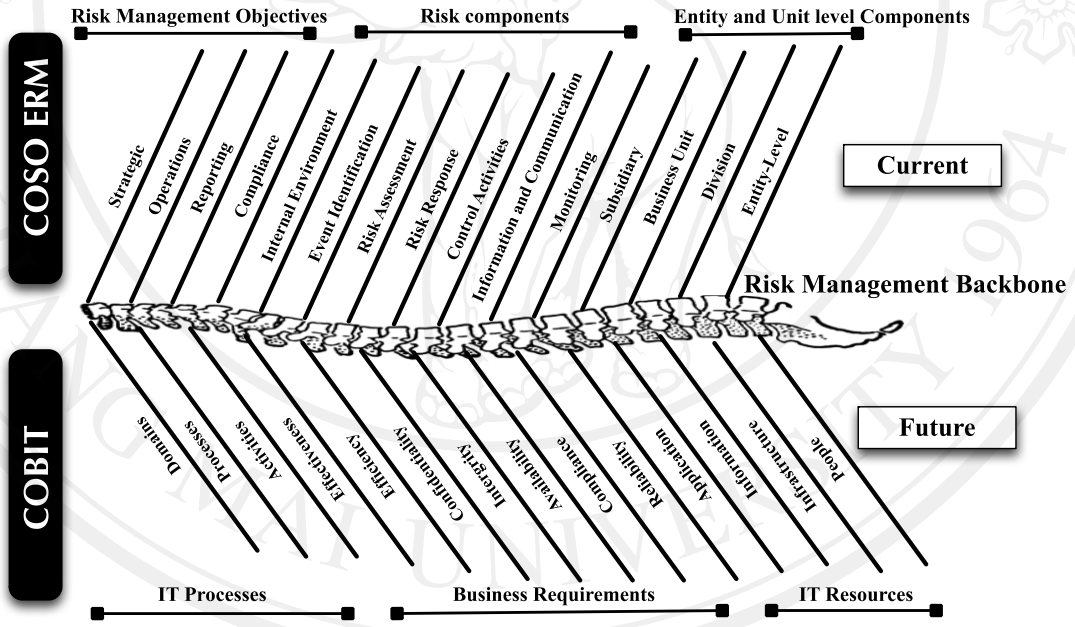


Figure 4.17 shows the summary of risk knowledge collected from experts and the relationships between the knowledge in the form of a structural knowledge map.

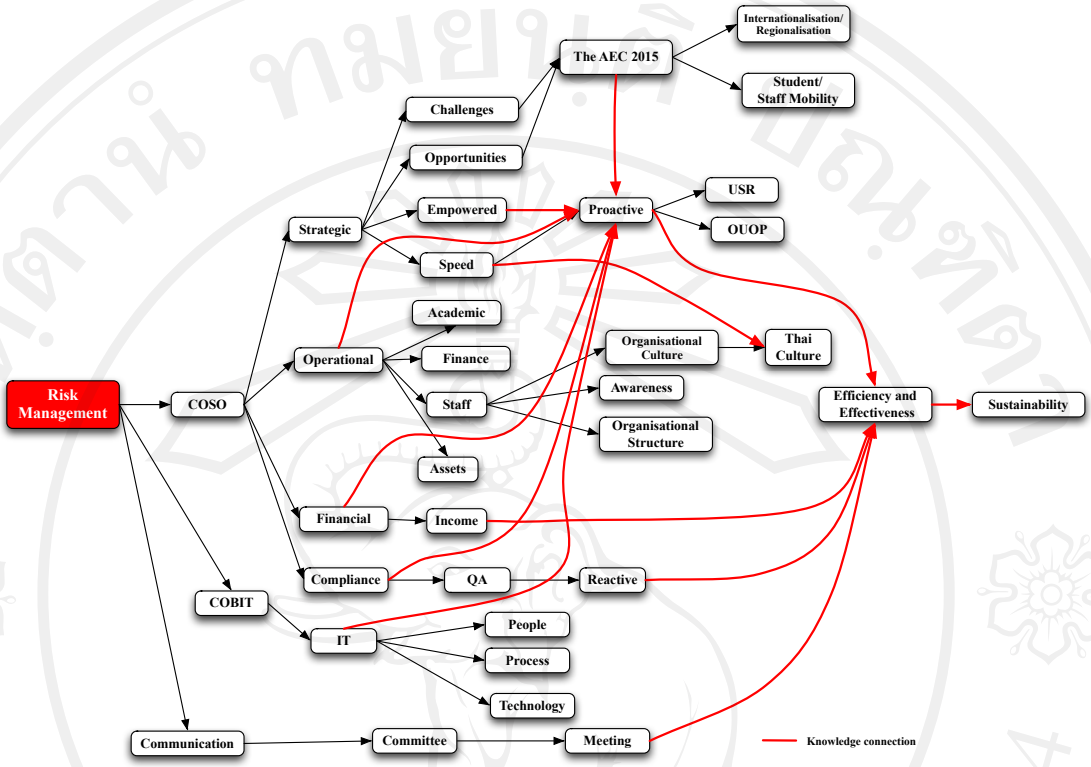


Figure 4.18 Structural Knowledge Map for Risk Management in Thai Public Affiliated Universities

4.4.6 Knowledge Capture and Requirements: Compliance

GRC knowledge requirements for compliance were captured in a similar way to governance and risk: by using experts. The experts provided a law (compliance) background with a Thai higher education perspective. 1 expert has worked at university in the domain of law for more than 40 years. 2 experts are lecturers in faculty of law. Also, they are faculty administrators. This provided a historical perspective of compliance to the research. Moreover, this stage used an appropriate literature. Literature regarding compliance was more extensive than risk or compliance as it included documents provided by the Thai ministry of education, which create the regulatory environment for universities in Thailand. The interview was split into eight sections according to the OCEG structure and in the same way as governance and risk management, namely:

- **Section One: Context and Culture –** Questions in this section relates to the external and internal context of compliance in Thai universities as well as the culture, values and objectives of effective compliance.
- **Section Two: Organise and Oversee –** The questions in this section relates to the overall compliance approach and the related roles and responsibilities.
- **Section Three: Assess and Align –** The questions in this section is about how compliance aligns with risk and a wider GRC framework.
- **Section Four: Prevent and Promote –** This section includes questions regarding the promotion of compliance throughout Thai universities and the prevention of issues relates to compliance.
- **Section Five: Detect and Discern –** This part relates to notifications, surveys and inquiries that relates to compliance in the organisation.
- **Section Six: Respond and Resolve –** This section relates to internal measures to control compliance, as well as responses to third-party inquiries or investigations.
- **Section Seven: Monitor and Measure –** Questions in this section pertained to monitoring and evaluating performance related to compliance.
- **Section Eight: Inform and Integrate –** This section was about information management, technology and infrastructure.

The results of capturing experts in university compliance described:

- **Expert Knowledge Capture (Compliance): Context and Culture**

Compliance in Thai higher education consists of two key components: law, and regulations. Law applies to all stakeholders of the university and while the law might be interpreted and applied differently at each individual higher education institution, the law is set out in Thai law and more specifically by the Thai MOE. Regulations are internal constructs, approved by the university council or

management and used within a particular institution to manage staff, students and business partners.

Compliance is important for Thai public affiliated universities to ensure that people within the organisation follow the same rules, and that disparate parties and stakeholders within the university conduct the university's business in the same way. By following compliance in terms of general law, specific educational law and university regulations, the organisation can achieve effective governance. This highlights the importance of the integration of G, R, and C to create a synergistic model, which is able to leverage each aspect related to governance, risk and compliance to build a sustainable organisation that meets the needs of its stakeholders.

There are four compliance components important to Thai public affiliated universities, which are academic, financial, personnel/staff and assets. This suggests that an effective GRC model for Thai affiliated universities must consider each one of these components. Traditional public universities have a more rigid structure in terms of their compliance, with public affiliated universities commanding more flexibility.

In principle, the concept of compliance in Thai public affiliated universities compares to international universities and higher education systems, but in reality, as with governance, there are issues related to the legacy civil service culture. This has contributed to bureaucracy and sometimes increased aspects of compliance beyond that required in a traditional public university. An integrated GRC model for the affiliated public universities of Thailand must therefore encompass appropriate compliance issues, while minimising aspects associated with a bureaucratic legacy culture.

Compliance in Thailand's public affiliated universities should have clear objectives and clear meaning so issues of compliance can be fully understood by stakeholders. Compliance should also enable the university to be flexible in responding to change, facilitate effective management and should promote the development of the university in a rapidly changing global economy and education system. This requires an appropriate model and again provides justification and relevant input into the integrated GRC model for Thai public autonomous universities.

- **Expert Knowledge Capture (Compliance): Organise and Oversee**

As with risk, compliance should be the responsibility of everyone in the university, though more specifically, compliance is categorised according to who is responsible for each part. The government has a compliance role to play in designing, enacting and updating the public affiliated university laws, while the university council or management board must design, enact and update compliance in four components: academic, financial, assets and staff. These components must also be linked to the government category to ensure university level compliance does not conflict with the external compliance (law) set by the Thai government. The university president must leverage compliance to effectively manage the organisation, and finally, staff within public affiliated universities must also meet compliance needs in their day-to-day work. This illustrates the complexity of compliance issues within the public affiliated universities and the need for an effective model to manage compliance, but more importantly link it to the other important aspects of managing and creating a sustainable higher education institution (governance and risk management).

Compliance within public affiliated universities should change significantly to meet the needs of Thailand's higher education system and the external and internal pressures on the public affiliated universities. However, adjusting compliance to meet the needs of the new public affiliated universities has been relatively slow, and in a similar way to issues of governance, Thai public affiliated universities have often retained existing legacy compliance structures and have not developed innovative compliance guidelines to meet the challenges facing Thai higher education. This again corroborates the need for an integrated model to provide guidance and motivation to public affiliated universities to update their stance in aspects of compliance to best meet the needs of the organisation and Thai higher education in general.

In terms of compliance responsibility and involvement, all individuals within a university have a role to play. This is because:

- The university council must develop, set out and enact issues of compliance.

- Staff and students use, and are under control of compliance
- Compliance can change rapidly and requires continuous assessment to ensure it is suited to the organisations' needs

Compliance requirements are distributed throughout the university in a number of ways, including management meetings. If the particular issue of compliance is significantly important or has a wide-ranging effect on stakeholders then a public hearing might take place to allow the involvement of stakeholders in the compliance process. Staff from specific areas of the organisation with a relevant interest or expertise in the particular aspect of compliance are involved with the process. For example, issues relating to financial compliance may involve an individual from the financial section of the organisation. This demonstrates that people are an important component of compliance and have a direct impact as well as being affected by issues of compliance. The integrated GRC model must therefore consider people alongside issues of compliance.

- **Expert Knowledge Capture (Compliance): Assess and Align**

As with governance, risk forms a key part of compliance and again corroborates the need for an integrated GRC model for Thai public affiliated universities. Too many compliance issues can slow the organisation down and contribute to risk, while a lack of compliance can also lead to risk in terms of not providing enough guidance to the organisation. While the affiliated universities are more autonomous than their traditional public counterparts, they still earn a significant proportion of their budget from the government and must closely follow Thai law and MOE mandates.

The AEC 2015 presents interesting challenges and potential changes for compliance in Thai public affiliated universities. The AEC is likely to require new compliance mandates from the Thai MOE, particularly related to language such as English. There are also likely to be compliance related issues arising from the increased student mobility and potential standardisation of education across the ASEAN region. This again corroborates the need to produce an integrated GRC

model, which allows universities to effectively understand and respond to the challenges and opportunities presented by the AEC.

The relationship between governance and compliance is also an important one, with the need for effective governance in order to ensure compliance is achievable. For example, without effective governance, any mandated compliance will create high risks. This supports the notion of an integrated GRC model and verifies the literature, which suggests GRC should be considered in an integrated and holistic way as opposed to individual piecemeal components. Compliance in Thai universities is also inextricably linked to Thai culture and thus culture has significant impacts on compliance and how it should be integrated into a GRC model. Students in Thai higher education are not likely to protest against issues of compliance and in line with the Thai culture, will accept compliance as mandated by anyone in power (e.g. the university council). Conversely, at the request of those in power (e.g. university president, university council), students will often join in protesting against issues of compliance. For example, students at Khonkaen University joined university management and other stakeholders to protest against the proposed transformation to become a public affiliated university (Khonkaen University, 2012).

- **Expert Knowledge Capture (Compliance): Prevent and Promote**

Compliance is seen mainly as an administrative task, with some departments and faculties being more efficient than others in meeting compliance requirements and promoting compliance in the organisation. Rewards, management and incentives to promote compliance and effectively meet the requirements of any compliance issues are highly dependent on individual departments and their administrative design. There is also frequent mismanagement of compliance, with compliance sometimes mismanaged to achieve specific objectives. To counter this, an effective and integrated GRC model could ensure governance, risk management and compliance are considered holistically and thus reduce the likelihood that compliance is misused.

- **Expert Knowledge Capture (Compliance): Detect and Discern**

Compliance in Thai public affiliated universities is still heavily based on the Thai governmental culture, and is slow and inflexible. As a result there is a need to

create a new culture and framework for compliance, which could be instigated through the proposed GRC model. The methods to identify and respond to issues of compliance are based on detection within individual departments and a reporting system up the chain of command to the public affiliated university council. A relevant and integrated GRC model should attempt to minimise issues of compliance and focus on creating a proactive rather than reactive culture.

- **Expert Knowledge Capture (Compliance): Respond and Resolve**

In a similar way to governance, internal and external audits represent the main measures to ensure effective compliance is achieved in Thai universities. Internal audits ensure individual departments are compliant with rules and regulations, while the external governmental audit acts as a third party in auditing public affiliated universities. For internal audits, relevant committees ensure the issues of compliance they are responsible for are met. The affiliated university council subsequently acts to check and update individual universities regarding issues of compliance. The integrated GRC model for Thai public affiliated universities must ensure fast and flexible responses to issues of compliance and in relation to the forthcoming AEC 2015, speed and flexibility in compliance will help Thai public affiliated universities effectively respond to the challenges and opportunities.

- **Expert Knowledge Capture (Compliance): Monitor and Measure**

Compliance under Thai law is checked via internal and external audits, and measured by people with a direct interest in the outcome of such audits.

- **Expert Knowledge Capture (Compliance): Inform and Integrate**

Information related to compliance is recorded mainly through paper-based documents, but some data is uploaded and stored electronically. Issues of compliance are stored and recorded according to the main responsibilities and sections of compliance, which are:

- Finance
- Staff

- Academic
- General

By separating compliance into these sections, universities can ensure the right compliance information can be accessed and received by the right people at the right time. Ensuring that compliance information flows up, down and across the organisation is challenging, and with the focus on paper based recording and storage of compliance information, an effective GRC model could utilise the tools of knowledge management such as a KMS to increase the speed of reporting, responding and integrating compliance across Thai public affiliated universities and ensure compliance is more efficient and effective. This is an important component of an effective GRC model as compliance acts as a filter mechanism to protect from risk.

While technology is already used for compliance, there is currently minimal use and the potential of knowledge management through technology is not currently being achieved within the Thai public affiliated universities. As a result, the integrated GRC model should ensure the potential of knowledge management in meeting the needs of compliance in Thai public affiliated universities.

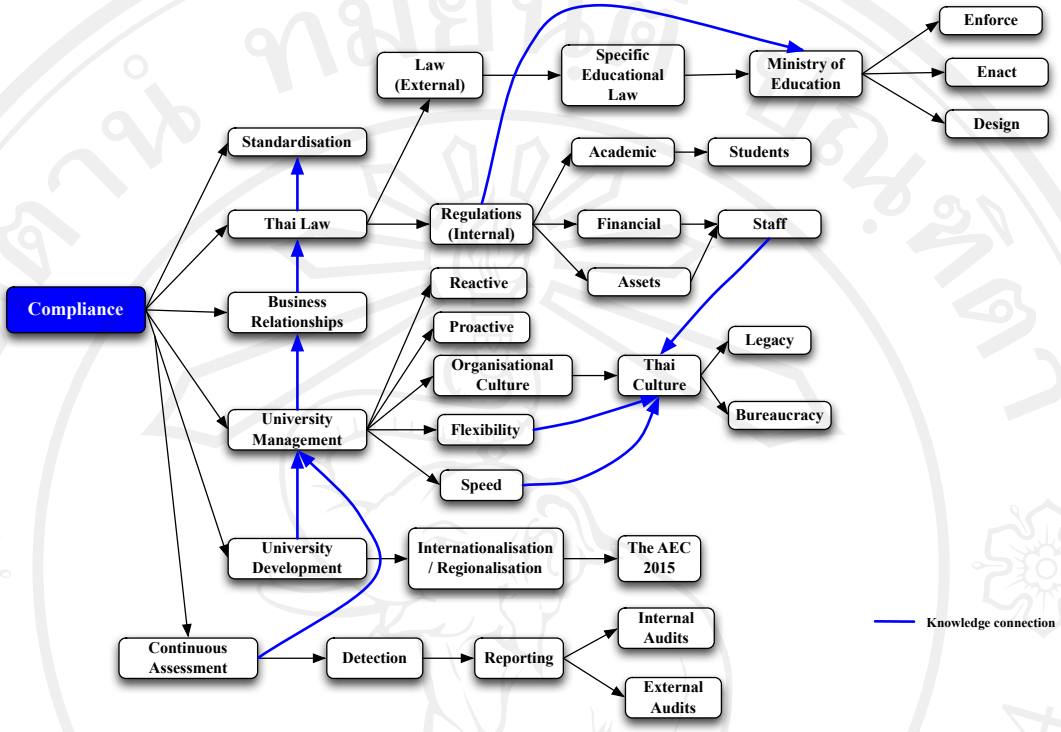


Figure 4.19 Structural Knowledge Map for Compliance in Thai Public Affiliated Universities

4.4.7 Creating a Holistic GRC Model for the Affiliated Public Universities in Thailand

Once knowledge requirements had been captured from experts, the GRC model for Thai affiliated universities could be produced. Figure 4.7 indicates the process of this chapter so far in gathering disparate pieces of tacit and explicit knowledge from experts and the literature regarding each aspect of governance, risk management and compliance. This tacit and explicit knowledge was combined to produce an appropriated GRC model for the Thai public autonomous universities, as illustrated in Figure 4.19.

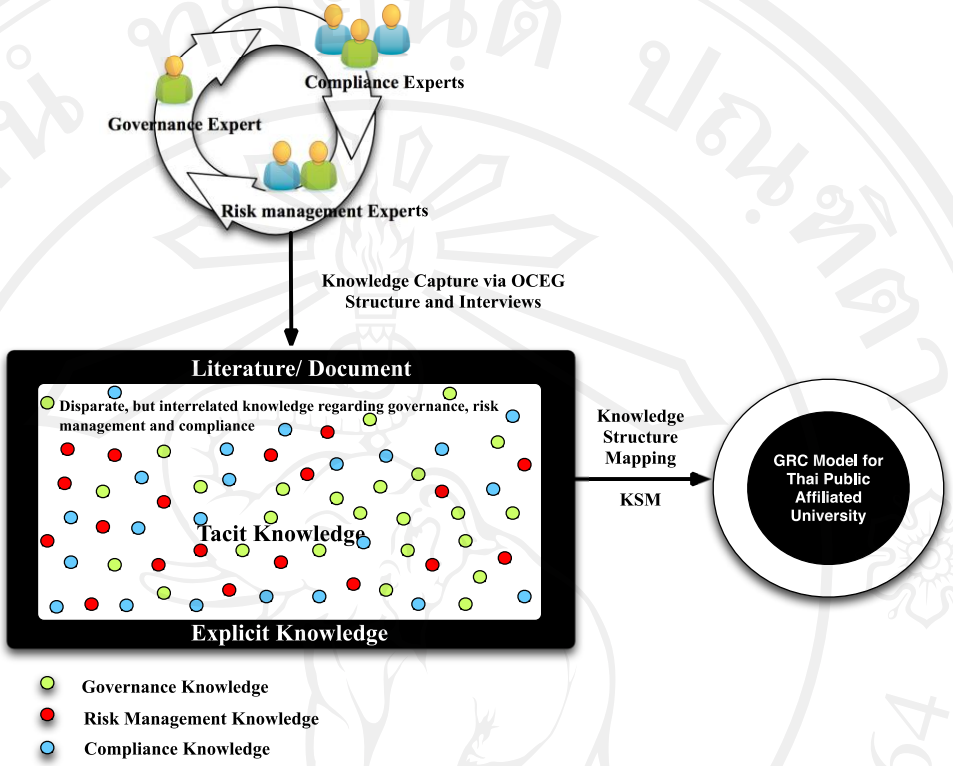


Figure 4.20 Expert Knowledge Capture and Structure Process to Create an Integrated GRC Model for the Thai Public Affiliated Universities

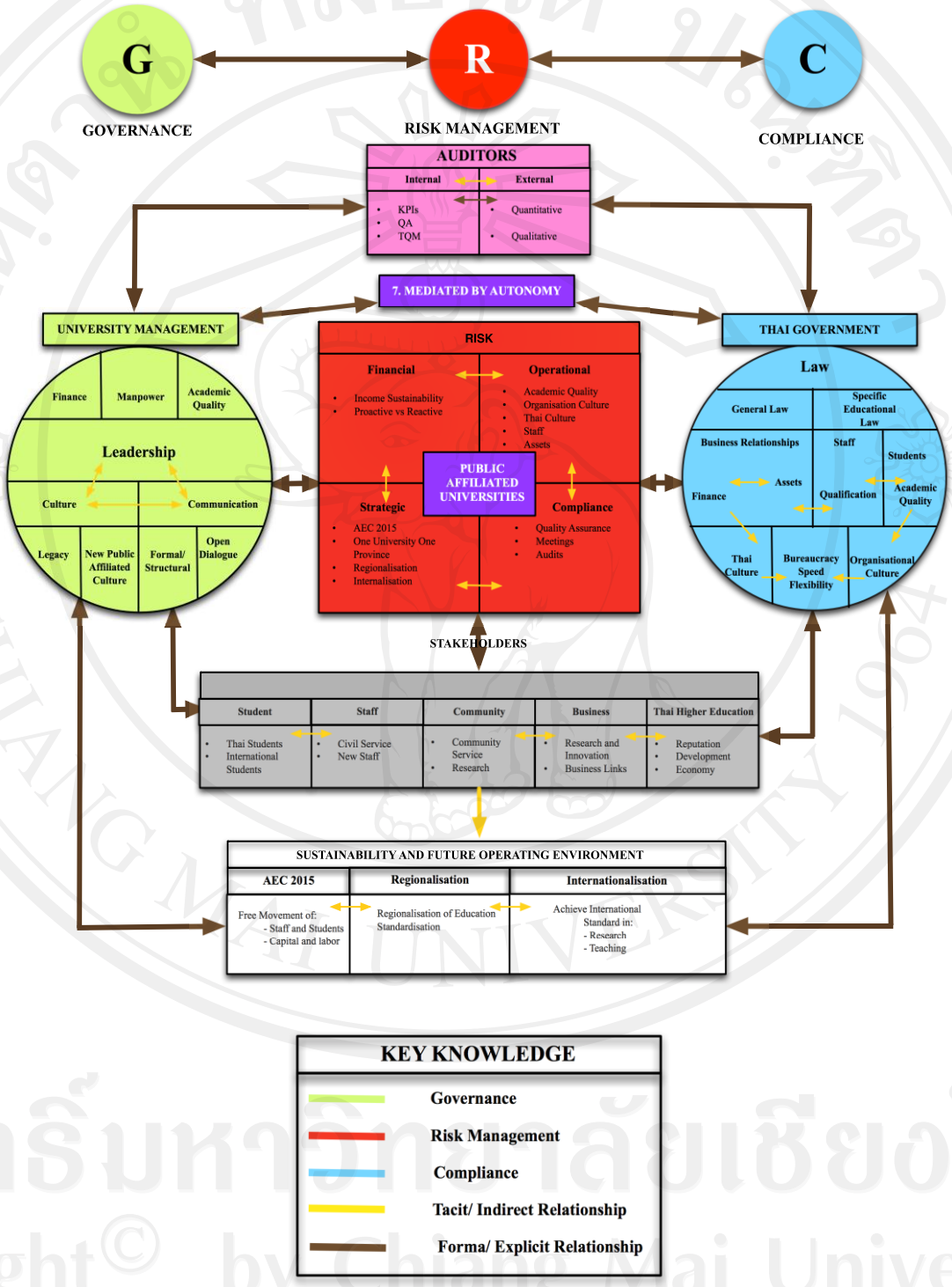


Figure 4.21 Structual Knowledge Map for GRC of Thai Public Affiliated Universities

Table 4.4 Description of GRC Model for Thai Public Affiliated Unviersities

GRC Model	Description
1. Governance University Management	
1.1 Leadership	This refers to a key part of governance in the public affilitated universities: Leadership. Notably the style of leadership and whether there is a strong president or strong board/ council has a significant impact on governance, particulay via the other aspects of governance (1.2-1.6)
1.2 Culture	Leadership (1.1) affects culture within a paricular university, which in turn can affect a variety of other organisational issues.
1.2.1 Legacy	This is related to culture and reflects the fact that culture in the public affiliated universities is significantly affected by the legacy of a government/ civil service culture.
1.2.2 New Public Affiliated Culture	This represents the opportunity for a new culture baed on the autonomy of the public affiliated universities and both affects other aspects in this part of the model, including communication (1.3), finance (1.4), workforce (1.5) and academic quality (1.6).
1.3 Communication	Communication is a critical aspect of governance in the public affiliated universities and significantly impacts the effectiveness of governance. Within governance, communication is affected by both leadership (1.1) and culture (1.2). Within communication, there are two important aspects (1.3.1) and (1.3.2).
1.3.1 Formal/ Structural	Formal/ Structural relateds to the style and method of communication inside the public affiliated universities and is affected by leadership (1.1) and impacts other aspects of governance including finance (1.4), workforce (1.5) and academic quality (1.6).
1.3.2 Open Dialogue	Open dialogue should be a key part of effective governance in the public affiliated universities, but depends on leadership (1.1), culture (1.2) and communication (1.3)

Table 4.4 Description of GRC Model for Thai Public Affiliated Unviersities (Continued)

GRC Model	Description
1. Governance University Management	
1.3 Finance	Finance is one of the key pillars of effective internal governance and is inextricably linked to leadership (1.1), workforce (1.5) and academic quality (1.6). A key aspect of finance in the public affliliated universities is the relationship with the Thai government (compliance) and the mediation of this relationship via varying levels of autonomy (7).
1.4 Workforce	Workforce is also one of the three key pillars of governance (See 4.4) and is a crucial part of good governance with links to all aspects of governance/ university management in the GRC model.
1.5 Academic Quality	Academic quality represents the last of the three pillars of good governance and like the other two pillars (workforce 1.5 and finance 1.6) academic quality relies on effective leadership and governace in the organisation, this is especially so given the autonomy and need to earn income to maintain financial sustainalbility (2.1.1).
2. Risk Management	
2.1 Financial	Financial risk represents one of the four key risk categorisation for the Thai public affiliated universities. This is especially so due to the relative autonomy there universities experience (7) and the resulting need to earn and manage income. This leads to two futher categorisations of financial risk (2.1.1 and 2.1.2).
2.1.1 Income Sustainability	Income sustainability is a critical risk for the public affiliated universities and while a proportion of their budget originates from the Thai government (2.4), there must be a link to stategy (2.3) and university operations (2.2) to achieve effective financial operations (2.2) to achieve effective financial sustainability.

Table 4.4 Description of GRC Model for Thai Public Affiliated Unviersities (Continued)

GRC Model	Description
2. Risk Management	
2.2.2 Proactive Vs. Reactive	Related to income sustainability (2.1.1) and financial risk more generally (2.1) is the requirement for a proactive stance against financial risk to achieve financial stability (2.1). Achieving a proactive stance requires links to other aspects of risk as well as governance and compliance.
2.2 Operational	Operational risk refers to risks arising from the everyday operation of the public affiliated universities and is closely linked to financial risk (2.1), strategic risk (2.3) and compliance risk (2.4). Within everyday operations, risk arises from issue of academic quality (2.2.1), organisational culture (2.2.2), Thai culture (2.2.3), staff (2.2.4) and assets (2.2.5).
2.2.1 Academic Quality	Academic quality represents a risk for public affiliated universities in term of the relationship with stakeholders, particularly students, and also links to internal and external audit (4.1 and 4.2). Academic quality is also inextricably linked to compliance risk (2.4), strategic risk (2.3) and financial risk (2.1).
2.2.2 Oragnisational Culture	Organisational culture as a risk refers to the ability of organisational culture to constrain or limit effective decision making leading to a reactive rather than proactive organisaton.
2.3.2 Thai Culture	Thai culture represents a risk for the public affiliated universities mainly in term of increasing regionalisation (the AEC 2015) and internationalisation. Thai culture represents a risk intrinsically by not being risk aware. Conversely, Thai culture, linked with effective governance and an appropiate relationship with stakeholders represents an opportunity rather than a risk.
2.2.4 Staff	Staff risk has many facets. Firstly, the number of appropriately qualified staff acts as a risk in the day to day running of an institution. From a long term perspective, staff represent a risk from a strategic (2.3) point of view in term of meeting strategic and stakeholder needs.

Table 4.4 Description of GRC Model for Thai Public Affiliated Unviersities (Continued)

GRC Model	Description
2.2.5 Assets	Asset risk is strongly linked to financial risk (2.1) as well as general governance and compliance issues.
2.3 Strategic	Strategic risks are one of the most significant risk categories for the public affiliated universities. The relationship between university leadership (1.1) and law (3.1) is mediated by the autonomous nature of public affiliated unversities and therefore strategy must take into account both issues of compliance and autonomy. Strategic risk is also strongly linked to stakeholders. The key strategic risks for the Thai public affiliated universities are the AEC 2015 (2.3.4).
2.3.1 The AEC 2015	The AEC 2015 is a key strategic risk for the Thai public affiliated univerisities (see Chapter 1) and is strongly linked to regionalisation (2.3.3) and internationalisation (2.3.4).
2.3.2 One University One Province (OUOP)	The Thai government suggests in Thailand, there should be one university to serve the community and economy in each province. In reality, some province have more than one university while others have none. In this sense, university clustering creates competition between universities with some being strong in particular subjects and others being strong in terms of maintaining a geographic presence throughout a province. This creates strategic risk for the public affiliated universities in terms of meeting stakeholder needs and compliance requirements.
2.3.3 Regionalisation	Regionalisation is a strategic risk strongly related to the AEC 2015 (2.3.1) which will see a free movement of students and a more toward education standardisation. The risk is also related to issues of compliance in terms of specific educational low (3.3) which could mandate specific requirements for the Thai public affiliated universities in order to achieve the Thai government's aim of becoming the leader of higher education in the Southeast Asian region.

Table 4.4 Description of GRC Model for Thai Public Affiliated Unviersities (Continued)

GRC Model	Description
2.2.4 Internationalisa-tion	Risk from internationalisation is similar to strategic risks from the AEC 2015 (2.3.1) and regionalisation (2.3.3) in terms of meeting stakeholders needs and compliance mandated by the Thai government. Strategic risks are thus strongly related to compliance risks (2.4).
2.4 Compliance Risks	Compliance risk mainly represents risk associated with not achieving compliance. This is a particular risk for the Thai publice affiliated univeristies as they must maintain a balance between compliance set by the Thai government and autonomy provided by their public autonomous status. Complaince risks are mainly from issues of quality assurance (2.4.1), meeting (2.4.2), and audits (2.4.3).
2.4.1 Quality Assurance	Quality assurance risk relates to aspects of Thai law (3.1) and audit (4.1, 4.2). Quality assurance risk also affects stakeholders and strategic risk (2.3).
2.4.2 Meetings	Risk related to meeting is strongly linked to leadership (1.1), culture (1.2) and communication (1.3) and affects how the Thai public affiliated universities will achieve compliance and respond to ther risk categories.
2.4.3 Audits	Audit risk is linked to internal and external audit (4.1 and 4.2) and therefore to both governance and compliance. Audits also affect other compliance risks and con ultimately affect stakeholders and future strategy.
3. Compliance – Thai Government	
3.1 Law	Law is a key compliance issue for the Thai public affiliated universities which is mandatory. There are two aspects to law; general law (3.2) and specific educational law (3.3).
3.2 General Law	General law refers to law which is not specific to educational organisations, but must be followed regardless. This includes several aspects related to the Thai public affiliated universities including business relationships (3.2.1), finance (3.2.2) and assets (3.2.3).

Table 4.4 Description of GRC Model for Thai Public Affiliated Unviersities (Continued)

GRC Model	Description
3.2.1 Business Relationships	General law affects all business relationships Thai public affiliated universities might create, and due to their autonomous nature, business relationships might become more common in the Thai public affilated universities than in traditional universities. This has links with finance in terms of compliance (3.2.2) and in university leadership (1.4).
3.2.2 Finance	Finance in term of complianc relateds to the need for the public affiliated univerisities to follow law and regulation in aspects of finance and related to all aspects of finance in the organisation.
3.2.3 Assets	Assets means any assets the university purchases or utilises must meet law or regulations and thus affects business relationships (3.2.1) and finance (3.2.2).
3.2.4 Thai Culture	Thai culture acts to mediate aspects of compliance and influences Thai law (3.1), inculding general law (3.2) and specific educational law (3.3).
3.3 Specific Educational Law	In terms of compliance, specific educational law has a greater impact than general law (3.2) and affects staff (3.3.1), students (3.3.2), qualifications (3.3.3) and academic quality (3.3.4).
3.3.1 Staff	Education law affects staff in terms of finance (1.4) in terms of rates of pay for specific types of employee (e.g. lecturer, professor). Education law also affects what qualifications they must abtain (3.3.3) and thus can affect strategic risk (2.3).
3.3.2 Students	Students are affected by specific educational law (compliance) in terms of them and the qualifications (3.3.3) they receive.
3.3.3 Qualifications	Compliance and specific educational law affect the qualifications students receive and the qualifications staff are required to possess in order to teach.
3.3.4 Academic Quality	Educational law affects academic quality via qualifications (3.3.3) and more formally, this is through internal and external audit (4.1, 4.2).

Table 4.4 Description of GRC Model for Thai Public Affiliated Unviersities (Continued)

GRC Model	Description
3.3.6 Bureaucracy, Speed, Flexibility	All three aspects bureaucracy, speed and flexibility are affected by compliance and for the public affiliated universities, autonomous mediates governance and compliance and thus in comparison to traditional universities governance and compliance is both more complex and more important.
4. Auditors	
4.1 Internal Audit	Internal audit affects university governance and compliance, acting to create a symbiotic relationship between governance, and compliance. Internal audit is often reflected through key performance indicators (KPIs), quality assurance (QA) and total quality management (TQM). Internal audit is strongly linked to external audit.
4.2 External Audit	Like internal audit, external audit is a key link between governance and compliance. Audit is commonly quantitative meaning aspects of finance are often a focus of audit (1.4, 2.1, and 3.2.2).
5. Stakeholders	Stakeholders have strong formal and informal links with governance, risk and compliance. The model breaks down stakeholders into five categories namely students (5.1), Staff (5.2), Community (5.3), Business (5.4) and Thailand's higher education (5.5).
5.1 Students	Students are a key stakeholders of the Thai public affiliated universities and one directly affected by governance, risk and compliance. In the future operating environment (6), students will include both Thai and international students.
5.2 Staff	Like students, staff are a key stakeholders and are affected directly by all three aspects of governance (1), risk management (2) and compliance. Staff can be categorised into new public affiliated university staff or older (legacy) civil service staff. This distinction influences the degree to which they affect and are affected by governance, risk management and compliance.

Table 4.4 Description of GRC Model for Thai Public Affiliated Unviersities (Continued)

GRC Model	Description
5.3 Community	The community are more indirectly affected by governance, risk management and compliance, but are particularly affected by strategy and the future operation environment of the public affiliated universities (6).
5.4 Business	Business links are directly affected by issues of governance (1) and compliance (3) and in terms of research and innovation are strongly linked to strategic risk (2.3) and the future operating environment of the public affiliated universities (6).
5.5 Thai Higher Education	Thai higher education in general is a stakeholder of the Thai public affiliated universities and is directly and formally affected by governance risk and compliance. In particular, the reputation and development of Thai higher education and the related national economic development are the key stakeholder objectives for Thai higher education. This also links Thai higher education (as a stakeholder) to the public affiliated universities' sustainability and future operating environment (6).
6. Sustainability and Future Operating Environment	Sustainability and the future operating environment of Thailand's public affiliated universities represent the diving force for an effective GRC model (see Chapters 1and 2). This sustainability and operating environment is represented by the AEC 2015, and regionalisation and internationalisation of the Thai higher education system.
6.1 Free movement of Staff, Students, Capital and Labor	As described in Chapter 1, the AEC 2015 will promote the free movement of students, staff, capital and labour which require effective GRC.
6.2 Regionalization of Education	Thailand is aiming to become a regional centre of education in Southeast Asia and such regionalisation requires and is affected by GRC.

Table 4.4 Description of GRC Model for Thai Public Affiliated Unviersities (Continued)

GRC Model	Description
6.3 Related to the AEC 2015 and Regionalisation of Education	This issues related to allow regional and international compatibility. As such, standardisation requires effective GRC, particularly compliance.
6.4 Achieve International Standards in Research and Teaching	Internationalisation of Thai higher education requires high achievement in aspects of research and teaching, both of which require an effective GRC capability.
7. Mediated by Autonomy	One of the most significant aspects of the GRC model is that the relationship between governance and compliance is mediated by autonomous. This represents the fundamental relationship between Thai public affiliated universities in term of governance and compliance (2), which is both positively and negatively affected by their relative autonomy.

From governance, risk management and compliace knowledge, the next stage is categoried GRC knowledge in the term of MBNQA to align with section 4.4.4 – 4.4.6 for creating the CAMT GRC model. Figure 4.22 presents results of this stage.

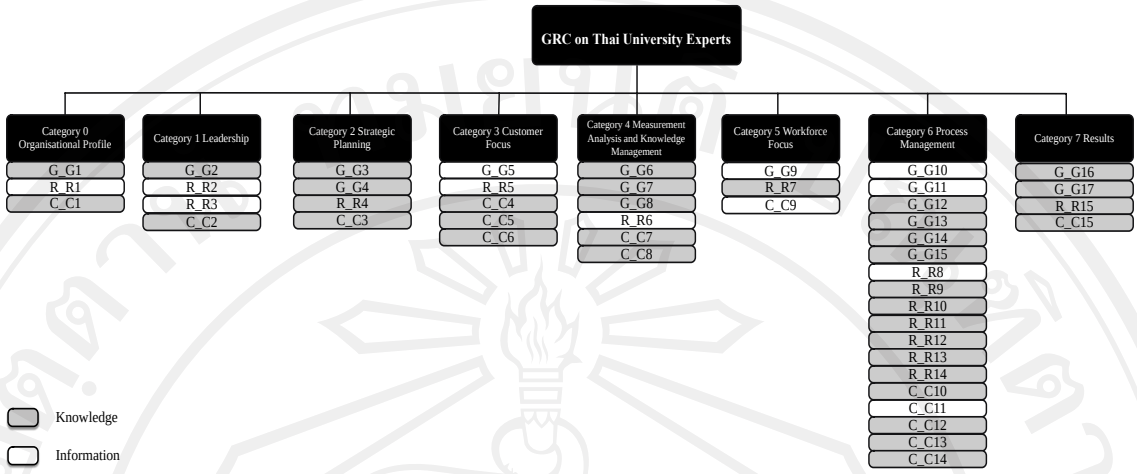


Figure 4.22 GRC Components on Thai University Experts

Figure 4.22 presents GRC knowledge components on Thai university experts, which categorised knowledge by using the MBNQA. Figure 4.22 illustrates the proportion GRC on MBNQA.

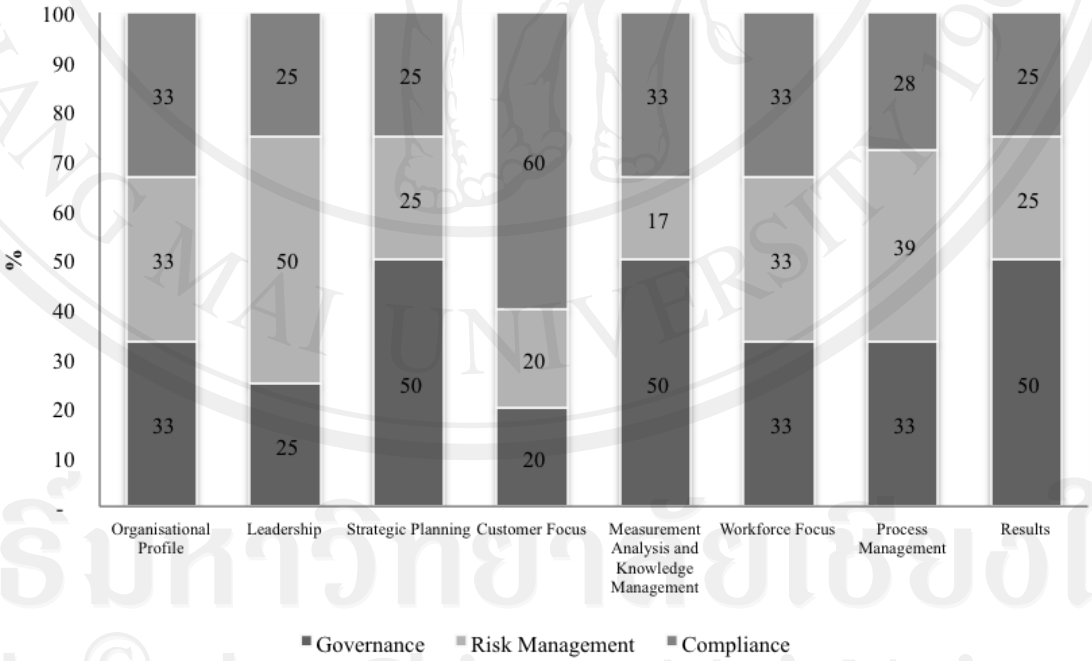


Figure 4.23 Proportion GRC on Thai University Experts

Figure 4.23 shows governance, risk management and compliance in organisational profile as 33%. Leadership has 25% governance, 50% risk management and 25% compliance, Strategic planning has 50% governance, 25% risk management and 25% compliance. Customer focus has 20% governance, 20% risk management and 60% compliance. Measurement analysis and knowledge management has 50% governance, 17% risk management and 33% compliance. Workforce focus has 33% governance, risk management and compliance. Process management has 33% governance, 39% risk management and 28% compliance. Results have 50% governance, 25% risk management and compliance.

After classifies experts knowledge in to MBNQA criteria, this section indicates information and knowledge in each category to be more understanding the type of knowledge and information.

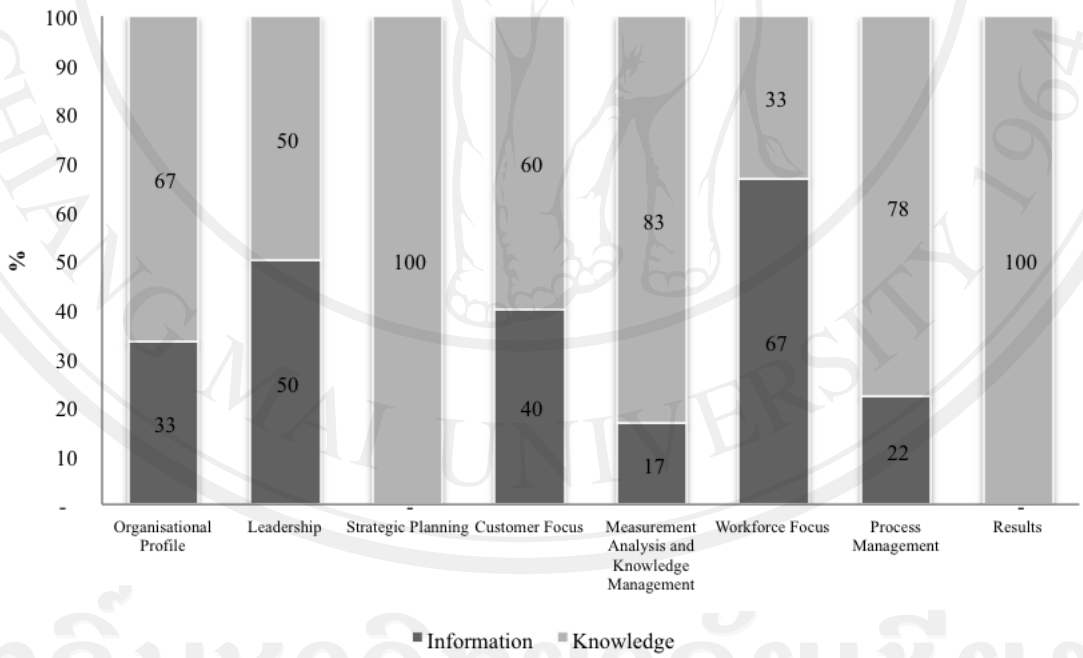


Figure 4.24 Proportion of Information and Knowledge GRC on Thai University Experts

Figure 4.24 shows 33% information and 67% compliance of organisational profile, 50% information and knowledge of leadership, 100% knowledge of strategic

planning, 40% information and 60% knowledge of customer focus, 17% information and 83% knowledge of measurement analysis and knowledge management, 67% information and 33% knowledge of workforce focus, 22% information and 78% knowledge of process management, 100% knowledge of results.

Table 4.5 Description of Structural Knowledge Map for Governance, Risk Management and Compliance on MBNQA in Thai Public Affiliated Universities

Organisational Profile	**Descriptions**
G_G1	More autonomy in Thai Affiliated Universities
R_R1	The AEC 2015
C_C1	University Compliances
Leadership	**Descriptions**
G_G2	Responsibility for Governance
R_R2	Risk Responsibilities
R_R3	Risk Committee
C_C2	Administrative task and compliance
Strategic Planning	**Descriptions**
G_G3	Internationalisation for Strategic Planning
G_G4	Continuous Improvement of Governance
R_R4	Key Objective of Risk
C_C3	Strategic Planning for University Compliance
Customer Focus	**Descriptions**
G_G5	Academic Governance
R_R5	Customer and Stakeholders
C_C4	Customer involvement and Compliance
C_C5	Stakeholder's needs and Compliances
C_C6	Customers affect with University Compliance

Table 4.5 Description of Structural Knowledge Map for Governance, Risk Management and Compliance on MBNQA in Thai Public Affiliated Universities (Continued)

Measurement Analysis and Knowledge Management	Descriptions
G_G6	Dialogue Communication for Governance
G_G7	Measurement Governance
G_G8	Auditing Governance
R_R6	COSO ERM and COBIT; Frameworks for Managing risk
C_C7	University Compliance Vs. Measurement
C_C8	How to Check University Compliance
Workforce Focus	**Descriptions**
G_G9	Workforce Governance
R_R7	Staff and Risk Culture
C_C9	Staff Compliance
Process Management	**Descriptions**
G_G10	Legacy Aspects of Governance
G_G11	Components of Governance
G_G 12	Traditional Public Universities
G_G13	Thai University Governance
G_G14	Aligning governance
G_G 15	Governance Weakness
R_R8	Risk Components
R_R9	Cultural Risk in Thai Public Affiliated Universities
R_R10	Legacy in Risk
R_R11	Individual Risk Management
R_R12	Standard Framework for Managing Risk
R_R13	Risk Requirement and Method

Table 4.5 Description of Structural Knowledge Map for Governance, Risk Management and Compliance on MBNQA in Thai Public Affiliated Universities (Continued)

Process Management	Descriptions
R_R14 universities	QA, the main mechanism for ensuring effective risk management in Thai public affiliated
C_C10	Cultural Compliance
C_C11	Component of Compliance
Process Management	**Descriptions**
C_C12	Relationship of Compliance VS. Governance and Risk Management
C_C13	Compliance Management
C_C14	Integrated Compliance
Results	**Descriptions**
G_G 16	Appropriated Knowledge for Governance
G_G 17	Achieve Effective Governance
R_R15	Risk Response
C_C15	The result there is a need to create a new culture and framework for compliance

4.5 Step Two: Creating the CAMT GRC Model

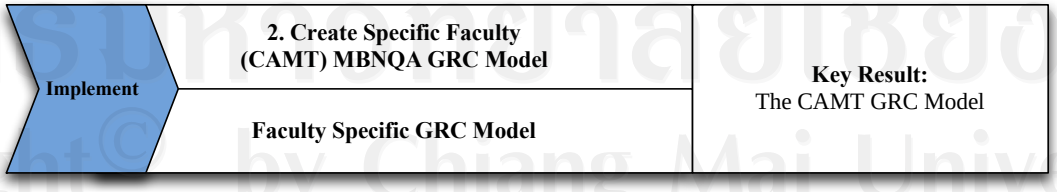


Figure 4.25 The Implement Stage of the Results and Main Task of Capturing Knowledge

After capturing the information and knowledge from the CAMT MBNQA and GRC expert, the CAMT GRC model is created. This is showed below in Figure 4.25.

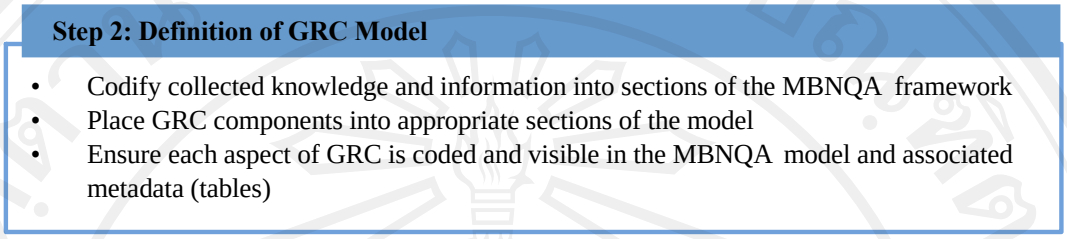


Figure 4.26 Knowledge Requirements and Data Sources of Develop Stage for Creating the CAMT GRC Model

4.5.1 Defining GRC Knowledge to Create the CAMT GRC Model

This section presents the results of a practical implementation of the integrated GRC model. The College of Arts, Media and Technology (CAMT) at Chiang Mai University acts as a case study and represents a microcosm of the wider Thai public affiliated universities, thus allowing a practical application of the knowledge domains. Figure 4.26 indicates the focus of this chapter based on the methodological overview of the work.

Defining CAMT's GRC status is undertaken by following the same knowledge capture structure defines through the OCEG GRC categories and the MBNQA criteria, as describes below and shows in Figure 4.26.

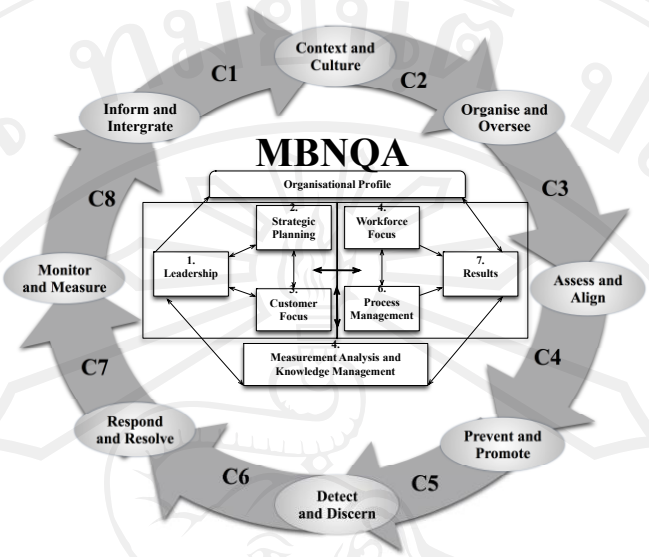


Figure 4.27 Creating CAMT GRC Model base on the MBNQA and OCEG Framework

As Figure 4.27 shows, achieving success in each of the eight MBNQA and OCEG GRC components would lead to the desired GRC scenario and a truly integrated GRC capability.

To assess CAMT in each of the eight categorises, a variety of knowledge sources and tools are used. These are showed in the eight corresponding sections below, along with the knowledge itself in the form of results from the particular knowledge sources from the MBNQA criteria.

4.5.1.1 Context and Culture

The context and culture category aims to understand CAMT's current culture along with both the internal (CMU) and external (Thai higher education) contexts that CAMT operates. This will allow CAMT to address current issues and identify opportunities to create a culture and context in alignment with CAMT's desired objectives and outcomes. Table 4.6 indicates the components required to understand CAMT's context and culture as well as related knowledge sources used to collect the appropriate information.

Table 4.6: CAMT Context and Culture and Associated Knowledge Sources

C1: Culture	Knowledge Sources	C2: Internal Context	Knowledge Sources
C1.1 Analyse Culture C1.2 Analyse Leadership C1.3 Analyse Risk Culture C1.4 Analyse Workforce Engagement	Organisational Profile, Leadership, Measurement Analysis and Knowledge Management, Workforce Focus from MBNQA	C2.1 Define CAMT's Internal Business Context (CMU) C2.2 Understand and Define Changes to Bring CAMT's Internal Context into Alignment with GRC	Organisational Profile from PMQA, SWOT
C3:External Context	**Knowledge Sources**	**C4: Values and Objectives**	**Knowledge Sources**
C3.1 Define CAMT's External Business Context (Thai Higher Education) C3.2 Assess Needs of External Stakeholders	Organisational Profile of MBNQA, SWOT Analysis, QA	C4.1 Define CAMT Mission and Vision C4.2 Define CAMT Values C4.3 Define CAMT Business Objectives	Organisational Profile from PMQA , BSC

- **C1: CAMT Context and Culture and Relationship to GRC**

As shown in Table 4.6, the culture at CAMT was analysed via knowledge gathered through the PMQA framework. The Public Sector Management Quality Award (PMQA) was agreed by Thai government on June 28, 2005 and is based largely on the concepts of the Malcolm Baldrige National Award (MBNQA), used in the USA, and the Thailand Quality Award (TQA), which promotes understanding of the requirements for performance excellence, competitiveness improvement, and sharing the learning of successful performance strategies (OPDC, 2008). As shown in the previous section, the PMQA allowed determination of the 'as-is' situation as it is an existing management tool used at CAMT and thus could be easily leveraged to provide the appropriate knowledge for the CAMT 'to-be' GRC scenario GRC model. The PMQA questions are shown in Appendix A, but the results are summarised and presented below according to the eight GRC categories.

From the organisational profile of the PMQA, in terms of culture, (CAMT) is a college within Chiang Mai University (CMU) with an international outlook, as represented by collaboration with institutions in China, Europe, and the USA, specifically through student exchange. While the Thai culture remains a central aspect

of CAMT, there is also a focus and acceptance of international cultures as represented by the links with international universities and student exchanges. This reflects the aim of CAMT and more generally, the Thai public affiliated universities, which mission to become internationally recognised institutions.

CAMT is an organisation focusing on innovation, as exemplified by its Knowledge Innovation Centre (KIC) used to pursue innovative projects and link with other public and private sector organizations. A key aspect of CAMT's profile, which is in alignment with the remit of the public affiliated universities, is that CAMT earns the majority of its budget (more than 93%) from student fees and projects, thus meaning. CAMT is financially self-sufficient compared to other faculties.

In line with the results of expert knowledge capture, while CAMT is part of a public affiliated university, there remains a culture of bureaucratic processes, mainly from originating from within CMU.

In terms of CAMT's leadership, the following key points emerge the organisational analysis:

- The leader of CAMT acts as a designer, leading projects and the management team, and ultimately designs the future of the organisation.
- Leadership of CAMT focuses on Thai education guidelines and key performance indicators (KPIs) to ensure CAMT is meeting Thailand's education requirements.
- Quality Assurance (QA) frameworks form the basis of managing teaching staff and guiding leaders.

Table 4.6, section external context suggests that in terms of risk culture, the central aspect at CAMT is that there is a low awareness of risk among staff, who are not always fully aware of the autonomous nature of the organisation. According to C.4 in Table 4.6, workforce engagement can be assessed by the characterisation of work, which is often compartmentalised group work rather than teamwork across the whole organisation. CAMT staff tend to be on average, younger and less experienced than in other faculties at CMU, but as such are often more dynamic, and less constrained by legacy bureaucracy, which forms a central part of CAMT's teaching

and operations. A key issue in terms of CAMT staff is that the focus is often on output, sometimes at the expense of appropriate compliance.

- **C2: Internal Context**

CAMT's context in relation to CMU is that it is an international college within CMU and is bound by CMU's regulations. In terms of an effective GRC model, CAMT must learn how to align people, process and technology to achieve effective GRC.

- **C3: External Context**

CAMT's external context and the needs of external stakeholders (Table 4.6, C.3.2) within Thai higher education can best be explained by defining CAMT's external business environment using SWOT analysis, as shown in Table 4.7.

Table 4.7 SWOT Analysis: Preparing Thai Higher Education for Future Challenges (Translated and Adapted from OHEC, 2010)

Strengths	Weaknesses
1. Thailand Education Institutions are members of international networking corporations such as the ASEAN University Network (AUN), the Association of Southeast Asian Institutions of Higher Learning (ASAIHL), the ASEAN-European Academic University Network (ASEA-UNINET), the Association of Universities of Asia and the Pacific (AUAP), the University Mobility in Asia and the Pacific (UMAP), the Association of American University (Internet II)	1. Poor English teaching and learning when teaching students to use English language at an international level. There is a general weakness in English within Thai higher education. 2. Thailand educational institutions, lecturers, staff and students do not have useful and appropriate knowledge about the AEC 2015. Moreover, there are no courses to teach or prepare students for the AEC 2015.

Table 4.7 SWOT Analysis: Preparing Thai Higher Education for Future Challenges (Translated and Adapted from OHEC, 2010) (Continued)

Strengths	Weaknesses
2. Having 844 International curricula to support international students and academic cooperation with other countries. 3. Quality Standards for Science and Technology Curricula. 4. Many higher educational Institutions in Thailand are recognised by the Quality of International Academy and Competition. 5. Strong Academic reputation in niche programs such as Heath Science, Tropical Medicine, Topical Agriculture, Tourism, Industrial Agriculture. 6. Excellent academic center/ research center to have academic cooperation and research internationally to improve competitive level of Thailand. 7. Office of Higher Education Commission set Thailand Higher Education Standards to monitor and control quality in academic education management. 8. Academic institutions in economic areas have the ability to provide academic service in the local community.	3. Students who graduate do not have the ability to work in manufacturing and service industries, which are a key part of the AEC. 4. Many Thai educational institutions have low understanding and knowledge about free trade and service so they do not prepare to compete as an educational service in the AEC. 5. There is not enough cooperation with international academic institutions who have offices in Thailand. 6. There is more on teaching than research and development. 7. The number of academic staff with PhDs is below international standards. 8. There is little cooperation between education institutions in Thailand and there is no clear guidance on developing collaborative objectives. 9. Academic standards in Thailand are different to international standards. 10. Academic competition in Thailand is lower than in Singapore and Malaysia.

Table 4.7 SWOT Analysis: Preparing Thai Higher Education for Future Challenges (Translated and Adapted from OHEC, 2010) (Continued)

Strengths	Weaknesses
	11. There is not enough deep knowledge and understanding about how to manage the educational system and related compliances to service education in the AEC. There is little cooperation with the ASEAN to provide scholarships to people outside Thailand and few opportunities to collaborate and work together.
Opportunities	**Threats**
Table 4.7 SWOT Analysis: Preparing Thai Higher Education for Future Challenges (Translated and Adapted from OHEC, 2010)	1. There are many universities with academic excellence in ASEAN countries, such as Singapore, Malaysia, Vietnam so educational institutions in Thailand are less competitive/ attractive to students. 2. Many competitive education institutions exist because of free trade and service across ASEAN. 3. There is no currently credit transfer or centralized system to approve/validate academic qualifications in ASEAN countries. 4. ASEAN countries have policies to retain people with high performance and excellent ability to study and work in their country (e.g. Singapore).

Table 4.7 SWOT Analysis: Preparing Thai Higher Education for Future Challenges (Translated and Adapted from OHEC, 2010) (Continued)

Opportunities	Threats
1. Good geographic location - Thailand is central in ASEAN, linking many countries both in and outside of ASEAN. Also, Thailand is in an economic corridor and economic route in ASEAN-countries such as the Greater Mekong Sub region (GMS) and Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT). Thailand has a clear policy to be an academic center for neighboring countries (e.g. Lao, Vietnam, Malaysia, Singapore, Myanmar, Indonesia). 2. The ASEAN charter and 2020 Vision acts as a framework to promote collaboration between ASEAN members. 3. Free flow of trade and services in ASEAN will increase work skills and language ability. 4. Academic status is an important rule related to the 3 pillars of the ASEAN community (ASEAN Political-Security Community: APSC, ASEAN Economic Community: AEC and ASEAN Socio-Cultural Community: ASCC).	5. Free movement of people has potential to cause disease, illegal substance abuse and crime in Thailand, which could in turn affect Thailand's higher education system. 6. A lack of preparedness to deal with the movement of people in an economic area.

- **C4: Values and Objectives**

According to Table 4.6, section C.4.1, CAMT's mission is to become a college for knowledge worker innovation, and as such, CAMT has four values given in an acronym based on its name, these are:

- C=Creativity
- A=Accountability
- M=Morality
- T=Technology

CAMT has two main business objectives in relation to its internal and external operating environment, which are:

- Produce software graduates and Knowledge workers for Chiang Mai and the upper provinces of northern Thailand to become a center of the Mekong River.
- Achieve research and academic service excellence in alignment with CMU's mission and become a center of excellence in software engineering and knowledge management.

Summary of Context and Culture as it Relates to the 'To-be' GRC Scenario.

As part of CMU and the affiliated public universities, CAMT's context and culture is a reflection of these larger organizations, but CAMT has some key differences in its context and culture when compared to the wider university in which it operates, these are:

- CAMT is 93% or more self sufficient, earning funds to support itself
- CAMT has a strong international focus
- CAMT places a strong focus on innovation
- CAMT has a relatively young and inexperienced workforce

In considering CAMT's context and culture in relation to the 'to-be' GRC model and the proposed model of GRC for the public affiliated universities, as the following issues emerge:

- CAMT benefits from a new culture, and to some extent is not constrained by legacy governance issues. This however, is tempered by the requirement to meet legacy governance and compliance requirement issues set by the wider organisation CMU and Thai government.
- CAMT's approach to internationalisation is proactive, not reactive, symbolised by the existing relationship between higher education institutions in Europe and Asia.
- Innovation at CAMT contributes to financial proactivity and sustainability.

4.5.1.2 Organise and Oversee

The CAMT 'to-be' GRC model should be integrated with the existing operating model of CAMT, and management should be assigned specific responsibilities, decision-making authority, and accountability to achieve GRC goals.

Table 4.8 Organise and Oversee and Associated Knowledge Sources

O1: Outcomes & Commitment	Knowledge Source	O2: Roles & Responsibilities	Knowledge Source
O1.1 Define Scope of CAMT GRC O1.2 Define GRC Goals O1.3 Obtain Commitment from the Organisation to GRC System	Expert Interviews, Document Analysis, Literature Review, Results of MBNQA	O2.1 Define and Enable CAMT GRC Roles and Accountability	Leadership of MBNQA, Expert Interviews, Document Analysis, Literature Review
O3: Approach & Accountability	**Knowledge Source**		
O3.1 Allocate Accountability to Individuals and Committees O3.2 Define GRC Processes and Integrate with CAMT Business Processes O3.3 Define Measurement and Evaluation of GRC O3.4 Define Organisational Change Management Approach	Expert Interviews, Document Analysis, Literature Review, Leadership, Process Management of MBNQA		

- **O1: Outcomes and Commitment**

The scope of a successful CAMT GRC implementation should allow CAMT to achieve its vision to be a college for innovative international knowledge workers. Achieving this goal means CAMT must achieve sustainable success in five areas, which are:

- Academic quality
- Research
- Academic services
- Support of the Thai culture
- Effective management

- **O2: Roles and Responsibilities**

Currently, as with the other public affiliated universities, CAMT has not defined a GRC committee, policy or process, hence the need to develop the integrated GRC approach and more toward the 'to-be' scenario presented in this research.

- **O3: Approach and Accountability**

There is currently no effective GRC approach in CAMT, hence there is a need to build such an approach using the GRC knowledge and model presented in Chapter 4, as well as the GRC assessment results in this chapter.

4.5.1.3 Assess and Align

This aspect of the GRC process assesses CAMT's effectiveness in optimizing its risk profile in the context of CAMT's initiatives, tacit knowledge, and activities.

Table 4.9 Assess and Align and Associated Knowledge Sources

A1: Risk Identification	**Knowledge Source**	**A2: Risk Analysis**	**Knowledge Source**
A1.1 Identify CAMT Risks A1.2 Identify Changes in Internal and External Factors that Drive Risk A1.3 Categorise CAMT Risks A.1.4 Assign Accountability to Monitor Changes in Underlying Factors	Measurement, Analysis and Knowledge Management of MBNQA, CAMT Risk Management, UCB Risk Catalouge	A2.1 Analyse Current Approaches to Risk A2.2 Prioritise Risks	Measurement, Analysis and Knowledge Management of MBNQA, CAMT Risk Management
A3: Risk Optimisation	**Knowledge Source**		
A3.1 Develop Key Risk Indicators A3.2 Develop CAMT Risk Plan	Measurement, Analysis and Knowledge Management of MBNQA, CAMT Risk Management		

- **A1: Risk Identification**

According to the MBNQA assessment at CAMT, there are ten key risks. These risks along with their relationship to GRC, the particular risk silo and whether they fit the knowledge domain of people, process or technology are shown in Figure 4.28.

Table 4.10 The Ten Key Risks Identified at CAMT Along with Appropriate Categorisation (Chakpitak, 2010)

Risks in CAMT	GRC Component	People/Process / Technology	Risk Silo
No Information or Incorrect Information-Governance	Governance	- People - Process	- Operational
Hiding Mistakes in incorrect Information-Compliance	Compliance	- People	- Cultural - Operational - Compliance
Cheating/Dishonest Behavior-Compliance	Compliance	- People	- Cultural - Compliance
Loss of Secret of Business Information-Compliance	Compliance	- People	- Operational - External
Mishandling of Personal Information-Compliance	Compliance	- People - Process	- Cultural - Operational
Damage to Information-Risk Management	Risk Management	- Process - Technology	- Operational
Errors in Analysing Information-Risk Management	Risk Management	- People - Process - Technology	- Operational
Lack of Knowledge in Law, Regulation and Compliance-Compliance	Compliance	- People	- Strategic - Compliance
Administrators Set Wrong Strategy-Governance	Governance	- People	- Strategic
Staff Lack Necessary Knowledge and Experience-Risk Management	Risk Management	- People	- Cultural - Operational

- **A2: Risk Analysis**

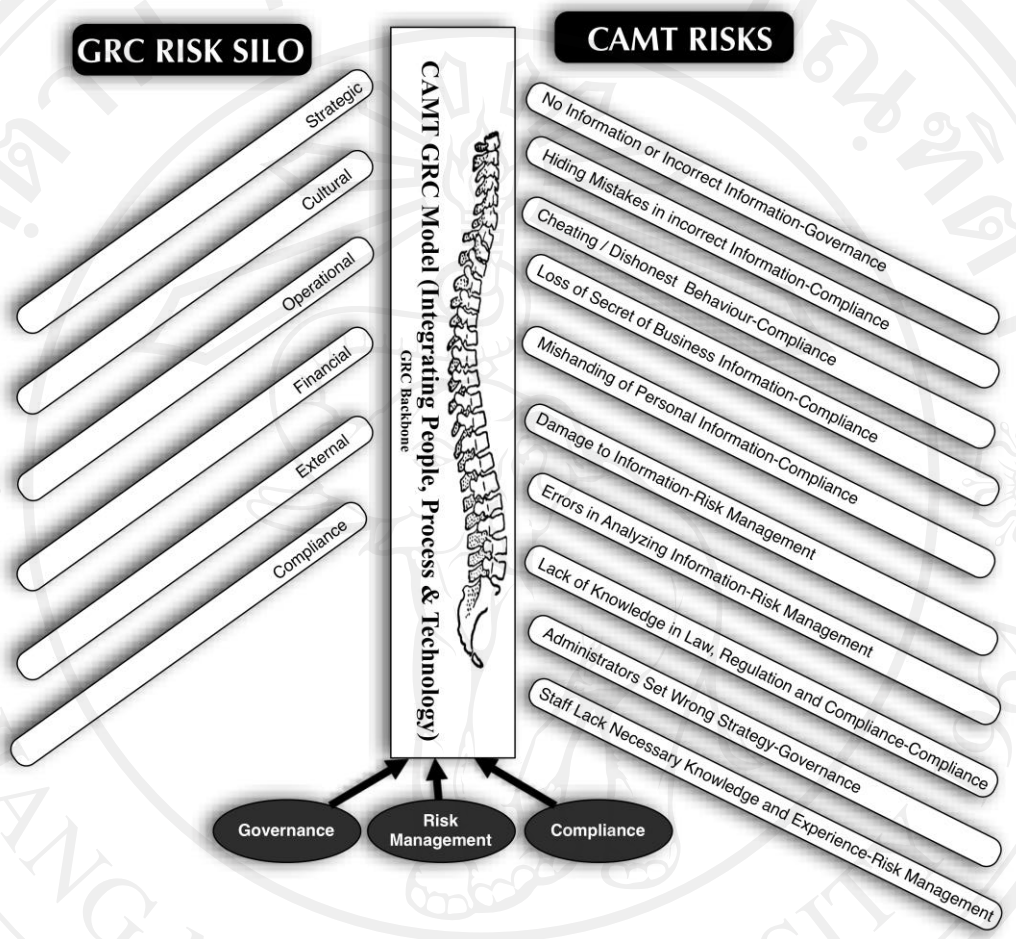


Figure 4.28 Relationship between GRC Risk Silos and CAMT Risks

Risk analysis and prioritisation at CAMT, in terms of analysing and prioritising risk at CAMT, the ten risks were categorised according to a generic risk management model based on risk likelihood and potential impact. This generic model is illustrated in Figure 4.29 along with a categorisation of CAMT's ten risks according to the model in Table 4.10

Risks		Likelihood		
		Low	Medium	High
Impact	Critical	Management Required	Essential to Monitor and Manage Risk	Significant Management is Crucial
	Moderate	Risk Accepted, but Monitored	Useful to Manage Risk	Must Manage Risk
	Limited	Accept Risk	Risk Accepted, but Monitored	Monitoring of Risk is Needed

Figure 4.29 Generic Risk Management Model

CAMT Risks		Likelihood		
		Low	Medium	High
Impact	Critical	• Damage to Information • Management Sets Wrong Strategy	• Lack of Knowledge in Law, Regulation and Compliance	• Staff lack Necessary Knowledge and Experience
	Moderate	• Loss of Secret Business Information	• No Information or Incorrect Information	• Error in Analyzing Information
	Limited	• Cheating/ Dishonest Behavior	• Hiding Mistakes in Incorrect Information	• Mishanding of Personal Information

Figure 4.30 Ten CAMT Risks Categorised According to the Generic Risk Management Model. Risk categorization was Based on a Survey of CAMT Leaders and Staff (n=40)

- **A3. Risk Optimisation**

CAMT develops key risk indicators and a risk plan every year through the CAMT risk committee. However, CAMT risks are not always treated in an integrated holistic way, and this should be the focus of a 'to-be' GRC scenario.

4.5.1.4 Prevent and Promote

This OCEG GRC category aims to promote and motivate desirable behavior at CAMT, and prevent undesirable events and activities, using a mix of suitable controls and incentives.

Table 4.11 Prevent and Promote and Associated Knowledge Sources

P1: Codes of Conduct	**Knowledge Source**	**P2: Policies**	**Knowledge Source**
P1.1 Develop a CAMT Code of Conduct P1.2 Implement and Manage the CAMT Code of Conduct	Interview Experts, Literature Review, CAMT Meeting and Discussion, Leadership of MBNQA	P2.1 Develop CAMT GRC Policies P2.3 Implement and Manage GRC Policies	CAMT Meeting and Discussion, MBNQA, BSC
P3: Preventive Controls	**Knowledge Source**	**P4: Awareness & Education**	**Knowledge Source**
P3.1 Establish Preventive Controls at CAMT, Including Processes, Human Resources and Technology	Interview Experts, Literature Review, CAMT Meeting and Discussion, MBNQA	A4.1 Define a CAMT GRC Awareness and Education Plan	Interview Experts, Literature Review, CAMT Meeting and Discussion, MBNQA, BSC
P5: Human Capital Incentives	**Knowledge Source**		
P5.1 Foster Ethical Leadership P5.2 Develop Compensation Plans Based on Staff Conduct	Interview Experts, Literature Review, CAMT Meeting and Discussion, Leadership of MBNQA		

- **P1: Codes of Conduct**

CAMT currently apply the Thai royal decree on criteria and procedures for good governance, B.E.2546 (2003) and develop this into a specific CAMT code of

conduct to meet CAMT's mission. This aspect of good governance could be integrated with risk and compliance in future GRC implementations.

- **P2: Policies**

CAMT are currently in the initial stages of GRC implementation and as such there are currently no CAMT GRC policies, but these policies should be developed for an effective GRC capability and based on the GRC model and the specific organisational aspects affecting CAMT.

- **P3: Preventive Controls**

The main source of preventive controls at CAMT is to monitor processes, human resources and technology using a risk management framework and although thus us effective, it lacks links to governance or compliance aspects within the organisation and mainly uses lacking indicators (reactive) rather than leading indicators (proactive) to manage the organisation. In the 'to-be' scenario, CAMT should concentrate on an integrated GRC capability, which encourages proactivity rather than a reactive approach.

- **P4: Awareness and Education**

A CAMT GRC awareness and education plan should be developed each year to ensure every member of the organisation understands and is aware of GRC.

- **P5: Human Capital Incentives**

CAMT's 'to-be' GRC scenario should continue to foster ethical leadership and develop compensation plans based on staff conduct and quality of staff, which can be measured and linked to other management tools such as competency based management, CMU QA ,TQA, KM, MIS, personnel scorecard (Term of Reference: TOR & Job Description:JD) andHR scorecard (Team competency), but must be effectively linked to an integrated GRC capability.

4.5.1.5 Detect and Discern

This section aimed to detect actual and potential undesirable conduct at CAMT, including events, systemic weaknesses, and stakeholder concerns by using a broad network of information gathering and analysis techniques.

Table 4.12 Detect and Discern and Associated Knowledge Sources

D1: Notification	**Knowledge Source**	**D2: Inquire & Survey**	**Knowledge Source**
D1.1 Capture Notification	Gap Analysis	D2.1 Gather CAMT Workforce and Stakeholder Views D2.2 Establish an Organisation-Wide Integrated Approach Gathering Information at CAMT D2.3 Establish a Suitable Approach to Self-Assessment D2.4 Gather Information Through Observations and Conversations D2.5 Report Information and Findings	Customer Focus, Workforce Focus , Measurement, Analysis and Knowledge Management, and Process Management of MBNQA, BSC
D3: Detective Controls	**Knowledge Source**		
D1.1 Establish Suitable Methods to Detect Undesirable Behavior in Human Resources, Process and Technology	Workforce Focus and Process Management of MBNQA, BSC		

- **D1: Notification**

In this section, CAMT can capture notifications and information through the QA score to measure GRC activities in CAMT.

- **D2: Inquire and Survey**

CAMT should leverage its existing knowledge management expertise and knowledge management system (KMS), as well as the management information system (MIS) and e-office to establish an organisation-wide and integrated approach to gathering GRC information at CAMT.

4.5.1.6 Respond and Resolve

Respond and resolve refers to methods for CAMT to respond to and recover from noncompliance and unethical conduct, or potential GRC failures, with the aim to resolve issues and prevent or resolve similar issues more effectively and efficiently in the future.

Table 4.13 Respond and Resolve and Associated Knowledge Sources

R1: Internal Review & Investigation	Knowledge Source	R2: Third-Party Inquires & Investigations	Knowledge Source
R1.1 Define the Inquire CAMT's Investigation Process	CAMT Meeting and Discussion, MBNQA, BSC	R2.1 Prepare for and Third Party Inquires	Customer Focus of MBNQA, BSC
R3: Corrective Controls	**Knowledge Source**	**R4: Crisis Response, Continuity and Recovery**	**Knowledge Source**
R3.1 Establish Corrective Process Controls for Human Resources Process and Technology	BSC, KMS, Workforce Focus of MBNQA, QA	R4.1 Develop Crisis Response and Continuity Plans at CAMT	CAMT Risk Management

- **R1: Internal Review and Investigation**

CAMT should link its current stakeholder expectations and other review tools to effectively determine the status of performance with regard to GRC.

- **R2: Third-Party Inquiries and Investigations**

Compliance should be of particular concern in this category and CAMT should ensure compliance with third party inquiries and investigations (e.g. external auditors) by integrating compliance with governance and risk to ensure an effective and sustainable response to third-party inquiries and investigations.

- **R3: Corrective**

CAMT should continue with its established corrective process controls for human resources process and technology (e.g. ISO 12207/15504/29110/ISO 9001 version 2008 / 27000), but more effectively link these to future scenarios and via an

effective GRC model rather than using the ISO series becoming a bureaucratic indicator focused on the past rather than the future.

- **R4: Crisis Response, Continuity and Recovery**

In combination with the CAMT risk model shows in Figure 4.27, CAMT should develop crisis response and continuity plans to ensure organisational sustainability based on effective GRC.

4.5.1.7 Monitor and Measure

Once in place, CAMT should monitor and measure the organisation on a regular basis to ensure the GRC system is effective in allowing CAMT to meet business objectives and respond to the changing environment in which it operates.

Table 4.14 Monitor and Measure and Associated Knowledge Sources

M1: Context Monitoring	**Knowledge Sources**	**M2: Performance Monitoring & Evaluation**	**Knowledge Sources**
M1.1 Monitor CAMT's External Business Context (Higher Education in Thailand and Beyond) M1.2 Monitor CAMT's Internal Business Context (CAMT, CMU)	Results of MBNQA, BSC	M2.1 Monitor and Evaluate GRC Effectiveness M2.2 Review and Risks and Risk Prioritisation M2.3 Analyse Potential GRC Failure M2.4 Perform Monitoring Activities and Analyse Results M2.5 Perform Monitoring Activities	Gap Analysis, BSC, Results of MBNQA
		M3: Systemic Improvement	Knowledge Sources
		M3.1 Develop CAMT GRC Improvement Plan M3.2 Implement Improvement Initiatives	Gap Analysis, BSC, Results of MBNQA

- **M1: Context Monitoring**

CAMT must continue to monitor both CAMT's external business context (higher education in Thailand) and the internal business context (CMU) by integrating existing monitoring tools (e.g. KPIs) with an effective GRC model.

- **M2: Performance Monitoring and Evaluation**

Currently, a fully integrated and operational GRC model does not exist at CAMT and therefore are few performance monitoring or evaluation tools. As stated throughout other categories, existing management tools can be used as a proxy for GRC monitoring until a fully integrated GRC model and associated measurement and monitoring tools are in place.

- **M3: Systemic Improvement**

Similarly to M2 above, there are currently no CAMT GRC improvement plans or GRC improvement initiatives, and this should form a key part of GRC implementation.

4.5.1.8 Inform and Integrate

Gather, store and manage CAMT's GRC information so it can flow within the organisation and become available to stakeholders as necessary and appropriate.

Table 4.15 Inform and Integrate and Associated Knowledge Sources

I1: Information Management & Documentation	Knowledge Source	I2: Internal & External Communication	Knowledge Source
I1.1 Develop a GRC Knowledge Management Structure I1.2 Develop GRC Knowledge Collection Procedures I1.3 Develop GRC Information Access, Use and Transfer Procedures I1.4 Develop GRC Knowledge Storage Policy and Procedures	Measurement, Analysis and Knowledge Management of PMQA, BSC, CAMT Tree	I2.1 Develop Reporting Plan I2.2 Develop Communication Plan	Measurement, Analysis and Knowledge Management of PMQA, BSC, CAMT Tree
I3: Technology & Infrastructure	**Knowledge Source**		
I3.1 Assess Technology Needs and Gaps	Measurement, Analysis and Knowledge Management of PMQA, BSC, CAMT Tree		

- **I1: Information Management and Documentation**

CAMT's expertise in knowledge management provides a natural advantage in terms of developing a GRC knowledge structure, access to data and transfer procedures. This expertise should be leveraged in developing a GRC knowledge management, storage and dissemination policy and thus highlights the importance of this research in defining the important aspects of a GRC capability and the knowledge relationships and requirements needed to achieve effective GRC.

- **I3: Technology and Infrastructure**

Again, CAMT has a natural advantage in its technology expertise, but must formally assess technology needs and gaps by surveying stakeholder expectations and understanding how IT is managed. This currently forms the basis of other research and should be effectively linked to GRC.

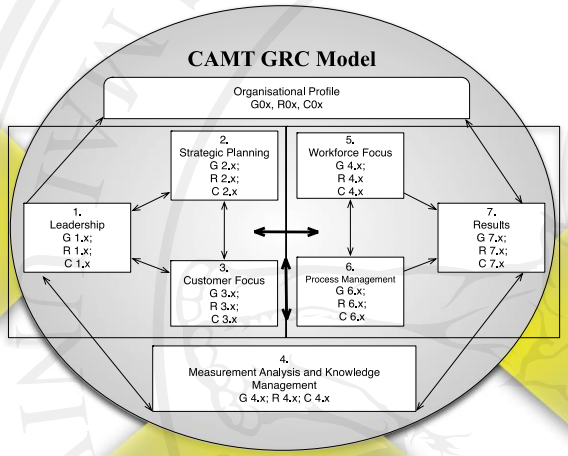
- **I2: Internal and External Communication**

CAMT should use its expertise in knowledge management and IT to develop an appropriate GRC communication and reporting plan. This is related both to CAMT's internal and external environment, for example CAMT can utilise its IT and knowledge management experience to link its website and other communication materials to aspects of GRC.

4.5.2 Creating the CAMT GRC Model

After reviewing and discussing CAMT GRC data, the 'CAMT GRC Model', was designed to assist CAMT in the design and implementation of a GRC program. Figure 4.31 shows the proposed CAMT GRC model, which shows the general aims of GRC along with how CAMT might address these aspects. An effective GRC model could help CAMT meet its management challenges.

Governance	
PMQA Category	**Key Finding**
O: Organisational Profile	G0.1 To be affiliated universities G0.2 Be strong in governance and alignment with Thai governance rule
1:Leadership	G1.1 Good relationship of leaders and staff G1.2 Responsibility and accountability of Leaders G1.3 Strong ethic
2:Strategic Planning	G2.1 Empowerment strategy G2.2 To be assistances by helping stakeholders
3:Customer Focus	G3.1 Students should have same academic standards G3.2 USR should work with communities in person G3.3 Student's benefit and quality G3.4 Relationships with stakeholders G3.5 Requirements and expectations of stakeholders
4:Measurement Analysis and Knowledge Management	G4.1 Challenge KPIs G4.2 Information characters of CAMT
5:Workforce Focus	G5.1 Assessment by Dean G5.2 Professional staff G5.3 Professional ethics G5.4 Personnel with happiness
6:Process Management	G6.1 QA as major standard G6.2 Value, culture and braining created base on 4 missions of CMU.
7:Results	G7.1 Faculty budget G7.2 Education business G7.3 Rate of trust, transparency, ethics G7.4 To produce international graduated students



Risk Management	
PMQA Category	**Key Finding**
1:Organisational Profile	R0.1 The AEC 2015 R0.2 Low renew assets
1:Leadership	R1.1 Inappropriate requirement R1.2 Transparency and accountability in management R1.3 Experience of CAMT administrators R1.4 UCB risk of leadership
2:Strategic Planning	R2.1 Lacks of capital investment R2.2 COSO Risk
3:Customer Focus	R3.1 Risk of quality students R3.2 Risk of stakeholder requirements and expectations R3.3 UCB risk of customer
4:Measurement Analysis and Knowledge Management	R4.1 No information, or incorrect information R4.2 Replacement of human resources R4.3 Risk in CAMT information R4.4 UCB risk
5:Workforce Focus	R5.1 New staff, high risk R5.2 Unreverse Risk R5.3 Lack of experience R5.4 Complaints and grievances R5.5 UCB risk of workforce
6:Process Management	R6.1 Developing work R6.2 Financial risk R6.3 Compliance risk R6.4 UCB risk of process management
7:Results	R7.1 Result of net profit R7.2 Open new resources R7.3 New blue ocean

Compliance	
PMQA Category	**Key Finding**
1:Organisational Profile	C0.1 University law, compliances and regulations
1:Leadership	C1.1 Leadership compliance
2:Strategic Planning	C2.1 Salary budget C2.2 Ratio of lecturers to staff C2.3 Setting CAMT strategy C2.4 Transferring action plans to achieve strategic goals and key strategies C2.5 Achieving in strategic human resources master plan and action plans
3:Customer Focus	C3.1 Customers and stakeholders compliances
4:Measurement Analysis and Knowledge Management	C4.1 Effective implementation of human resources C4.2 Relevant Compliance
5:Workforce Focus	C5.1 Full office hours C5.2 Developing staff of faculty
6:Process Management	C6.1 Financial regulations C6.2 Quality process management
7:Results	C7.1 Business gain C7.2 Efficiency and effectiveness results

Figure 4.31 The CAMT GRC Model

Figure 4.31 is the CAMT GRC model. This model presents an integrated governance, risk management and compliance for faculty of affiliated universities in Thailand. This model was explained the effectiveness by using knowledge management theory, which shows in next section.

4.5.3 Knowledge Management and the CAMT GRC Model

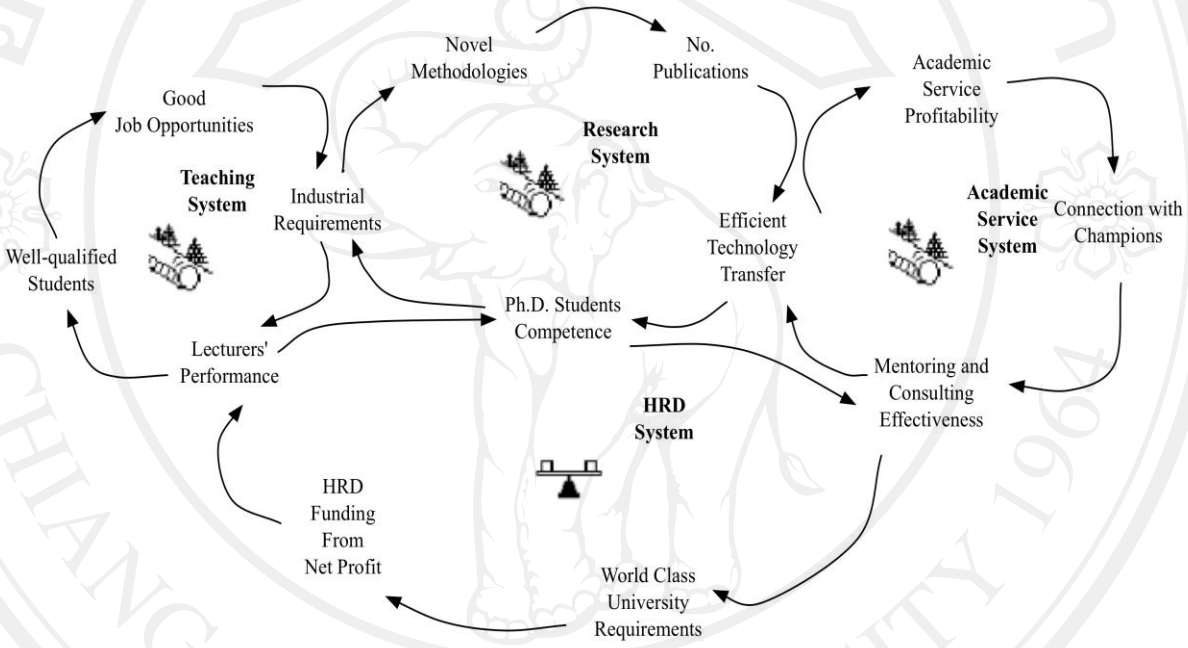


Figure 4.32 CAMT Systems Thinking Source: Adapted from Senge, 1994 And Chakpitak, 2009

CAMT uses the fifth discipline, which is the theory of Senge (1994). The main principle is the leader as designer. CAMT leaders have to set systems thinking to plan and manage organisation. Also, CAMT sets systems thinking, which aligns with CMU mission, namely teaching system, research system, academic system and human resource system. (Chakpitak, 2009).

Moreover, CAMT designs the CAMT BSC, which is a proactive activity in management. The CAMT BSC constitutes GRC perspectives, which support CAMT's overall objectives. The foundation of GRC includes governance-based regulations, namely, responsibility, accountability, equitable treatment, creation of long-term

value, transparency, promotion of best practice and social and environmental awareness. The CAMT BSC is 'CAMT GRC' which meets the requirements of good governance and sustainability. There are four dimensions to 'CAMT GRC': financial, business process, customer, and learning and growth. These are detailed below.

- Financial: The CAMT budget should be managed based on overall CMU Quality Assurance (QA) and TQA Activities. Focus should also continue to be placed on student affairs, research, student contests, visiting professors, special projects, and cooperative education. Lecturers in CAMT should match full-time staff with full-time equivalent students (FTES) to support academic quality as the Thai government will support the education sector where a high QA score exists. In addition, stakeholders trust organisations that guarantee effective organisation and want to invest (e.g. provide research funding).
- Learning and Growth: CAMT should use knowledge management as a key tool to cover strategic planning, manpower planning, evaluation, human resource development, management information system (MIS) and risk management.
- Business Process: The five "S" processes are, sorting, straightening, systematic cleaning, standardising, and sustaining academic utilisation to lead staff to understand how to work in CAMT. In addition, CAMT must satisfy office utilisation, office inventory, building and place, and utility costs. CAMT also uses Information Technology (IT) to manage its organisation. For example, MIS, knowledge management systems (KMS), e-office.
- Customer: CAMT uses customer relationship management (CRM) to support and encourage customers. This encourages CAMT to support its customers via public relations, marketing and information. Additionally, up and cross selling and retention as well as a loyalty program and animation services delivered for the Government Office of Chiang Mai are the main external services.

One of the issues with an effective GRC model is that it must consider the variations and nuances of an organisation if it is to drive sustainability and growth. This presents a dilemma within universities, who often have complex management structures, with faculties, schools and departments each presenting different management needs. The GRC approach in this thesis is not designed to present a homogenous, one size fits all model for affiliated universities in Thailand, rather it attempts to highlight the GRC challenges to higher education in Thailand, showing how a systematic investigation of these challenges might be undertaken. GRC is an important approach to drive sustainability given that the affiliated status provides autonomy and exposes these universities more fully to the risks associated with local, regional and global change.

To have efficiency and effectiveness management, CAMT sets CAMT GRC on MBNQA to support management in CAMT. Governance presents transparency and accountability in CAMT. Risk management presents to CAMT reflect with the current process, which is the main objective of GRC model. Also, CAMT defined, disclosed and aligned with compliance both inside and outside organisation.

4.6 Unexpected Finding

This section collected data from initial finding and methodological steps. After creating the CAMT GRC model. The unexpected finding found:

- The affiliated university where is a sample size rejects to give information about increasing tuition fee during period of research collecting data.
- There are manual and method how to manage risk, but staffs in university still have difference ideas and opinions about risk management.
- The sample-affiliated university does not have effective financial management such as depositing money in banks, while inflation rate is over bank interest.
- The internal audit in sample-affiliated university audit under compliance and regulation rather than use risk management to be foundation.
- The financial of sample-faculty has high current ratio (current asset/ current liability), but in fact this faculty a lack of liquidity finance because

university transfers revenue to faculty late (2 or 3 months after receiving tuition fee)

- The borrowed money, which faculty can borrow from university is not enough for faculties where have a lot of projects. University generates borrowed money from size of population.

The aim of this chapter has been to show how GRC could be effectively applied in practical way and the case study acts as representative microcosm of the wider Thai public affiliated universities. The final stage of this research is to validate the GRC knowledge presented in this thesis and thus next section presents results of a GRC validation with experts and set of GRC related recommendations for the Thai public affiliated universities.

4.7 Step Three: Evaluation and Generalisation

This step illustrates generalised the faculty GRC model. The key result is the faculty GRC model, which is evaluated by 4 experts from 3 faculties in the affiliated university. Figure 4.33 shows step of generalisation.

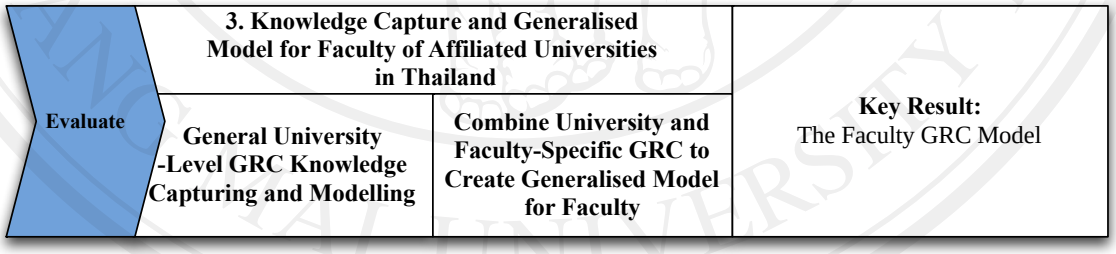


Figure 4.33 The Implement Stage of the Results and Main task of Generalisation

The detail of this stage presents in Figure 4.34.

Step 3: Evaluation and Future Recommendations

- Evaluate model with faculty experts/ leaders
- Make future GRC recommendations for faculty of public af filiated universities

Figure 4.34 Generalisation and Evaluation of the Integrated Faculty GRC Model

4.7.1 Evaluation of the Integrated Faculty GRC Model

The CAMT GR model was evaulated by experts in two ways. Firstly, experts were inteviewed about the proposed GRC model and secondly, a gap analysis was undertaken between the proposed GRC model and the current apporach to GRC by the public affiliated universities. The gap analysis allows for an evaluation between the proposed GRC model and current management in relation to GRC.

The selected experts from 3 faculties to evaluate the CAMT GRC model show quality of sample in Table 4.16

Table 4.16 Quality of Evaluated Sample Size

Description	Faculty 1st	Faculty 2nd	Faculty 3rd
Experience and Position of experts	• Former administrative vice dean • Faculty risk committee • Risk management expert	• Former administrative vice dean • Faculty risk committee • Accounting Experts	**Expert 1** • Academic Vice Dean **Expert 2** • Head of Academic School
Budget	• Faculty Revenue 125,735,991.51 Baht • Government Budget =126,478,923.08 Baht • Revenue 49.85% • Government 50.14%	• Faculty Revenue 88,101,500 Baht • Government Budget 36,290,400 Baht • Revenue 70.83 % • Government 29.17%	• Faculty Revenue 59,522,914.22Baht • Government Budget 6,340,961.28 Baht • Revenue 90.37% • Government 9.63 %

Table 4.16 Quality of Evaluated Sample Size (Continued)

Description	Faculty 1st	Faculty 2nd	Faculty 3rd
Amount of Employee	147 Lectures 172 Staff	45 Lecturers 54 Staff	65 Lecturers 50 Staff
Student Enrollment	4,619 students	2,671 students	1,030 students
Department	4 academic departments	7 Academic departments	4 Academic departments
Degree	9 Bachelor degrees 13 Master degrees 8 Doctoral degrees	2 Bachelor degrees 6 Master degrees (1 Co-curricula) 1 Doctoral degree	3 Bachelor degrees 2 Master degrees 1 Doctoral degree
Source	Faculty 1st Annually Year 2012	Faculty self assessment Year 2012	Faculty self assessment Year 2011

CAMT GRC model can act to demonstrate how GRC could be considered and applied by the faculty public affiliated universities. This chapter seeks to evaluate the GRC model and its potential application to the Thai public affiliated universities. The chapter is separated into two key parts. The first presents the results of the GRC model evaluation from experts, while the second part elucidates this evaluation by discussing strengths, weakness, limitations and potential future adaptations to the model based on a current implementation of GRC at Chiang Mai University.

The GRC model represents the expert knowledge regarding each component of governance, risk management and compliance and has been integrated into a framework of GRC suitable for the Thai public affiliated universities. While the model represents the appropriate GRC knowledge domains and integrates them effectively into a model, it does so in an abstract way and without consideration of practical application to people, process and technology. A knowledge management perspective considers people, process and technology central to successful and effective knowledge management (Racz et al. 2010; Rodriguez and Edwards, 2010). As such, the next chapter takes the GRC model presented in this chapter and will

apply it to people, process and technology via study a case at the College of Arts, Media and Technology (CAMT), which thus acts as a case study for the GRC model built in this chapter and illustrates how some of the abstract knowledge in each of the governance, risk management and compliance domains might be practically applied through a holistic framework to the Thai public affiliated universities.

4.7.2 Evaluation Results

All experts agreed that the proposed GRC model provided a useful overview of GRC for the faculty of Thai public affiliated universities. The model was determined to be both representative of the challenges facing these universities in terms of GRC and a strong indicator of the knowledge relationships between individual components of GRC and the appropriate parts of the university responsible for dealing with these GRC components. The top level overview of GRC was in some ways determined to be far more detailed than any current method of approaching GRC within the university.

All for experts suggested that the explicit determination and explanation of the knowledge relationships between the components of GRC was significant, particularly as GRC is well known as being difficult to define (Racz et al. 2010) and treat as a holistic process, even though literature agrees that the strongest approach to GRC is a holistic one (Rasmussen, 2010; Mitratech Holdings, 2010; AGA Corporate Partner Advisory Group Research, 2010). The expert evaluation thus showed that the proposed GRC model represents a good capture and conceptualisation of the GRC knowledge, and is able to highlight the mediating effect autonomy has on each aspect of the affiliated universities.

One of the strongest aspects of the proposed GRC knowledge model was the focus on forthcoming risks and the future operating environment of the affiliated universities. For example, the AEC 2015 will have significant effects on the Thai public affiliated universities (see Chapter 1) and as such, is an important focus for GRC. Experts agreed that GRC is a key part of sustainable public affiliated universities and that the model provides a blueprint from which to understand and implement GRC, and, ultimately, sustainability.

A recurring comment from the expert evaluation was the fact that the proposed GRC model acts as a starting point with opportunities to individualise the model to make it appropriate for individual faculties within the Thai public affiliated universities. This ability to use the knowledge model and individualise it toward individual faculties or departments has been shown in Chapter 4 and the application of the model to a case study at CAMT.

The evaluation of the proposed GRC model is shown in Table 4.5 in relation to the CAMT GRC components which are judged necessary for an effective GRC capability (OCEG, 2009). Experts were asked to compare the proposed the CAMT GRC model with ***Question is how leaders do management issue 'tuition fee adjustment' by using governance, risk management and compliance?*** This research question is significant and impacted the GRC model for faculty. All descriptions showed on Appendix J**.** Also, Experts determined the effectiveness of the proposed GRC model versus current GRC thinking and action.

Table 4.17 Expert Evaluation of the Proposed the CAMT GRC Model Vs. the Case Study Approach to GRC

Evaluation Criteria	Expert Comments/ Link to Proposed CAMT GRC Model Via MBNQA	Expert Evaluation
Governance	- Balance between financial and customer's expectation (G3.3) - Reporting fact student tuition fee for stakeholder's needs (G7.3)	- The proposed GRC model considers all component of MBNQA as a central part of GRC as well as links with each separate GRC component. - Again, experts suggested the proposed model provides a more integrated and proactive approach than the exiting GRC approach.

Table 4.17 Expert Evaluation of the Proposed the CAMT GRC Model Vs. the Case Study Approach to GRC (Continued)

Evaluation Criteria	Expert Comments/ Link to Proposed CAMT GRC Model Via MBNQA	Expert Evaluation
Governance (Continue)	- Balance between financial and customer's expectation (G3.3) - Reporting fact student tuition fee for stakeholder's needs (G7.3)	- The proposed model considers graduate students from a variety of GRC perspectives and effectively links them. Convesely, the current GRC approach only considers the graduate program as an important aspect of university sustainability and without explicit links or knowledge related to GRC. - The proposed GRC model provides explicit strageties and impacts related to internatio-nalisation and provides a more comprehensive approach than current GRC thinking. - Assets and risk are considered in the proposed GRC model, but there is a lack of specific resource consideration, mainly because of the holistic generalised nature of the proposed model rather than a specific application to an individual organisation or faculty. - IT risk and management is not significantly covered in the proposed GRC model, however general aspects of communication and risk are considered from an IT perspective. - This is considered in relation to all aspects of GRC.
Risk Management	- High expenditure for salary (R6.2). - Risk from increasing student fee (R3.2) - To be affiliated university less supported by the government (R6.2) - Self funding so less student fee can not manage and develop organization (R6.2) - Communication risk (R4.3)	

Table 4.17 Expert Evaluation of the Proposed the CAMT GRC Model Vs. the Case Study Approach to GRC (Continued)

Evaluation Criteria	Expert Comments/ Link to Proposed CAMT GRC Model Via MBNQA	Expert Evaluation
Risk Management (Continue)	- High rotation of IT equipment and program licenses (R6.4)	-Staff and their development are conisdered crucial aspects of an effective GRC model and this is reflected in the proposed model, which considers staff across all aspects of GRC. - Staff and their relationship with every aspect of GRC in the organisation is a strong benefit of the proposed GRC model. - Stakeholders are considered essential to the university in both the proposed GRC model and the existing risk management committee approach. - The GRC model considers student development in the context of GRC, however the current CMU risk committee approach sees student development as separate to GRC. - Recruitment of students is essential to both the existing CMU risk committee approach and the proposed GRC model, however, the proposed GRC model puts recruitment into an effective context and describes the appropirate knowledge relationships to achieve sustainable student recruitment. - The proposed GRC model considers more than just funding sources, and links closely to strategy.
Compliance	- Student fee: actual cost per unit higher than current student fee (C2.3) - Announcement to increase student tuition fee the same time as that is informed in other faculties (C2.3) - Providing scholarship (C3.1) - Providing part-time job in the faculty (C3.1)	

Table 4.17 Expert Evaluation of the Proposed the CAMT GRC Model Vs. the Case Study Approach to GRC (Continued)

Evaluation Criteria	Expert Comments/ Link to Proposed CAMT GRC Model Via MBNQA	Expert Evaluation
		- Tuition fees are considered not just as part of risk, but also in terms of stakeholders and strategy, representing the strength of GRC knowledge integration.

Table 4.17 summarises results from experts evaluation to show that one of the main differences between the proposed model and the current integrated approach is whether GRC is approached from a holistic integrated perspective, or a separatist silo approach to each GRC component. Universities must inform the major customers (parents and students) with the fact, e.g. the cost of the each student. The basic tuition fee of the students should align with the student loan rate in Thailand (Compliance). Moreover, any increase of the tuition fee should be proved with accountable information by the university council(Governance). In addition, students who cannot pay the tuition fee can borrow money from the Thai student loan organisation. Furthermore, universities should provide scholarship or part-time job for students who can not loan the money(Risk Management). Universities must set aside budget to support and improve students' quality (Governance). In order to improve students' competencies, students are provided with good conditions in study and life such as the clean and safe dormitory with high-tech facilities. Also, universities should grant scholarship and time to students who cannot loan tuition fee (Risk Management). In this way, students' competencies can be improved and their parents' satisfactions can be reached. Therefore, both parents and students will support universities in increasing the tuition fee for better quality (Governance). Finally, universities can increase tuition fee with customers' satisfactions (Governance).

In the proposed approach, there was also a strong consideration of knowledge and relationships between different stakeholders and individuals within the organisation, but in the existing approach to GRC, little consideration of knowledge or relationships. In terms of implementation, the existing model shows benefits against the proposed approach as it is already implemented, whereas the proposed model is mainly a theoretical knowledge management approach which has not yet been implemented. Chapter 4 allowed for practical implementation, and showed how the model could be used to create a strong and effective GRC implementation at CAMT. The next section of the generalisation conisders in more detail how the proposed GRC model into faculty of affiliated universities in Thailand.

One of the key strengths is the holistic and synergistic approach brought by the proposed model. In addition, the model provides clear relationships and knowledge regarding an integrated GRC approach. Experts agreed that the model was both suitable and effective, although there were some suggestions for future imporvements.

A specific GRC model was created for one of the faculty public affiliated universities (Colledge of Integrated Science and Technology, Chiang Mai University) and the integrated GRC model is now generated and evaluated against this to understand how the proposed GRC model differs from current management thinking and whether the new knowledge of the proposed GRC model is in alignment with the university's current thinking and desired future strategy. This was important, as if the model does not fit with the Thai public affiliated universities' practical needs, the research becomes purely an epistemological exercise rather than a useful practical implementation. As this thesis represents a knowledge management perspective, it was important to keep a practical and useful knowledge implementation at the forefront of this work, hence the evaluation in practical terms.

4.7.3 Discussion and Benefit of the Research

This thesis suggests that a governance, risk management and compliance (GRC) framework has a considerable capacity to create Thai public affiliated universities which are both responsive to change and sustainable. GRC has been used in commercial business settings, but has not yet been applied effectively or in an

integrated way to higher education. The traditional criticisms of GRC implementation centre on difficulty in defining an appropriate GRC capability and its wide ranging remit. The research in this thesis therefore takes the perspective of knowledge management to effectively define a suitable GRC model for the Thai public affiliated universities and to capture the appropriate knowledge necessary to create a specific and actionable GRC model.

To generalise the CAMT GRC model, this stage shows comparing the components of GRC into three types of university both in world wide levels. The results of this part shows in Tabel 4.18. and 4.19

Table 4.18 The Generalisation of the Faculty GRC Model

Key of Generalisation	Description
GRC	- The integrated view of GRC is a critical aspect of organisational sustainability (Schäfer et al. 2012) - Meeting goal achievement with good operations - Organisation's reputation with maintenance credibility and trust - Brand of the organisation creates sustainable added value - The challenge of management will justify valuable and capability of management to maintain the ability with various rules of external directors following the directions and policy statements, in practice the internal standard and expectations of new shareholders.
Knowledge Management	- Using knowledge management techniques and technologies in higher education should be as ubiquitous as it has become in the corporate sector, and if undertaken effectively, it can lead to better decision-making capabilities, reduced 'product' development cycle time (e.g. curriculum development and research), improved academic and administrative services, and reduced costs (Johnstone, 2003).

Table 4.18 The Generalisation of the Faculty GRC Model (Continued)

Key of Generalisation	Description
	- KM strategies and practices have come to embody the interactions between people, process and technology to promote a robust system of information sharing, while guiding organisations toward ongoing reflexivity and learning. - KM is to implement a process to deliver the right knowledge to the person who needs it when they need it (Hussain et al. 2004). - KM can also be used to focus on long-term organisation-wide strategies to enhance sustainability (Lubit, 2001). KM can be used to gain a more comprehensive, integrative, and reflexive understanding of higher education.

The results of this research can be broadly summarised in three areas. The work firstly takes a knowledge management approach to identify GRC experts before using knowledge structure maps to highlight the key knowledge requirements for an effective GRC capability in the Thai public affiliated universities. This data is then integrated to create the proposed integrated GRC model for the faculty of Thai public affiliated universities. The resulting model is then applied to a case study faculty within the Thai public affiliated universities to evaluate how the GRC model can be practically applied. The OCEG's GRC capability is used as a guide for this model implementation. Finally, the thesis evaluates the potential and effectiveness of the proposed GRC model, indicating that it has significant promise in application to the Thai public universities and in responding to future challenges and opportunities.

4.8 Chapter Summary

This chapter has focused on knowledge capture to gather the current status and requirements for an appropriate GRC capability for the faculty of Thai public affiliated universities. Results in this chapter have presented detailed governance, risk management and compliance knowledge from appropriate experts and has utilised

knowledge structure mapping to effectively move from tacit to explicit knowledge and build an integrated GRC model for the faculty of Thai public affiliated universities. The resulting GRC model shows the GRC environment of the faculty Thai public affiliated universities as well as the relationships between each GRC component.

The generated and evauated chapter has focused on generaling and evaluating the proposed GRC model and has utilised experts to provide such generaltion and evaluation. The first part of the chapter showed expert generated and evaluated opinions approach to GRC within the public affiliated universities. The second part represented the general GRC model for faculty of affiliated univerisities in Thailand. The key strength of the proposed approach is its integration and synergy between different aspects of GRC and the modeling of appropriate GRC knowledge along with the knowledge relationships mapped out. The existing GRC approach tends to consider GRC in silos and does not give attention to the knowledge and knowledge relationships involved.