07 08 | OCTUBRE HOTEL SOL DE ORO MIRAFLORES

4to Congreso Internacional de

INGENIERÍA DE COSTOS

AACEI PERÚ 2016

ASEGURANDO **RENTABILIDAD** EN LOS PROYECTOS

La Gestión de Riesgos: Un enfoque integrador AACE - PMI

*“**Nadie está exento** durante el desarrollo de un proyecto de sufrir **imprevistos** que puedan generar **impactos** en diferentes áreas, inclusive afectar la imagen empresarial (…). **Hoy en día** se evidencia que la **Gestión de Riesgos** es vital y va más allá de simplemente **maximizar las oportunidades y minimizar las amenazas** en un proyecto”*

By: David Alejandro Chigne Tataje, PMP®, PMI-RMP®

LA GESTIÓN DE RIESGOS: UN ENFOQUE INTEGRADOR AACE - PMI

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BY: DAVID A CHIGNE T | PMP®, PMI-RMP®

Questions? - chignedavid@gmail.com

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BIO of David Chigne, PMP®, PMI-RMP®

- ✓ Ingeniero Electricista con estudios de postgrado en Sistema de potencia.
- ✓ *Director General Perú* de INGEMA PERU SAC y *Project & Risk Consultant* de ELECTRICAS DE MEDELLÍN PERÚ.
- ✓ 10 años de experiencia en proyectos de ingeniería y construcción orientados al rubro de la energía.
- ✓ *"Algo que no sabes de mi es que fui bombero voluntario por mas de 13 años, con una especialización en Pre-hospital Trauma Life Support con el Florida Dade Fire Deparment, USA".*
- ✓ Involucrado con el Project Management Institute (PMI) desde el año 2006.

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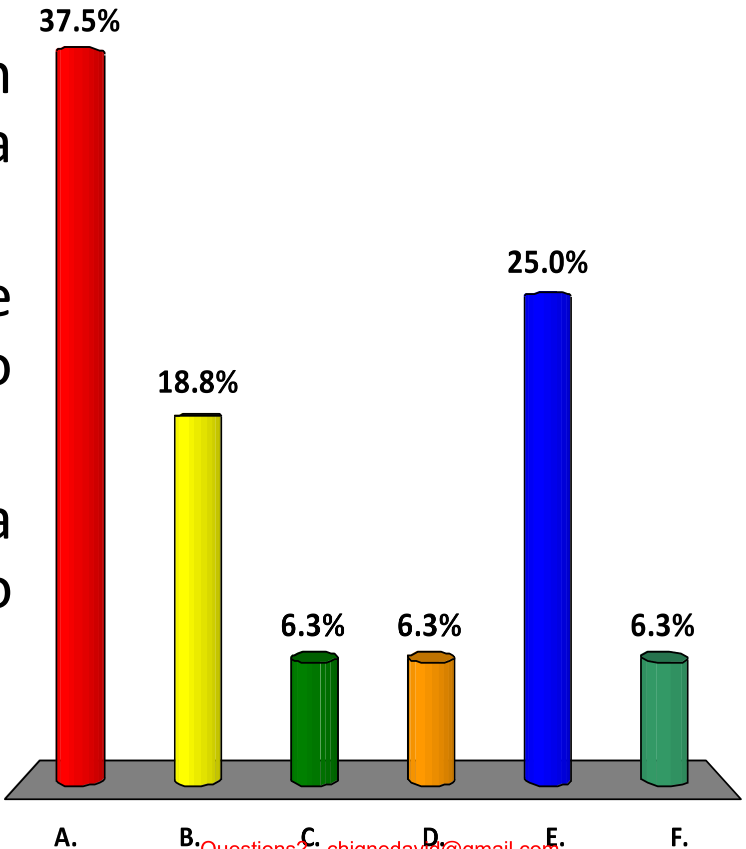
¿PRM in your life?

Let's make a statistical sampling…

Turning Technologies

¿Qué TANTO esta involucrado en la gestión de riesgos en los proyectos?

A. He asistido a un curso de gestión de riesgos, pero más allá de eso, no.
B. He participado en la elaboración de un plan de gestión de riesgos y/o en una sesión de identificación de riesgos.
C. He realizado un análisis cualitativo de riesgos, priorizando riesgos y definiendo disparadores y planes de respuesta.
D. Conozco del manejo de softwares para el análisis cuantitativo y los he utilizado en proyectos.
E. He realizado B y C
F. He realizado B, C y D.



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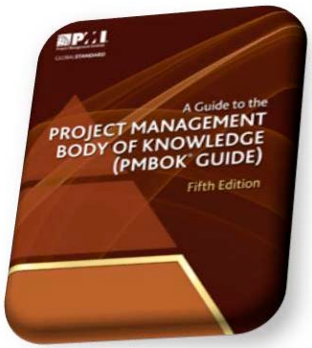

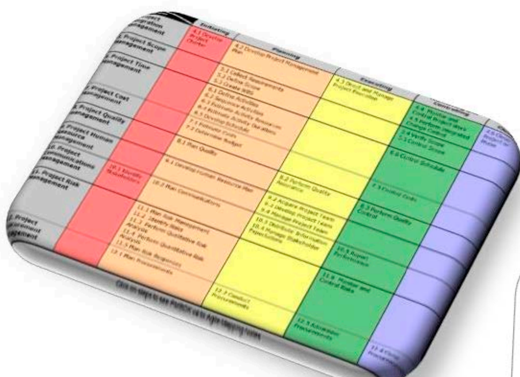

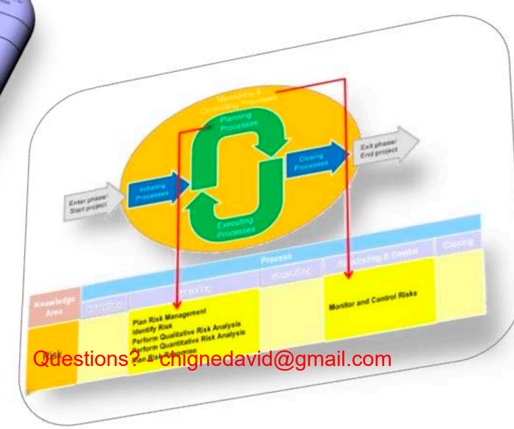

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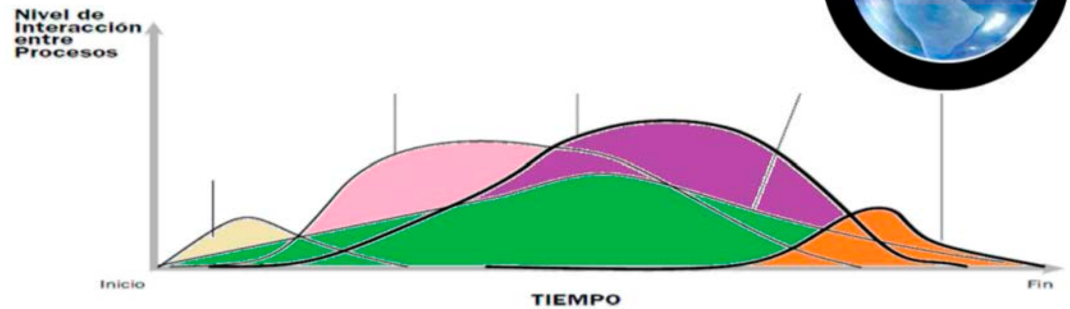

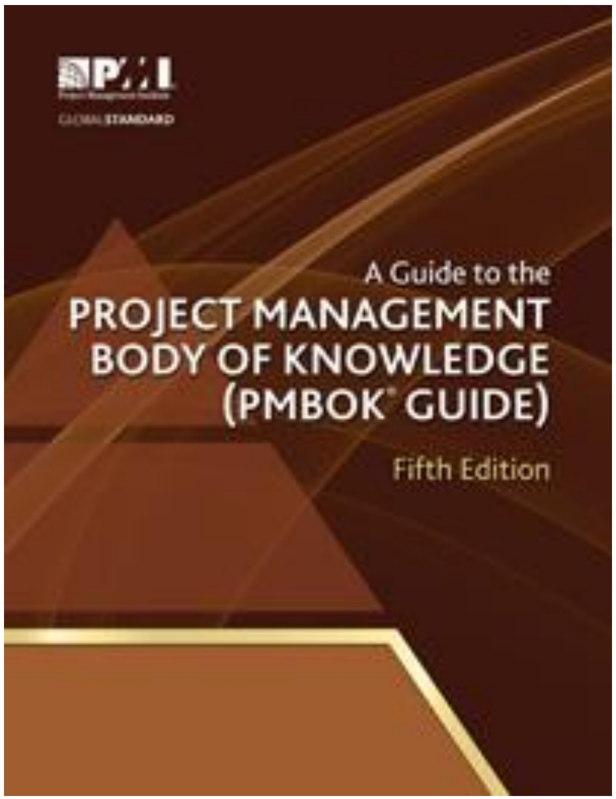

Process Groups / Knowledge Area	Initiating	Planning	Executing	Monitoring and Controlling	Closing
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Execution	4.4 Monitor and Control Project Work 4.5 Perform Integrated Change Control	4.6 Close Project or Phase
5. Project Scope Management		5.1 Collect Requirements 5.2 Define Scope 5.3 Create WBS		5.4 Verify Scope 5.5 Control Scope	
6. Project Time Management		6.1 Define Activities 6.2 Sequence Activities 6.3 Estimate Activity Resources 6.4 Estimate Activity Durations 6.5 Develop Schedule		6.6 Control Schedule	
7. Project Cost Management		7.1 Estimate Costs 7.2 Determine Budget		7.3 Control Costs	
8. Project Quality management		8.1 Plan Quality	8.2 Perform Quality Assurance	8.3 Perform Quality Control	
9. Project Human Resource Management		9.1 Develop Human Resource Plan	9.2 Acquire Project Team 9.3 Develop Project Team 9.4 Manage Project Team		
10. Project Communications Management	10.1 Identify Stakeholders	10.2 Plan Communications	10.3 Distribute Information 10.4 Manage Stakeholder Expectations	10.5 Report Performance	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses		11.6 Monitor and Control Risks	
12. Project Procurement Management		12.1 Plan Procurements	12.2 Conduct Procurements	12.3 Administer Procurements	12.4 Close Procurements

Notes Click on steps to see PMBOK v4 to Agile Mapping Notes

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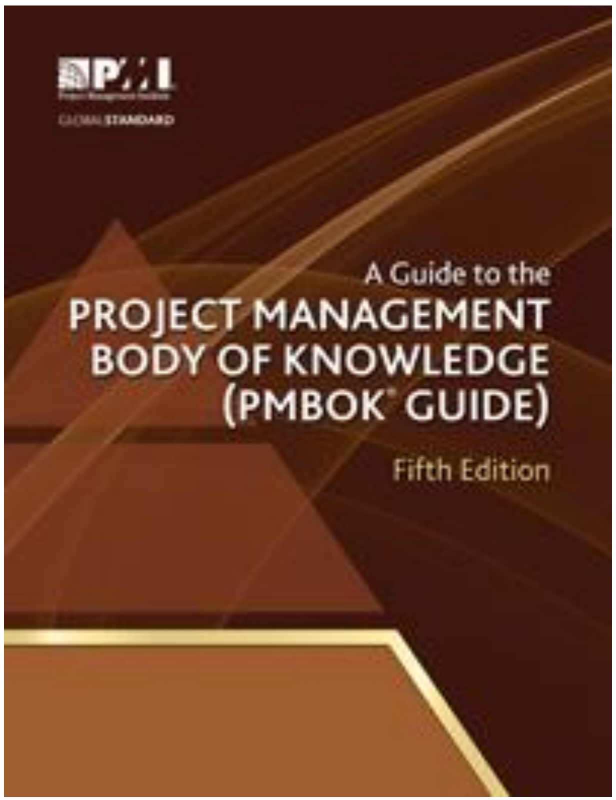

Y otros soportes disponibles en la web del PMI (publications & papers)

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"Total cost management is the effective application of professional and technical expertise to plan and control resources, costs, profitability and risks"

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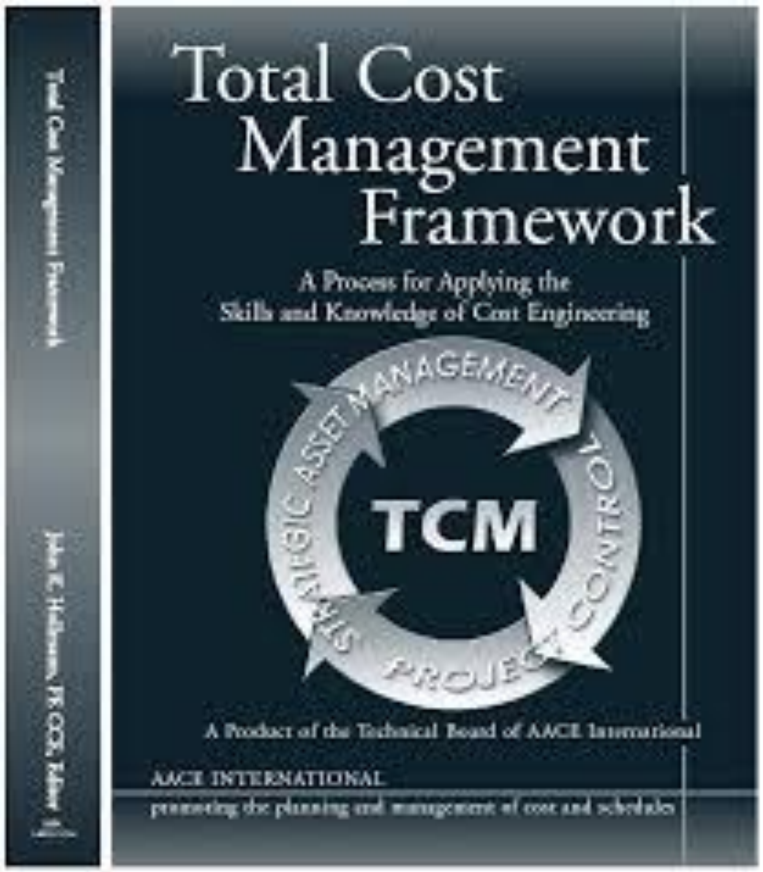

73
RP's

21
PPG's

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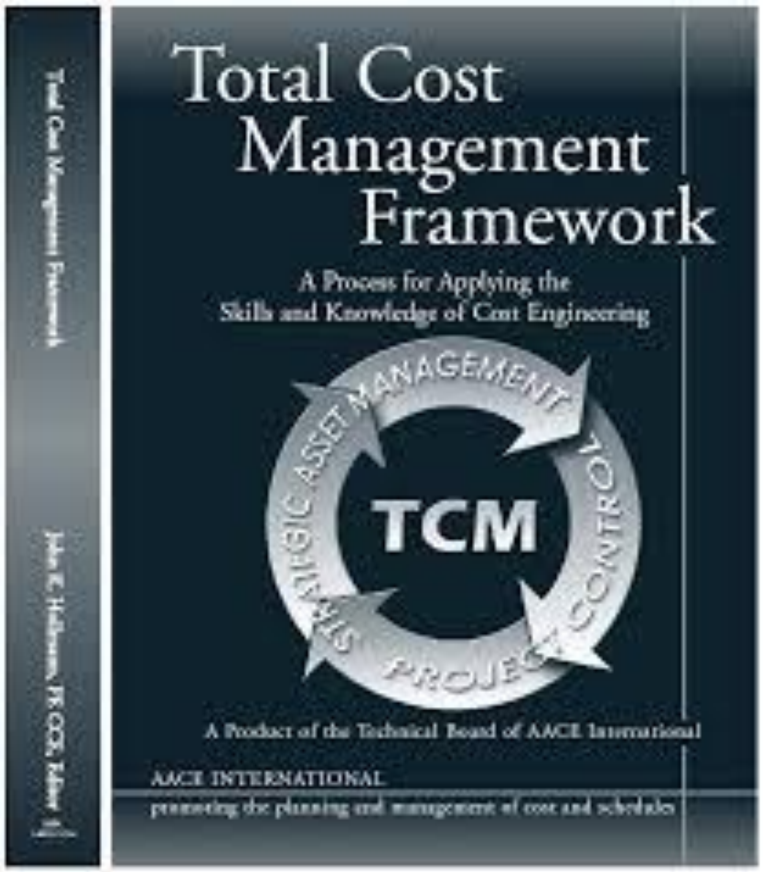
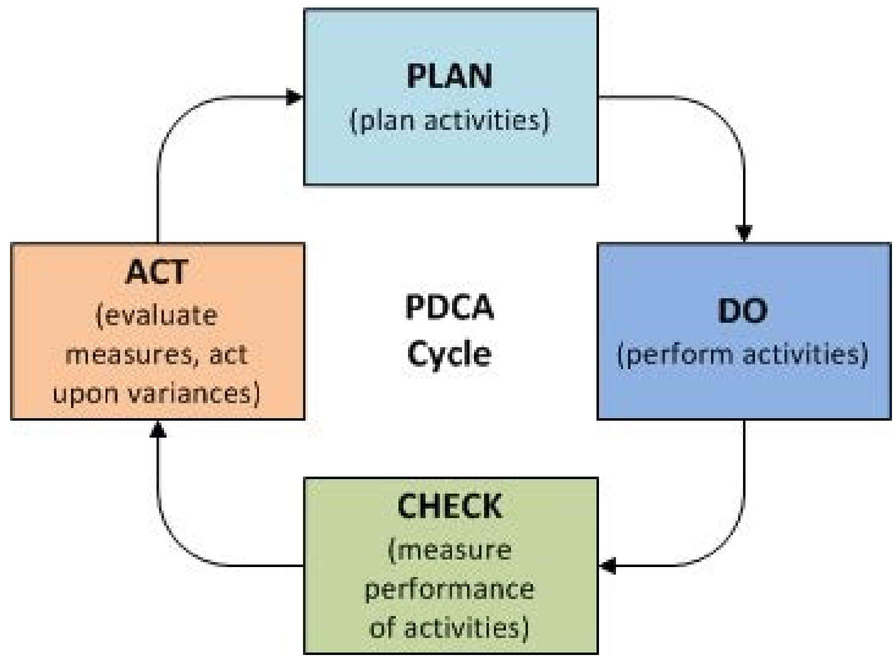
TCM: Define los Conceptos y terminología necesaria para una gestión total de los costos.



The Basic TCM Process Model



TCM: Based on Demming or Shewhart Cycle Model.

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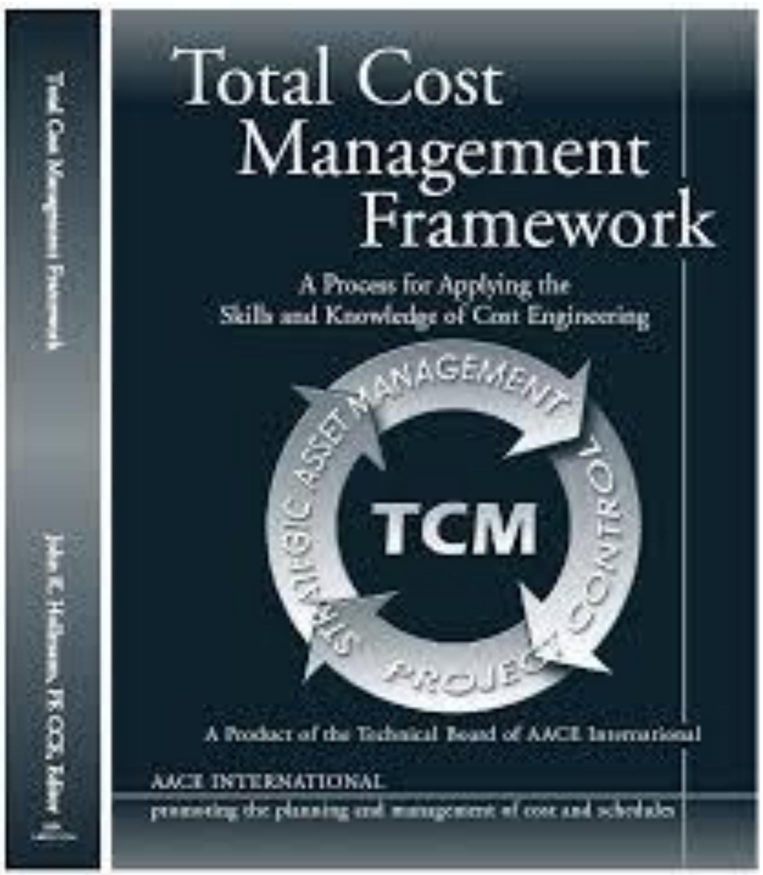
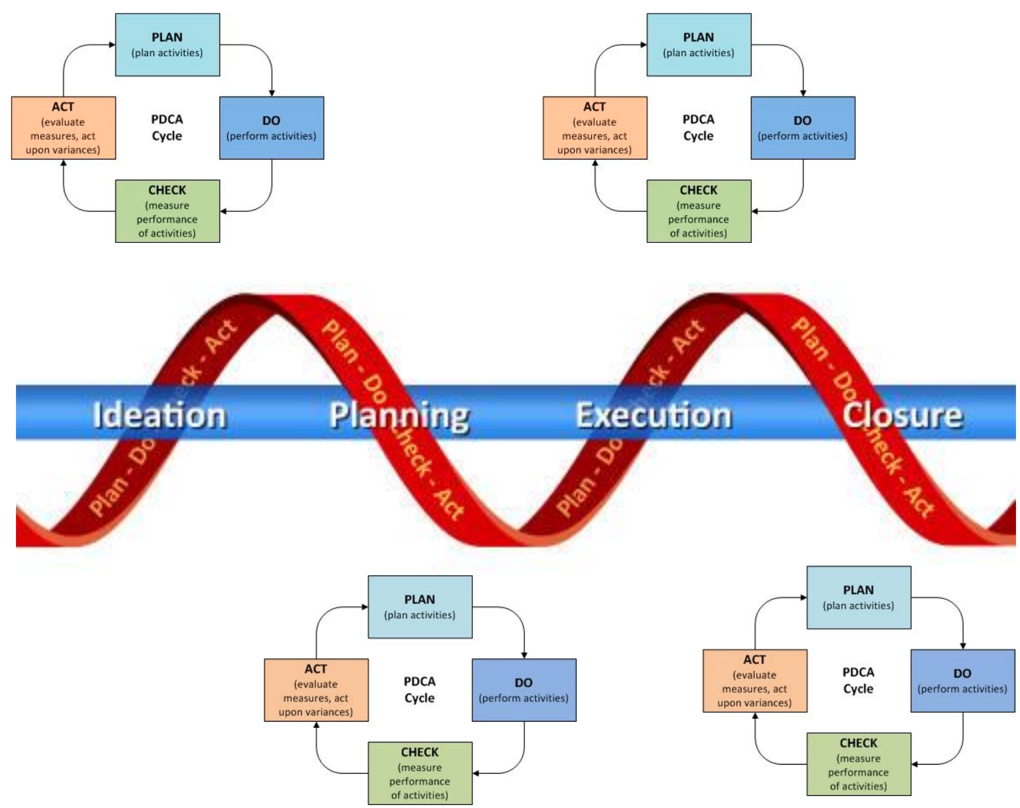


The Basic TCM Process Model throughout the Project or Asset Life Cycle



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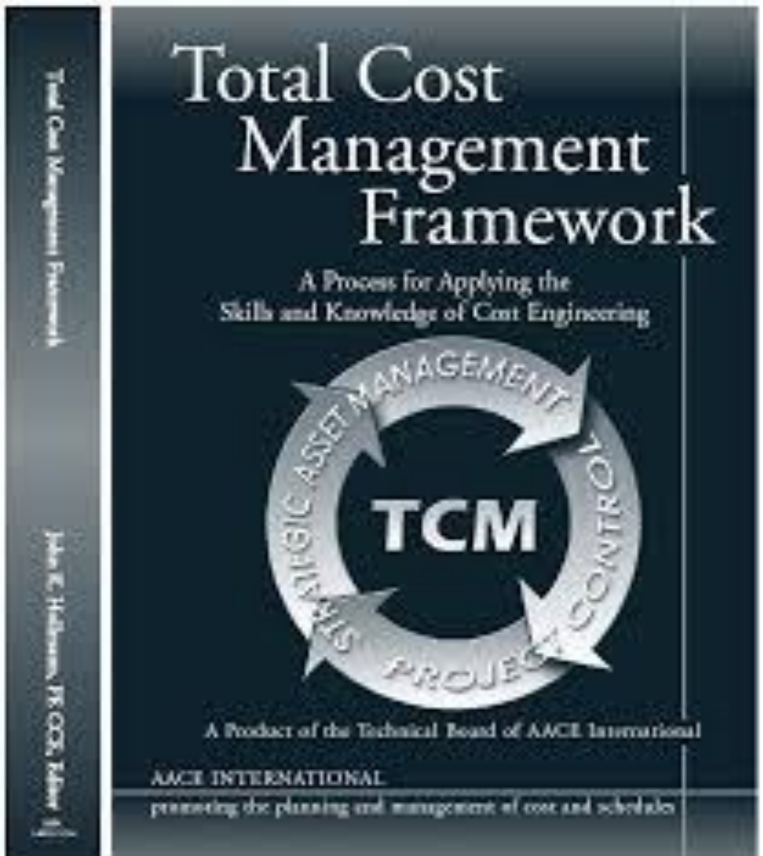

73
RP's

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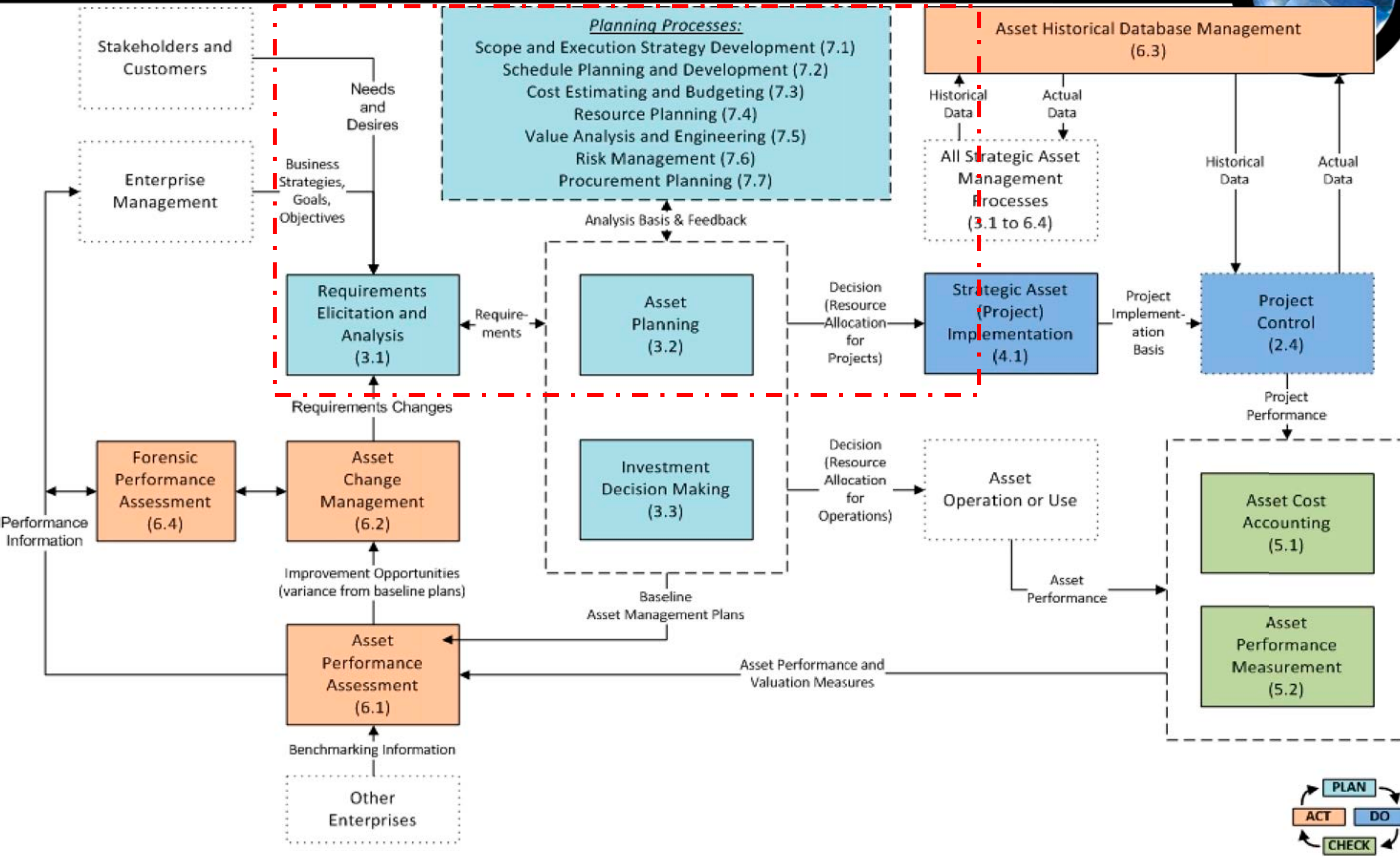

The Strategic Asset Management Process Map

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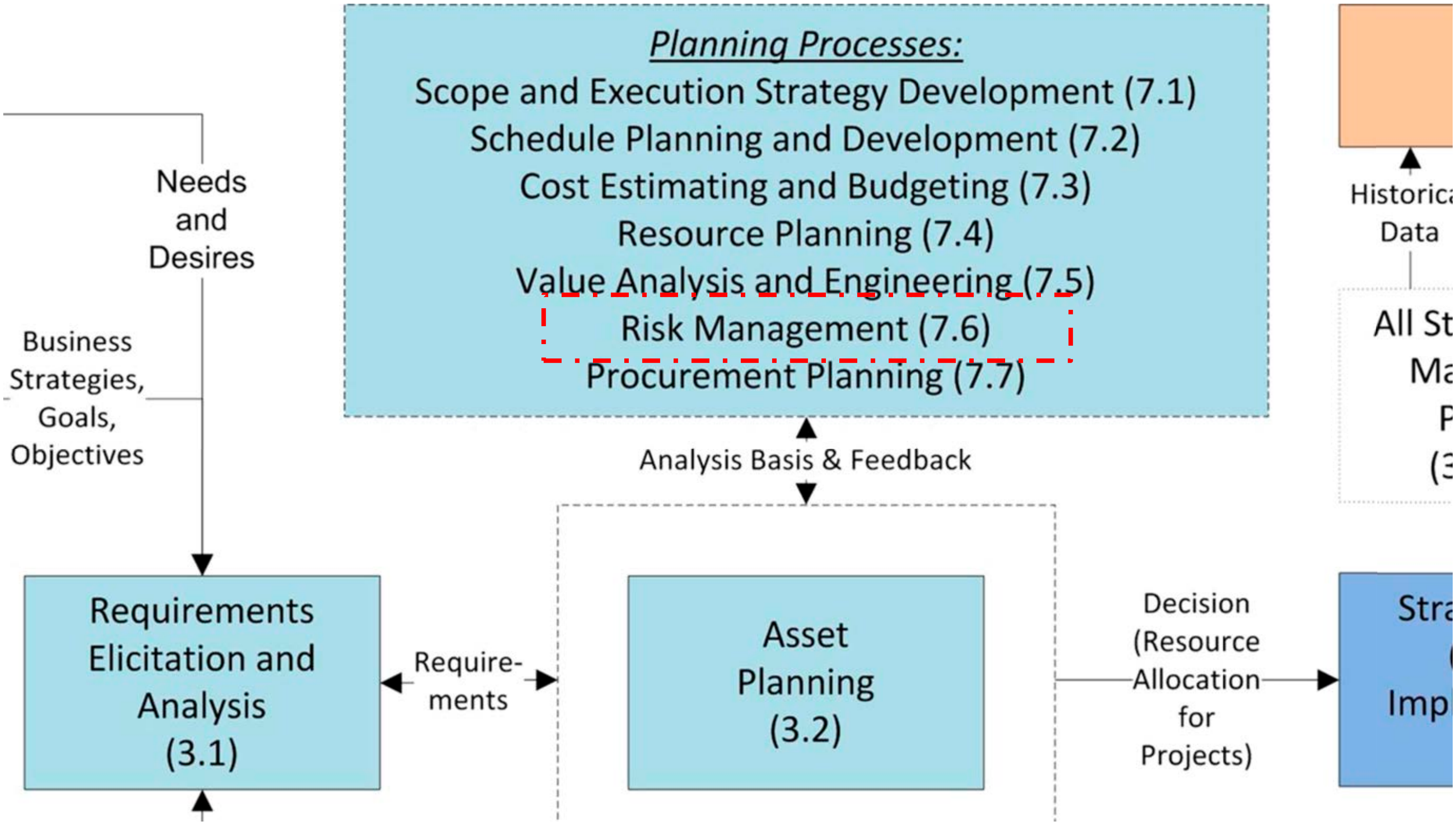

The Strategic Asset Management Process Map

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¿What is risk?

Let's make a statistical sampling...

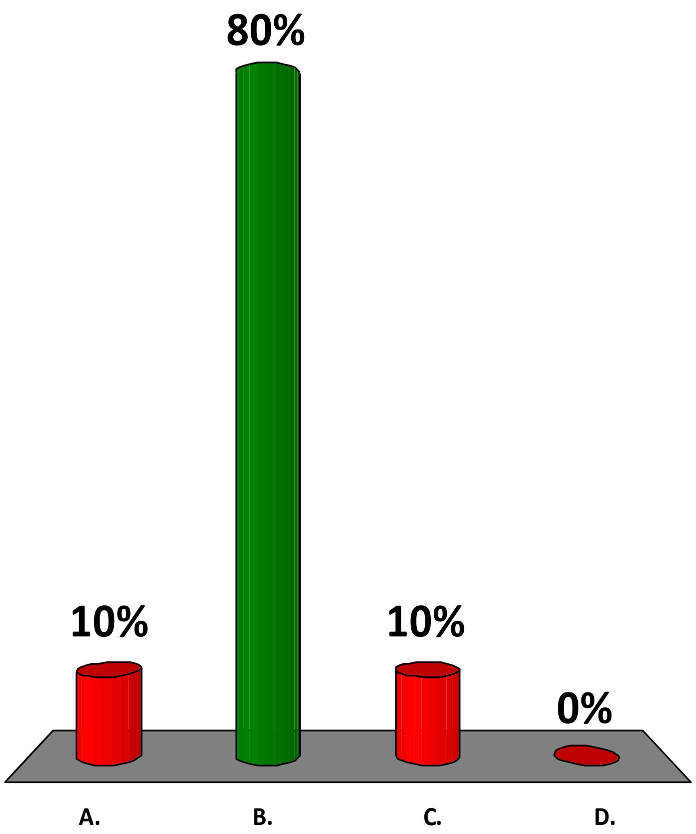
¿Qué es el riesgo en los proyectos?

A. Posibilidad que se produzca un contratiempo o una desgracia sobre cualquiera de los objetivos del proyecto.

B. Evento o condición incierta que en caso de ocurrir puede tener un impacto (pos. o neg.) sobre cualquiera de los objetivos del proyecto.

C. Es una situación que se presentó y ha generado un impacto (pos. o neg.) sobre cualquiera de los objetivos del proyecto.

D. Es un evento futuro 100% seguro se va a presentar y generará un impacto sobre los objetivos del proyecto.



Risk management is a systematic and iterative process…

1. Plan - *to establish risk management objectives;*
2. Assess - *to identify and analyze risk;*
3. Treat - *by planning and implementing risk responses; and*
4. Control - *by monitoring, communicating and enhancing risk management effectiveness.*

11.1 Plan Risk Management - *how to conduct risk management activities.*
11.2 Identify Risks - *determining which risks may affect the project.*
11.3 Perform Qualitative Risk Analysis - *prioritizing risks for further analysis or action.*
11.4 Perform Quantitative Risk Analysis (optional) - *numerically analyzing the effect of identified risks.*
11.5 Plan Risk Responses - *developing options and actions.*
11.6 Control Risks - *risk response plans, tracking identified risks, etc...*

ABOUT THE PMI AND (PART OF) THE RISK MANAGEMENT: *PLAN RISK MANAGEMENT* *AND OTHERS PROCESSES…*

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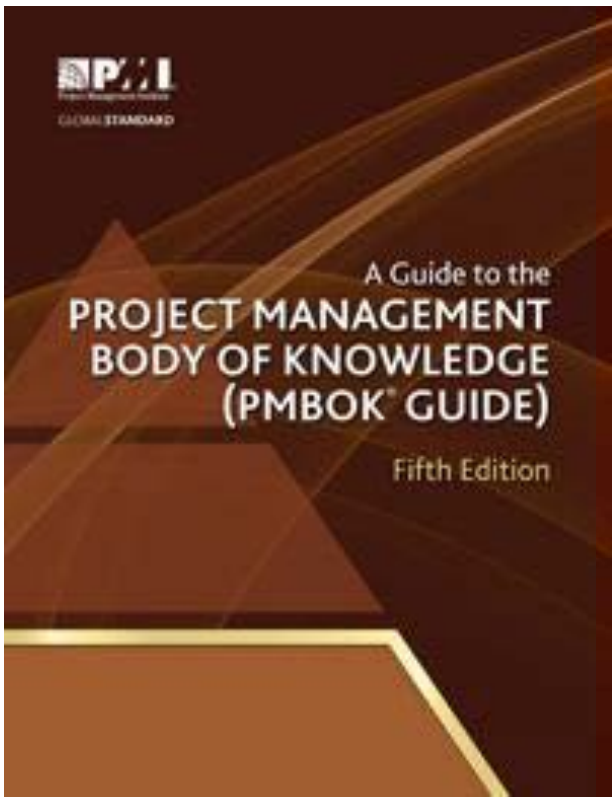
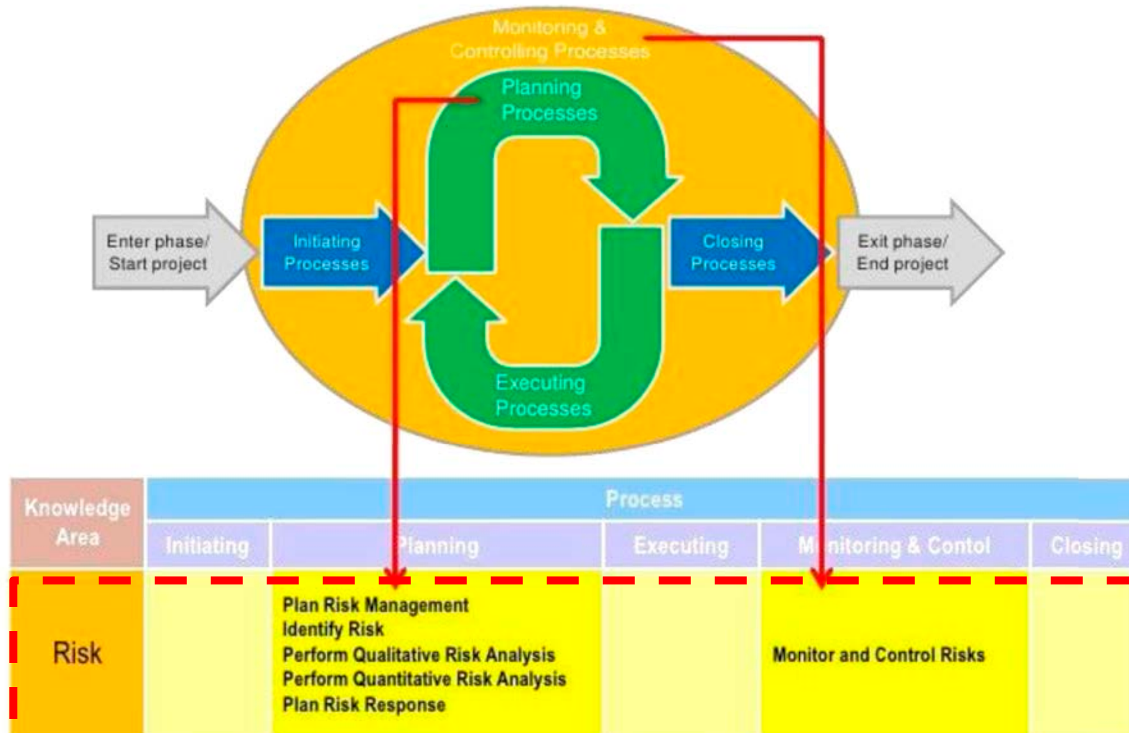
Process map for Risk Management





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11.1 Plan Risk Management

Inputs	Tools & Techniques	Outputs
.1 Project management plan .2 Project charter .3 Stakeholder register .4 Enterprise environmental factors .5 Organizational process assets	.1 Analytical techniques .2 Expert judgment .3 Meetings	.1 Risk management plan

Outputs

11.1.3.1 Risk Management Plan

(…) is a component of the Project Management Plan and describes how risk management activities will be structured and performed. The risk management plan includes the following:

PMBOK 5^{TH} Ed. Pag. 316. PMI®

11.1.3.1 Plan de Gestión de Riesgos

(…) es un componente del plan para la dirección del proyecto y describe el modo en que se estructurarán y se llevarán a cabo las actividades de gestión de riesgos. El plan de gestión de riesgos incluye lo siguiente:

Metodología. Define los enfoques, las herramientas y las fuentes de datos que se utilizarán para llevar a cabo la gestión de riesgos en el proyecto.

Roles y responsabilidades. Define el líder, el apoyo y los miembros del equipo de gestión de riesgos para cada tipo de actividad del plan de gestión de los riesgos, y explica sus responsabilidades.

(…)

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11.2 Identify Risk

Inputs

.1 Risk management plan
.2 Cost management plan
.3 Schedule management plan
.4 Quality management plan
.5 Human resource management plan
.6 Scope baseline
.7 Activity cost estimates
.8 Activity duration estimates
.9 Stakeholder register
.10 Project documents
.11 Procurement documents
.12 Enterprise environmental factors
.13 Organizational process assets

Tools & Techniques

.1 Documentation reviews
.2 Information gathering techniques
.3 Checklist analysis
.4 Assumptions analysis
.5 Diagramming techniques
.6 SWOT analysis
.7 Expert judgment

Outputs

.1 Risk register

Inputs

11.2.1.2 Cost Management Plan

The cost management plan provides processes and controls that can be used to help identify risks across the Project.

11.2.1.3 Schedule Management Plan

The Schedule management plant provides insight to Project time/Schedule objectives and expectations which may be impacted by risks (known and unknown).

PMBOK 5TH Ed. Pag. 321. PMI®

11.2.1.2 Plan de Gestión de los Costos

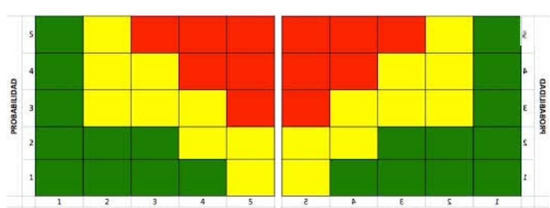
El plan de gestión de los costos proporciona procesos y controles que se pueden utilizar para ayudar a identificar los riesgos a lo largo del proyecto.

11.2.1.3 Plan de Gestión del Cronograma

proporciona conocimiento sobre los objetivos y expectativas relativos al tiempo y cronograma del proyecto que pueden ser afectados por riesgos (conocidos y desconocidos).

11.3 Perform Qualitative Risk Analysis

Inputs	Tools & Techniques	Outputs
.1 Risk management plan .2 Scope baseline .3 Risk register .4 Enterprise environmental factors .5 Organizational process assets	.1 Risk probability and impact assessment .2 Probability and impact matrix .3 Risk data quality assessment .4 Risk categorization .5 Risk urgency assessment .6 Expert judgment	.1 Project documents updates



T&T's

11.3.2.2 Probability and Impact Matrix

Evaluation of each risk's importance and priority for attention is typically conducted using a look-up table or a probability and impact matrix (…) Risk rating rules can be tailored in the Plan Risk Management process to the specific Project.

PMBOK 5TH Ed. Pag. 331. PMI®

11.3.2.2 Matriz de Probabilidad e Impacto

(..) Por lo general, la evaluación de la importancia de cada riesgo y de su prioridad de atención se efectúa utilizando una tabla de búsqueda o una matriz de probabilidad e impacto (…) Las reglas de calificación de los riesgos pueden adaptarse al proyecto específico durante el proceso Planificar la Gestión de los Riesgos.

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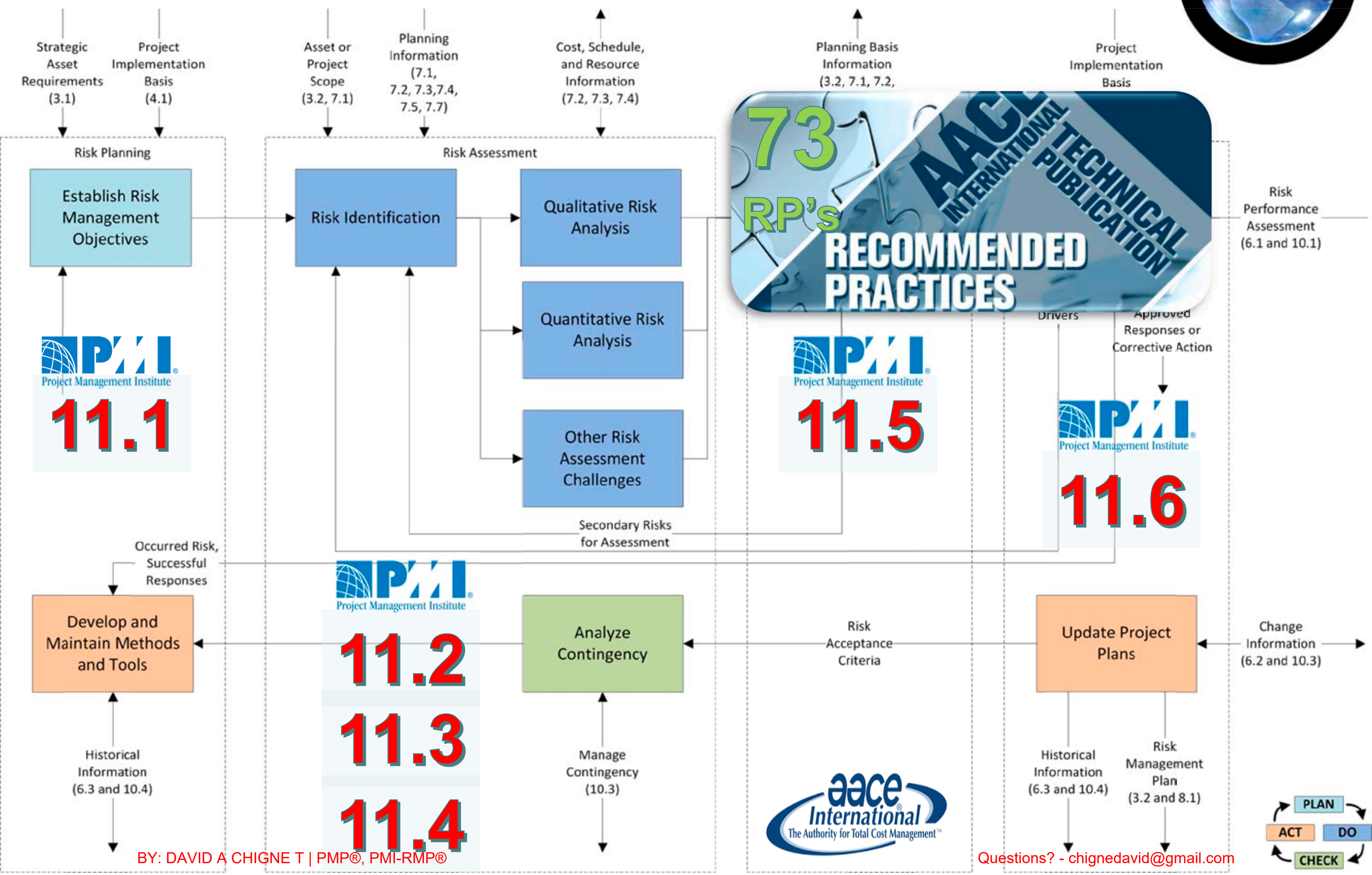

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7.6-1. Process map for Risk Management

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39R-06, *Project Planning – As Applied in Engineering and Construction for Capital Projects*
40R-08, *Contingency Estimating – General Principles*
41R-08, *Risk Analysis and Contingency Determination Using Range Estimating*
42R-08, *Risk Analysis and Contingency Determination Using Parametric Estimating*
43R-08, *Risk Analysis and Contingency Determination Using Parametric Estimating – Example Models as Applied for the Process Industries*
44R-08, *Risk Analysis and Contingency Determination Using Expected Value*
57R-09, *Integrated Cost and Schedule Risk Analysis Using Monte Carlo Simulation of a CPM Model*
58R-10, *Escalation Estimating Principles and Methods Using Indices*
61R-10, *Schedule Design – As Applied in Engineering, Procurement, and Construction*
62R-11, *Risk Assessment: Identification and Qualitative Analysis*
63R-11, *Risk Treatment*
64R-11, *CPM Schedule Risk Modeling and Analysis: Special Considerations*
65R-11, *Integrated Cost and Schedule Risk Analysis and Contingency Determination Using Expected Value*
66R-11, *Selecting Probability Distribution Functions for use in Cost and Schedule Risk Simulation Models*
67R-11, *Contract Risk Allocation – As Applied in Engineering, Procurement, and Construction*
68R-11, *Escalation Estimating Using Indices and Monte Carlo Simulation*
70R-12, *Principles of Schedule Contingency Management – As Applied in Engineering, Procurement and Construction*
72R-12, *Developing a Project Risk Management Plan*
75R-13, *Schedule and Cost Reserves within the Framework of ANSI EIA-748*
77R-15, *Quality Assurance/Quality Control for Risk Management*
80R-13, *Estimate at Completion (EAC)*
82R-13, *Earned Value Management (EVM) Overview and Recommended Practices Consistent with ANSI EIA-748*
85R-14, *Use of Decision Trees in Decision Making*

23 RP's

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23 RP's

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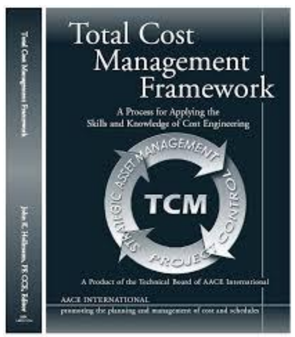

[72R-12, *Developing a Project Risk Management Plan*]

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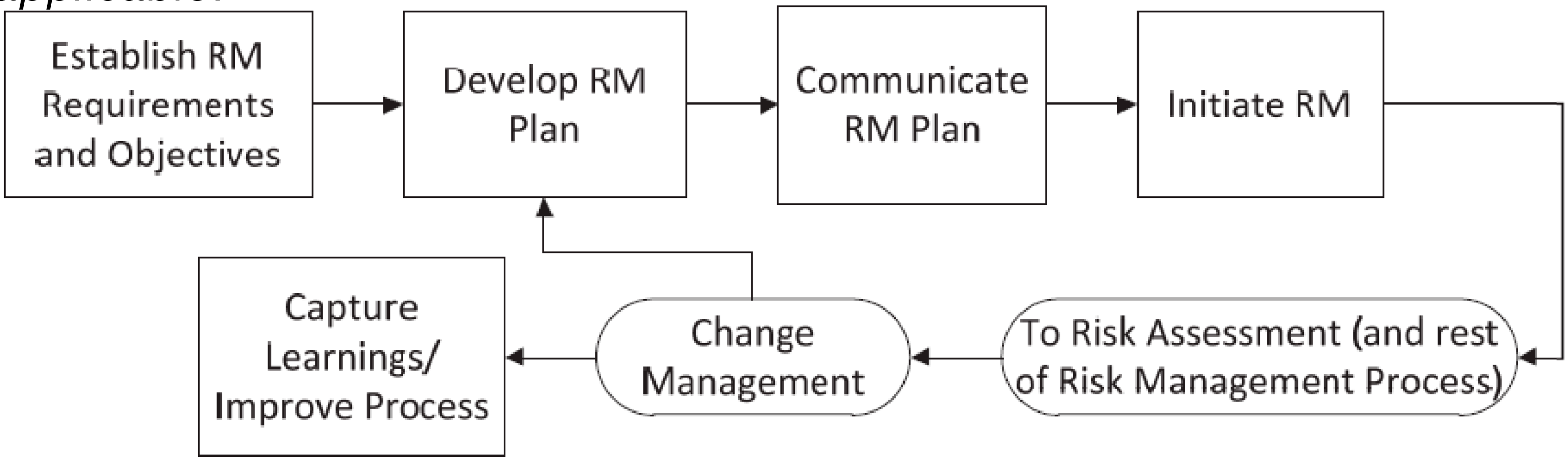
72R-12
DEVELOPING A PROJECT RISK MANAGEMENT PLAN
TCM Framework: 7.6 – Risk Management

Purpose

(…)This RP is intended to provide guidelines (i.e., not a standard) for developing a project risk management plan. This will provide a basis for what most practitioners would consider to be good practices that can be relied upon, and that they would recommend be considered for use where applicable.″



Process for Developing, Implementing and Maintaining a Risk Management Plan

Fig. 1 – 72R-12, pag.3

72R-12

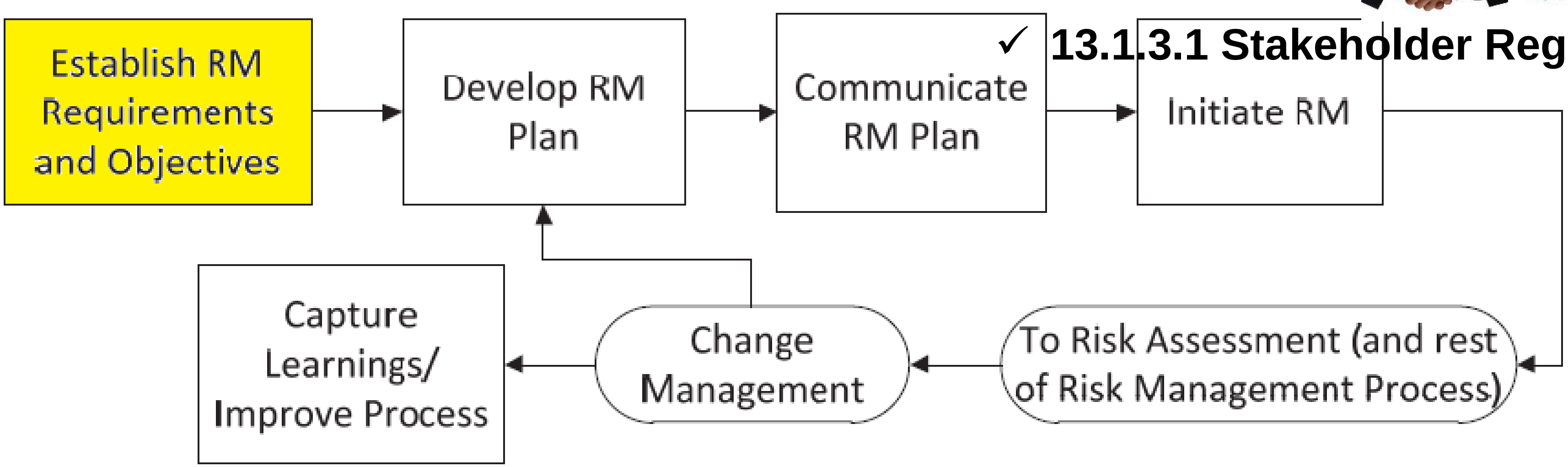
DEVELOPING A PROJECT RISK MANAGEMENT PLAN

TCM Framework: 7.6 – Risk Management

Establish requirements and Objectives

(...) identify the stakeholders and to elicit their expectations, requirements, and objectives (from the process with respect to risks) (…) considering the external and internal context will help ensure that no important stakeholder and requirement is missed.

✓ **13.1.3.1 Stakeholder Register**



Process for Developing, Implementing and Maintaining a Risk Management Plan

Fig. 1 – 72R-12, pag.3

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72R-12

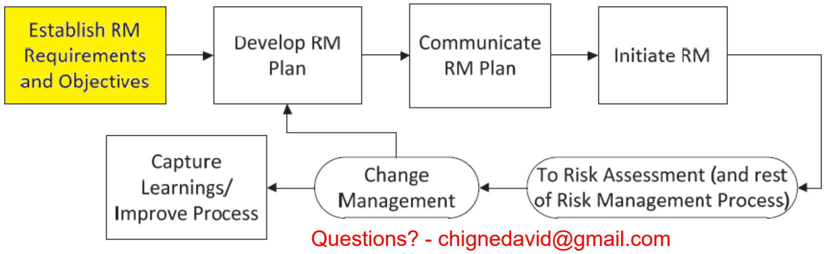
DEVELOPING A PROJECT RISK MANAGEMENT PLAN

TCM Framework: 7.6 – Risk Management

Establish requirements and Objectives

External content *(must be considered):*

- *The social, cultural, political, legal, regulatory, financial, technological, economic, natural, and competitive entities and environments, whether international, national, regional or local*
- *key drivers and trends having impact on the objectives of the organization*
- *relationships with, perceptions and values of external stakeholders*
- *preferred methods or practices*
- *preferred metrics and/or report formats*
- *operational definitions of risk defined by the stakeholders that may affect the specific processes and methods used.*



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72R-12

DEVELOPING A PROJECT RISK MANAGEMENT PLAN

TCM Framework: 7.6 – Risk Management

Establish requirements and Objectives

Internal content (stakeholders that can influence the way in which a project will be manage risk.):

The risk management process should be aligned with the organization's culture, processes, structure, and strategy.

- *(…)*
- *Information systems, information flows and decision making processes (both formal and informal).*
- *The relationships with, perceptions, and values of internal stakeholders.*

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- ✓ Plan Communications Management.
- ✓ T&T's Stakeholders analisys:
  - ✓ Power / interest grid.
  - ✓ Power / influence grid.
  - ✓ Influence / impact grid.
  - ✓ Salience model.

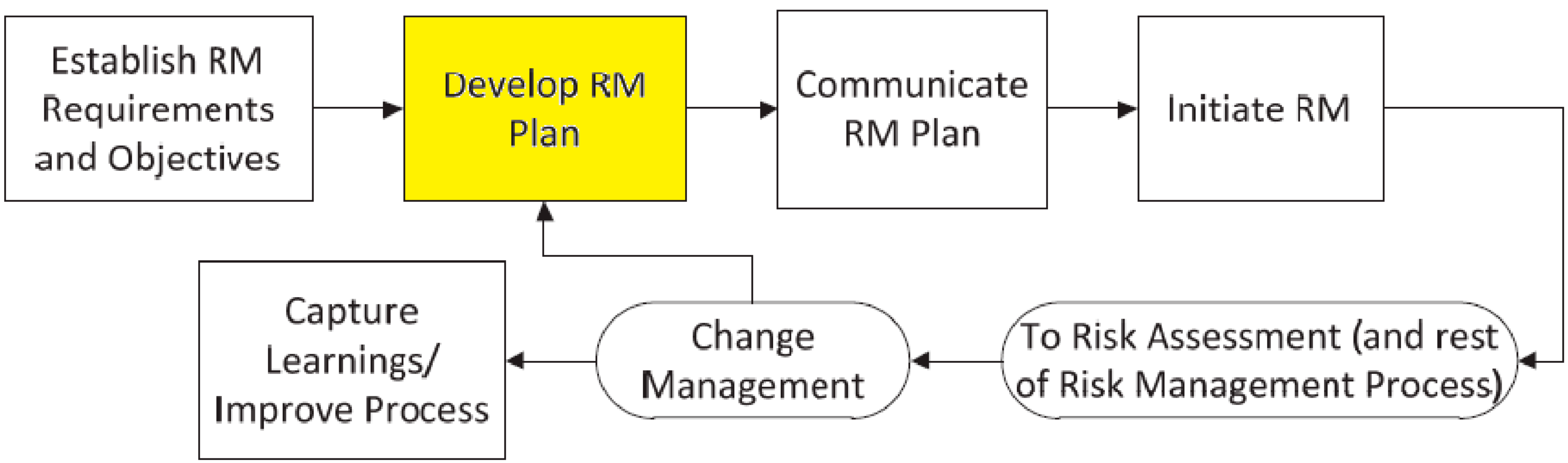
72R-12

DEVELOPING A PROJECT RISK MANAGEMENT PLAN

TCM Framework: 7.6 – Risk Management

Developing Risk Management Plan

(...) each project's risk management plan must be organized in a logical manner and made specifically applicable to the project. (…) The risk management plan will need to consider the requirements (…) and determine how each will be addressed in consideration of the context.



Process for Developing, Implementing and Maintaining a Risk Management Plan

Fig. 1 – 72R-12, pag.3

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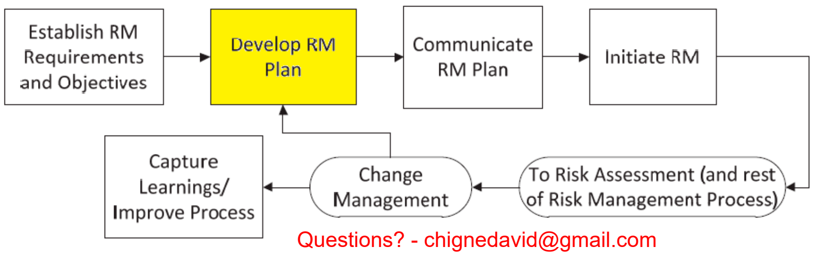
72R-12
DEVELOPING A PROJECT RISK MANAGEMENT PLAN
TCM Framework: 7.6 – Risk Management

Developing Risk Management Plan

- *Scope: describe the scope of the risk management plan with respect to the overall project plan.*
- *Strategy and objectives. What are the purpose and objectives of the project in respect to risk management?*
- *Definitions: (…) ensure that it is clearly stated as it drives how positive or negative risks will be addressed.*
- ***Roles and Responsibilities:** (…) understanding the roles and responsibilities of team members with respect to risk management is a key element.*

Project Business Sponsor, Vice President or Director, Project Manager, Risk Manager, Risk Coordinator or Team Lead, Project Controls Manager, Risk Analyst, Risk Action Owner, Risk Owner, Risk Management Team

RASCI matrix could be usefull, isn't?



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72R-12
DEVELOPING A PROJECT RISK MANAGEMENT PLAN
TCM Framework: 7.6 – Risk Management

Developing Risk Management Plan

- *Qualitative Risk Assessment:* *provides direction for the* ***AACE 62R-11, Risk Assessment: Identification and Qualitative Analysis.***
  - ✓ *Risk identification, Risk Document Control, Risk Coding and RBS, Risk Status, Risk Matrix, Risk Response Categories for Threats or Opportunities…*
  - ✓ ***Integration with Value Management.***
    **** 11.5 Value Management and Value Improving Practices (VIPs)****
  - ✓ ***Risk Register Quality Assurance.***
  - ✓ ***Change Management:*** Risks and treatment or actions plans may trigger some form of change notice for the project.

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- ✓ 4.5.2 Perform Integrated Change Control (Process)
  - ✓ Inputs.
  - ✓ Tools & Techniques.
  - ✓ Outputs.

And… what about RASCI matrix?

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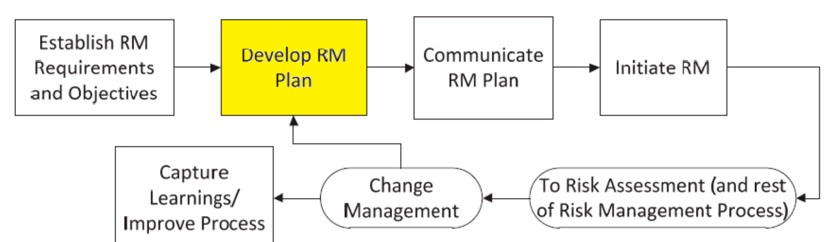
DEVELOPING A PROJECT RISK MANAGEMENT PLAN
TCM Framework: 7.6 – Risk Management

Developing Risk Management Plan

- *Quantitative Risk Assessment:* *provides direction for (many)* ***AACE RP's.***
  - ✓ *Cost and Schedule Risk Analysis.*
  - ✓ *Contingency and Reserves.*
  - ✓ *Escalation. Provide a description of what type of risks may be included in the analysis to determine the escalation. Define how budget values will be derived from analysis distributions.*
  - ✓ ***Integrated Analysis*** *– AACE recommends that integrated cost and schedule risk analysis be done. The details of the process will need to be provided in the risk management plan.* ***For an example****, see RP 57R-09, Integrated Cost and Schedule Risk Analysis Using Monte Carlo Simulation of a CPM Model.*

> 10 RP's



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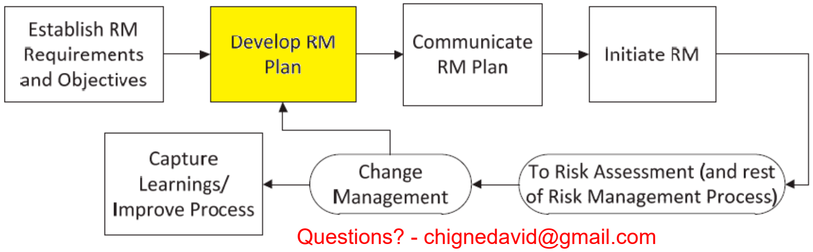
DEVELOPING A PROJECT RISK MANAGEMENT PLAN
TCM Framework: 7.6 – Risk Management

Developing Risk Management Plan

What else?

- *Risk management Schedule*
- *Key Performance Indicators (KPI). a measure of how well the risk management process is performing.*
- *Critical success factors.*
- *Closeout and Lessons Learned.*
- *Reference Documents.*
- *Software.*
- *Risk Management Plan Revision Control.*
- *Apendix: should include examples of any documents referenced in the risk management plan*
- *Reporting.*



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DEVELOPING A PROJECT RISK MANAGEMENT PLAN
TCM Framework: 7.6 – Risk Management

Developing Risk Management Plan

- *Reporting.*

✓ ***What** is to be reported? E.g. the number of risk identified versus analyzed versus treated versus closed, and/or a brief description of the high level risks?*

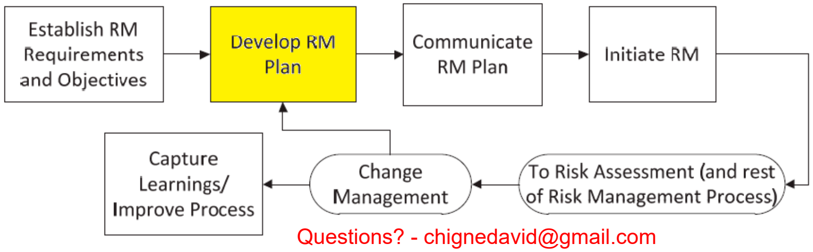
✓ ***Who** is to write the report(s)? E.g. the risk manager, the risk coordinator, and/or the project manager?*

✓ ***When** is it to be issued? E.g. weekly, monthly, or quarterly?*

✓ ***How** is it reported? E.g. single page or a detailed document?*

✓ *Is it meant to be a stand alone report or part of an overall project report?*

✓ *If it is part of an overall project report, who is coordinating the overall report and when does the risk report need to be issued for inclusion?*



Dude... what about RASCI matrix?

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72R-12

DEVELOPING A PROJECT RISK MANAGEMENT PLAN

TCM Framework: 7.6 – Risk Management

Developing Risk Management Plan

	TASK	Sponsor/VP	Project Manager	Risk Manager	Risk Coordinator	Project Controls	Risk Analyst	Engineering	Action Owner	Risk Owner	PMO	Construction	Owner
1	Risk Management Plan	A	C	R	S	C	S	I			I		I
2	Identification		R	C	S	S		S				S	S
3	Qualitative Analysis		R	C	S	S		S				S	S
4	Treatment		I	C	S	S		S	R	A		S	S
5	Quantitative Analysis	I	S	C	S	A	R					S	S
6	Monitoring	I	R	C	S								
7	Risk Reporting	I	A	R	S							I	I
8	Training/Education			A									
9	Risk Standards & Procedures	A		R									

responsible, accountable, support,consult, inform

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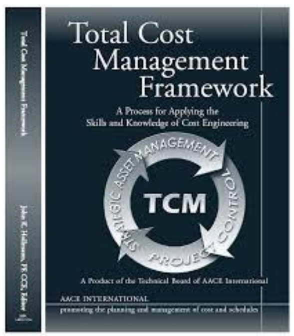
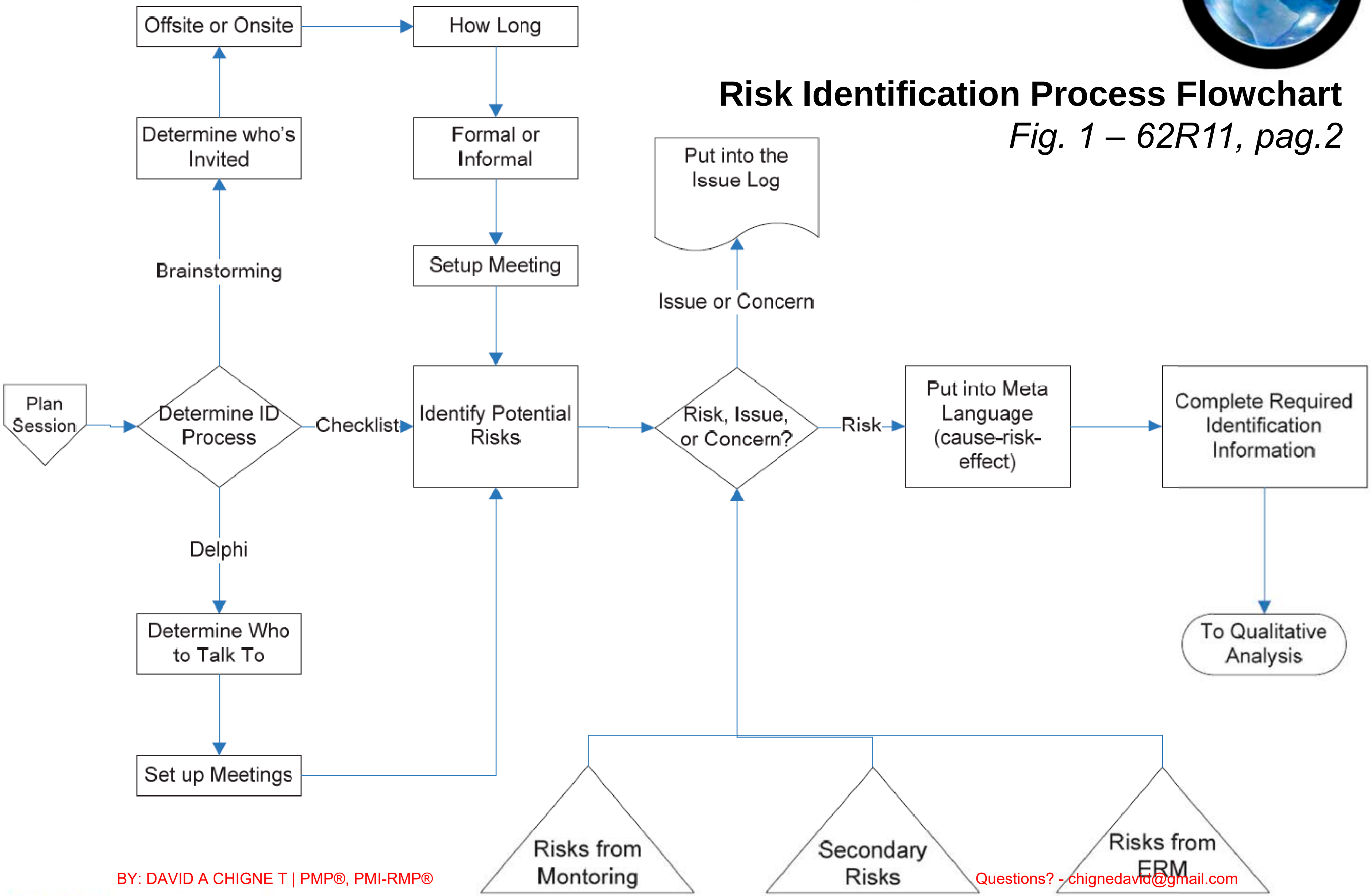


62R-11, *Risk Assessment: Identification and Qualitative Analysis*

Risk Identification Process Flowchart

Fig. 1 – 62R11, pag.2



62R-11
RISK ASSESSMENT: IDENTIFICATION AND QT. AN.
TCM Framework: 7.6 – Risk Management

Risk Identification Process

(…) Issues to be considered

- ✓ ***What.*** *Identify the scope and boundaries of the risk analysis*
- ✓ ***Who.*** *Identify attendees of the risk sessions or who will be interviewed.*
- ✓ ***Where.*** *Where will the session take place?*
- ✓ ***When.*** *Identification meetings and interviews (…) as soon as practical.*
- ✓ ***How.*** *All relevant policies, procedures, and methods (…) communicated to the whole team if possible.*
- ✓ ***Why.*** *(…) explain to attendees why they are involved in the session.*

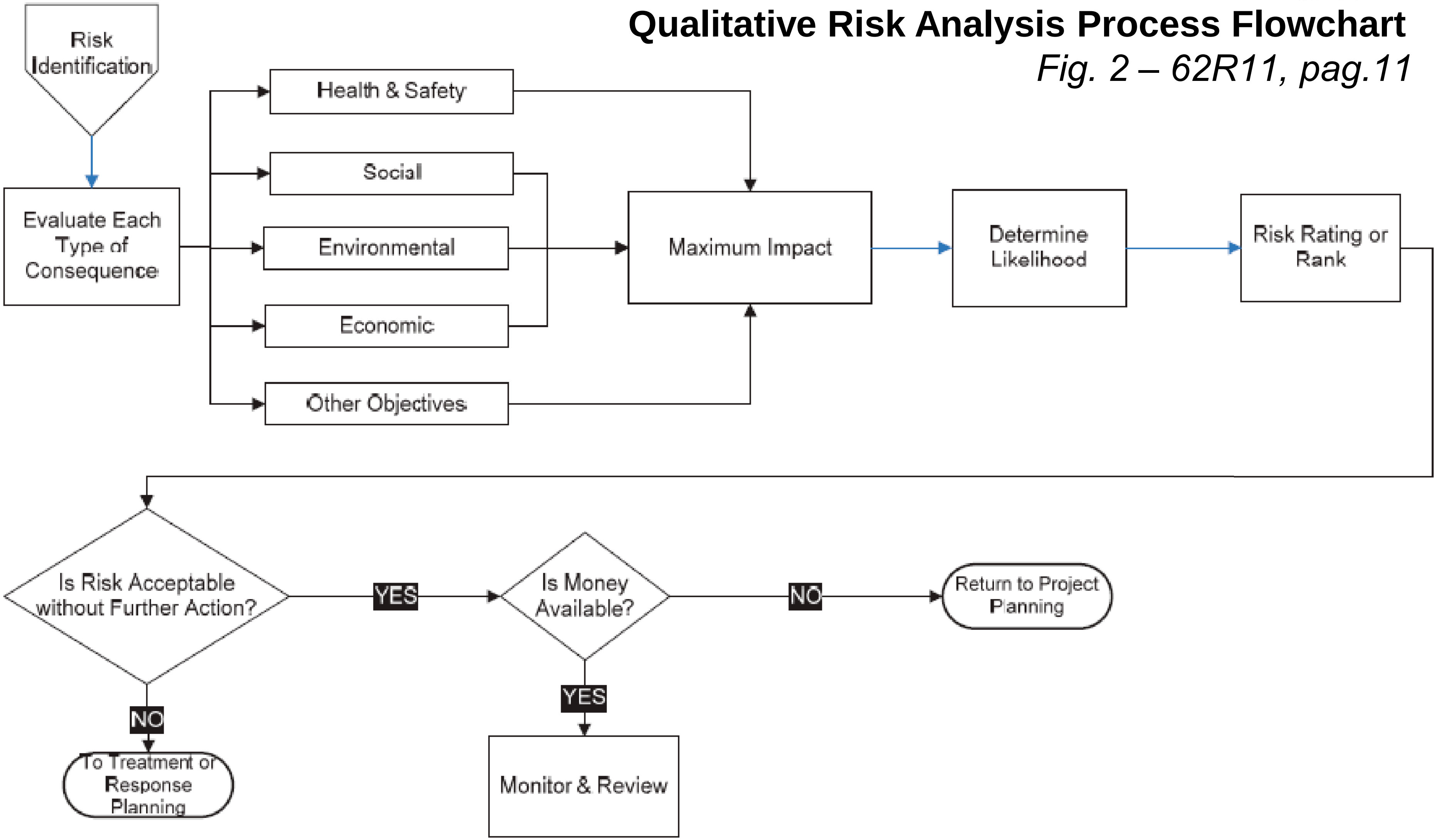
62R-11
RISK ASSESSMENT: IDENTIFICATION AND QT. AN.
TCM Framework: 7.6 – Risk Management

Risk Identification Process – *Who.*

PHASE	TYPICALS SOURCES	POTENTIAL ATTENDEES
Conceptual or scoping study (equivalent to AACE Estimate Class 5).	Historical experience, lessons learned, subject matter expert (SME), checklists, value analyses, insurance requirements, and regulatory requirements.	Business or asset representative, operations/maintenance representative, project manager, engineering or technical manager, and other key stakeholder representatives such as environmental, health and safety, supply chain and so on.
Feasibility study or design (equivalent to AACE Estimate Class 4).	Same as above (but typically in greater detail) plus facilitated brainstorming or Delphi practices.	Same as above (but may represent more specific to asset elements) plus project team functional leads (e.g., technical or engineering, construction, fabrication, procurement, etc.) and SMEs as appropriate.
Project approval (equivalent to AACE Estimate Class 3).	Same as above plus special identification sessions such as process hazardous operations analysis (HazOps).	Same as above. May include 3rd parties such as vendors or contractors as appropriate.
Execution (equivalent to AACE Class 2 or 1).	Same as above though more detailed and emphasis on risk monitoring findings, plus more input from commissioning, start-up and asset turnover.	Same as above with participation of additional vendors and contractors as appropriate and commissioning, start-up and turnover representatives.
Commissioning and start-up.	Same as above but specific to remaining work scope.	Same as above, but specific to remaining work scope.

Qualitative Risk Analysis Process Flowchart

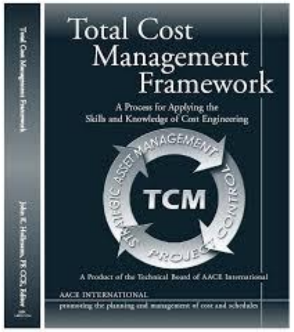
Fig. 2 – 62R11, pag.11



62R-11
RISK ASSESSMENT: IDENTIFICATION AND QT. AN.
TCM Framework: 7.6 – Risk Management

Example of guidelines for (...) other potential parameters

		1 Very Low	2 Low	3 Medium	4 High	5 Very High
Other Risk Analysis Parameters	Risk Reduction Index	Virtually no risk reduction with option	Unacceptable degree of risk reduction with option	Acceptable degree of risk reduction with option	Relatively high degree of risk reduction with option	Extremely high degree of risk reduction with option
	Precision with which risk understood	Virtually nothing known about risk event +50% / -25%	Poor knowledge of risk event +25% / -20%	Average knowledge of risk event +20% to -10%	Good knowledge of risk event +10% to -5%	Excellent knowledge of risk event +2.5% to 0%
	Admissibility	Option almost totally inconsistent with most project objectives	Option inconsistent with majority of project objectives	Option moderately consistent with majority of project objectives	Option consistent with majority of project objectives	Option almost completely consistent with most project objectives
	Achievability	Option virtually impossible to implement	Option relatively difficult to implement	Option of average difficulty to implement	Option relatively easy to implement	Option extremely easy to implement
	Acceptability	Virtually impossible to accept option	Relatively difficult to accept option	Option moderately acceptable	Relatively easy to accept option	Virtually certain to accept option
	Controllability	Virtually impossible to control risk event response	Relatively difficult to control risk event response	Average ease of controlling risk event response	Relatively easy to control risk event response	Virtually certain to control risk event response
	Risk Cost Index	Option risk-cost profile makes it extremely easy to select option	Option risk-cost option profile makes it relatively easy to select option	Option risk-cost profile moderately attractive	Option risk-cost profile makes it relatively difficult to select option	Option risk-cost profile makes it virtually impossible to select option
	Controllability Index	Extremely poor	Below average	Average	Above average	Extremely good



63R-11, *Risk Treatment*

¿What are the strategies for Threats and Opportunities?

Let’s make a statistical sampling…

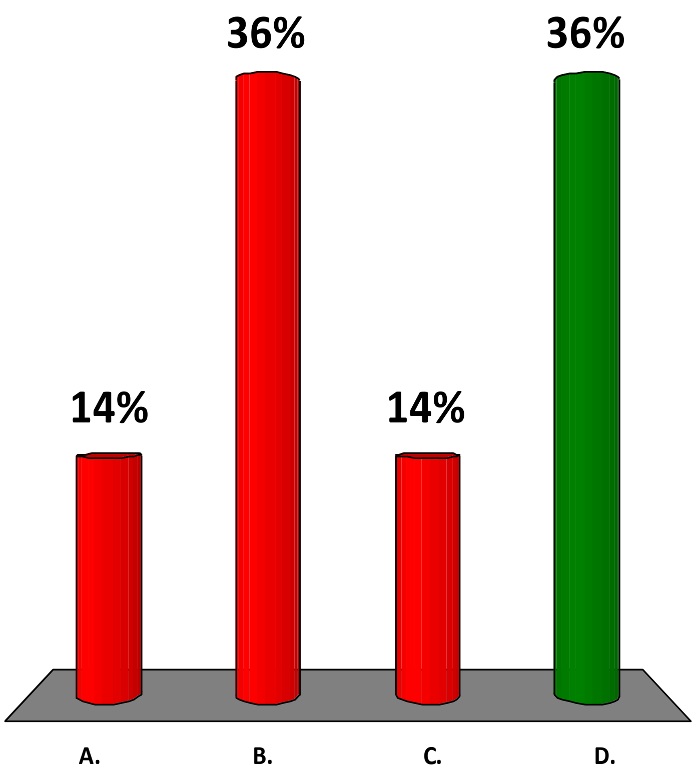
¿Cuáles son las *risk strategies* para los riesgos positivos y negativos?

A. **Positivos:** Explotar, Maximizar, Compartir y Aceptar. **Negativos:** Evitar, Minimizar, Mitigar y Aceptar.

B. **Positivos:** Desarrollar, Mejorar, Compartir y Aceptar. **Negativos:** Transferir, Diferir, Mitigar y Aceptar.

C. **Positivos:** Explotar, Maximizar, Desarrollar y Aceptar. **Negativos:** Diferir, Minimizar, Transferir y Mitigar.

D. **Positivos:** Explotar, Mejorar, Compartir y Aceptar. **Negativos:** Evitar, Transferir, Mitigar y Aceptar.



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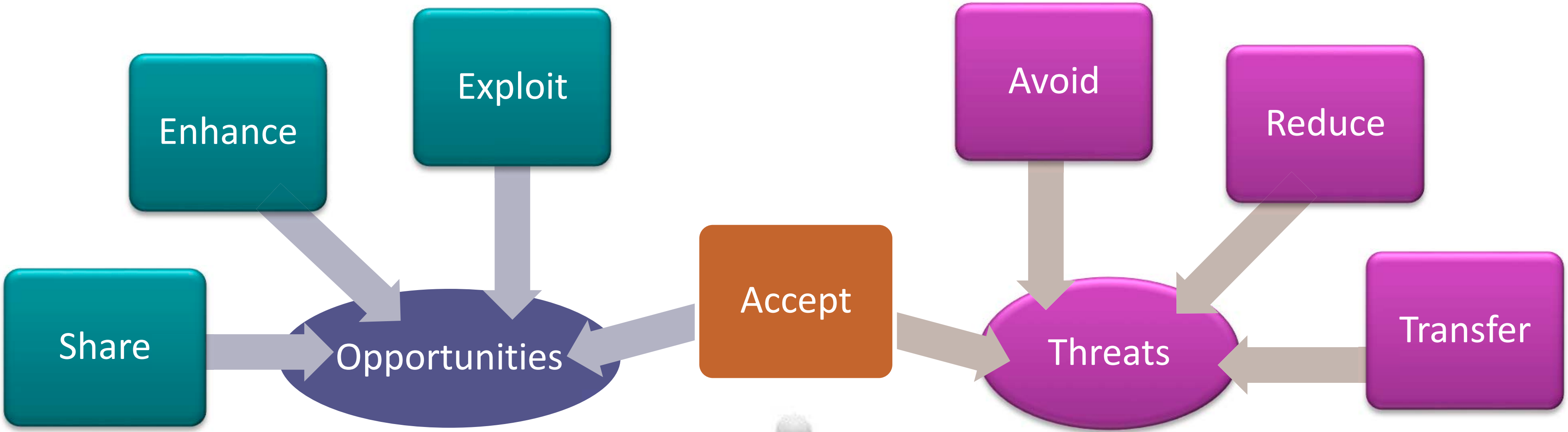
7.6.2.3. Risk Treatment

11.5 Plan Risk Responses



WE ARE ALMOST FINISH…

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Establishing a position**…**

"(…) The perform qualitative Risk Analysis is performed regularly throughout the project life cycle, as defined in the ***project's*** *risk management plan. This process can lead into perform Quantitative Risk Analysis (Section 11.4) <u>or directly into Plan Risk Responses</u> (Section 11.5)."*

PMBOK 5TH Ed. Pag. 329. PMI®

"(…) El proceso Realizar el Análisis Cualitativo de Riesgos se lleva a cabo de manera regular a lo largo del ciclo de vida del proyecto, tal como se define en el plan de gestión de los riesgos del proyecto. Este proceso puede conducir al proceso Realizar el Análisis Cuantitativo de Riesgos (Sección 11.4) <u>o directamente al proceso Planificar la Respuesta a los Riesgos</u> (Sección 11.5).

Risk management is a systematic and iterative process…

Establishing a position**...**

<u>Background</u>

"(...) The TCM risk management process is unique in that it explicitly includes residual risks in the quantitative risk analysis process to determine contingencies and, this RP recognizes that qualitative risk analysis is just a step in risk management."

Pag. 2 – AACE® International Recommended Practice No. 62R-11

El proceso de gestión de riesgos del TCM es único, ya que incluye explícitamente los <u>riesgos residuales</u> en el proceso de análisis de riesgo cuantitativo para determinar las contingencias y, esta RP reconoce que el análisis de riesgos cualitativo es sólo un paso en la gestión de riesgos.

¿What is residual risk?

Let's make a statistical sampling...

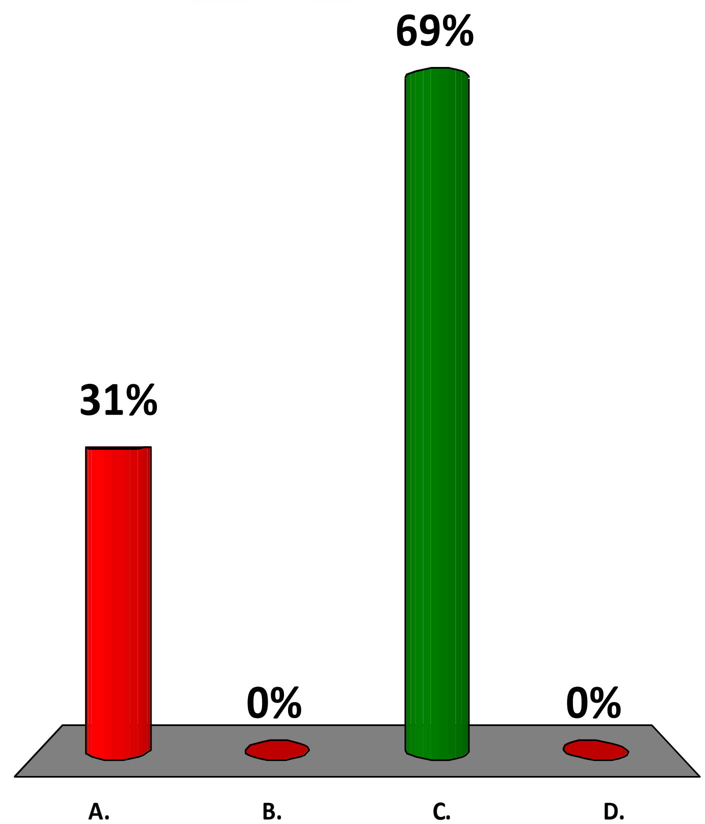
¿Qué es un riesgo residual?

A. Aquellos riesgos que surgen como resultado directo de la implementación de una respuesta a los riesgos.

B. Es un plan de respuesta que se crea dependiendo del impacto de un riesgo en un proyecto.

C. Aquellos riesgos que se espera permanezcan después de la respuesta prevista de riesgo se ha tomado…

D. Es determinar las fortalezas y debilidades del marco de riesgo de la organización.



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Maybe could be an important difference...

About...	PMI	AACEi
Quantitative Risk Analysis (QTRA)	Is performed after qualitative analysis is done and can be optional.	Includes residual risks in the quantitative risk analysis process (...) recognizes that qualitative risk analysis is just a step in risk management

IN CONCLUSION…

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