Office of the Government Chief Information Officer
The Government of the Hong Kong Special Administrative Region

BEST PRACTICES
FOR BUSINESS ANALYST
APPENDIX A
TECHIQUES AND TOOLS
FOR BUSINESS ANALYST

[G60a]

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Change Number	**Revision Description**	**Pages Affected**	**Rev. Number**	**Date**

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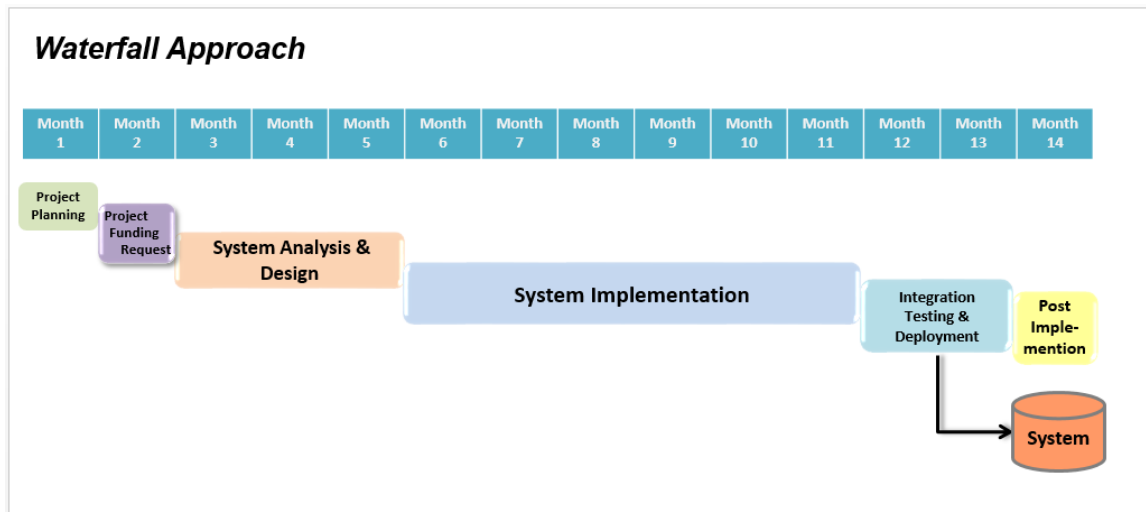# 1   DIFFERENCES IN ROLES AND RESPONSIBILITIES AMONG BA, SA, UAC AND BAC

Table 1 - Roles and Responsibilities among BA, SA, UAC and BAC

No.	Item	Business Analyst (BA)	Systems Analyst (SA)	User Assurance Coordinator (UAC)	Business Assurance Coordinator (BAC)
1	Position in Project Organisation	A member of IT project organisation	A member of IT project team	Member of PAT	Member of PAT
2	Reporting Party	Report to Project Owner, PSC, PAT or Internal PM (according to project needs and project phases)	Report to Internal PM	Report to Senior User in PSC	Report to Executive in PSC
3	Focus	Focus on alignment among business, user and technical perspectives	Focus on technical perspective, transform user requirements into functional requirements for technical implementation	Focus on user perspective	Focus on business perspective
4	Major Responsibilities	• Act as a bridge between user and IT sides and work with IT project team members • Select approach and plan for business analysis activities • Assist in identifying	• Perform system analysis and design including: - coordinate with BA to elicit and analyse requirements; - transform user requirements into functional requirements	• Ensure user requirements are properly specified • Ensure user-related issues/problems are properly managed • Ensure quality control activities and quality control follow-up actions	• Ensure that business issues arising during the project are properly managed • Monitor the progress and cost against project's business case • Coordinate quality

No.	Item	Business Analyst (BA)	Systems Analyst (SA)	User Assurance Coordinator (UAC)	Business Assurance Coordinator (BAC)
		business needs and defining project scope and approaches • Facilitate the elicitation and analysis of requirements, and help users to assess the proposed system option from business perspective • Assist users to perform UAT, and coordinate pre-production and roll-out activities • Evaluate performance of systems against business needs and benefits	for technical implementation; - work with other IT staff to identify suitable solutions; - design system architecture • Perform implementation, testing and data conversion • Perform project evaluation review on technical aspects	are properly conducted from user perspectives • Contribute to project evaluation review	control activities from business perspectives • Contribute to project evaluation review

2 SYSTEM DEVELOPMENT METHOD AFFECTING BUSINESS ANALYSIS APPROACH

(a) Currently, the system development methodologies used in the Government can generally be classified into three main types: the waterfall approach, the iterative approach and the incremental approach. Figure 1 shows the three types of development approaches.

(b) Sometimes, a hybrid approach (e.g. a mix of waterfall and iterative approach) may be adopted. Agile software development method is an example of the hybrid approach. It is suitable for development of applications which requires relatively shorter time to delivery and is very often based on requirements that are of high uncertainties. Agile generally starts the system development with a high-level SA&D and is then followed by repeated cycles of implementation activities. To facilitate the adoption of Agile in the Government, the "Practice Guide for Agile Software Development" is developed to illustrate the Agile practices and provide guidance to B/Ds on implementation of IT systems.
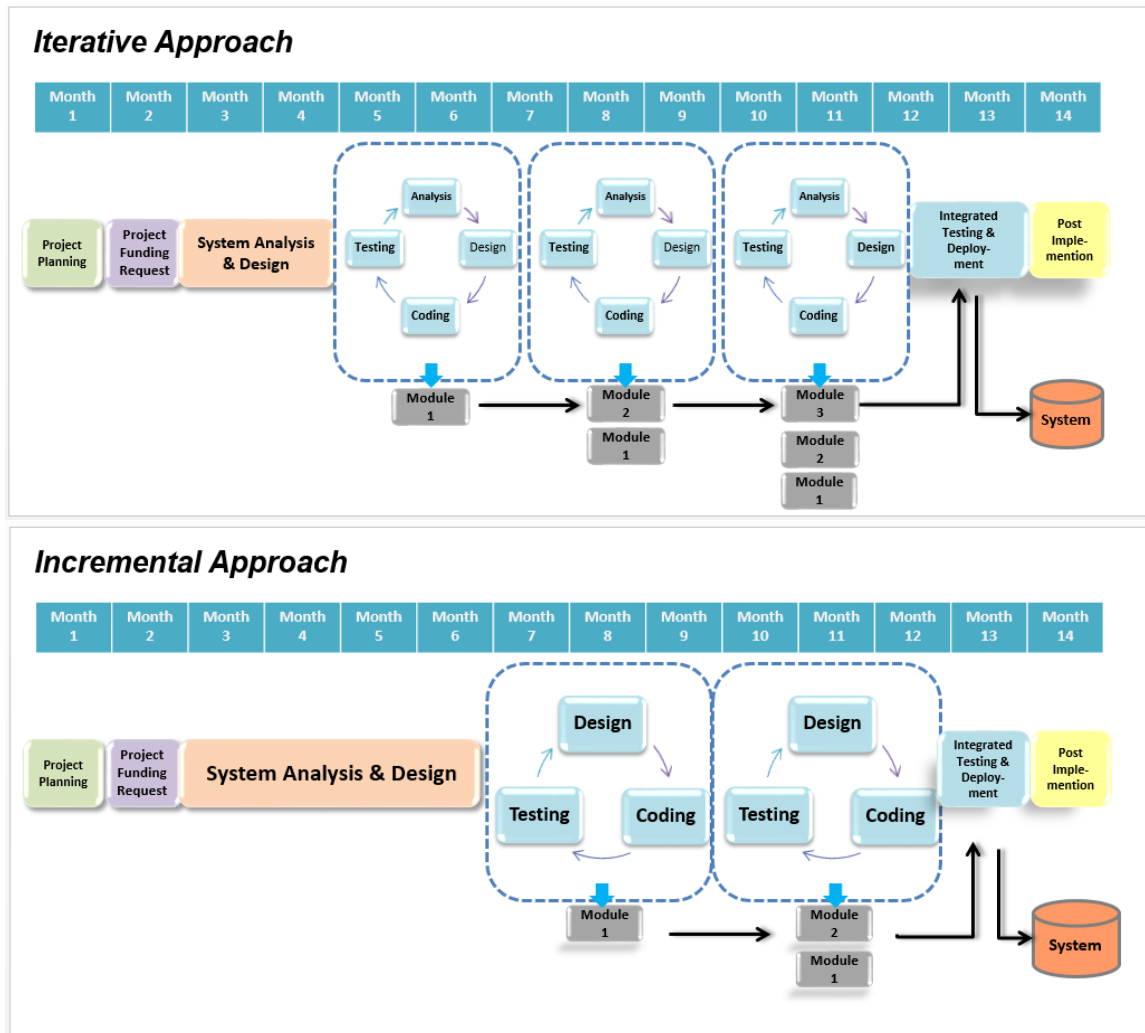
Figure 1 -   Waterfall, Iterative and Incremental Approaches

2.1   Waterfall Approach

(a)   The waterfall approach divides the system development process into phases. The phases are performed one by one sequentially. Each phase will be completed with the target deliverables produced before proceeding to the next phase, i.e. flowing steadily downwards (like a waterfall) and will not go backwards.

(b)   If a waterfall approach is used, the business analysis approach will follow a sequential planned work process. System Implementation will not start until the SA&D is completed. All requirements will be elicited, collected, defined and documented in the SA&D before project team proceeds to implementation. This implies that more business analysis effort will be put at the beginning of the project

to plan the business analysis activities and at the SA&D phase to elicit all user requirements as well as near the end of the Implementation phase to assist users in conducting the UAT.

2.2 Iterative Approach

(a) The iterative approach is to start the system development with a high-level SA&D and then followed by repeated cycles of implementation activities including detailed requirements analysis, design, coding and testing. Each cycle will normally be short, e.g. within one to three months, and will deliver a target group of functions/components that may be rapidly rolled out. In principle, the whole system will be developed gradually in an iterative manner. Rapid Application Development (RAD) is an example of the iterative approach.

(b) At project start, it is often that high-level requirements will be elicited and high-level system design will be defined. This means that not all detailed requirements will be defined in advance of implementation, and there is a higher possibility of uncertainty or change in some of the requirements. Therefore, less business analysis effort will be put at the SA&D phase. Instead, more business analysis effort will be required and distributed evenly throughout the Implementation phase to elicit detailed requirements during each iteration. On the other hand, effort for performing UAT of the entire system at the near end of the Implementation phase will be reduced when comparing with that for the waterfall approach.

(c) There may also be other circumstances, e.g. where users are unavailable at the Implementation phase or requirements are stable and unlikely to be changed after SA&D phase, that detailed requirements will also be defined at the SA&D phase even though iterative approach is adopted.

2.3 Incremental Approach

(a) Object Oriented Methodology (OOM) is an example of the incremental approach. The system is developed on a component basis enabling the effective re-use of existing components to facilitate the building of different modules and functions. OOM divides the system development process into different stages including SA&D (which covers business planning, business architecture definition and technical architecture definition), implementation (which covers incremental delivery planning, design and build) and integrated testing and deployment. Similar

to the waterfall approach, all requirements are finalised at the SA&D before proceeding to implementation. Yet, the system is incrementally developed and rolled out like the iterative approach.

(b)   If an incremental approach is used, the business analysis effort required for the SA&D phase is similar to that of the waterfall approach in which all requirements are gathered before project team proceeds to implementation. But for the Implementation phase, the business analysis effort required for the incremental approach will be similar to that of the iterative approach i.e. distributed evenly throughout the Implementation phase rather than near the end to assist users in conducting the UAT.

3   BUSINESS ANALYST ACTIVITIES/DELIVERABLES CHECKLIST

Table 2 – Example of BA Activities and Deliverables Checklist

(Note: Status of Deliverable - C = Created, R = Referred to, U = Updated, I = Provided input/comment, X = Not used thereafter)

Phases / BA Activities / Deliverables — BA Tasks	Project Planning — Business Analysis Planning			Project Funding Request — Business Case Definition				Feasibility Study / System Analysis & Design — Requirements Definition & Assessment of Proposed System Option & Organisation Readiness for System Implementation							System Implementation — System Implementation and Acceptance			Post Implementation — System Evaluation
	Determine BA Approach	Identify Stakeholders	Plan BA Activities	Define Business Needs	Assess Current Capability Gaps	Define Scope of Proposed System	Develop Business Case	Prepare for Elicitation	Perform Elicitation	Prioritise Requirements	Refine and Organise Requirements	Verify Requirements	Assess Proposed System Option	Review Organisation Readiness for System for Implementation	Support to System Scope & Requirements Management	Support to UAT	Support to Pre-production and Roll-out	System Evaluation
BA Deliverables																		
Business Analysis Work Plan			*C*	*R*	*R*	*R*	*U*	*RU*	*R*	*R*	*R*	*RU*	*RU*	*R*	*R*	*R*	*X*	
User Requirements Document												*C*	*U*	*U*	*R*	*R*	*R*	*R*
Other Project Deliverables																		
Business Case Document							*I*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
Funding Application Form							*I*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
Project Management Plan							*I*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*	*R*
Feasibility Study Report												*I*	*I*	*I*	*R*	*R*	*R*	*R*
System Analysis & Design Report												*I*	*I*	*I*	*R*	*R*	*R*	*R*
User Acceptance Test Plan & Cases																*I*	*X*	
User Manual																	*I*	*X*
Training Materials																	*I*	*X*

(Note: Status of Deliverable - C = Created, R = Referred to, U = Updated, I = Provided input/comment, X = Not used thereafter)

Phases			Project Planning		Project Funding Request			Feasibility Study / System Analysis & Design							System Implemen-tation			Post Implemen-tation
BA Activities			Business Analysis Planning		Business Case Definition			Requirements Definition & Assessment of Proposed System Option & Organisation Readiness for System Implementation							System Implement-ation and Acceptance			System Evaluation
BA Tasks / **Deliverables**			Determine BA Approach	Identify Stakeholders	Plan BA Activities	Define Business Needs	Assess Current Capability Gaps	Define Scope of Proposed System	Develop Business Case	Prepare for Elicitation	Perform Elicitation	Prioritise Requirements	Refine and Organise Requirements	Verify Requirements	Assess Proposed System Option	Review Organisation Readiness for System for Implementation	Support to System Scope & Requirements Management	Support to UAT	Support to Pre-production and Roll-out	System Evaluation
Post Implementation Departmental Return (PIDR)																				*I*

4   RESOURCES ESTIMATION FOR BA

<The following is an example of tasks for helping BA to fill in the estimated effort required which is expressed in term of man-days. Sample contents are written in *"bold italic"* and should be replaced by project-specific information or removed to suit specific project needs.>

Table 3 - Resources Estimation for BA

No.	BA Tasks	Total Estimated Effort (in man-days)	Estimated Effort Per Month (in man-days)										
			Year 1				*Year 2*						
			SEP	*OCT*	*NOV*	*DEC*	*JAN*	*FEB*	*MAR*	*APR*	*MAY*	*JUN*	*JUL*
I	*Business Analysis Planning*												
1	*Explore Business Analysis Approach*												
2	*Identify stakeholders and conduct stakeholder analysis*												
3	*Plan business analysis activities and prepare business analysis plan*												
	Sub-total												
II	*Business Case Definition*												
4	*Assist in identifying and defining business needs*												
5	*Perform gap analysis*												
6	*Define scope of proposed IT system*												
7	*Assist in developing business case*												
	Sub-total												
III	*Requirements Definition*												
8	*Prepare for elicitation*												
9	*Perform elicitation*												
10	*Prioritise requirements*												
11	*Refine and organise requirements*												
12	*Verify requirements*												
13	*Prepare User Requirements Documents (URD)*												
	Sub-total												
IV	*Assess Proposed System Option and Organisation Readiness for System Implementation*												

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No.	BA Tasks	Total Estimated Effort (in man-days)	Estimated Effort Per Month (in man-days)										
			Year 1				*Year 2*						
			SEP	*OCT*	*NOV*	*DEC*	*JAN*	*FEB*	*MAR*	*APR*	*MAY*	*JUN*	*JUL*
14	*Assess Proposed System Option*												
15	*Review Organisation Readiness for System Implementation*												
	Sub-total												
V	*System Implementation and Acceptance*												
16	*Provide support to system scope and requirements managements*												
17	*Provide support to User Acceptance Test (UAT)*												
18	*Provide support to pre-production and roll-out*												
	Sub-total												
IV	*System Evaluation*												
19	*Evaluate system against business benefits*												
	Sub-total												
	Total man-days required												

5 BA TECHNIQUES

5.1 RACI MODEL

(a) RACI Model is a common tool used to clarify the levels of participation of different roles in completing tasks or deliverables for a project. The definitions of RACI are listed below:

   i) **Responsible (R):** Has the duty and obligation to complete the activity

   ii) **Accountable (A):** Has the authority as the ultimate decision maker (i.e. approver)

   iii) **Consult (C):** Has the expertise, experience and interests; must be given the opportunity to influence decisions prior to finalisation by the "accountable" or "responsible" party

   iv) **Informed (I):** Keeps up-to-date about the activity progress, usually upon completion of the activity

(b) To further illustrate, an example of RACI Matrix showing the different roles of various project stakeholders in performing business analysis activities of the SDLC is provided in the following Table 4.

Table 4 - A Sample of RACI Matrix for BA Activities in SDLC

(Note: Status - R=Responsible, A=Accountable, C=Consult, I=Informed)

Phases	Stakeholder / BA Activities	Project Owner	Business Analyst	PSC	PAT	Internal PM	Contractor Project Manager	Systems Analyst	End Users Representatives	External Stakeholders
Project Planning	**Business Analysis Planning**	AC	R	C	C	CI				
Project Funding Request	**Business Case Definition**	AC	RC	C	C	RC				
Feasibility Study/ System Analysis & Design	**Requirements Definition**	A	R	AC	C	R	CI	C	CI	C
	Assess Proposed System Option & Organisation Readiness for System Implementation	A	C	AC	C	RC	R	RC	CI	CI
System Implementation	**System Implementation & Acceptance**	A	CI	A	CI	RC	R	R	C	I
Post Implementation	**System Evaluation**	A	CI	A	CI	RC	I	I	CI	I

5.2   SWOT ANALYSIS

(a)   A SWOT analysis is a useful technique often used in the planning process through evaluation of the Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T) involved in a project or business of an organisation. BA may use the SWOT analysis technique in preparing the business case and the risk analysis for IT projects.

(b)   The four characteristics of SWOT analysis are briefly explained below:

   i)   **Strengths:** characteristics of a project that lead to an advantage over others, such as experienced project teams, good customer relationships, advanced ICT facilities or other favourable internal factors;

   ii)   **Weaknesses:** characteristics of a project that cause a disadvantage relative to others such as lack of business knowledge or technical skills, limited resources or other unfavourable internal factors;

   iii)   **Opportunities:** external factors that could be transformed to advantages such as new ordinances and opportunities to explore new markets and technology; and

   iv)   **Threats:** external factors that could cause risk to project implementation such as uncertain economic environment and political issues.

(c)   BA can perform a SWOT analysis in the following steps:

   i)   Prepare a blank SWOT matrix table as below:

Table 5 -   A Blank SWOT Matrix Table

	Helpful	**Harmful**
	Strengths	**Weaknesses**
Internal Factors		
	Opportunities	**Threats**
External Factors		

ii) Conduct a meeting with stakeholders. Through brainstorming, BA can seek the stakeholders involved to provide views or ideas on the four elements (Strengths, Weaknesses, Opportunities and Threats) of the project.

iii) BA should conclude the findings on four elements and write down on the SWOT matrix table.

(d) An example of the SWOT Analysis table is attached below.

Table 6 - An Example of SWOT Analysis Table

SWOT Analysis *(For the XXX University)* *(Project : Setup a web portal for graduated students)*		
	Helpful	**Harmful**
	Strengths	**Weaknesses**
Internal Factors	1) *Have experienced IT staff in developing the web portals.* 2) *Computer Centre of the University is willing to host the web portal free of charge.* 3) *Have a large number of graduated students.*	1) *Lack of manpower for coordination.* 2) *Lack of funding for promotion of the web portal.*
	Opportunities	**Threats**
External Factors	1) *Improve the relationship with the graduated students.* 2) *Enhance reputation and image of University in the community.*	1) *Need to apply and register with the Government.* 2) *Difficulty in communicating with students graduated long time ago.*

5.3   MOSCOW ANALYSIS

(a)   MoSCoW is a technique that helps users to prioritise each requirement based on its importance. It generally divides requirements into four categories as follows:

   i)   **MUST (M):** describes a requirement that is critical to project success and must be implemented and satisfied by users in the proposed IT system.

   ii)   **SHOULD (S):** represents a requirement that is important to project success and should be included in the proposed IT system. This requirement is often as important as MUST requirement but less time-critical, and can be satisfied in other ways if strictly necessary.

   iii)   **COULD (C):** describes a requirement which is less critical and considered as desirable or nice to have. This requirement will be included if time and resources permit.

   iv)   **WON'T (W):** represents a requirement that will not be implemented in the proposed IT system under the current project scope. This requirement is either the least-critical or inappropriate for the project, but the requirement may be re-considered by other projects or in future.

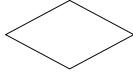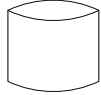(b)   An example of requirement prioritisation using MoSCoW method is stated below.

Table 7 -   An Example of Requirement Prioritisation using MoSCoW Method

No.	Functional Requirements for *On-line Study Room Reservation System in XXX University*	Priority
R1	*Allow student to reserve one time slot of study room per request*	*M*
R2	*Allow selection of multiple time slots of study rooms per request*	*C*
R3	*Send email notification to student if the booking is successful*	*S*
R4	*Traditional Chinese user interface would not be required.*	*W*

5.4   FLOW DIAGRAM

(a)   A flow diagram is a diagram that uses graphic symbols to indicate the nature and flow of the activity steps in a process. It is useful to improve the understanding of a process and helps to identify problem areas and improvement opportunities. Symbols that are commonly used in Flow Diagrams are listed below:

Table 8 - Symbols Used in Flow Diagram

No	Name of Symbol	Description of Use	Symbols
1	Start / End	Indicate a start/end point in a process flow.	
2	Process Step	Show an activity/task that will be performed; if the process is required to be further broken down into sub-processes, another separate process flow diagram may be drawn for each sub-process if necessary.	
3	Decision	Indicate a decision to be made in process at which it leads to different flows	
4	Document / Report	Show there is a document/report input to/output from a process	
5	Data Repository	Use to store information resulted from previous step	
6	Connector	Connect to/from a page or other process flow	
7	Manual Operation	Show an activity/task that is manually performed	
8	Flow	Connect between two symbols	

(b)   There are several steps to draw a Flow Diagram:

i)   As a start, identify key activities/tasks, input, output and data repository of a process.
ii)   Observe, understand and record the sequence of activity steps and decision points.
iii) Draw the Flow Diagram, and verify it.

(c)   Two examples of Flow Diagrams are:

i)   Simple Linear Flow Diagram: It shows a sequence of activity steps that make up a business process. An example is a shown in Figure 2.
ii)   Swim Lane Flow Diagram: It shows the actual process flow and which person or group (in form of a line) is involved in each activity step of the process. The lane can be shown

either horizontally or vertically based on the number of involved parties or the number of activity steps. An example is shown in Figure 3.
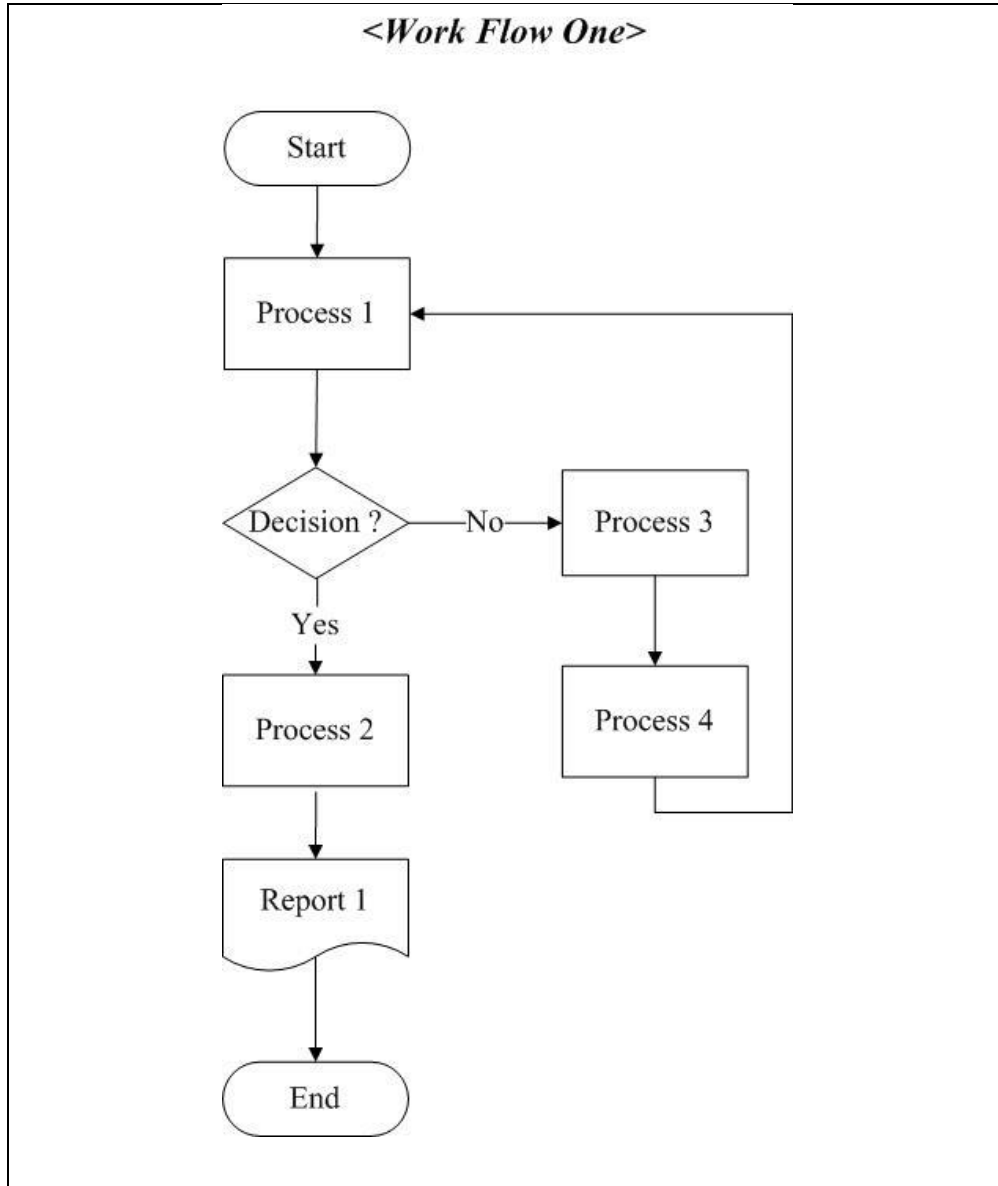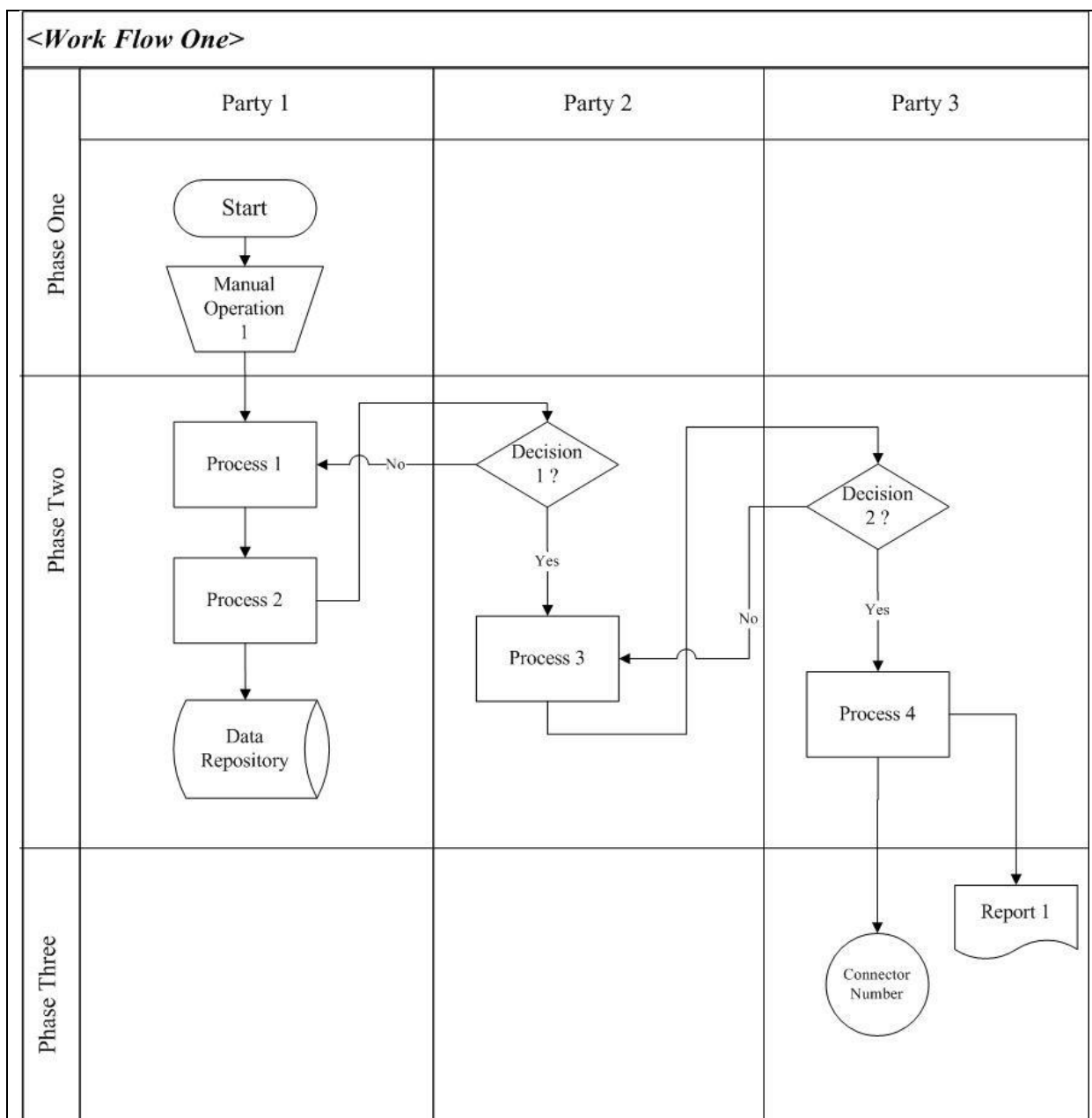
Figure 2 -   A Simple Linear Flow Diagram

Figure 3 -   A Swim Lane Flow Diagram

5.5   REQUIREMENT WORKSHOP AND INTERVIEW

(a)   The requirement workshop and interview is a popular method for BA to elicit requirements. A well-run workshop/interview can facilitate BA to capture better quality of requirements. BA should engage in trust, mutual understanding and strong communications among the project stakeholders and IT project team in order to elicit requirements.

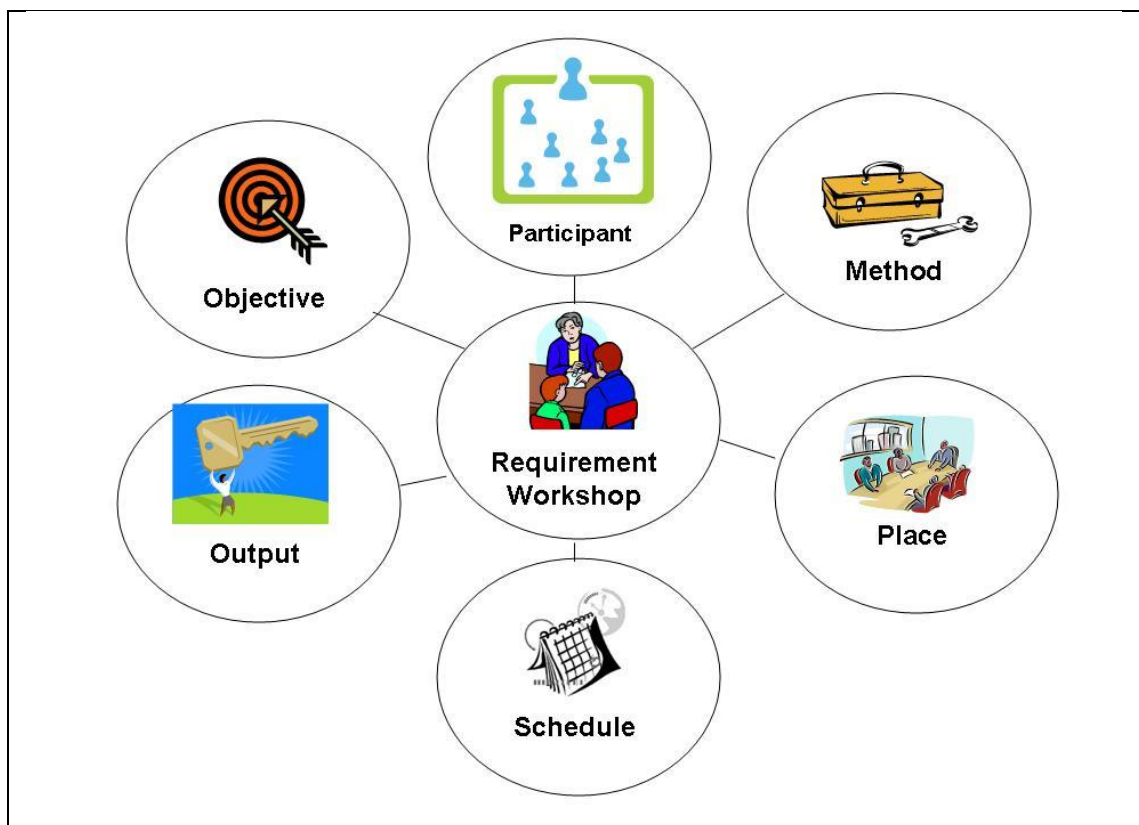(b)   BA can consider the following six elements to perform a well-run requirement workshop /interview:

Figure 4 -   Six Elements to perform a well-run requirement workshop/interview

i)   **Objective:** BA should define the objective of workshop/interview and outline the reasons and justifications for running the workshop/interview.

ii)   **Participants:** All project stakeholders may be invited to participate in requirement workshops/interviews.   Sometimes, the project owner may be present only at the beginning and the end of a series of workshops/interviews.   BA should refer to the stakeholder list and register in the Business Analysis Work Plan to invite appropriate stakeholders to participate in different workshops/interviews.
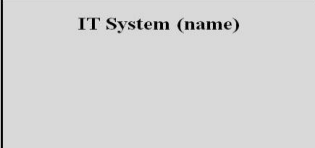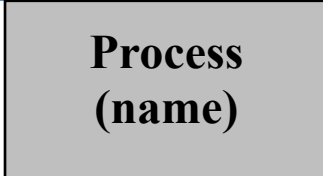
iii) **Method:** For each workshop/interview:

- Prepare a clear agenda. The agenda should state the objectives and the items/activities to be discussed/run in the workshop/interview.
- Define some ground rules, principles or guidelines for the workshop/interviews, e.g. taking notes for follow-up actions, distribution of documented requirements after meeting for review, etc.
- Use elicitation techniques such as use cases, process flow diagrams, prototypes and models.
- Conduct follow-up actions for any unclear requirements.

iv) **Output:** The requirements elicited and collected in workshops/interviews should be recorded and properly documented for further analysis.

v) **Place:** The location of a workshop can influence the outcome. The venue should be comfortable and convenient for both the BA and stakeholders.

vi) **Schedule:** BA should prepare a meeting schedule for all workshops/interviews and confirm with the stakeholders concerned in good advance.

5.6   USE CASES

(a)   Use Case is an analysis model that is written to capture the business events related to the new system from the users' point of view. A Use Case describes how an actor interacts with the system to accomplish one or more of that actor's goals or to respond to an event.

(b)   A Use Case is often presented in the form of a Use Case Diagram with one or more Use Case Scenarios.

(c)   A Use Case Diagram is a diagram that represents a user's interaction with the system and depicts the specification of a Use Case. A Use Case Diagram can portray different types of users of a system and the various ways that they interact with the system. This type of diagram is typically used in conjunction with textual descriptions, and will often be accompanied by other types of diagrams.

(d)   Scenarios are written as a series of steps performed by actors or by the system that enables an actor to achieve a goal. A Use Case describes scenarios in the form of primary and alternate flows. The primary or basic flow represents the simplest way to accomplish the goal of the Use Case. Special circumstances and exceptions that result in a failure to complete the goal of the Use Case are documented in alternate flows.

(e)   Steps for creating Use Cases:

   i)   Identify Use Cases by one of the following ways:
   - Actor Based: Identify the users (i.e. actors) related to the system or organisation, and then identify process with actions or tasks that they will perform or initiate.
   - Event Based: Identify external events that the system needs to respond, and then relate the events to corresponding actors and Use Cases.

   ii)   Create a Use Case Diagram and explain the Use Case for each of the identified process or event using the Use Case template below.

   iii)   Organise and structure the Use Cases to make them easier to follow and understand.

(f)   Some commonly used symbols in a Use Case Diagram are depicted as follows:

Table 9 - Some Commonly Used Symbols in a Use Case Diagram

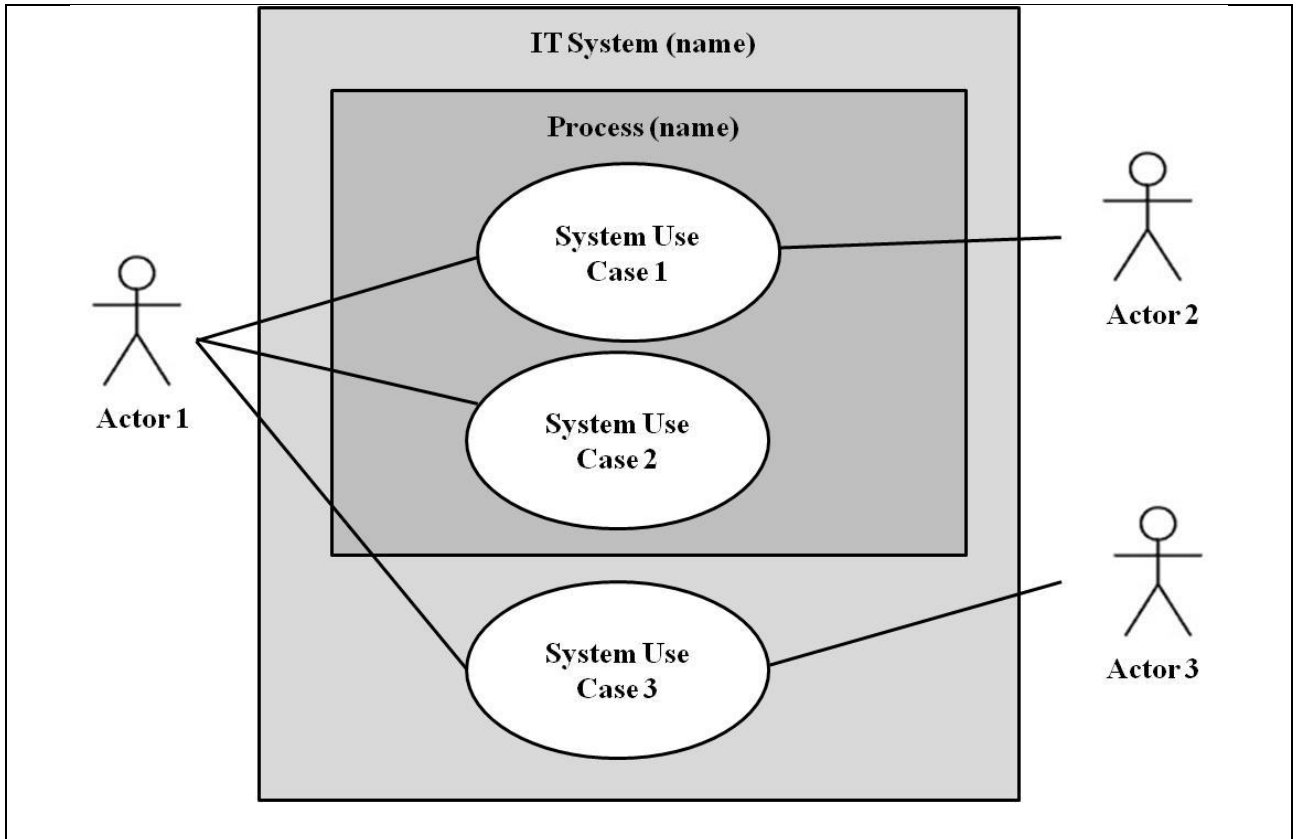| No	Name of Symbol	Description of Use	Symbols
1	Actor	Actor is a user playing a role on an IT system, interacting with the use case.	Actor 2
2	Use Case (UC)	Use Case is a user task which will be a system function / process (The name of UC should be indicated).	System Use Case 3
3	Connection	Connection is interconnection between Actors and UCs.	
4	System	System is an IT system with specified boundaries and system name.	IT System (name)
5	Process	Process is a process with specified boundaries and process name.	Process (name)

Figure 5 -   A Use Case Diagram

(g)   A Use Case template is provided in the following page with explanations. B/Ds can adopt
the template flexibly and make changes if necessary.

Use Case

<<<Use Case Number/ Use Case Name>>>

Table 10 - An Example of Use Case

Use Case Identification and History			
Use Case ID:	*<The ID no. of Use Case>* **UC 1.1**		
Use Case Name:	*<The name of Use Case>* **Create new inventory record**	**Version No:**	*<The version no>* **1.0**
Purpose:	*<The purpose of the Use Case>* **To create new inventory records for newly procured items in sections/teams of the department**		
Last Update by:	*<The last people who update the Use Case>* **Mr. QQ, SA(SU)1**	**On (date):**	*<when was last updated>* **dd /mm/yyyy**
Approved by:	*<The officer who approved the Use Case>* **Mr. PP, SO(SU)1**	**On (date):**	*<when was the approved>* **dd/ mm/yyyy**
User/Actor:	*<The name of the Primary Actor who triggers the Use Case>* **Inventory Control Assistant**		
Business Owner Name:	*<The name who is the Business Owner>* **Mr. CC, SSO(SU)1**		
Trigger:	*<The factor who triggers the Use Case>* **Upon receipt of notification from sections via the Inventory Record Administrator that newly purchased items were received and supplier's invoice was settled.**		
References:	*<The any other reference for the Use Case>* **1. Current manual process flow diagram for the creation of a new inventory record.** **2. SPRxxx Clauses of the Stores and Procurement Regulations** **3. DDD Internal Circular 9/9999 Record of Inventory Items issued on dd/mm/yyyy**		
Frequency of Use:	*<The frequency of use of the Use Case>* **Daily, during office hours**		
Volume of Use	*<The number of users who is involved in the Use Case at the same time>* **1. On average about 100-200 new inventory records per month.** **2. On average about 5 – 50 new items per inventory record.** **3. On average 15,000 newly created inventory records per year.**		
Preconditions:	*<The preconditions of the Use Case undertake>* **Newly purchased items are well-received and distributed to end users in a Section, and supplier's invoice is settled.**		
Post Conditions:	*<The post conditions of the Use Case undertake>* **A new inventory record is created in the system**		
Non-functional Requirements	*<The non-functional requirements for the Use Case>* **1. Table-liked multiple rows entries should be allowed for input of inventory items created under an inventory record.** **2. Any housekeeping tasks should be scheduled in non-office hours unless there is an urgent need.**		
Assumptions:	*<The assumptions of the Use Case>*		

	1. SPRxxx Clauses of the Stores and Procurement Regulations *2. DDD Internal Circular 9/9999 Record of Inventory Items issued on dd/mm/yyyy* *3. Sample documents including GFxxx, invoice and PO.* *4. Current inventory item list (in Excel form).*
Business Rules:	*<The business rules for the Use Case>* *1. It is assumed that any staff in a section who has initiated changes in inventory records of that section will proactively pass all required information to the Inventory Record Administrator of the Section, who in turn coordinates with the Inventory Control Assistant for creation of new inventory records.* *2. Each inventory item is properly categorised and assigned with an item number.* *3. No work-in-progress items will be recorded to the IMS.* *4. Each inventory item shall be linked with the corresponding invoice.*

Main Flow			
Step	**Actor**	**Description**	**Alternate/Exception Flow**
1	*<Actor 1>* *Inventory Record Administrator*	*<The description of the flow step1>* *Inform the Inventory Control Assistant of Supplies Section for receipt of newly purchased items, fill in form GFxxx and pass a copy of certified invoice to Supplies Section for supporting.*	*<The alternate flow 1.1 of step1>*
2	*<Actor 2>* *Inventory Control Assistant*	*<The description of the flow step2>* *Search for any existing, suitable Item Category Code and Item Number.*	*<The exception flow 2.1 of step2>* *If the Inventory Control Assistant can find suitable Item Category Code(s) and Item Number(s), continue Step 3.* *If not, Inventory Control Assistant will have to create new Item Category Code(s) by performing Alternate Flow #2.1, and then continue Step 3.*
3	*Inventory Control Assistant*	*Input the inventory items information (see sample GFxxx form in Appendix XX Reference Documents).*	*The system should perform validity and completeness check of input information such as P.O. number. If the information is incomplete or invalid, the system will request the Inventory Control Assistant to correct the input information at this step.*
4	*Inventory Control Assistant*	*Scan the certified invoice copy into PDF file. Upload the PDF file of the certified invoice copy to the system, and link the inventory items to the invoice.*	

Step	Actor	Description	Alternate/Exception Flow
5	*Inventory Control Assistant*	*Submit the input record to supervisor for review and approval.*	*If invoice amount >= HK$1M, go to Alternate Flow #6.1 Seek Approval from Inventory Control Manager. If invoice amount < HK$1M, go to Alternative Flow#6.2 Seek Approval from Inventory Control Officer.*
6	*Inventory Control Assistant*	*Upon approval, send emails to notify Inventory Record Administrator and Inventory Holder, and then print and distribute bar code labels to Inventory Record Administrator for sticking on the items.*	
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Alternate/Exception Flow	*<Alternate Flow#1.1>* *2.1 Create new Item Category Code and Item Number*		
Step	**Actor**	**Description**	**Alternate /Exception Flow**
1	*Inventory Control Assistant*	*Create a new Item Category Code (if required).*	
2	*Inventory Control Assistant*	*Create a new Item Number with item description.*	*Go back to Main Flow Step#3.*
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4			
5			

Alternate/Exception Flow	*6.1 Seek Approval from Inventory Control Manager*		
Step	**Actor**	**Description**	**Alternate /Exception Flow**
1	*Inventory Control Manager*	*Submit the new inventory record to the Inventory Control Manager for review and approval*	
2	*Inventory Control Manager*	*Approve, or reject and notify the Inventory Control Assistant to make changes and end.*	*Go back to Main Flow Step#6.*
3			
4			
5			