NTUCollab: A Collaboratory Platform for NTU Students

CHANGE MANAGEMENT PLAN

Version 1.3
Prepared by Team Eagles

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VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Gupta Jay	03/17/2021	Gupta Jay	03/21/2021	Initial Change Management Plan
1.1	Mundhra Divyesh	03/23/2021	Gupta Jay	03/25/2021	Added Change Request Process Flow Requirements
1.2	Mundhra Divyesh	03/272021	Gupta Jay	03/29/2021	Added Change Request Form and Management Log
1.3	Gupta Jay	03/31/2021	Gupta Jay	04/01/2021	Final Revision and all Appendices

TABLE OF CONTENTS

1   INTRODUCTION

1.1   Purpose of the Change Management Plan

A Change management plan will be used to define activities and roles among Team Eagles in order to control any change during the development or maintenance phase of NTUCollab. The two major goals for this plan is to raise team awareness of an impending change and help the team adopt and implement the change. To achieve these two objectives, we need to identify a quantifiable set of key performance indicators (KPI's) which is being done in this document. During the change execution, achieving these KPI's as planned will help our team to track toward our final goal.

This document also lays down a set of instruction to facilitate smooth and efficient communication between the developers and project manager of Team Eagles. There must be a proper two-way discussion taking place between developers and managers so that all questions and concerns among the two parties are cleared out. It is quite often that developers have a huge chunk of questions and it needs to be cleared out through an efficient channel by the methods described in this document.

Change is seldom taken in a positive way by a team and hence this document also puts focus on resistance management. When a particular set of people have been performing the same work for a while, they might resist to adapt to new processes as people tend to resist changes naturally. In order to help with it, this document lays out a plan to help Team Eagles adapt to a business change which might involve a certain degree of training or other educational component. This will be particularly achieved by providing training sessions which will be designed to introduce and educate our team members on the changes.
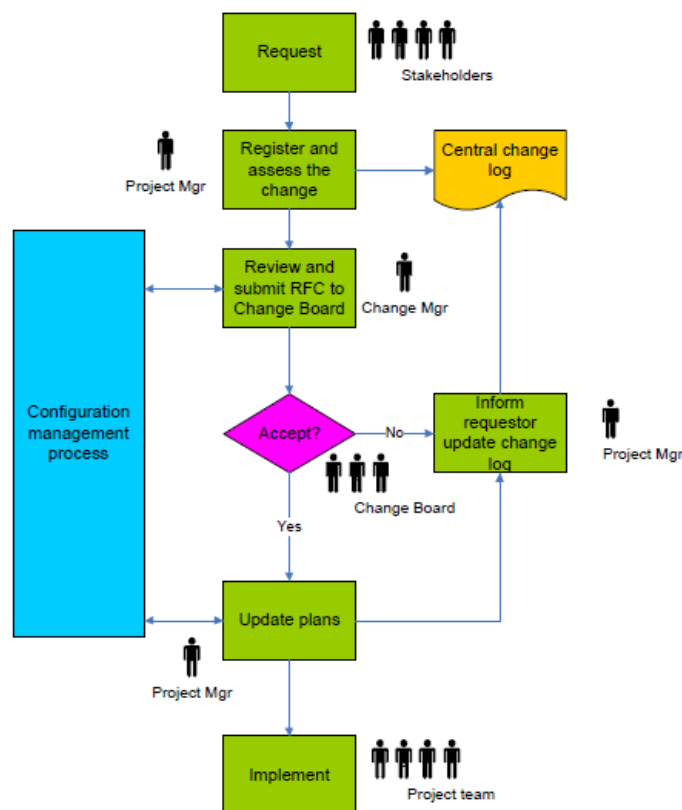
2   CHANGE MANAGEMENT PROCESS

The Change Management process is a series of well-defined steps which needs to be followed by our change management team in order to drive individual transitions and see to it that NTUCollab meets its intended outcomes. This is a process which guides our application change to fruition, from the earliest stages of conception and preparation, through implementation and finally to resolution. It can be used to establish detailed procedures which can then be used for tracking the submission, coordination, review and approval for the release of the proposed changes to NTUCollab.

2.1   Change Request Process Flow Requirements

Step	Description
Generate CR	A submitter completes a CR Form and sends the completed form to the Change Manager. CR can be submitted by a stakeholder in the organization or by an application user so that they can request a change to alter a configuration item.
Log CR Status	The Change Manager enters the CR into the CR Log. The CR's status is updated throughout the CR process as needed. Depending on the type of change, the log report will contain information necessary to make decisions for authorization and implementation of the proposed change. The information would include description of the configuration item which need to undergo change, reason for the proposed change, type of change, timeframe, costs and business justification.
Evaluate CR	Project personnel review the CR and provide an estimated level of effort to process, and develop a proposed solution for the suggested change. Evaluating each and every change to assess its impact, risk and benefits is very critical for NTUCollab since it caters to the NTU Community. The impact assessment will consider the impact on the business environment, application infrastructure, customer service and implementation resources. The changes can also be reviewed by our stakeholders such as technical personnel or service owners to help evaluate the need for change.
Authorize	Approval to move forward with incorporating the suggested change into the project/product. Each change request will require authorization from the concerned authorities before beginning its implementation. The project manager and stakeholders will take a look at the anticipated risk of the change, size of the business at the

	point when the change is presented and potential financial repercussions while evaluating and authorizing the changes.
Implement	If approved, make the necessary adjustments to carry out the requested change and communicate CR status to the submitter and other stakeholders. Once authorized of the changes, the change request will be handed to the release manager for coordination and collaboration with the developers of Team Eagles. Each change will have a backup plan in case it fails to be implemented. Once building and testing of the application according to the proposed changes is finished, release and deployment team should notify the project manager of the results and suggested implementation requirement.
Review and Close	Upon completion of a change, a post implementation review will be carried out. This will ensure all the objectives of the changes have been successfully achieved. If successfully implemented, all the changes associated with fixing errors for this change should be closed. If not successful, the project manager should follow the backup plan appropriately.

Figure 1: Change Request Process Flow Chart

The image above shows the Change Management Process Flow Chart. It shows the processes and the individuals involved within the whole process. The roles and responsibilities performed by stakeholders, project managers, change control board have also been shown for getting a clearer picture of the whole process.

2.2 **Change Request Form and Change Management Log**

The table below shows the fields and descriptions of the change request form. The stakeholders who will be submitting any change request form should adhere to the proposed format and fields stated below.

Element	Description
Date	The date the CR was created.
CR#	CR number is assigned by the Change Manager. This will be used to identify each CR by its unique serial number.
Title	A brief description of the change request. Title should clearly state what the CR is about and convey a clear message to the Change Manager.
Description	Description of the desired change, the impact, or benefits of a change should also be described. The description should contain information on how the change will affect the application infrastructure, business environment and customer service.
Submitter	Name of the person completing the CR Form and who can answer questions regarding the suggested change.
Phone	Phone number of the submitter.
E-Mail	Email of the submitter.
Product	The product that the suggested change is for.
Version	The product version that the suggested change is for.
Priority	A code that provides a recommended categorization of the urgency of the requested change (High, Medium, Low).

The template in the Appendix represents change management log. It will have all the details from the change request form filled into it as and when a request is accepted. This way, it will help to keep a track of all the changes which have been implemented to NTUCollab after its first release.

2.3 **Evaluating and Authorizing Change Requests**

Changes made to NTUCollab's application in an uncontrolled manner can significantly degrade the application experience and can even break the system in the worst cases. Therefore, we have implemented a rigorous and robust process for both evaluation and authorization of change requests such that the changes are delivered with the specified budget and agreed timelines by all parties. The primary motive for such a system is that minor changes that have little impact on the NTUCollab's experience must not carry large development and testing overhead as compared to major change requests.

The authorization of change requests is done by the Change Control Board (CCB) of NTUCollab. It is a committee of subject matter experts and managers that constantly review and authorize if the changes are to be implemented in the project. For this application, there are two types of CCB:

- Project Level CCB
- Software Change Control Board (SCCB)

Before submitting a change request, here are some questions that "you" (any client or stakeholder of the project) can consider:

- Will the change request result in any significant modification of the business requirements or the software requirement specification?
- Will the change request result in a request for additional funds or sponsorship from the stakeholders?
- Is the change request important enough such that it is required to be implemented as soon as possible or can it be delayed?

It is important to consider such factors before submitting a request for change such that it is easy to determine for the project managers whether the change request should be accepted. Once a request is submitted, it is evaluated using the different criterion given below.
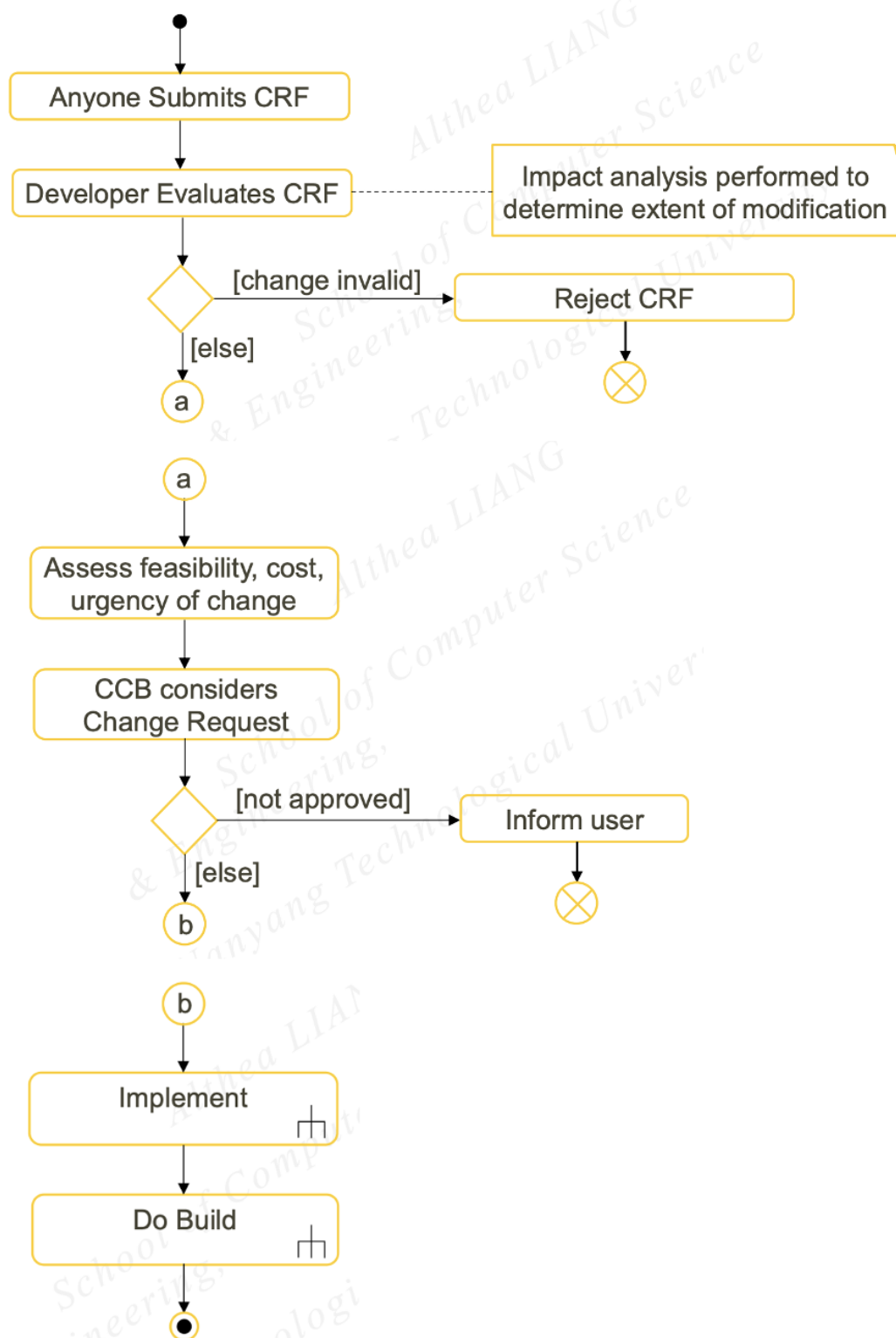
Figure 2: Change Control Process - Evaluate Change
(Source: CZ3002 Change Management Lecture, Dr Althea Liang)

2.3.1   Change Type Criteria

Change Type	Description
Major	The CR contains a new requirement to be added to the product or a significant change/expansion of an existing functional requirement. The project lifecycle timelines will be altered due to the change and additional funding or sponsorship may be required to implement the change.
Minor	It is a routine CR, such as upgradation of programming language version, support libraries, or any other change having little impact on the overall system. It will not result in alteration of the project timelines and will not require additional funding to implement.

2.3.2   Priority Criteria

Priority	Description
Critical	Issues that can cause the application to crash or hang for prolonged periods of time and may result in incorrect results or behaviour. The change carries a high development overhead and no known easy work-arounds. Many users are impacted by the issue and the CR is required to be catered to as soon as possible.
High	Changes or issues that cause the application to produce incorrect behaviour or require change in the functional requirements of the software with no known work-arounds. Many users are impacted and the CR is required to be resolved with immediate attention as it will impact major users.
Moderate	Any issues that impact minimal areas of the software and can be fixed with some known workarounds. It also includes change requests that do not impact critical processes and does not affect critical software components. This CR cause little to no impact on the integrity and performance of the system.
Minor	Minor problems/issues or cosmetic change. There is no loss of system functionality in any manner. This CR does not impact daily process. Rejection of request is viable.

After a change request is evaluated, all the factors pertaining to the project that will be affected are noted down assigned to every CR. The factors are listed below.

Type	Description
Scope	Change affecting the scope of the project listed in the project Software Requirements Specification (SRS) or Software Design Document (SDD) file.
Time & Duration	Change affecting timeline of the project and altering the critical path or due dates of project milestones.
Cost	Change affecting the cost or budget change and requires additional funding or sponsorship from stakeholders.
Resources	Change affecting resources including the equipment or manpower required.
Product	Change affecting the product. Some CRs may only result in change or fixing of non-product areas such as documentation.
Processes	Change affecting the process adopted for the product. Some significant CRs may require changes in the adopted processes to make them more suitable for the current product.
Quality	Change affecting quality of the product.
Availability	Change affecting the uptime of the application to the public domain. Changes related to the back-end system such as database, cloud, or APIs will result in down-time for the user.
Reliability	Change affecting the integrity of the system. Any CRs that introduce ambiguous or experimental features will result in loss of reliability of the application.
Maintainability	Change affecting the maintainability of the product. Large codebase changes or incorrect coding techniques will compromise the maintainability in the future.

As soon as a Change Request is submitted, it is assigned a status of 'Open'. As the request moves along the process of evaluation, authorization, and implementation, the following statuses are assigned to the CR.

Status	Description
Open	The CR has been submitted but not yet approved or assigned by the Change Control Board.
Work in Progress	The CR is approved, assigned to a team(s), and is currently in the implementation and building phase.
In Review	The CR implementation and building work is completed and in final review before to testing and QA.
Testing	The CR review is complete and is currently undergoing testing.
Closed	The CR work is completed, the testing has been successful, and updates have been built and released to production.
On Hold	The CR is approved, a team is assigned, but the work is put on hold and the tasks are currently in the backlog.

2.3.3   Change Control Board

Project Level CCB

Role	Name	Contact	Description
Project Manager	Dandapath Soham	+65 1234 5678	Oversees project progress. Approves and executes project plan.
Lead Developer	Gupta Jay	+65 2345 6789	Oversees all front-end and back-end development activities. Responsible for timely execution of development tasks.
QA Manager	Somani Palak	+65 3456 7890	Responsible for development and direct quality assurance procedures so that the application meets internal and external standards before shipment to users.

Role	Name	Contact	Description
QA Engineer	Bansal Aditya	+65 4567 8901	Oversees on improving software development processes and preventing defects in production and making sure that the software development is done in a correct way with good software practices.
Release Manager	Kanodia Ritwik	+65 5678 9012	Responsible for scheduling, and controlling the software's development and delivery process.

Software Change Control Board (SCCB)

Role	Name	Contact	Description
Project Manager	Dandapath Soham	+65 1234 5678	Oversees project progress. Approves and executes project plan.
Release Manager	Kanodia Ritwik	+65 5678 9012	Responsible for scheduling, and controlling the software's development and delivery process.
Finance Manager	Mundhra Divyesh	+65 3456 7890	Responsible for producing financial reports, direct investment activities, and develop strategies and plans for the long-term financial goals of their organization and the projects.
Service Level Manager	Bhatia Ritik	+65 6789 0123	Responsible for negotiating Service Level Agreements and making sure that the IT Service Management processes, Operational Level Agreements are appropriate

			for the agreed service level targets.
Application Manager	Bansal Aditya	+65 4567 8901	Responsible for managing the software applications within a business and overseeing the specific applications that are needed to improve business operations, and then supervise the installation, upgrading and daily maintenance of software applications.
Business Relationship Manager	Gupta Jay	+65 2345 6789	Oversee initiation and develop relationships with clients for business growth. Keep up with the recent industry trends, markets, and technologies. Develop and maintain detailed business plans for client projects.

3 RESPONSIBILITIES

Role	Name	Contact	Description
Project Manager	Dandapath Soham	+65 1234 5678	Oversees project progress. Approves and executes project plan. Analyses and managing project risk. Monitoring progress. Managing reports and necessary documentation.
Lead Developer	Gupta Jay	+65 2345 6789	Oversees all front-end and back-end development activities. Responsible for timely execution of development tasks.
Change Manager	Bhatia Ritik	+65 6789 0123	Responsible for creating and implementing change management strategies and plans for NTUCollab. He needs to plan in order to drive faster adoption, higher ultimate utilization of the software.
Release Manager	Kanodia Ritwik	+65 5678 9012	Responsible for scheduling, and controlling the software's development and delivery process.
QA Manager	Somani Palak	+65 3456 7890	Responsible for development and direct quality assurance procedures so that the application meets internal and external standards before shipment to users.
Change Agent (Communication)	Bansal Aditya	+65 4567 8901	Provide clear communication to all key stakeholders on change related issues. Measure and improve the

			current communications efforts and overseeing the allocated annual communications budget.
Change Agent (Human Resource)	Bansal Aditya	+65 4567 8901	Provide expert HR advice on personal transitions and support. In charge of recruitment, office administration, interviews, hiring, firing, benefits, organizational trainings and team building.
Executive Project Sponsor	Alvin Ong	+65 9012 3456	Responsible for making sure that risks and changes are managed. Help to ensure control and review processes and oversees delivery of project value. Report to CEO on project outcomes/success

Appendix A: Change Management Plan Approval

The undersigned acknowledge they have reviewed the NTUCollab's Change Management Plan and agree with the approach it presents. Changes to this Change Management Plan will be coordinated with and approved by the undersigned or their designated representatives.

Signature:	
Print Name:	Dandapath Soham
Title:	Project Manager
Role:	Oversees the overall management and back-end development of the project.
Date:	14 March 2021

Signature:	
Print Name:	Gupta Jay
Title:	Lead Developer
Role:	Responsible for the development of the project and all its systems.
Date:	14 March 2021
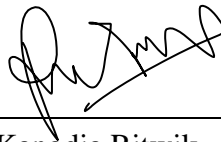
Signature:	
Print Name:	Kanodia Ritwik
Title:	Release & Change Manager
Role:	Monitors and supervises process of operational changes.
Date:	14 March 2021

Appendix B: References

The following table summarizes the documents referenced in this document.

Document Name and Version	Description	Location
NTUCollab_Change_Management_Log_Template	Change Management Plan Template for NTUCollab	Microsoft OneDrive (Nanyang Technological University) → Projects → NTUCollab → NTUCollab_Change_Management_Log_Template
NTUCollab_Change_Request_Form	Change Request Form Template	Microsoft OneDrive (Nanyang Technological University) → Projects → NTUCollab → NTUCollab_Change_Request_Form_Template

Appendix C: Key Terms

The following table provides definitions for terms relevant to this document. (The terms are listed in ascending alphabetical order)

Term	Definition
Authorization	Official permission given by the Change control board members to access a specific system or to carry out a specific function/task/change to the system,
Budget	The estimated cost of the project which is approved by the project manager.
Change Control Board	A group of people who evaluate change requests and approve it based on considerations such as cost, urgency and impact of changes on the system.
Change Management	A plan which consists of set of guidelines of how a team will proceed throughout the development schedule. It consists of the details regarding the authority to approve or reject any changes to the system.
Change Request (CR)	"A formal proposal for an alteration to some system. Such request typically originated from bugs / system enhancement / development of other systems / changes in underlying structure and or standards."
Change Request Form (CRF)	A form which needs to be filled by stakeholders who request a change for the system. This form includes the details regarding the change requested.
Cost	The complete process of estimating the amount of effort required to develop a product.
Key Performance Indicators (KPI)	It is a set of marks used to quantify the achievements of a team during the course of a project. It is used to measure performance of a team against a certain benchmark.
Milestone	These are points in the course of project where a significant event takes place and hence is marked as important. It is used to keep track of time to achieve a set of deliverables during the course of project.
Project Manager	An individual who is responsible for leading a project team. They supervise the whole planning and execution of the project.
Quality	The set of parameters which are used to define product qualities such as sustainability, reliability and maintainability. Product attributes can be compared to set benchmark.

Quality Assurance	The set of procedures implemented to avoid errors in our system. It ensures that a desired level of quality is maintained throughout the course.
Quality Control	The procedures which are used to check that the product satisfies its requirements.
Risk Management	A plan which is developed in order to deal with any unseen circumstances during the course of the project, even after development is completed. It is used to control risks that are associated with any project that is undertaken.
Stake holder	A person, group or company that is involved in the project and they have the ability to affect the outcome of the project as well as get impacted by it.

Appendix D: Change Request Form Example

The example Change Request From attached below can be used to submit changes during the life of the project.

Change Request Form

SUBMITTER - GENERAL INFORMATION

CR#							
Submitter Name							
Brief Description of Request							
Date Submitted							
Date Required							
Priority	☐ Low		☐ Medium		☐ High		☐ Mandatory
Reason for Change							
Other Artifacts Impacted							
Assumptions and Notes							
Attachments or References	☐ Yes		☐ No				
	Link:						

INITIAL ANALYSIS

Hour Impact		
Duration Impact		
Schedule Impact		
Comments		
Recommendations		

CHANGE CONTROL BOARD - DECISION

Decision	☐ Approved		☐ Approved w/Conditions		☐ Rejected		☐ More Info
Decision Date							
Decision Explanation							
Conditions							

Template Word File for Change Request Form –
NTUCollab_Change_Request_Form_Template.XLSX

Appendix E: Change Management Log Template

The detailed Change Management Log template attached below can be used to track and manage requested changes during the life of the project.

Change Management Log Template												
Project Name:												
Project Manager Name:												
Program Manager Name:												
Date Created:												
Date Modified:												
Change #	Type	Description	Date Identified	Status	Priority	Assigned	Expected Resolution	Action	Impact	Date Work Resolved	Sign Off	Remarks

Template Excel File for Change Management – NTUCollab_Change_Management_Log_Template.XLSX