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Change Management Process for IT Services

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Abstract: *The document discusses the general change management for information technology service management. It comprises of the objectives of the process which gives the entire team the lead and procedures to the process. There is scope of the process and steps of the change management process like, normal change, emergency change, standard change, retrospective change and project change. The main processes - normal change management and emergency change management are described with detailed steps and pictorial representation. Their process triggers are also explained relating to each step. The activities involved include, identifying the problem, requesting for change, approval or rejection of the request by the team, implementation, seeking resolution and closure of the change the benefits brought about by a change are also included and the challenges associated with it.*

Keywords: *Global network operation center, Configuration management data base, Release and Service Request schedule, Technical Change Management, Request for change, Emergency Change Management, Change Request, Emergency Change Advisory Board, Change Advisory Board.*

I. INTRODUCTION

In most scenarios, IT and innovation of technology usually brings new changes in an organization. For one to request for a change, he or she has discovered the best ways to improve the status of the business and how to minimize the risks. To remain competitive, the organization has to adapt quickly with the changing trends and they have to satisfy the customers accordingly. Change management process helps an organization to test and implement the new changes without any disruption and interference with the current working state of an organization.

Change management includes pre-release of activities such as roll out, roll back planning and scheduling of the changes that are requested. The roll back plans are included in case the change approval fails. The change owner has to prepare every detail, the steps to be followed for the success of the change and he should monitor the process till the end. One has to go through a number of approvals from multiple stake holders before the change is implemented all risk are assessed and notified.

II. OBJECTIVE

The aim of Change Management is basically to deliver and support the efficiency and effectiveness of the IT services. The approved goals and objectives by various heads of office provide a reference where the implementation and the operational decisions and various activities are checked out. The goal of this process is certainly to control and look closely for the lifecycles of all changes and making sure it benefits the organization.

We have various objectives of change management process; first, a structured process for planning, scheduling and implementing of these changes should be provided by the Change owner. Secondly, response should be provided to the change of request concerning the organization while maximizing the value and working on reducing the incidents and disruptions.

Again making sure that these changes are recorded and mostly evaluated, changes are given priority, must be planned, tested, implemented and reviewed. Need to make sure Service level as agreed are met by using right methods, process and procedures.

Change requests come about when an organization creates or gives a suggestion for various changes they want in an organization or a firm (Ali & Lai, 2016). After a request, various heads have to respond to the RFC (Request for change). As usual business risks should be optimized and ensuring that the methods and techniques are used for the success of this process.

III. INTERFACES WITH OTHER PROCESS

Change management process interfaces with many other process of service management as shown in the diagram below.

A. Release and deployment management:

Release and Deployment Management process ensure that all release and deployment packages can be tracked, installed, tested, verified, and/or uninstalled or backed out if inappropriate.

B. Configuration management:

Configuration management process enables to keep all the computer software, hardware, functionality and performance of the system up to business expectations in line with growing market trends.

C. Problem management:

Problem Management is to minimize the adverse impact of Incidents and Problems on the business that is caused by errors within the IT Infrastructure identifying changes required, resolving problem request using known error data base, problem records created due to a change and reporting on problems.

D. Service desk:

Service desk is the first line of defense who are responsible for reporting, carrying out initial diagnosis, and assigning incidences to relevant teams by using incidents management system.

E. Capacity, availability and performance management:

Processes built within the organization to maintain, adhere and manage policies, maintenance of up to date management/operational documents and manage changes.

F. Security management:

Security management process is used to manage, maintain, implement security protocols, procedures and policies for any change request.

G. Service level management:

As per the agreed service levels, the services are managed, tracked and adhered to for any new change or existing problem. Key activities include identifying any potential change impact on service levels, record and report to SLA's.

H. Service continuity management:

Process to maintain continuity of service with no interruption, assessing impact of change on contingency.

I. Capacity management:

Identify current capacity and maintain right resource capacity to meet the current and future business requirement, record, notify, report and manage the capacity.

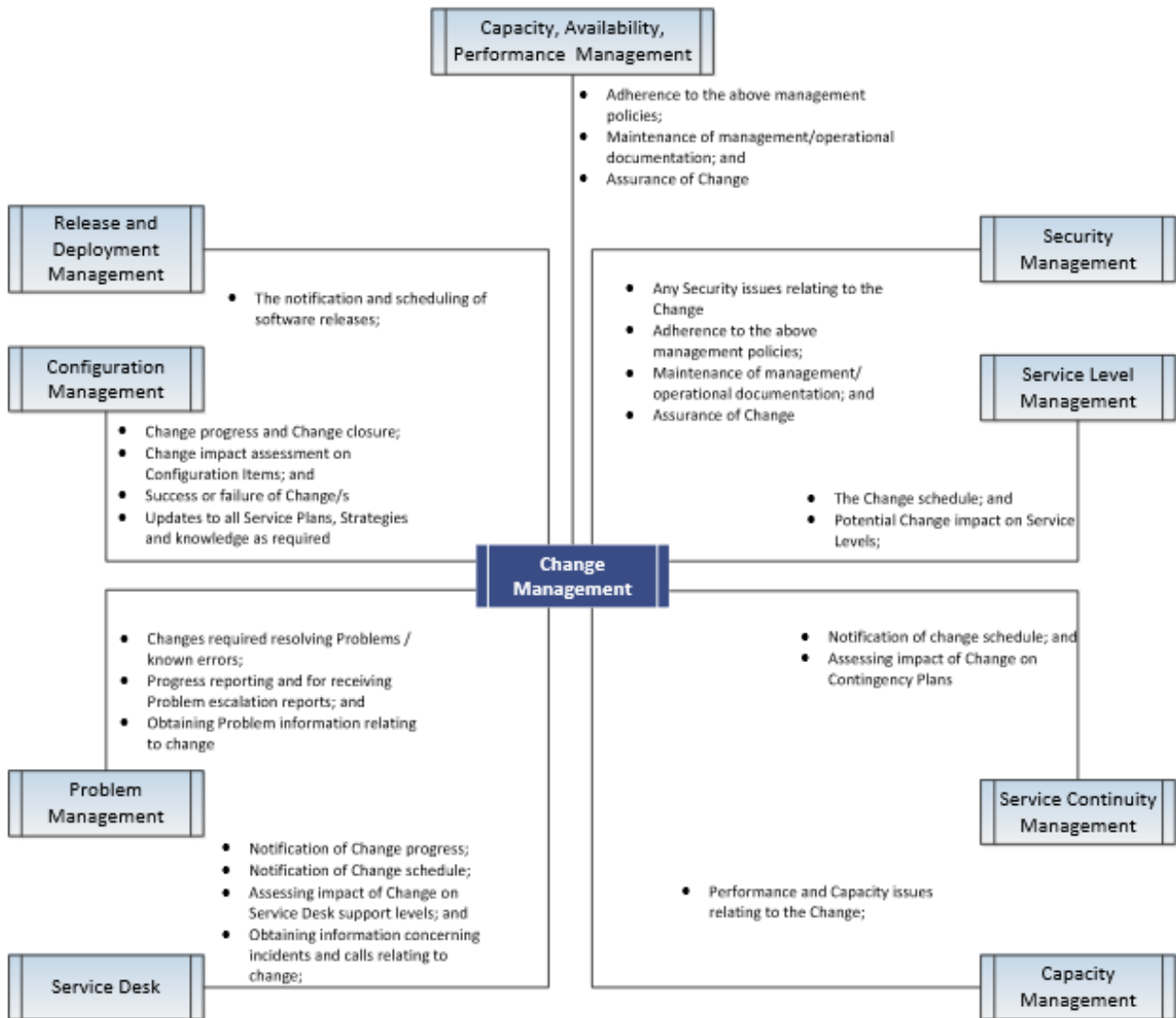


Fig 1: Interface with other process

IV. CHANGE MANAGEMENT PROCESS

Change management processes are detailed as below:

A. Normal Change Management Process

- i) *Step 1- Informing the L2 Subject Matter Expert:* The Change Initiator usually creates a Change, meaning he or she always come up with the ideas for improvement of an organization. The Change Management process owner will have to account for the process throughout (Ali & Lai, 2016). He or she has to inform the Service Manager Expert (SME) about the upcoming change in the organization for one to be prepared one should ensure the Service Manager Expert agrees with the proposal of change you’ve offered. Normal change is reviewed and approved by CAB any changes are instructed to change manager.
- ii) *Step 2- Confirm Outage Window:* After informing the Service Manager Expertise, one has to contact the Release Manager to agree onto the outage window. In case there is no outage window, one should not reach out to the Release Manager.
- iii) *Step 3- Raise Request for Change:* The Request for Change are appropriately assessed before providing authorization for implementation. This will provide increased satisfaction to the customers and minimizes the problems or rather reduces them. Proposing Request for Change must have various details such as; Reason for change, release notes, and priority of change deployment and the environment on which the changes would have to

be deployed. After raising the Change Request, the change will be modified in this stage also known as the planning stage.

- iv) *Step 4- Create Implementation Plan:* In this stage, one has to identify why he or she wants to implement change management, sell the value of change management, assign roles and responsibilities, and define the process for handling changes. One has to major on implementation strategies, their impacts, the risks that are involved, the rollback plans, the testing strategy, and communication plans. All the activities involved in the implementation is to be focused on achieving the goals and the objectives of change management. The role of making decisions and handling of the resistance should be handed over to the change management. Selling the value of change is usually done in most organization and the stakeholders should be involved at the same time the change is informed, since it will affect them directly either positively or negatively so it's very important.
- v) *Step 5- Internal Review:* There is the submission of implementation plan to the Service Delivery Manager and Change Manager to review and accept or reject it before raising a Change Request.
- vi) *Step 6- Review with Release and Service Request schedule(RASR):* For significant changes RASR should be notified of the upcoming changes to identify the upcoming conflict. The L2 team needs to review the RASR schedule to identify if any other changes might impact or be impacted by the Change proposed
- vii) *Step 7- Review with L2 SME:* Reviewing of the plan by L2 SME is required prior to the Change Advisory Board (CAB). If no CAB is required, the implementation plan is submitted for the next evaluation stage that is Request for Change.
- viii) *Step 8- Submit Request for Change:* The request for change is submitted to Technical Change Management (TCM) team. The CR cannot be changed once it has been submitted to TCM. The Change Request is moved to pending Status and filtering and classification stage. The plan needs to be emailed to the change manager where Change Request will be ready for implementation.
- ix) *Step 9- Perform CAB review:* The Change Advisory Board will be able to review the whole document, the process, the accuracy of technology's impact. They should also come to an agreement in that, the change should be satisfying and send it to all the parties, in case the issues are not resolved, they have to cancel it to initiate another process. The change should be classified as an outstanding and communication to be sent to all parties. If the outstanding issues are not resolved, the change is cancelled
- x) *Step 10- Filter CR:* The change request is to be filtered by the TCM. They ensure that the correct lead time applies. Ensuring all the required detail has been provided in the Implementation plan
- xi) *Step 11- Add approval groups:* In case the Change Request is accepted, it is taken for approval in the groups and if it is not satisfying it will be taken back for another planning process. The L2 team identifies more approvers and contact TCM team to add to the Change Request.
- xii) *Step 12- Release CR approval:* There are two process involved in this stage, approvers approve the change and the decision is to be forwarded to CAB. Second after the approval of the plan, the Change Advisory Board is supposed to release this Change Request, if the CR is not released within 24 hours follow up is done with the TCM and CAB. Finally, CAB will send the email to stakeholders to implement the change.
- xiii) *Step 13- Stakeholder's Review of CR:* After reviewing the change, the stakeholders will name it as scheduled. They should make sure that appropriate stakeholders are informed/consulted. Stakeholders should ensure that the reviewed plan does not clash with other scheduled changes.

- xiv) *Step 14- Set Stage to final filtering:* After all the approvals are obtained from stakeholders, the next stage is final filtering where the change request status is changed to scheduled and usually ready for implementation.
- xv) *Step 15- Implement change:* The resources needed for implementation are engaged, the TCM team is informed to start the change, deploy and test it. Rollback change if foreseen failure as per implementation plan. Prepare necessary reports and update documentation as required. The impact of the change has been accessed to see if the change implemented within a change window addresses the identified issue or the implemented change addresses the identified issue but also impact other issue or implemented change did not address the identified issue.
- xvi) *Step 16- Contact GNOC (Global network operation center):* L2 support team will contact GNOC in case of failed change and GNOC will intern analyze the failure and act accordingly.
- xvii) *Step 17- Preparation failed change report:* In case the change is unsuccessful, a change report will be prepared by the Change Implementer.
- xviii) *Step18- Conduct failed change review:* Team will also conduct the failed review, Change Management will help in correcting the change and the report will be prepared.
- xix) *Step19- Update CMDB (Configuration management data base):* CMDB will be updated if change is successful
- xx) *Step20- Set status to resolved:* L2 team updates the change with necessary reports and sets the status accordingly.
- xxi) *Step 21- Review and close change:* Review and close change request.

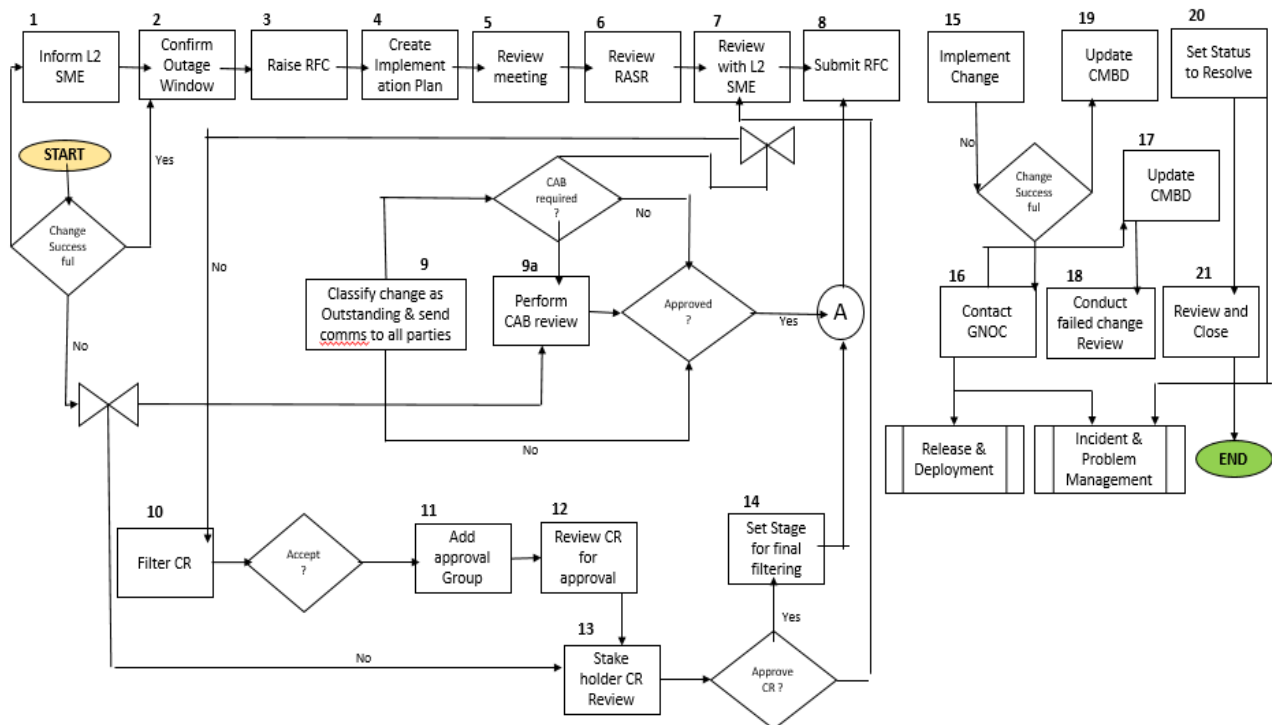


Fig 2: Normal change management process flow

B. Emergency Change Management Process

Emergency Change Management (ECM) will apply to all Change Requests (CRs) which do not meet the standard lead time requirement. The intention of the Emergency Change Management Procedure is to control the ‘Urgent’ changes so that a high level of service can be maintained. It will result in a higher level of performance and customer satisfaction and also keep time spent in investigating perceived problems in the network to a minimum.

Inform the L2 SME of the emergency Change request. Gain approval from the L2 SME. Inform Change Management of the emergency change details and eCAB requirements. Review RASR to determine if there are any scheduling conflicts or impact, raise Emergency change and obtain the Change reference, progress to GM approval or eCAB with implementation plan, CR ready for implementation.

The eCAB will review the documentation provided in the Change Request i.e. Implementation plans, test results, back out plans, impact of change, on confirmation of no existing tickets an email approval is obtained by service manager. Emergency change request is created and TCM team is engaged. Implementation plan is created other approvers are added based on the change impacted to other systems. Work with all identified stakeholders to secure approvals on securing the same Implement the change, changed are tested and deployed. Access to see if the change was successfully implemented within a change window and addressed the identified issue however it had an unknown impact to another service or service component, if the change is not successful the Changes are rolled back successfully within the Change Window

The last stage is to always prepare a Failed Change Report where Change Implementer and Change Management teams are always there to look for a solution to the problem. In case the change has been declared successful, one is to take inputs from Change Manager. The final stage will always update Change Request and after getting a resolution, it will be reviewed finally and closed (Cameron & Green, 2019). Emergency changes can also be applied to the reduction of risk associated with the company. In the Emergency Change process, every change will receive a post-implementation that will enable an organization to have good benefits and also reduce the cost of production and profit will be made exclusively.

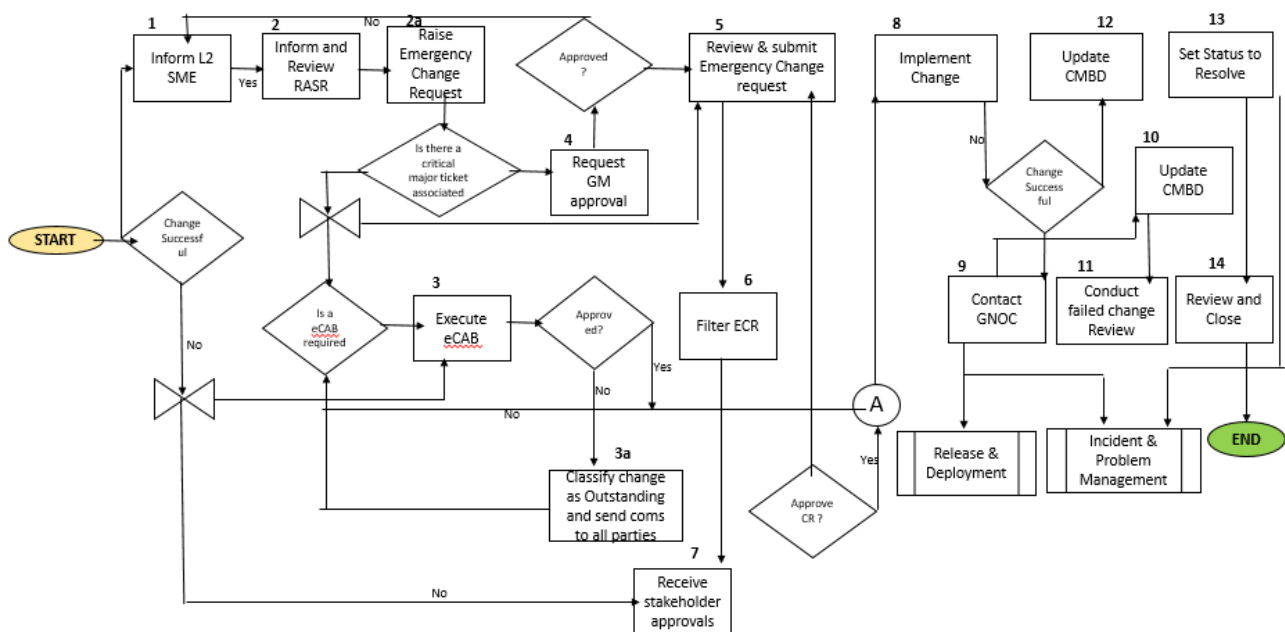


Fig 3: Emergency change management process flow

C. Standard Change Management Process

As usually said it is favorable and simplest since Change Advisory Board and stakeholder’s approvals are always required. The risks are usually low. Minimal planning is usually required in standard change management process to perform a Change Request.

D. Retrospective Change Management Process

This change is always created after the completion of standard changes. It always tries to restore the service for it to fix or correct a system outage. The summary of the application should be recorded and the changes will have to be implemented with the Service Manager.

E. Project Change Management Process

Project change management process's change ownership lies in the hand of project managers for change requests. This area entails the following; planning, and building of a project, raising change on a remedy, and its implementation.

V. IMPORTANCE OF CHANGE MANAGEMENT PROCESS

We have various benefits of this process to various individuals, both the IT Service Providers and even the Customers when the change is implemented successfully (Ali & Lai, 2016). They include;

- Improves institutional best practice by ensuring quality service delivery
- Change management help in analyzing the impact to the business and implement the change faster and keeping to a budget.
- Effective management of the change process will help bring in better customer delight and service.
- Improving the capability of analysis to other operations currently performed in the organization and eliminating cross impact.
- Increased or improved visibility and communication of changes to our esteemed customers more so the business
- There will be a better business perception of Information Technology due to the improvised quality of the plan to be implemented.
- The risks that are always experienced in an organization will be reduced and this will result in a perfect income or profit.

VI. ROLES AND RESPONSIBILITIES

Roles	Responsibilities
Change Management Process Owner	He or she should ensure the purpose of this Change request is fit and ensure quality reports. Always accountable to the organization or customers in case, the changes have negative effects. He or she has to ensure there are no technical mistakes. He or she is also the one to give out the procedures and authorizes the process implementation. This is to avoid conflicting ideas from different personnel.
Change Manager	He or she is responsible for giving a valid report and information to the Change Management (Rosenbaum et al., 2018). They receive, accept, and review Request for Change. They also give notification to the Stakeholders. He or she also is responsible for various changes within the Change Request and should improve the quality and quantity of the services.
Change Advisory Board	They usually review changes made and always give a resolution to conflicts that arise from Request for Changes. If they are not able to give out the resolution the plan is always canceled.
Change Tester	They usually perform the test plan by helping the Change Manager
Stakeholders	They allocate any suggestion for every Request for Change
Emergency change advisory board	They should first look into the Change Request and find out if it belongs to the Emergency Change. They also ensure the recording of the Emergency Change into perfection.
Change coordinator	They are also known as the subject matter experts who usually assess, plan, and monitor the process (Rosenbaum et al., 2018). They always ensure that each procedure, the instructions of the work, the tools are used and followed well.
L1 team	L1 team are the resources who interact with customer and provide first level support to resolve the issue.
L2 team	L2 team are responsible for raising the Change Requests and delivery of corrective action tasks.

VII. CONCLUSION

The change management process ensured that standardized procedure, methods and process are efficiently used for an organization by prompt handling of all Changes, in order to minimize the impact of any related Incidents upon services,

implementing these business-critical changes which help improving IT service quality and better project outcomes lowering project costs.

Effective solutions are identified for an organization, based on the implication the change management process brings to the current operations. Change management process categorizes changes based on the severity as Normal and Emergency which are the most important category which go through multiple stake holder approval before implementation.

By properly managing the changes using change management process within an organization, help reduce the incidents that would affect efficiency, and maintain company productivity.

VIII. GLOSSARY

Change	This is the addition, modification, or removal of anything that could affect Information Technology services.
IT Service	A service is a means of delivering value to customers by facilitating outcomes the customers want to achieve without the ownership of specific costs and risks.
Impact	A measure of the effect of an incident, problem, or change on the business process.
Implementation	The process of moving an idea from a concept to reality.
Risks	These are negative outcomes in an organization.
Change Management	The process for managing the addition, modification, or removal of anything that could affect IT services resulting in minimal disruption to services and reduced risk
Change Record	A record containing the details of a change.

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Maqbool Jameel Ahmed, is presently working as a Director in Supply Chain Management & Digital Transformation in Information Technology sector. He has overall 15 years of experience in the area of Business Enterprise System Implementation and Operational support. He is highly experienced in Enterprise Resource Planning and led multiple large sized clients to transform their IT platform by implementing ERP's–SAP, Oracle, Digital platforms. He has guided graduate and post graduate students on Enterprise resource planning applications He has extensive experience in IT infrastructure management, Project management, Project analysis, Cost control, Resource management, Financial management, critical analysis, problem resolution and Quality assurance.