Northeastern University

TEAM CHARTER: PROJECT TEAM-4 **PJM: 6135 (20296)**

PURPOSE OF THE TEAM:

- To create a culture of trust and respect via teamwork, work ownership, time management, leadership, and communication skills. To be the model for exceptional serviceability, dependability, and life transformation.
- Apply outstanding thinking to the production of concepts and works that enhance people's living places both aesthetically and functionally.
- Offering strong solutions to pursue greater objectives and fostering the best culture of teamwork for improved management and environment at work.
- Through in-depth learning, guarantee the project's success and achievement in all important areas.

TEAM BACKGROUND & CONTACT INFORMATION:

The team possesses a combined technical and non-technical background spanning several years in the D2C; B2C business, power sector, and IT service industry.

Name	*Contact*	*Background*
Saad J. Choudhry	choudhry.sa@northeastern.edu +1 (845) 689 7319	Graduated in Electrical Engineering from Lahore, Pakistan in 2014. Previously worked in power sector in Pakistan and China. Now, I'm pursuing Master's in Project Management customized for technical projects.
Aabhas Maru	maru.a@northeastern.edu +1(857) 869-6710	Graduated from Indore, India in commerce with honors in 2021 and currently honing skills in Project Management with concentration in Analytics & Agile.
Vishva Jigneshkumar Bhatt	bhatt.vish@northeastern.edu +1(617) 238-4381	Graduated (2021) from Gujarat, India in Electrical Engineering. Possess one-year professional work experience as a GET at HCL Technologies, Noida, India. Currently, pursuing Master's of Science in Project Management with major in Analytics.

Arda Altinsoy	altinsoy.a@northeastern.edu +1 (339) 227-1758	Graduated in 2022 as a business administrator in Istanbul, Turkey. Currently studying master's in Project Management with analytics concentration.
Shuhaib Khan Sajjad	Sajjad.s@northeastern.edu 857-746-0842	Holds a bachelor's degree in Engineering (2019). Has 3 years of varied work experience in operations, research and quality management. Currently pursuing MSc. Project Management with a minor in analytics.

TEAM COMPOSITION:

Our team consists of 5 individuals that share the goal of achieving the highest degree of productivity, goal-oriented practices, work ethics, and efficiency in delivering the project every week.

COMMUNICATION TOOLS & TECHNIQUES:

The goal of open communication is one of our core beliefs & we follow below mentioned tools & techniques to achieve it.

- **In-person Meetings:** Regular discussions and duty distribution after class.
- **MS Teams Meetings:** Detailed plannings and assignment creations.
- **WhatsApp/SMS:** Direct communication among group members and meet scheduling.

MEMBERSHIP ROLES & RESPONSIBILITIES:

- **Manager/Leader**

  - Clarifying assumptions and uncertainties.
  - Acting as a liaison to the instructor when required.
  - Making sure that individuals are advised of the team's action plans and delegating requisite tasks as necessary.
  - Setting deadlines for individual submission, group editing, and final submission to the instructor.

- **Facilitator**

  - Checking in with any group members who have not contributed to the discussion as assigned.
  - Logging with the instructor nonparticipating or nonresponsive group members.

- **Quality Controller**

  - Checking and ensuring the project is adhere to its defined scope and time.
  - Identifies the issue that led to decrease in quality of the project.
  - Present deliverable that will improve the quality of the project.

- **Recorder & Support**

  - Gathering separate submissions to produce a coherent, linguistically, and technically sound document. This needs to be done with enough time in advance to allow for group editing and criticism.
  - Showing a major contribution to the team's agreed-upon research, writing, replying, editing, etc. criteria.

TEAM ROLES ROTATION SCHEDULE:

- Each Team Member shall take up responsibilities on a weekly rotation basis. This will help the team benefit from the unique skillsets of every individual.
- The roles will be taken up as per the schedule in the table below. Cross functional contributions will be required owing to the small size of the team.
- If an Individual is unable to take up a managerial role in any of the weeks assigned to them, they are obliged to inform the rest of the team well in advance to avoid confusion and work backlogs.

Week	*Manager/Leader*	*Facilitator*	*Quality Controller*	*Recorder*	*Supporter*
1	Aabhas Maru	Shuhaib Sajjad	Saad Choudhry	Arda Altinsoy	Vishva Bhatt
2	Vishva Bhatt	Aabhas Maru	Shuhaib Sajjad	Saad Choudhry	Arda Altinsoy
3	Arda Altinsoy	Vishva Bhatt	Aabhas Maru	Shuhaib Sajjad	Saad Choudhry
4	Saad Choudhry	Arda Altinsoy	Vishva Bhatt	Aabhas Maru	Shuhaib Sajjad
5	Shuhaib Sajjad	Saad Choudhry	Arda Altinsoy	Vishva Bhatt	Aabhas Maru
6	Aabhas Maru	Shuhaib Sajjad	Saad Choudhry	Arda Altinsoy	Vishva Bhatt

GROUND RULES:

- Professionalism is mandated.
- Active Contribution in each stage of the project is required for smooth team functioning.
- When Problems arise, the team will resolve them together without pointing fingers.
- Constructive criticism is encouraged, and this is to be received on a positive note by everyone.
- We encourage all team members to put their thoughts on the table during each team meeting.
- Personal problems should be notified to the team manager so that it does not affect the project.
- Deadlines should be strictly adhered to.

DECISION MAKING PROCESS:

- Key findings and management of speedy analyses among all comments plus ideas.
- Carefully analyzing tasks and analyzing them according to their priority.
- The resources required for the project are assessed and secured beforehand
- Threats are measured and quantified as part of a plan to lessen errors.
- Use effective strategies to finish the assignment.
- We shall always be listening to other people's opinions as a collaboration.
- We may arrive at any hypothesis by using comparisons and contrasts.
- A content area specialist can highlight the advantages or disadvantages; therefore, and therefore that assessment can guide our decision-making.

CONFLICT MANAGEMENT APPROACH:

- A common problem could have two different solutions proposed by two members. We will vote on potential solutions as a team, and we will use the method that receives the most support.
- Meetings will proceed with discussions on other relevant topics if a member is unable to attend. His tasks will not be covered during this time. These assignments will be covered in the following meeting.
- Communication breakdowns may lead to conflicts and the loss of important information. To close those communication gaps, we will plan frequent meetings.

TEAM PERFORMANCE ASSESSMENT:

- The effectiveness of each group or organization and the person is evaluated based on significant challenges that develop in current initiatives.
- Various responsibilities are assigned during the operation in order to conduct functional testing.
- Ensuring accuracy and ongoing process improved efficiency.
- Assisting and motivating colleagues.
- Providing recommendations and suggestions for the projects in order to assess, recommend, and address the team.

Table of Contents

REVISION STATUS

Revised On	Version	Description	Performed By	Reason
01.20.2023	**1.0**	Document layout planned	All team members	Project Phase initiation
		Basic Document created	Aabhas Maru	
01.20.2023	**2.0**	Index created	Aabhas Maru & Shuhaib Sajjad	To track the progress and updates of the Project Quality Plan
		Revision history format created	Aabhas Maru & Shuhaib Sajjad	
01.21.2023	**3.0**	Added introduction section	Arda Altinsoy	To provide an overview of the project
		Tasks & Schedule finalized	All team members	
01.21.2023	**4.0**	Added parent organization background section	Vishva Bhatt	To provide information on the Project sponsor organization
01.21.2023	**5.0**	Added parent organization quality policy section	Saad Choudhry	To provide the parent organization's

				quality policy
01.22.2023	**6.0**	Updated document (font & grammatical errors)	Shuhaib Sajjad	To make sure everyone has gone through the document, errors have been removed and approval has been provided by all team members
		Signature page section added	Arda Altinsoy	
		Final Document review & Signed signature page	All team members	
01.22.2023	**7.0**	Added References section	Aabhas Maru	To provide information on sources used in the project and to make sure the Project Quality Plan document is good to submit

		Final review before submission	Arda Altinsoy	
01.26.2023	**8.0**	Added project organization background section	Vishva Bhatt	To start phase II planning for quality management plan.
		Added Team members roles are responsibilities section		To make sure everyone on the team knows their roles and responsibilities.
01.27.2023	**9.0**	Added quality metrics and house of quality	Saad J. Chodhry	To provide a metric to measure the quality of the project.
	10.0	Added quality improvement plan	Aabhas Maru	To provide quality improvement plan.
01.28.2023	**11.0**	Added quality assurance plan	Arda Altinsoy	To provide quality assurance plan.
	12.0	Added quality control plan	Shuhaib Khan	To provide quality control plan.

01.29.2023	**13.0**	Updated document (font & grammatical errors)	Vishva Bhatt	To format the document
01.29.2023	**14.0**	Updated Reference Section	All Team members	
	15.0	Added sign off page	All team members	
02.05.2023	**16.0**	Updated QMP Part 1	All Team Members	To add quality requirements specific to the case study.

INTRODUCTION

Bombardier is a company that entered the transportation industry in 1974 and became the industryleader in a very short amount of time. Since their entrance to the industry and the growth strategyis acquiring facilities, Bombardier has purchased the leading Canadian aircraft manufacturer, "Canadian", civil and military aircraft based "Short Brothers plc", a Learjet corporation "Koselka",and “Havilland” from Boeing, respectively. On a company basis, they divided themselves into 4 different concepts: Business Aircrafts, Amphibious Aircrafts, Regional Aircraft, Defense Service.

Despite their activity and strength in the industry, the system Bombardier used had quality problems because of their strategy of growth. The company took over the data and systems of every facility it acquired. These inherited systems have resulted in problems in data sharing between production facilities and shortages in workforce mobility. In addition, the cost of owninginformation systems was multiplied by the number of systems maintained. The biggest problem isthe low visibility of the inventory and the lack of integration between their legacy systems. Bombardier Aerospace's manufacturing activities have been supported by the Bombardier Manufacturing System (BMS), but it has had problems with adapting to business requirements and updates. Therefore, they devised a project quality management plan in order to improve the qualityof the system they use and to re-align themselves with the conditions of the business they are in.

SPONSOR ORGANIZATION BACKGROUND

Bombardier is a transportation company with its segments in rail transportation and aerospace industry. It started as a rail transportation industry in 1974 and entered the aerospace industry in 1986 with the purchase of Canadair. It then acquired multiple aerospace companies between 1989to 1992, with a major acquisition of De Havilland company from Boeing. Bombardier Limited reported revenues of $14.8 billion by January 2007 with aerospace and rail transportation divisionscontributing equally.

Bombardier Aerospace is the third largest designer and manufacturer of commercial aircraft and the leading producer of regional aircraft. It is also one of the two largest manufacturers of businessaircraft in the world. Bombardier Aerospace has its headquarters in Montreal, Canada and it employs 27,130 people across 13 facilities worldwide. It is now organized into four product and service lines: business aircraft, regional aircraft, amphibious aircraft and defense services. In 2005,Bombardier's regional aircraft held 50% of market share for 20 - 90 seat segment of the regional aircraft market.

Embraer is Bombardier's closest competitor in regional aircrafts and Gulfstream is its main competitor in business aircrafts. Bombardier is focusing on regional aircrafts right now and believes that it is well positioned to survive the adjustments occurring in the aircraft industry.

PARENT ORGANIZATION QUALITY POLICY

Our goal is to become a key player in the transportation industry. Bombardier is dedicated to giving its clients lasting benefits and top-notch service quality. We endeavor to get it right the first time and provide the finest quality goods and services. In order to ensure that we meet or surpass our clients' expectations, we consistently enhance our performance and procedures. The goal of Bombardier is to possess and establish strong foundations and a wide margin for development. As we work on the BMIS project, we shall remain committed to these quality standards.

- WE ADHERE TO Regulatory and Industry Requirements Related to Quality and Safety (aircraft and all its parts), and We Only Work With Suppliers Who Adhere to These Standards.
- We ALWAYS respond to our customers' needs and STAND BY the goods(aircrafts) and services(post sales product services and customer services) we provide.
- WE PERFORM our work in accordance with a streamlined set of standardized business processes, and we continually invest in and improve.
- To our internal or external clients, WE NEVER deliver, acquire, produce, or ship inferior-quality goods or services.
- High quality of the user experience is our primary consideration, and we will keep building open and genuine relationships with consumers.
- Vendors are crucial to the business, and we'll keep building relationships that are mutuallyrespectful.
- We embolden our staff members by fostering an environment of reliability to guarantee that each individual is aware of their duties and commitments and produces better commodities.

TOOLS USED IN QMP

To maintain a quality management plan updated and maintained according to the project progress,multiple tools are used. These tools not only help the organization in improving quality management process and methodologies but also enhance customer appeasement in order to improve project performance.

- Qualitize EQMS - A platform that would allow the aerospace industry to control the quality of all the parts, assemblies, and OEMs utilized in the manufacture of aircraft
- Prioritization Chart
- House of Quality
- Pareto Charts
- Cause & Effect Diagram
- Control Charts
- Scatter Diagrams
- Flow Charting
- Histograms

PROJECT ORGANIZATION BACKGROUND

Bombardier limited had expanded by acquiring several industries. Along with acquisition of industries, it also acquired its IT systems. Thus, it was difficult for project teams to share data between different sites and derive insights for future projects. The vision was to develop an integrated organization in which employees would seamlessly share common data across sites and products using single set of unified systems and processes.

Bombardier Aerospace chose Enterprise Resource Planning (ERP) system to realize this strategic vision. But unfortunately, due to implementation of inappropriate business processes, an outdated company vision, a weak sponsorship model, and insufficient involvement of internal employees, the first ERP implementation was discontinued mid-project. This was done in 2000 after spending $130 million on the project.

In October 2001, same project with different name, Bombardier Manufacturing Information System (BMIS) was initiated. This system was to support Bombardier Aerospace's operations. The total budget to implement BMIS system across all facilities of Bombardier Aerospace was $363 million. Its development required 400 people, and it was estimated to support 9500 users over seven sites. I was believed that successful implementation id this project would result in saving $1.171 billion. A project team and a change management team were developed to execute the project. The implementation of BMIS to all the Bombardier facilities was to take six years. The company decided to implement BMIS at one plant at a time, beginning with the company's newest facility at Mirabel Plant, located near Montreal.

TEAM MEMBERS ROLES AND RESOPONSIBILITIES

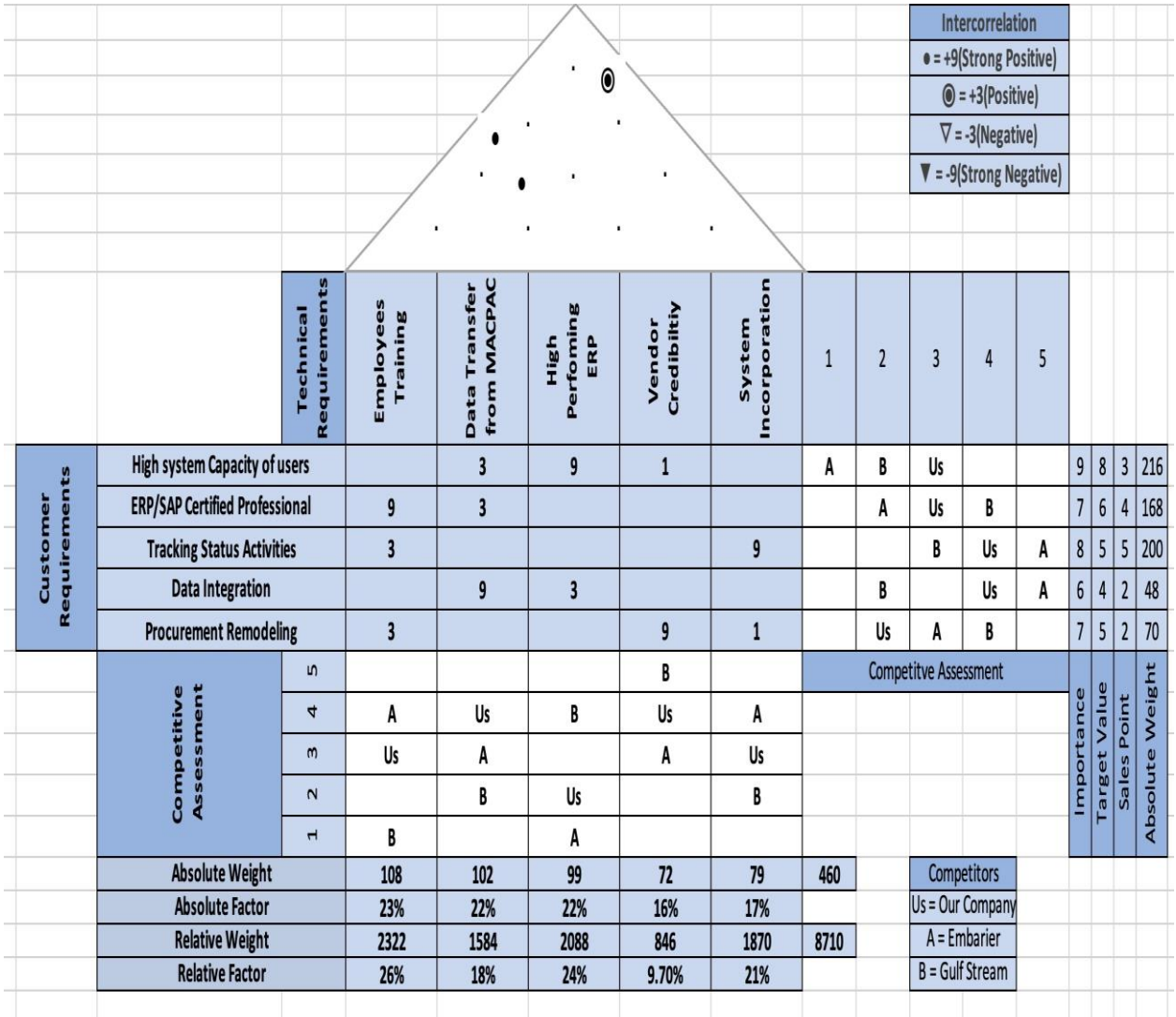
Team member roles	Responsibility
Director	Work with leadership and project managers to set strategic goals and objectives for project Hire and supervise new project managers
Project Manager	Monitor project progress Assign tasks and set deadlines Ensure Bombardier's management is informed of the project progress
Business Analyst	Analyze business trends and suggest changes in project strategies
Change Manager	Implement change management plan across the organization Manage change request, access their impacts and accept/reject change requests.
Quality Manager	Audit BMIS system and ensure the quality of new ERP system Ensure Bombardier's quality standards are met
Training consultant	Supervise user trainings for new ERP system Conduct regular training sessions for different types of users
Financial Advisor	Generate budget for the project Suggest ways for cost cutting Document every transaction

QUALITY METRICS

Customer Requirements	Technical Requirements	Quality Metrics	Status	Notes and Actions
ERP System Implementation	• 63 systems will be integrated together into the new structure. • Migration of data from the prior MACPAC database.	It must be simple to obtain and intuitive to utilize.	Passed	• The systems convergence went off without a hitch, and it is now operational. • The information from the old system has been transferred and is accessible through the new platform.
Procurement automation	• Automate duties as assigned to minimize them. • Improve firm exposure in the marketplace. • Decrease the amount of paper consumed to achieve the objective of a "paper-free- free environment."	Reduce the amount of paperwork and physical labor.	Passed	• The administrative chores were decreased as a result of the mechanization procedure, which was applied consistently. • Achieved the objective of a "paper-free- free environment." • Bombardier Aircraft is more widely known.
Data Management	Data cleanup	• Data redundancy must be avoided, as well as all wrong or faulty information must be eliminated. Data protection was approved.	Passed	To eliminate duplicate and erroneous or damaged data, data staging, retrieval, modeling, and aggregation are carried out.
Inventory Management	Boost cash flow while lowering turnaround time and quantifiable information.	Ongoing asset tracking upgrades.	Passed	• The company earned a profit thanks to cost reductions through managing inventory. • 75% less was expended overall on inventory management.

Conformity with Suppliers	Updated and brand-new vendor documents.	Make clear contracts with vendors and providers.	Passed	vacancies were established, with distinct logistical and procurement operators.
Track status activities	Create a scoring system for monitoring the viability of the project.	Follow and keep an eye on the scoreboard progress report every month.	Passed	The priority degree and timeliness of each report under the scoresheet are determined, and if assistance from management is required, this is done.

House of Quality



QUALITY IMPROVEMENT PLAN

The implementation of an ERP system is a complex and challenging task, and it requires careful planning and execution to achieve success. The case study "Successfully Navigating the Turbulent Skies of a Large-Scale ERP Implementation" highlights the challenges faced by a large airline company in implementing an ERP system. This Quality Improvement Plan will provide a comprehensive approach to addressing the issues raised in the case study and ensuring a successful ERP implementation.

Objectives:

- Improve communication and collaboration between the IT department and other departments to ensure that all stakeholders are involved in the ERP implementation process.
- Address the issue of insufficient training for employees on the new ERP system.
- Improve the overall quality of the ERP system by addressing the issues of system downtime and data errors.

Actions:

- Establish a cross-functional ERP implementation team: A cross-functional team that includes representatives from the IT department, finance, human resources, and other relevant departments will be established. This team will be responsible for ensuring that all stakeholders are involved in the ERP implementation process and that their specific needs are taken into account.
- Provide comprehensive training for employees: A comprehensive training program will be developed to ensure that all employees are properly trained on the new ERP system. The training will cover both the technical aspects of the system as well as its functionalities and will be tailored to the specific needs of each department.
- Regularly review and update the ERP system: The ERP system will be reviewed on a regular basis to identify any issues and ensure that it is functioning correctly. Any errors or downtime will be addressed promptly to ensure that the system is available and reliable for employees.
- Implement a quality management system (QMS): A QMS will be implemented to ensure that the ERP system meets the company's quality requirements and that any issues are identified and addressed in a timely manner.
- Monitor and measure progress: Regular progress reports will be generated to monitor the progress of the ERP implementation and to identify areas that need improvement.

Timeline:

- Establish cross-functional ERP implementation team: By end of month 1
- Develop and implement training program: By end of month 2
- Regularly review and update the ERP system: Ongoing
- Implement QMS: By end of month 3
- Monitor and measure progress: Ongoing

QUALITY ASSURANCE PLAN

The purpose of quality assurance is to detect and prevent defects and to ensure that the product performs its duty in the best possible way. We know that Bombardier's old system no longer adequately meets the needs of the business that they are in, has technological deficiencies and needs updating. For this reason, they established an ERP system to keep up with the conditions of the sector. Quality control is crucial for the ERP system to work effectively and to satisfy the organization by meeting expectations. The procedures should be set correctly and in a planned way so that they can work in a systematic and sustainable way. An audit team should be established in the Project so that the progress of this planning can be monitored frequently. If there is a neglect in this, the company may have to deal with scenarios such as budget overruns, systematic failures, and loss of data storage capability. On the other hand, it is an important fact that the old system had problems in storing the data of all the acquired companies, sharing data or communicating between organizations. It is expected that this ERP system combines all these inter-organizational connections into a single hand. Therefore, it is essential to appoint a trained and professional project team to manage this system.

QUALITY CONTROL PLAN

This quality control plan outlines the methodology and process that Bombardier Aerospace will use to ensure the successful implementation of the ERP system. The plan includes a combination of Statistical Process Control (SPC), Control Charts, Scorecard system, and other best practices to ensure the quality of the deliverables and the satisfaction of the stakeholders.

Quality Control Methodologies:

- Statistical Process Control (SPC): SPC will be used throughout the ERP implementation process to prevent risks and problems, including reducing the cost. The process data will be collected and used to create control charts that identify special-cause variation. This will help the project manager to observe problems and take necessary measures to resolve them.
- Control Charts: Control charts will be used to monitor and inspect whether the process is stable or not. The Xbar and Range chart will be used to control the quality because the variables are continuous data. Sample data will be picked up randomly, and the x-axis tracks the samples tested in the period. During this period, process instability can be identified and corrected in time to make sure the quality is under control.
- Scorecard System: A scorecard system will be used to track the status of the project in the integration test level. These scorecards will be based on key activities completed, key upcoming activities, project risks and high-level issues. The system will use three colors to display the urgency of the problems like red, yellow and green. Daily meetings will be held in the final months to ensure the development and change requests can be informed to the stakeholders in time.
- Quality Management Review: A quality management review will be held at the end of each phase of

the ERP implementation process. The review will evaluate the actual performance, determine whether the project deliverable meets the requirements required by the stakeholders and upgrade the level of quality based on recommended corrective actions.

- Auditing and Inspection: Auditing and inspection of deliverables will be conducted on a regular basis throughout the ERP implementation process to ensure that they meet the established quality standards.
- Continuous Improvement: Continual improvement of the ERP implementation process will be sought through feedback from stakeholders, project team members, and process data analysis.

Implementation:

The quality control plan will be implemented by the project manager and the quality control team. The project manager will be responsible for overseeing the implementation of the plan and ensuring that all quality control activities are carried out according to the established schedule. The quality control team will be responsible for conducting SPC, Control Charts, Scorecard system, quality management review, auditing and inspection, and other quality control activities.

REFERENCE

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SIGN OFF

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