Business Proposal-Generic Corp

Prepared for Genric Corporation

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I. INTRODUCTION

Generic Corporation is a boutique software engineering firm located in Baltimore, Maryland. Generic Corporation has been in operation for approximately twenty-five years and maintains a diverse client base. Over the years revenue and productivity have remained stagnant. Generic Executive Leadership has decided to course correct this trend and improve internal operations and productivity. Currently, there are three main problems that impede the performance of Generic Corporation. The lack of program health visibility is the first problem of Generic Corporation. Executive management is currently unable to accurately determine the status of a given project. Secondly, the constant movement of people and resources creates a significant barrier to knowledge management processes and information sharing. Lastly, the lack of a standardized and uniform knowledge management platform makes cross-functional training difficult.

Our team has created a multifaceted strategy to improve Generic Corporations' internal operations visibility, communication and knowledge sharing. The strategy consists of the creation of the Generic Corporation Requirements Homeroom (GCRH). The GCRH will function as a combined Change Control Board (CCB) and an Enterprise Project Management Office (EPMO). All employees of Generic Corporation have been assigned to a team. Each team is comprised of five employees which in turn elects one Champion to represent them in the GCRH. Our strategy focused on addressing the previously mentioned challenges while minimizing the need for substantial financial and human capital resources. The intent was to use the staff and tools currently in use to solve these problems without having to seek outside consultants.

GCRH Function & Composition:
The GCRH will serve as the primary point-of-contact between Generic Corporation's Executive Management and employees. All knowledge and information repositories will be stored, maintained and distributed from the GCRH. Requirements will be reviewed by the assembled Champions on a bi-weekly basis. Two meetings of the month will focus on requirements and CCB related functions while the other two meetings will address EPMO cantered activities. The GCRH Requirements or EPMO meetings will take place on alternating Monday's.

The GCRH Requirements process begins with each Champion presenting the Configuration Manager a completed change request form. These change requests are due to the GCRH Homeroom Captain no later than close of business the Wednesday before the scheduled Monday GCRH Homeroom meeting. The GCRH Configuration Manager will compile and categorize the submitted change request forms from the Champions and prepare the change request summary form. The change request summary form along with the bi-weekly agenda will be disseminated to the Champions by close of business the Friday before the regularly scheduled GCRH Requirements meeting. Meeting minutes will be compiled by the Business Analyst and disseminated to the Champions in preparation for the next meeting by close of business the Thursday before the regularly scheduled GCRH Requirements meeting.

A similar process exists for the GCRH EPMO meetings; however, the Champions will complete knowledge sharing forms which are submitted to the Business Analyst. The Business Analyst operates in the same manner as the Configuration Manager for all matters outside of requirements and change requests. The GCRH Business Analyst will compile and categorize the submitted knowledge sharing forms from the Champions and prepare the knowledge sharing summary form. The knowledge sharing summary form along with the bi-weekly agenda will be disseminated to the Champions by close of business the Friday before the regularly scheduled GCRH EPMO meeting. The Business Analyst creates and disseminates the GCRH EPMO meeting minutes as they did for the GCRH Requirements meeting.

The GCRH consists of 11 employees; eight team Champions, one Business Analyst, one Configuration Manager and one Captain. The eight team Champions will return to their teams when they are not in a scheduled GCRH meeting. The Business Analyst, Configuration Manager and Captain are permanently assigned to the GCRH Homeroom and will spend their time carrying out daily administrative activities. These three GCRH dedicated resources provide operational continuity while the Champions and Executive Management are operating in their respective segments of the company. This strategy ensures that responsibilities of the GCRH members remains clear while providing a clear delineation of the role of the GCRH. Once implemented this approach will serve the short, medium and long-term objectives of Generic Corporation [1] [2].

II. FEASIBILITY ANALYSIS

Technical feasibility

The Business Analyst is suggested to use Sharepoint Online to maintain the minutes of the weekly meetings, address communication, learning and cross-training plans. Sharepoint Online delivers all the features of Sharepoint but without the associated overhead of managing the infrastructure. Generic Corp should purchase Sharepoint as a standalone in the cloud. Sharepoint Online provides cross device availability to access and interact with Sharepoint newsfeeds anywhere via mobile apps. The automated maintenance of the servers ensures that the administrator is always up to date with minimal downtime. The data is safeguarded by hosting it in geographically distributed datacentres.

We recommend Configuration Manager using RequirementONE software as the requirements management tool. RequirementONE enables to document requirements, collaborate with stakeholders and is easily integrated with the existing tools. The software is a fully-hosted system. The only system requirements are internet access and standard web browser. The subscription will include technology and processes designed to secure your data against physical loss, unauthorised data. It is assured that the service can be scaled as the number of users increase. On-premise and private cloud deployment is available upon professional subscription.

Economic feasibility

The subscription cost for Sharepoint Online Enterprise (Plan 2) will $10/month/user. Sharepoint will be only used by the Business Analyst which would cost Generic Corp a $120 annually. RequirementOne tool used by the Configuration Manager acts as a critical part of the whole system hence we recommend Generic Corp to purchase a professional subscription of $65/month/user costing $780 annually. The subscription of both the software increases a $900 annually for Generic Corp's budget. By subscribing to the software's Generic Corp reduces the cost of Software Licensing Cost, Hardware & Software deployment and maintenance cost, Hardware Warranties Cost, Software Licence Tracking Costs, Cost of electricity and cooling, Server Hardware and software costs. Generic Corp can mitigate the saved cost in hiring IT personnel with the experience and knack to manage projects using the software [3] [4].

GCRH Project Costs			
Labor Cost (Monthly)	**Rate**	**Projected Hours (Month)**	**Cost (7Months)**
Captain	$73.10	64	$32,748.15
Champion	$73.10	80	$40,935.19
Configuration Manager	$82.13	160	$91,989.18
Business Analyst/SharePoint Administrator	$76.76	160	$85,971.20
Subtotal			**$251,643.72**
Other Direct Costs	**Units**	**Unit Price**	
SharePoint Licenses (3 Licenses), $20 per Month per User.	3	$240	$720.00
RequirementOne License (3 Licenses), $65 Per Month Per User	3	$780	$2,340.00
Subtotal			**$3,060.00**
		ODC Subtotal (FFP)	**$3,060.00**
		Labor Subtotal (FFP)	$251,643.72
GCRH Project Costs			**$254,703.72**

Figure 1: GRCH project costs

Organizational feasibility

The Upper Management of Generic Corp is solely responsible in obtaining the project requirements and provide it to the Homeroom Captain. The Management should update the Captain about the budget and schedule of the month. The Captain of the homeroom is designated the job of submitted monthly reports of the on-going project schedules to the upper management. Upper Management will have Captain as a single point of contact releasing them from the hassle of interrupting the Unit Teams. The Captain has to provide updates directly coming from the Upper Management into the Homeroom meetings. Co-captain is appointed to assist captain in all roles and a Co-Captain performs and can work as a moderator in absence of the Captain. The Champions are elected to provide leadership and manage the projects under the Unit Teams. They are the attendees of the homeroom meetings. Any change request from the Unit Team members will be addressed in the homeroom meetings to the other champions. The Champions are responsible to address the on-boarding and off-boarding of team members, explaining role and responsibilities to new member and arrange training sessions. The Co-champion must assist the Champion in his all his roles and responsibilities. The Unit Team members are developers. They must provide Champions with updates on incorporation of the change request. Business analyst works as a Sharepoint administrator who maintains minutes of meeting, formulating transition plans and address cross-training plans. The Configuration Manager gathers all the change request from the Champions and maintains all the information in RequirementONE.

Quantified risk assessment

Figure 2: Risk assessment matrix

GCRH Risks:

Format (Impact, Probability):
Mitigation Response:

Ranking Based upon potential Impact followed by Probability

Risk 1 (Catastrophic, Occasional): GC Budget Constraints Cause Significant Manpower Reduction to GCRH and Teams
Mitigation Response: A downturn in the economy particularly with the external customers of Generic Corporation could have a major effect on the GCRH. Budget constraints and manpower reduction objectives are communicated to the Captain in the monthly Executive meeting. The Captain will then relay these objectives to the GCRH in the next scheduled GCRH EPMO meeting. If the GCRH meeting is next the next scheduled meeting then an Ad Hoc GRCH EPMO meeting will be called by the GCRH Captain. The Champions will then convey the applicable messages to their team members on an as needed basis.

Risk 2 (Catastrophic, Seldom): Mismatch Occurs between External Customer Requirements and Internal Requirements Development
Mitigation Response: The Bi-weekly GCRH Requirements meeting addresses all external and internal requirements arising since the previous meeting. This ensures that requirements are not missed or inadequately addressed.

Risk 3 (Catastrophic, Unlikely): Executive Management Miscommunicates Feedback from External Customers
Mitigation Response: External customer feedback will be routinely reviewed by GC Executive Management and Captain in the monthly Executive meeting. The Captain will then relay communication received from Executive management to the GCRH in the next scheduled GCRH EPMO meeting.

Risk 4 (Critical, Seldom): Captain Miscommunicates External Feedback Received from Executive Management
Mitigation Response: External feedback received from GC Executive management to the Captain is discussed in the GCRH EPMO meeting. In this meeting the GCRH staff will analyze and address questions or concerns that can arise from the information received from GC Executive Management.

Risk 5 (Critical, Seldom): CM Fails to Accurately Incorporate Internal Requirements into Cross Reference Matrix
Mitigation Response: The Bi-weekly GCRH Requirements meeting addresses all external and internal requirements arising since the previous meeting. This ensures that requirements are not missed or inadequately addressed. In preparation for this meeting the CM will review and present an updated Cross Reference Requirements matrix to the GCRH. The updates will be clearly delineated so the GCRH team members can effectively analyze the newer requirements.

Risk 6 (Critical, Unlikely): Team Skills Assessment Not Correctly Maintained by BA
Mitigation Response: The Business Analyst compiles and maintains the GC Skills Matrix. The GC Skills Matrix is updated on a monthly basis from input received from the monthly team member assessment conducted by the associated team Champion. After the monthly skills assessments have been incorporated into the Skills Matrix the new Matrix is presented at the next scheduled GCRH EPMO meeting.

Risk 7 (Moderate, Seldom): GCRH Workload Exceeds GCRH Staff Level
Mitigation Response: The alternating bi-weekly GCRH Requirements and EPMO meetings address all requirements, communication and knowledge sharing factors that can affect GC productivity. Any surge or decrease in requirements are addressed in the bi-weekly GCRH Requirements meeting while EPMO and communication related items are discussed and addressed in the bi-weekly GCRH EPMO meeting.

Risk 8 (Moderate, Seldom): Multiple GCRH Staff Members Depart Company at the Same Time
Mitigation Response: The bi-weekly GCRH EPMO meeting also focuses on staffing in addition to communication and knowledge sharing. All Champions have Co-Champions that serve as alternates should a Champion not be able to attend or participate in a bi-weekly GCRH Requirements and EPMO meeting. All Champions and Co-Champions are required to sign a tenure contract of at least one year. This significantly reduces frequent GCRH staff changes in a given year.

Risk 9 (Moderate, Unlikely): Team Member Project Knowledge Leaves Team or Company
Mitigation Response: The Business Analyst serves as the key project manager for the GCRH and reviews resource leveling on a monthly basis. The Skills Matrix is used to create team training plans. The training plan and curriculum is reviewed on a monthly basis by the Business Analyst to ensure that it is current. Any potential departures and subsequent cross-training or backfilling will be discussed in the GCRH EPMO meeting.

Risk 10 (Moderate, Unlikely): Communication/Knowledge Management Tool (SharePoint) Does Not Address GC Needs
Mitigation Response: The bi-weekly GCRH EPMO meeting focuses on communication and knowledge sharing. EPMO related tools and supplemental aids are also discussed and reviewed during these meetings. Any changes or suggestions that come from this review will be relayed to the Captain who will in turn convey the message to Executive Management at the next scheduled monthly meeting.

Risk 11 (Moderate, Unlikely): Requirements Tool (RequirementOne) Does Not Address GC Needs
Mitigation Response: The Bi-weekly GCRH Requirements meeting addresses all external and internal requirements arising since the previous meeting. This ensures that requirements are not missed or inadequately addressed. Requirement related tools and supplemental aids are also discussed and reviewed during these meetings. Any changes or suggestions that come from this review will be relayed to the Captain who will in turn convey the message to Executive Management at the next scheduled monthly meeting.

Risk 12 (Marginal, Occasional): Abundance of Meetings for Champions Reduces Quality of Change Request Form Submissions
Mitigation Response: The bi-weekly GCRH EPMO meeting focuses on communication and knowledge sharing. Assessments are also performed by the Business Analyst in preparation for these meetings on whether the frequency and/or duration of the meetings are efficient.

Risk 13 (Insignificant, Seldom): Executive Management Bypass GCRH to Communicate Directly With Team Members
Mitigation Response: The structure of the GCRH drastically reduces the interaction between Executive Management and Team Members. Executive Management is briefed by the GCRH Captain on a monthly basis while Team Members interact on a weekly sometime daily basis with their respective team Champion. These routine touch points should reduce the need to bypass the communications processes in place.

Risk 14 (Insignificant, Seldom): Team Members Bypass GCRH to Communicate Directly with Executive Management
Mitigation Response: The structure of the GCRH drastically reduces the interaction between Executive Management and Team Members. Executive Management is briefed by the GCRH Captain on a monthly basis while Team Members interact on a weekly sometime daily basis with their respective team Champion. These routine touch points should reduce the need to bypass the communications processes in place.

Risk 15 (Insignificant, Unlikely): GCRH Meeting Frequency Does Not Address GC Needs
Mitigation Response: The bi-weekly GCRH EPMO meeting focuses on communication and knowledge sharing. Assessments are also performed by the Business Analyst in preparation for these meetings on whether the frequency and/or duration of the meetings are efficient.

Size, Effort and Schedule estimate: [5] [6]

GCRH Project Cost Task Breakdown			
Labor Category	Description	Hours (Week)	Hours (Month)
Captain	Prepares and Submits Monthly Bottom-Up Reports (GCRH Requirements and EPMO) to Executive Management	6	24
	Prepares and Submits Monthly Top-Down Reports (GCRH Requirements and EPMO) to GCRH	6	24
	Facilitates Bi-Weekly Homeroom Meetings (GCRH Requirements and EPMO)	4	16
Captain Subtotal		16	64
Business Analyst (BA)	Collect and Compiles GCRH Requirements and EPMO Meeting Minutes	10.5	42
	Prepares and Submits Weekly Knowledge Management Report to GCRH	7.5	30
	Input, Update and Maintain Information into Sharepoint	3	12
	Prepares and Submits SharePoint Summary Report to Captain	3.5	14
	Creates Team Facilitator and Participant Training Curriculum	6	24
	Trains Champions on Team Specific Facilitator and Participant Training Curriculum	5.5	22
	Participates in Bi-Weekly Homeroom Meetings (GCRH Requirements and EPMO)	4	16
Business Analyst (BA) Subtotal		40	160
Champion	Prepares and Compiles Requirements from Team Members and inserts into Change Request Form twice per week	2.5	10
	Assesses, Documents and Maintains Team Skills Matrix	2.25	9
	Conducts On-Boarding for New Team Members (Monthly)	1.25	5
	Conducts Off-Boarding for New Team Members (Monthly)	1.25	5
	Administers Training Curriculum to Team Members	4	16
	Meet With Team Members once Per Week for Knowledge Sharing Report Input	2	8
	Prepares and Submits Knowledge Sharing Report to Business Analyst	2.75	11
	Participates in Bi-Weekly Homeroom Meetings (GCRH Requirements and EPMO)	4	16
Champion Subtotal		20	80
Configuration Manager (CM)	Collect and Compiles Change Request Forms from Champions	13.5	54
	Input, Update and Maintain Information into RequirementOne	8	32
	Prepares and Submits Bi-Weekly RequirementOne Report to GCRH	6.25	25
	Creates, Maintains and Distributes Cross-Requirement Matrix to GCRH	3.75	15
	Participates in Bi-Weekly Homeroom Meetings (GCRH Requirements and EPMO)	8.5	34
Configuration Manager (CM) Subtotal		40	160
Team Member	Meet With Champion once Per Week for Knowledge Sharing Report Input	2	8
	Provides Weekly Feedback to Champion on Requirements Input Suggestions	2	8
	Works on Daily Requirement Gathering and Refinement	36	144
Team Member Subtotal		40	160
Executive Management	Meets Monthly with Captain	2.5	10
	Evaluates General Corporation Internal and External Performance	23.5	94
	Gathers and Report External Customer Requirement Changes to Captain	14	56
Executive Management Subtotal		40	160

Figure 3: GRCH Project cost task breakdown

III. PROJECT PLAN

The Project Plan for the GCRH consists of six levels GCRH Requirements Meeting, GCRH EPMO Meeting, Team Member Training, Monthly GC Executive Meetings, GCRH Core Team Meetings, and Team Member Meetings. These six high level area capture the essence of what is needed to successfully implement the GCRH methodology. The GCRH Project Plan will take one hundred twelve days to fully implement. Microsoft Project was the tool we used to create the GCRH Project Plan. Microsoft Project forces you to assign duration in days or hours. As such, we selected day duration since this is better at providing an end-to-end assessment of the amount of time needed to implement the GCRH approach. The main problem with this day duration designation is that resources may not work an entire day on one project. Our GCRH approach was more focused on the work required by the resources currently available within the organization. Problems occur when schedule and timelines are adhered to without contextualizing them against the overall objectives of the company.

GCRH Project Plan

WBS 1.0 GCRH Requirements Meeting:
The GCRH Requirements Meeting duration is sixteen days. The GCRH Requirements Meeting is facilitated by the GCRH Captain; however, the primary role in this process meeting is the Configuration Manager. The Configuration Manager orchestrates requirements received from the Champions as well as serves as the RequirementOne administrator. In preparation for this meeting the Configuration Manager must update the Requirements Cross Reference Matrix. This Matrix provides GCRH members organizational wide visibility on the requirements that affect multiple teams. The Configuration Manager has both read and write access to RequirementOne while the two other GCRH members (Business Analyst and Captain) only have read access. These additional licenses increases RequirementOne visibility to other GCRH members and provides an additional level of check and balance.

WBS 2.0 GCRH EPMO Meeting:
The GCRH Requirements Meeting duration is thirty eight days. The GCRH EPMO Meeting is facilitated by the GCRH Captain; however, the primary role in this process meeting is the Business Analyst. The Business Analyst orchestrates requirements received from the Champions as well as serves as the SharePoint administrator. The Business Analyst has both read and write access to SharePoint while the two other GCRH members (Configuration Manager and Captain) only have read access. These additional licenses increases SharePoint visibility to other GCRH members and provides an additional level of check and balance. Monthly audits will be performed by the administrator on the SharePoint database and the associated findings will be archived. The SharePoint administrator will be responsible for the development, maintenance and operation of the SharePoint database. The Business Analyst will serve as the in-house project management subject matter expert. The Business Analyst will create, update and review the Integrated Master Plan (IMP)

while also maintaining the consolidated Integrated Master Schedule (IMS). All cost and schedule impact information extracted from the change request forms will be analyzed by the Business Analyst.

WBS 3.0 Team Member Training:
The GCRH Team Member Training duration is sixty days. The Team Member Training is a vital activity within the GCRH Project Plan. The Champions serve as the liaison between the GCRH and the individual team members. The team member designation is comprised of software engineers, requirements analysts and electrical engineers. Team members provide the functional day-to-day support of Generic Corporation. Over time team members can become exhausted or decide to move to another area within the company. In some instances team members have opted to leave the company to pursue other opportunities. Knowledge sharing and cross-functional training was incorporated into our model to allow for these personnel changes and movement. The Business Analyst creates all the training plans and associated curriculum for the company from information contained in the team member skills assessments. A single training design focal point ensures continuity and uniformity across the organization. The training is administered to the individual team members by the Champion who represents them at the GCRH meetings. Team members receiving training from a familiar person increases the potential absorption of training objectives.

WBS 4.0 Monthly GC Executive Meetings:
The GCRH Monthly GC Executive Meetings duration is sixty-five days. The main focus of these meetings is for the GCRH Captain to receive updates and information from the Generic Corporation Executive Management. The Executive Management is the only portion of the company that will have communication with external customers. These monthly sessions are also an opportunity for the Captain to update the Executive Management of internal matters relating to Requirement incorporation or EPMO activities.

WBS 5.0 GCRH Core Team Meetings:
The GCRH Core Team Meetings duration is fifty-two days. The Core Team consists of the permanent members of the GCRH: Captain, Configuration Manager and the Business Analyst. The focus of this meeting is on operational and administrative discussions related to the GCRH. These three members are tasked with fine tuning and improving the efficiency of the GCRH. If the various meetings are lasting too long or not achieving the desired outcomes these Core Team meetings will address these inefficiencies.

WBS 6.0 Team Member Meetings:
The GCRH Team Member Meetings duration is fifty-two days. The Team Member meetings are where the Requirements and EPMO processes begin. The Team Members submit the information in these meetings that will in turn be incorporated into the Change Request or Knowledge Sharing forms. From here information will be carried throughout the GCRH model.

Figure 4: GCRH project plan

IV. CONTEXT DIAGRAM

Figure 5: Context level diagram

A context diagram depicts the system, a part of the system and all the entities that interact with them. Context diagram generalizes the system under consideration as one high-level process and the represents the relation between the system and other external entities (organizational groups, external data stores, etc.). It has three components: Processes (circle), External Entities (rectangle), Data Flows (line with arrowhead indicating flow direction). They can utilized to capture and communicate various interactions and flow of data. Our team came up with a Context Diagram which has 4 external entities (Project Manager/Champion, Upper Management, Customer, Programmer/ Employee). The figure indicates various flow of data between the system and entities which aids the interested stakeholders in understanding various interactions. Customer interacts by giving the generic corporation their requirements. Upper management then makes various decision about whether a organization can handle the customer request. A green signal is given when the upper management issues a

change request. Based upon the projects in hand, various teams are assigned to a Champion. Champion has the details about the project each team is assigned to and information about the members in each team. They then formulate Project goals for the project under them and forward it to all the interested party. Based upon the statement of work, the programmers then create a Project plan. At any point of time if upper management wants to track the progress of a specific project then he/she can ask for the project report.

V. FUNCTIONAL REQUIREMENTS

Captain
- Prepares and Submits monthly report to Generic Corp executive leadership
- Prepares and Submits weekly report (Updates from Executive Leadership) to homeroom team
- Facilitates weekly homeroom meeting

Co- Captain (Back-Up)
- Must assist Captain in the preparation and submission of monthly report to Generic Corp executive leadership
- Must assist Captain in the preparation and submission of weekly report (Updates from Executive Leadership) to homeroom team

Business Analyst
- Business analyst will collect and compile meeting minutes and action items from weekly homeroom meeting
- Prepares and Submits weekly knowledge management report based on information received from

Champions (Distributed to homeroom team members)
- Must to input, update and maintain data in Sharepoint
- Prepares and Submits Sharepoint Summary report which is submitted to Captain prior to Monthly executive meeting.

Configuration Manager
- Must gather change request forms from Champions
- Must input, update and maintain data in RequirementONE
- Must create, update and maintain cross requirement matrix document
- Prepares and distributes weekly RequirementONE reports to homeroom team members

Champion
- Must prepare and compile information to be included in the change request form prior to homeroom meeting
- Must meet with unit members twice per week and gather inputs and/or for incorporation into change request form
- Must document and meet with new unit members to review team roles and responsibilities*On-Boarding*
- Must document and meet with exiting unit members to review individual role and knowledge transfer documents*Off-Boarding*

- Must document and meet with unit members once per week to gather knowledge sharing input used for knowledge sharing report.
- Must prepare and compile knowledge sharing report to be submitted to Business Analyst

Co-Champion (Back-Up)
- Must participate in meeting with new unit members to review team roles and responsibilities*On-Boarding*
- Must participate in with exiting unit members to review individual role and knowledge transfer documents*Off-Boarding*
- Must assist Champion in the preparation and compilation of knowledge sharing report to be submitted to Business Analyst
- Must participate in meeting with unit members once per week to gather knowledge sharing input used for knowledge sharing report.
- Must assist Champion in the preparation and compilation of information to be included in the change request form prior to homeroom meeting

Unit Team Member
- Must provide Champion with knowledge sharing inputs on a weekly basis
- Must provide Champion with updates and suggestions on current or future requirements for potential incorporation into change request form

Executive Management
- Must meet with homeroom Captain on monthly basis
- Must collect and compile external customer requirements to be relayed to homeroom Captain
- Must update homeroom Captain on a monthly basis of cost, schedule or organizational constraints

VI. NON FUNCTIONAL REQUIREMENTS

Performance
- Captains should receive EVM (Earned Value Management) training
- Captains should have experience in public speaking
- Champions should have experience in public speaking
- Business analyst should be proficient in using Sharepoint
- Configuration manager should be proficient in RequirementONE and writing reports

Maintainability
- Captain tenure should be at least 1 year
- Co-Captain tenure should be at least 1 year
- Champion tenure should be at least 1 year
- Co-Champion tenure should be at least 1 year
- Co-Captain should be selected by the homeroom team
- Co-Captain duties should mirror Captain's role
- Business Analyst and Configuration Manager should have equivalent educational and/or work experience
- Co-Champion duties should mirror Champion role

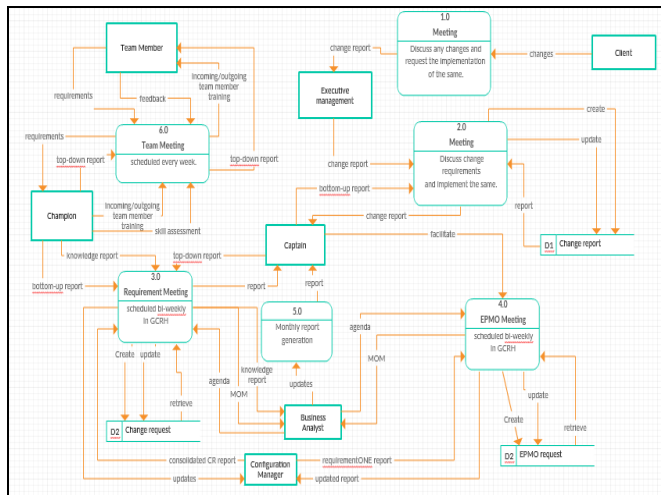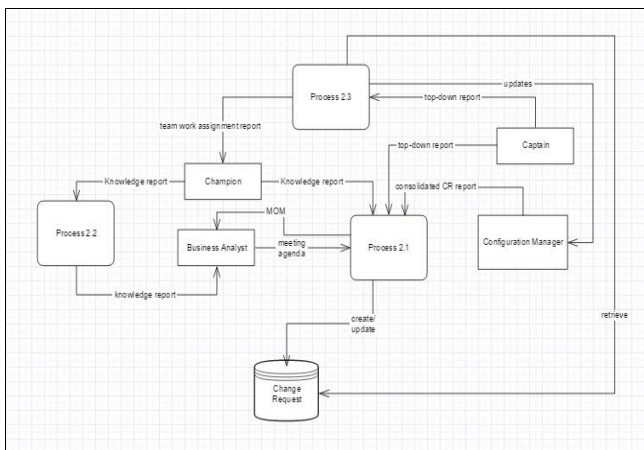Co-Champion should be selected by the unit team

Figure 6: Level 0 DFD

Figure 7: Level 1 DFD

Data flow diagram is a graphical representation of the flow of data in a system. It is often used as a basic step to create overview of a system. They can be used to model the complete organization or a part of the system. They can be used to either design a new system or to analyse an existing system. It serves as a good means of communication to naïve users since minimal technical knowledge is required to understand a DFD. A DFD illustrates what kind of data is sent from an entity and also the kind of data an entity extracts from a process, also shows where the data is stored and also input and outputs of a process.

The following DFD shows the proposed system by our team for Generic Corporation. Our systems consists of the following seven entities that interact with or are part of the system.

Executive Management: These are the board of directors at Generic Corporation who are responsible for the administrative activities needed for smooth functioning of company. They monitor various activities carried on in the company without their direct involvement.

Client: These are the actual customers of the company to whom products are built or the services are rendered for. Meetings with the management will be held to discuss the progress of their product/project or to request any changes to the existing system. These meetings can be either scheduled or unscheduled.

Captain:
- Captain is an active employee whose part of the company and is in responsible for the proposed HomeRoom administrative activities.
- He/She serve as a single point of contact between the executive management and the HomeRoom.
- He/She communicates information between management and teams, to and fro in the form of bottom-up and top-down reports.
- Facilitates bi-weekly requirement and EPMO meeting in HomeRoom.
- He/She consolidates all the activities in a month and generates a monthly report and submit to executive management as an update.

Configuration Manager:
- He/She is responsible for deploying change requests into the system.
- Maintain and update requirementsONE tool that is proposed to use in HomeRoom for requirement gathering.
- Generate a requirement cross reference matrix from the reports
- Keep the HomeRoom updated with bi-weekly requirementsONE reports.

Business Analyst:
- He/She is a part of homeroom and the responsibilities include analysing the business needs.
- Create agenda for bi-weekly EPMO & requirements meeting.
- Collect minutes of meeting and update the same to participants of the meeting.
- Update captain in the form of weekly and monthly reports.
- BA is responsible for updating and maintaining sharepoint tool in the HomeRoom.
- Collaborates with champions and come up with a team skill matrix, which will be used for assigning projects to teams.

Champion:
- Champion is a selected member of a team who represent their team and act as a single point of contact between the team and the HomeRoom. Champion is responsible for many activities.
- He/She prepares and administers curriculum for training of incoming and outgoing team members.
- Participate in weekly team meetings, collect, analyze and compile team requirements.

- Raise a request for Change Request update or insert a new requirement in the Change Request, if any.
- Perform a team skill assessment and updates the same to BA.
- Conducts a monthly training for new incoming team members and also for departing team members.
- Participate in weekly team meetings for inputs and knowledge sharing on knowledge reports.
- Generate and submit a knowledge report to BA for team skill assessment.
- Collect internal team member requirements.

Team Member:
- He/She is part of team. There are around 40 teams in the company and each team has different number of team members depending on the team size.
- The basic responsibilities of a team member include: Participate in weekly team meetings and provide inputs for knowledge report.
- Provide feedback to champion on a weekly basis for requirement inputs.
- Work on assigned daily tasks, requirement gathering and refinement.

In the above data flow diagram, it depicts our proposed solution for Generic Corporation. It includes the following components:
i. Process 1.0 illustrates a client - executive management interaction.

   Entities: Executive management and Client.
   Inputs: Changes from Client or nothing to just monitor the progress of an ongoing project.
   Outputs: Change report generated by executive management based on the changes provided by client.

ii. Process 2.0 is a scheduled meeting between executive management and Captain. Participating entities are executive management and Captain.

   Entities: Executive management and Captain.
   Inputs: Change report from executive management. Bottom-up report from Captain that serves as an update to management.
   Output: Captain extracts Change report from the meeting.
   Database D1: Change reports are stored in the database D1 for future reference.

iii. Process 3.0: Scheduled bi-weekly requirements meeting in HomeRoom.

   Entities: Captain, Champions, Business Analyst, Configuration Manager.
   Inputs: Top-down report from Captain. Meeting agenda from business analyst. Consolidated CR report from configuration manager. Knowledge report and bottom-up report from champion.
   Outputs: Business Analyst extracts minutes of meeting and disseminates to all participants and also extracts knowledge report from the meeting to update captain on monthly report. CM extracts updates from the meeting to update requirementsONE tool. Champions extract updates and assignments pertaining to their team. Captain extracts summary report from the meeting.
   Database D2: Change requests are stored here. New requirements are logged as a new CR, modifications on a requirement are updated in database and existing CRs are referred for report generation.

iv. Process 4.0: Scheduled bi-weekly EPMO meeting in HomeRoom. Activities pertaining to smooth functioning and improvisation of HomeRoom are discussed here.

   Entities: Captain, Configuration Manager and Business Analyst.
   Inputs: Captain facilitates the meeting, BA comes up with an agenda and CM updates the HomeRoom with his requirementsONE report.
   Outputs: BA derives minutes of meeting and sends it to all participants, CM derives an updated report if any changes made in the process.

v. Process 5.0: It is a scheduled monthly meeting in HomeRoom.

   Entities: Captain and Business Analyst.
   Inputs: consolidated updates from BA.
   Outputs: Consolidated monthly report which serves as an update to Captain from BA.

vi. Process 6.0: Scheduled weekly meeting within teams.

   Entities: Team members and Champion.
   Inputs: curriculum of training for incoming new team members, curriculum of training for departing team members and top-down report from Champion. Requirements and feedback from team members.
   Outputs: monthly training schedule to both incoming and departing team members, top-down report with assignments to the team, requirements from team members and skill assessment report for champion.
   Process 2.0 and Process 3.0 are critical to carry HomeRoom operations.
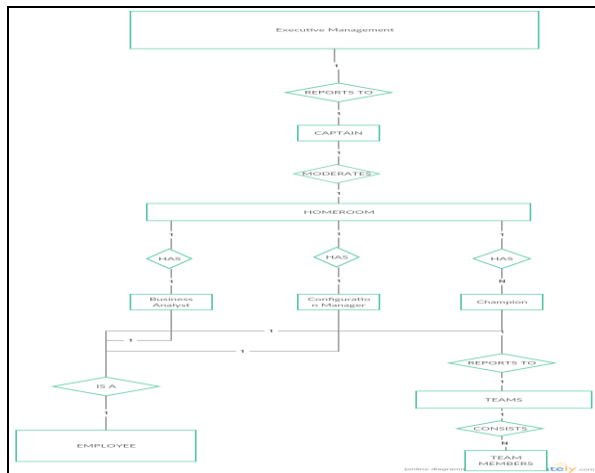
VIII.   ENTITY RELATIONSHIP DIAGRAM

Figure 8: ERD for GRCH

An entity-relationship diagram is a graphical representation of an information system that depicts the relationship between people, objects, places, concepts or events within a system. An ERD is a data modelling technique that can help describe business processes and can be used as the foundation for relational database.

As mentioned in our textbook there are 3 sets of ways for ERD modelling. These are IDEF1X, Chen, and Crow's Foot. We have drawn our model using Chen Symbol Sets. In Chen notation, the entities are represented by rectangles and contain the entity names. The relationships are represented by diamonds and contain the relationship names.

In our entity relationship diagram the diagram shows the relationships among the stockholders and the departments. As we go one by one through the relationships in the diagram, they are meant as below:

- Executive management is at the top of the hierarchy.
- Team members are on the bottom of the hierarchy.
- The business analyst, the configuration manager and the champions are in the middle of the hierarchy.
- There is only one captain and he is the one who moderates the homeroom meetings.
- The captain reports the change request forms which he/she received from the homeroom to the executive management.
- The captain meets with the business analyst, the configuration manager and the champions of the teams in the homeroom.
- Every homeroom meeting consists of only one business analyst, only one configuration manager and many champions.
- Every champion receives report from the team.
- Team and the champion has one to one relationship in the diagram since every team has only one champion and a champion is related with only and only one team.
- Team has many team members. Every member has to associate with a team.
- The employee entity is specialized into 3 under by business analyst, configuration manager and champions.

- Every business analyst is an employee of Generic Corporation but not every employee is a business analyst.
- Ever configuration manager is an employee of Generic Corporation but not every employee is a configuration manager.
- Every champion is an employee of Generic Corporation but not every employee is a champion.

In the data flow diagram, there are seven external entities which are team member, champion, configuration manager, business analyst, client, captain and executive management. Except client all of them exist in the entity relationship diagram as entity. The data flow diagram shows what kind of information among the external entities will be input to and output from the system, where the data will come from and go to and where the data will be stored. As in the data flow diagram, the arrows represents the data flows among the external entities or between the external entities and the processes. The arrows represents the relationships as in the entity relationship diagram and if there is no relationship between two entities there is no data flow between that entities in the data flow diagram. As shown in the data flow diagram, the executive managers only deal with the captain to discuss the change requests. Team members only associate within themselves and only with their champions. As in the data flow diagram the captain, champions, business analyst and configuration managers join the requirements meeting and that also correspond with the entity relationship diagram.

IX. USE CASE ANALYSIS
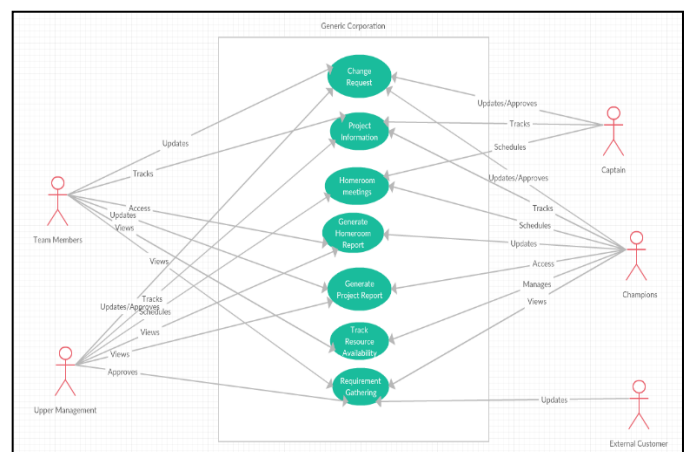
Figure 9: Use Case for GRCH

Use case is a methodology used in system analysis which graphically depicts interactions amongst various elements of a system. It helps in effective modelling of the system. Use case has many uses in system analysis as it defines the system behaviour, how user is going to interact with the system and how one use case is related to other use case. Using use case, various stakeholders can determine the functionality of the

system. Our team decided to include Use case is because a single diagram (use case dig) depicts the detailed summary of the entire system. Use case diagram can also be used to generate the sequence diagram of the system.

Various components in of a use case diagram are actors, lines, use cases and the system. Actors are the entities which portrays a role played by the user (can be person, organization or some external system) which interacts with the system. The system is depicted by a rectangular box which defines the boundary/scope of the system. Use case are represented using ellipses and are placed inside the systems rectangular box. Relationship between actors and use cases are represented by using lines.

The use case developed by our team will help the interested stakeholders to get a clear understanding about the working of the system. Below are the actors involved in the use case diagram:

- Customer - Customer put forward their demands and their demands can be used for gathering requirement for a specific project.
- Team Members -Are the programmers which can interact in many ways like, asking for change request, tracking project information, and accessing homeroom reports. The most important interaction of the team members is creating and updating project report.
- Champions- Champions are the managers which has at least one developing team under them. They can manage resource availability and generate homeroom report.
- Upper Management- They are the boss of bosses. They can track project report, schedule homeroom meets and approve a customer's request.
- Captain- Captain administers the Homeroom meeting. They can schedule a homeroom meeting and can approve or file in for a change request.
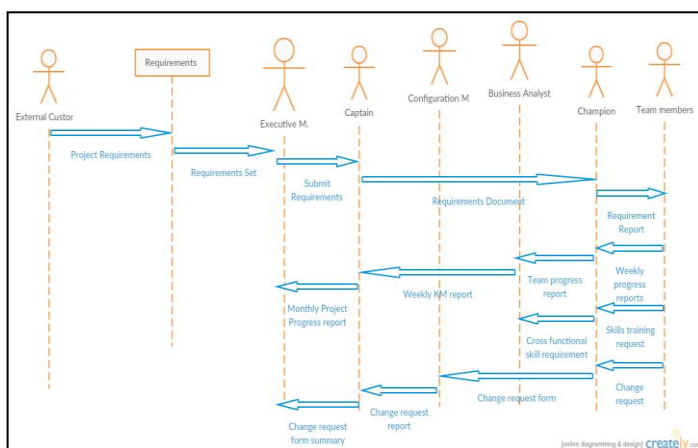
X. SEQUENCE DIAGRAM

Figure 10: Sequence Diagram for GRCH

A Sequence diagram is an interactive diagram that shows the interaction between different objects, processes and actors. It is an idea showing Message sequence chart. A sequence diagram shows object relations arranged in time sequence and expresses the objects and classes involved in the scenario, and the sequence of interactions exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development.

Sequence diagrams are considered the most popular of the UML diagrams for dynamic modelling. These diagrams focus on identifying the behavior within the system.

A sequence diagram shows, as parallel vertical lines, different processes or objects that happens simultaneously, and, as horizontal arrows, the messages exchanged between the processes or objects, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner.

Our sequence diagram has 8 vertical lines, 1 of them indicates the object and 7 of them indicate the actors in the Generic Corporation. Messages, are written with horizontal arrows including the message name written above them. The diagram also displays the interaction among the actors or between an object and an actor.

As in the use case diagram, the diagram starts up with the customer actor. Customer depicts what they demand about their new system and these demands are being used as Project Requirements for Generic Corporation while they build the new system for their customers. Executive managers are the stockholders who first receive the requirements and report them to the Captain. Champions of the units and Captain are the only stockholders who participate at the Home Room Meetings. Executive managers submit the requirements to the captain and the captain creates the requirements document and passes it to the champions. Champions create a report and transmit it to the team members. Team members meet on weekly base and make a change request form according to the requirements they received from their champion and transmit it back to the champion and that change request is being transmitted right to the captain in the homeroom meeting. After making a summary of the change request form the captain delivers the document to the executive management in a monthly base.
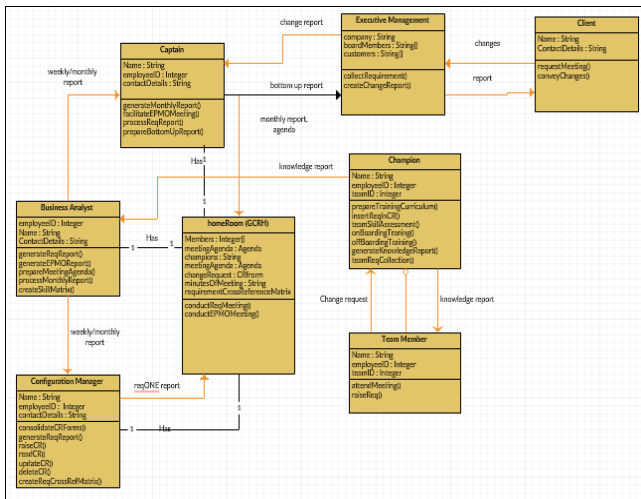
XI. CLASS DIAGRAM

Figure 11: Class Diagram for GRCH

A class diagram is a static diagram that represents a process or an application. Class diagram is used for viewing, describing and documenting different aspects of a system and also for building executable code of the software application.

The class diagram describes an entity along with the attributes and operations of it and also the constraints imposed on the system. The class diagrams are widely used in the modelling of systems for object oriented analysis and design.

In our diagram, we have seven entities in the proposed model, namely: team members, Champion, Business Analyst, Captain, Client, HomeRoom, configuration manager and Upper Management. This is a tentative class diagram and may change depending on the business requirements.

Our proposed class diagram has the following Entities.

1. Client

   Attributes: Name, contact details.

   Operations: Request meeting, convey changes.

2. Executive management

   Attributes: Company, Board members, customers.

   Operations: collect requirements, create change report.

3. HomeRoom

   Attributes: Members, Meeting agenda, champions, change request, minutes of meeting, requirement cross reference matrix.

Operations: conduct requirement meeting, conduct EPMO meeting.

4. Captain

   Attributes: Name, employee id, contact details.
   Operations: generate monthly report, facilitate EPMO meeting, process request report and prepare bottom-up report.

5. Business Analyst

   Attributes: Name, contact details, employee ID.
   Operations: create request report, create EPMO report, prepare meeting agenda, process monthly report, create skill matrix.

6. Configuration Manager

   Attributes: Name, Contact details, employee ID
   Operations: consolidated CR forms, generate requirement report, raise CR, update CR, read CR, delete CR, create requirement cross reference matrix.

7. Champion

   Attributes: Name, employee ID, Team ID, contact details.
   Operations: prepare training curriculum, team skill assessment, on boarding training, off boarding training, generate knowledge report, insert requirement in CR, and collect team requirements.

8. Team Members

   Attributes: Name, employee ID, Contact details, team ID.
   Operations: attend meeting, raise request.

In this proposed model, we have a dedicated team called HomeRoom that stands between executive management and the rest of teams. It is dedicated and designed to transfer information from higher management to team members in an efficient manner that increases cohesion in the process. The homeRoom consists of three employees and two software tools to assist the process. Captain, who is the main responsible person for activities carried inside homeroom. Configuration manager, maintains the requirementsONE tool and handles the change requests. Business Analyst, person who analyzes business needs, prepares agenda for scheduled meetings, records minutes of meeting and sends it to participants, responsible for maintaining sharePoint tool.
The tasks inside the HomeRoom are divided in a way that there is no overlapping or interlocking among team members. Also this model divides the organizational structure in such a way that eliminates overlapping of project requirements. The transition process between the teams is also transparent and is shared with all team members. It reduces the time taken by a team member to adapt to new project environment since the

process is standardized and available. This structure avoids process coupling and increases cohesion rate within HomeRoom as well as in the organizational level. Implementing this model would definitely help meet the project requirements.

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