

Improving Part Setup Workflow Efficiency in a Supply Chain using Share Point

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DOI : <https://doi.org/10.51583/IJLTEMAS.2024.130509>

Received: 23 April 2024; Accepted: 04 May 2024; Published: 08 June 2024

Abstract: The evolution of cloud computing is one of the major and recent developments in the computing world. Cutting-edge web technology applications have improved the manner in which business is conducted, allowing organizations to deliver business projects effectively. Microsoft SharePoint is an enterprise content management system that provides a collaborative platform for end users to design, monitor and execute business processes. It provides core functionality such as the ability to quickly undertake reporting, provision collaboration sites, and a sophisticated document repository featuring collaboration necessities. This study reviews the limitations of the current part setup workflow using email at Company XYZ, and also proposes workflow that improves the effectiveness and efficiency of the part setup workflow process using SharePoint. The creation of a SharePoint list including important features and fields, and managing the collaboration among the various shareholders involved in the whole process is discussed briefly along with screenshots. The benefits of SharePoint in the supply chain at Company XYZ is provided, also previous work done on SharePoint as an enabler collaboration is highlighted.

Keywords: Technology, SharePoint, Business process, Supply Chain, Workflow.

Confidentiality: The name of the company will be withheld and addressed as company XYZ

I. Introduction

Everything from computer hardware, software design, data management, database design and management, networking, administration of systems and engineering is contained within the term “information technology”. When covering the facets of IT as a whole, the use of computers and information are typically associated. Information technology continues to become cheaper and have more practical applications. Database technology permits organization of complex data and distribution of information. Telecommunications technology and networks increasingly provide fast transmission of all sources of data, including voice, written communications and video information. Today’s technology provides faster and more accurate interchanges of information via the web, and this is an evolution.

Disruptive innovations are currently changing the landscape of many industries and their business models. Because of increasingly digitalized processes and an exponential growth of sensible data, supply chains are also affected by the fourth industrial revolution. The emerging new technologies are creating strategic opportunities for the organizations to build competitive advantages in various functional areas of management, including logistics and supply chain management. However, the degree of success depends on the selection of the right technology for the application, availability of proper organizational infrastructure, culture and management policies. Technology is a means to enhance business competitiveness and performance. It plays a major role in success of supply chain by enhancing the overall effectiveness and efficiency of the logistics system. In logistics many new technologies are used in developed country while in less developed nations, the process is very slow. The latest technologies being used in logistics and supply chain management are segregated into Automatic Identification Technology, Communication Technology and Information Technology [19]. It should be noted however that information technology is a means to an end; it is not an end in itself. It affords an establishment the capability to sustain continuous improvement, flexibility, customer focus, responsiveness in order to meet both competitive and supply chain strategies.

Supply Chain Marco Process has become paramount in today's organization, not only in ensuring the overall successful supply chain management but also to increase the organizational performance and to get competitive advantage. Internal supply chain as one of the categories of Supply chain Marco Processes refers to the chain of activities within a company which includes strategic planning, demand and supply planning, field service, and product fulfillment. The internal supply chain has a significant impact on a company’s success; operations need to run smoothly in order to create a harmonized working environment and an efficient workflow. It is important to recognize that the internal supply chain management has a massive impact on the processes internal to the firm. In the case of company XYZ, Part Setup Workflow process is an internal process that involves multiple functions from the Part Set-up request to request completion.

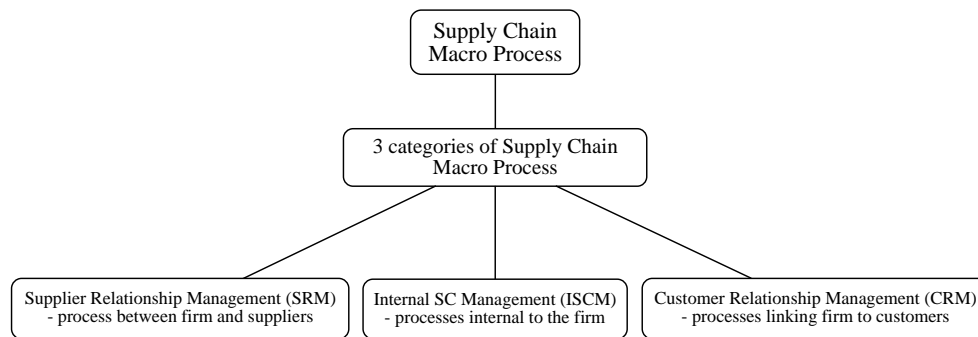


Figure 1.1 Supply Chain Macro Processes

1.1 Background of the Research

Recent information technology developments have influenced the design and cost of supply chain management, and thus the relationship among supply chain participants such as suppliers, customers, vendors and employees. Supply chain management plays various roles in different industries or sectors. Accordingly, many have recognized the application of ICT technologies in supply chain management. Information and Communication Technology field has also contributed in the internationalization of production and distribution networks in various industrial units. As many organizations are participating in more than one supply chain in the dynamic business environment, ICT tools have been recognized to lead global supply chains to develop comparative advantage for market competitiveness. ICT tools are majorly being used in supply chain areas such as order placement, inventory management, shipment tracking, exchange of information/transactions with vendors, e-payment information exchange with suppliers, mobile connectivity and cloud - based services (De Marchi et al., 2017). In particular, manufacturers and retailers in many developing nations are using ICT tools in supply chain to enhance their operational promptness, efficiency and economic performance. Global competition and improved technology are shortening time-to-market times and order-to-delivery times. Information technology now automates the integration of business processes across these organization in support of an explicit supply chain strategy. IT also enables richer practices and cross-enterprise integration in supply chain management.

On the other hand, there also exist inefficiencies in managing multiple supply chains as the business grow and expand and in terms of collaboration and communication with supply chain partners which affects the business performances and profit margins. Therefore, this study will aim to ascertain the full extent of the performance of information technology across the various level of supply chain at Company XYZ, and also provide relevant information for companies seeking to integrate information technology into all aspects of business and maximize its full potential.

1.2 Research Problem

Despite adopting several information technologies tools across its supply chain processes, there still exist a deficiency with digitalizing the Part Set-up Workflow within Company XYZ. The part set-up workflow process involves exchanging through emails the part details (consisting of part set-up request number, a general description of the work requested and name of the requestor who submitted the request) between the requestor and contributor/approver. The correct part set-up needs to be done to meet demand, supply, and safety stock. Incorrect part set-up planning can lead to inability to meet demand or wrong delivery, which eventually leads to shortages. Some other difficulties such as inability to track or maintain all KPI, tedious and inefficient manual efforts to maintain messages or emails, lots of email exchanges, difficulty for reporting can arise. The introduction of technology across supply chain processes has been more noticeable among leading and larger firms, who are able to raise capital and secure investments easily for such technological adoptions. However, there is still a slow rate of adoption among small-medium firms, which leaves a knowledge gap. The cost of implementation, lack of proper IT knowledge and skills, security fears and changing role of workers in adoption of new technology are factors that are challenging for IT adoption. This study seeks to contribute to helping address the impact of technology on supply chain performance at Company XYZ, in particular, how to best streamline and improve the efficiency of Part Set-up Workflow Process among supply chain partners.

1.3 Project Aims

This project aims to automate a portion of the supply chain by integrating the Part Set-up Workflow Process currently in place into SharePoint. This project will help to integrate automation, to save time, reduce shortages, timely and accurate delivery,

increase quality of information stored during the Part Set-up Workflow Process at Company XYZ. Furthermore, this project will show how to streamline any Information Technology tool into any workflow and how Information Technology can help mitigate complexity issues in supply chain at Company XYZ. Subsequently, the following research questions would be addressed.

1.4 Research Aim and Objectives

The main aim of this study is to determine the effect of SharePoint on supply chain performance at Company XYZ, other objectives include;

1. To review and assess the current Part Set-up Workflow Process at Company XYZ.
2. To explore and then design a solution to improve on the Part Set-up Workflow Process at Company XYZ.

1.5 Report Outline

Other areas that will be covered include an in-depth review on all information technology tools currently used in the supply chain at Company XYZ, also the Part Set-up Workflow Process will be discussed in detail. Furthermore, a detailed review on the impact of SharePoint on several workflow process in many industries, citing relevant works. Lastly, there will be a critical analysis of the extent to which SharePoint adoption in particular will benefit Company XYZ now and in the foreseeable future. Some recommendations will also be made.

II. XYZ as a company

XYZ was founded in 18xx, as a manufacturer of electric motors and fans. Over the past 100-plus years, they have grown from a regional manufacturer into a global technology solutions powerhouse. XYZ portfolio focuses on two core business platforms – Automation Solutions and Commercial & Residential Solutions. This optimization helps it drive growth, enhance investment opportunities and accelerate value creation for shareholders. Automation Solutions section ensures there is expertise, technologies and services to take on your toughest challenges and bring predictable success. The commercial and residential solution makes sure industry-leading solutions with products, systems and services are innovated to improve people's lives, to ensure human comfort and health, protect food quality and safety, advance energy efficiency and create sustainable infrastructure. Automation solutions covers several products/software such as automation & control, field control and pneumatics, operation management software, measurement instrumentation, valve actuator and regulator, control safety. Automation solutions comprise of several units, these all utilize the same information technology tools along their supply chains. Automation Solutions platform covers the following Business Units or BUs: MSOL, SYSS, FCV, D&I. Commercial and residential solution covers several products/services namely heating and air conditioning, refrigeration and coaching, professional tools and vacuum, commercial building solutions. Commercial and residential solution units likewise utilize the same information technology tools and protocols along their supply chains.

2.1 Part Set-up Workflow Process at Company XYZ

In other to build some manufacturing or industrial items, a lot of parts are needed. Part Set-up is an activity or ongoing process that is handled by the Master Data Management (MDM), and this activity is required to ensure the right unit item in demand is built or carried out in a correct and appropriate way. Thereafter, the supply chain team can track shortages and act. These parts are first built on Oracle. The correct Part Set-up needs to be done to meet demand, supply, and safety stock. If Part Set-up is not planned correctly, demand can't be met, or will be delivered in a wrong way. Therefore, lead to shortage.

2.1.1 Stakeholder Model

As manufacturing operations seek to gain competitive efficiencies, this integration also involves a great number of people and their associated work processes within the organization. When the operations team analyzes the materials management process, it likely will include receiving materials, storing materials, releasing materials for use, dispensing appropriate quantities, adjusting inventories, charging the right materials to the batch production process, consuming parts/materials, and issuing the products/parts to inventory. These processes are also highly interdependent and integrated. The right quantity of the correct, released parts/materials must be added to the right equipment. This equipment must be in the right state at the right point in the process. The people who are performing steps in the process must have been trained and approved to work on that production process.

To meet the Part Set-up Request objectives and desired future state, all of the stakeholders impacted by a change in the workflows transitioning from a manual based process to a batch record-based process, should be included in requirements gathering and business process analysis. Once these objectives, requirements, and a vision have been collected, distilled, and reviewed with the stakeholders, the potential solution is defined. As shown in Figure 2.1, the stakeholder model shows company XYZ Part Set-up Request stakeholders, their direct and indirect stakeholders considering their assets, needs, and interests. They are end-users of this design. The stakeholders are grouped into Requestors, Contributors and Handler;

1. Requestor; Product configuration team, Operations team, Customer care

2. Contributors; Finance, Planners, Pricing team, Manufacturing Engineering team, Procurement, Trade compliance.
3. Handler; Master Data Management.

2.1.2 Stakeholder Analysis of XYZ’s Parts Set-up Request

In this section, we present the stakeholder analysis. Although there are many different methods used for analyzing stakeholders, they tend to be either broad and inclusive or narrow and pragmatic. Following a detailed literature review Mitchell et al. (1997), they proposed a new normative theory called the Stakeholder Saliency Mode i.e., identification based on three variables: Power to influence the firm, Legitimacy of the stakeholders’ relationships with the firm, and the Urgency of the stakeholders claim on the firm. Power is the extent to which a party has or can influence the firm. The definition of Legitimacy is taken from Suchman (1995, p.574) who defines legitimacy as 'a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions'. Urgency is defined as 'the degree to which stakeholder claims call for immediate attention'.

This analysis allows and justifies entities that should be considered stakeholders of the Part Setup process. As illustrated in Table 2.1, the stakeholders are scored between 1-5, and are ranked from top to bottom based on their total score to justify their importance.

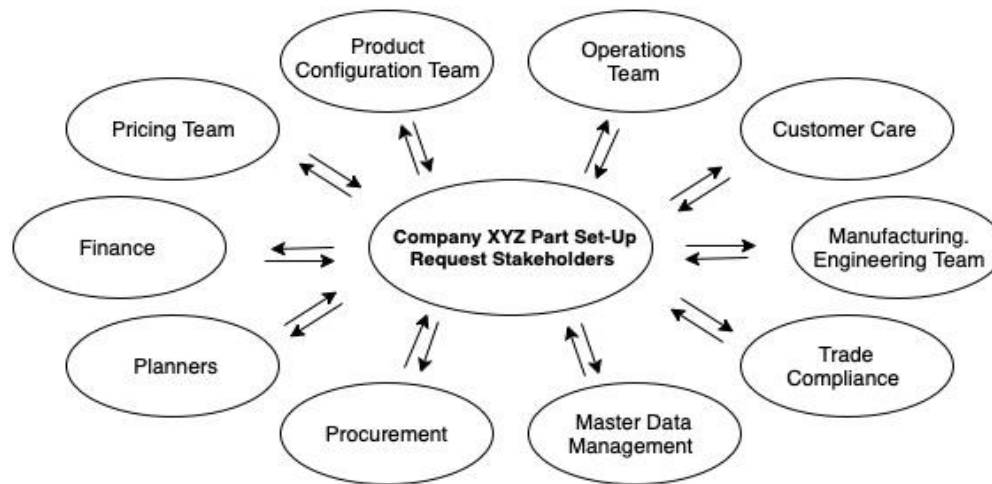


Figure 2.1 Company XYZ Part Set-up Request Stakeholders.

Stakeholders	Power	Legitimacy	Urgency	Total Score
Master Data Management	5	5	5	15
Product configuration team	4	5	5	14
Finance	4	5	5	14
Planners	4	5	5	14
Pricing team	4	5	5	14
Manufacturing Engineering team	4	5	5	14
Procurement	3	5	5	13
Trade compliance	3	5	5	13
Operations team	3	5	3	11
Customer care	3	5	3	11

Table 2.1 Company XYZ Part Set-up Request Stakeholder Analysis.

2.1.3 Current Workflow and Approval Process via Emails

As requestors raise requests from the comfort of their email inbox, an email address to receive Parts Set-up requests is created. Emailed requests are added to queues, so teams in charge can focus without worrying about missing requests or multiple inboxes. These types of requests include component (items bought from other companies, internal/external supplier), buy/resale, Kanban (commonly used parts, items created for new vendors), email.

As shown in Figure 2.2, an email is sent by the requestor to the handler. The email sent by the requestor will contain the *Part Set-up Request number* and a *general description of the work requested*. MDM (Master Data Management) receives the email, they sort and clean (meaning they will check for completeness of the request before proceeding with system amendment). If the request is complete for processing, then MDM send it based on requirement (e.g., update the price). If the price is available in the system, an email is sent directly to contributor (i.e., finance), if isn't there, first Pricing Team is emailed. Price is set-up by Pricing Team in Oracle, Finance then confirms cost update and part is activated. This is usually done manually through emails exchange between Finance and MDM. Thereafter, Requestor is notified that request has been fulfilled. The email sent by the finance or handler to the requestor will contain the *Part Set-up Request number*, a *general description of the work requested*, and the *name of the requestor who submitted the request*.

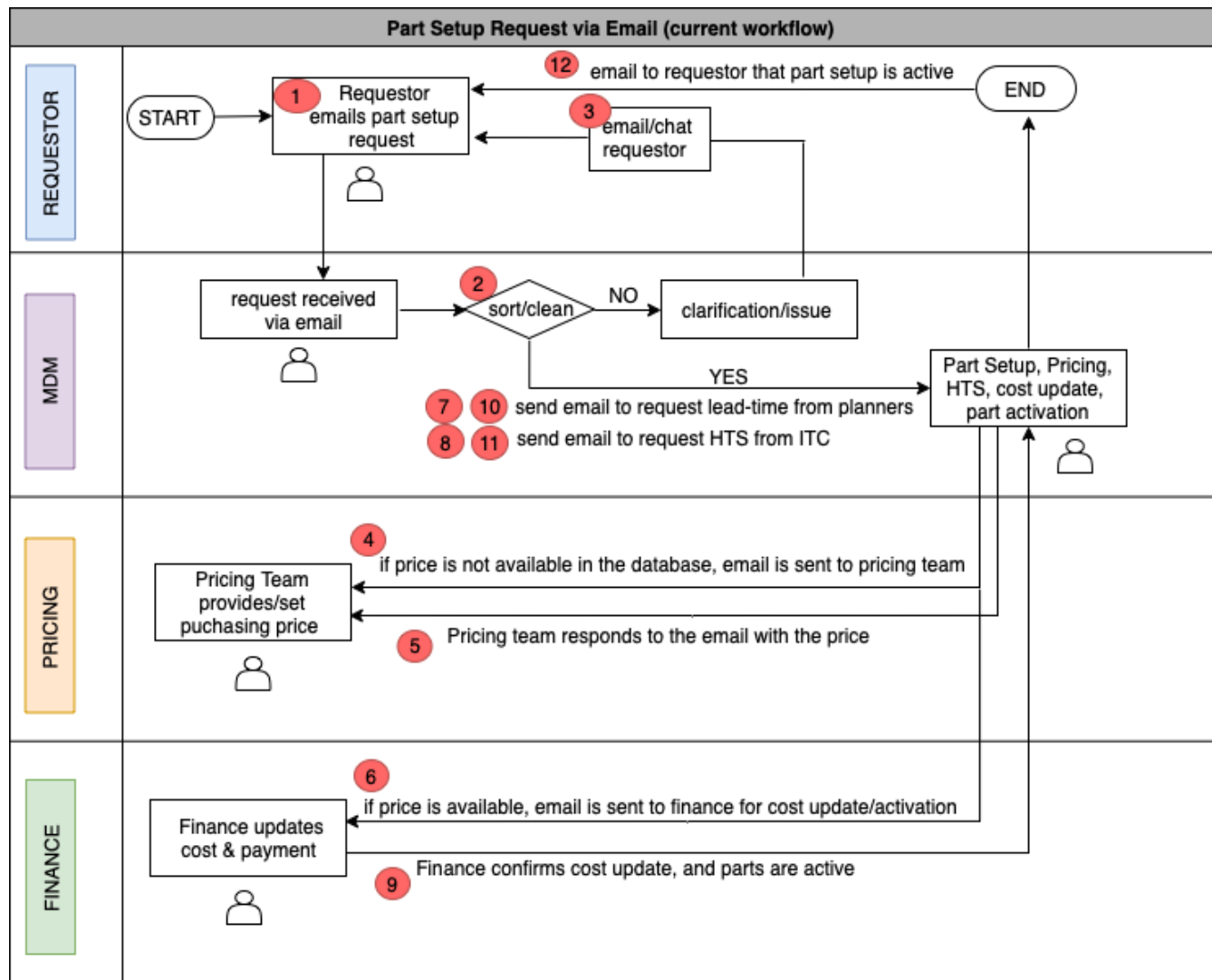


Figure 2.2 Pictorial representation of the Part Set-up Workflow Process at Company XYZ.

2.1.4 Cause and effect Analysis

Once a defect, error, or problem has been identified and confined for further review, we must begin to investigate potential causes of this undesirable effect. In circumstances where causes are not obvious, the **cause-and-effect diagram** is a certified tool frequently used to recognize potential causes. The cause-and-effect diagram is exceptionally valuable in the Analyze and Improve steps of DMAIC. However, the cause-and-effect diagram is assigned to identify potential pain points in the part setup request via

email. To analyze the part setup request via email problem, the major categories of email limitations such as communication output, unfinished deliverables, difficulty in efficiently tracking or maintain all KPI, difficult for reporting, Email could potentially cause information overload, Email messages can contain viruses, was laid out.

A brainstorming session followed to identify the various sub-causes in each of these major categories and to prepare the diagram in Figure 2.3. Then through discussion and the process of elimination, the gathering concluded that Communication Output is the most likely cause category as shown in Figure 2.4.

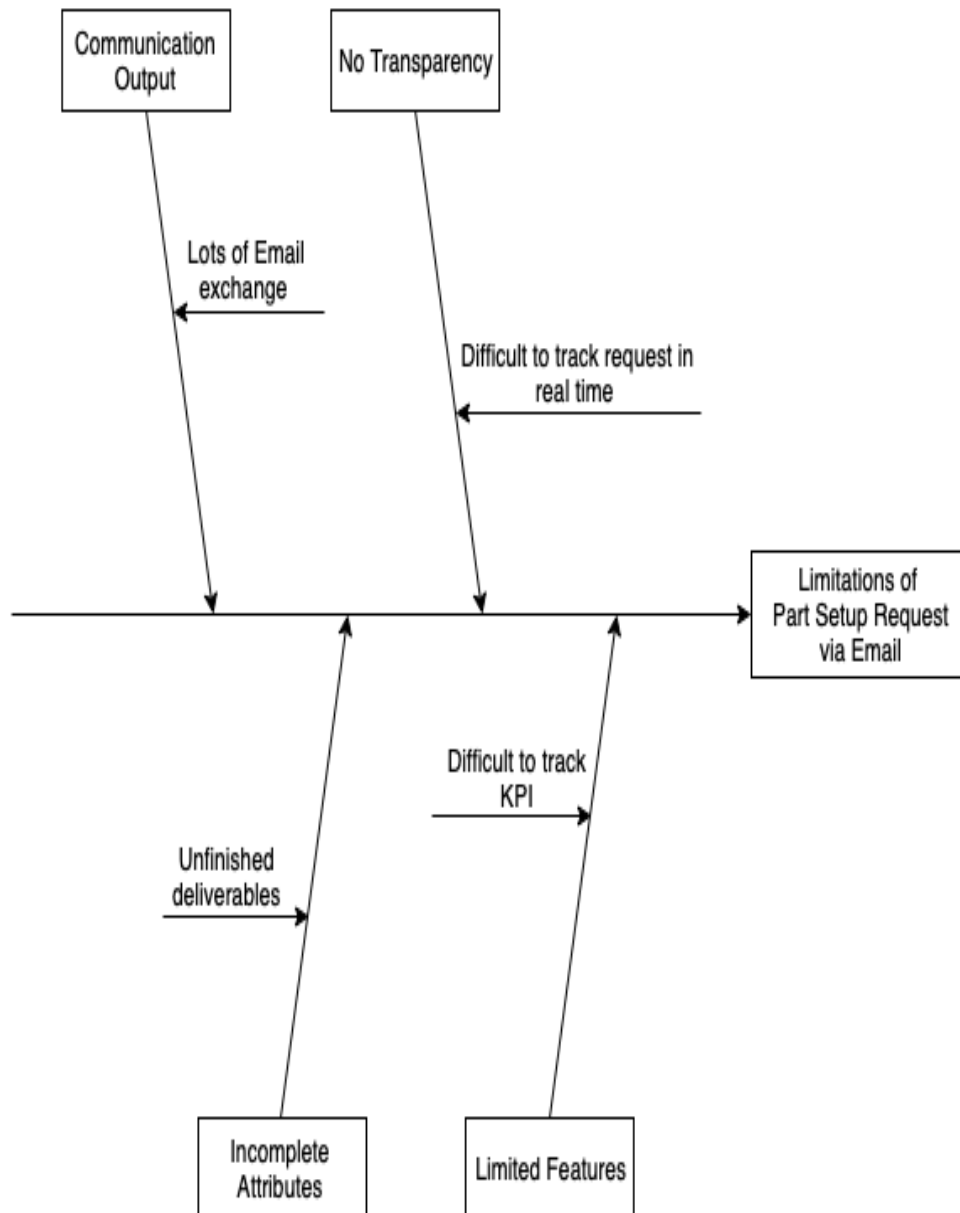


Figure 2.3 Cause-and-effect diagram for limitations of Part Setup Request.

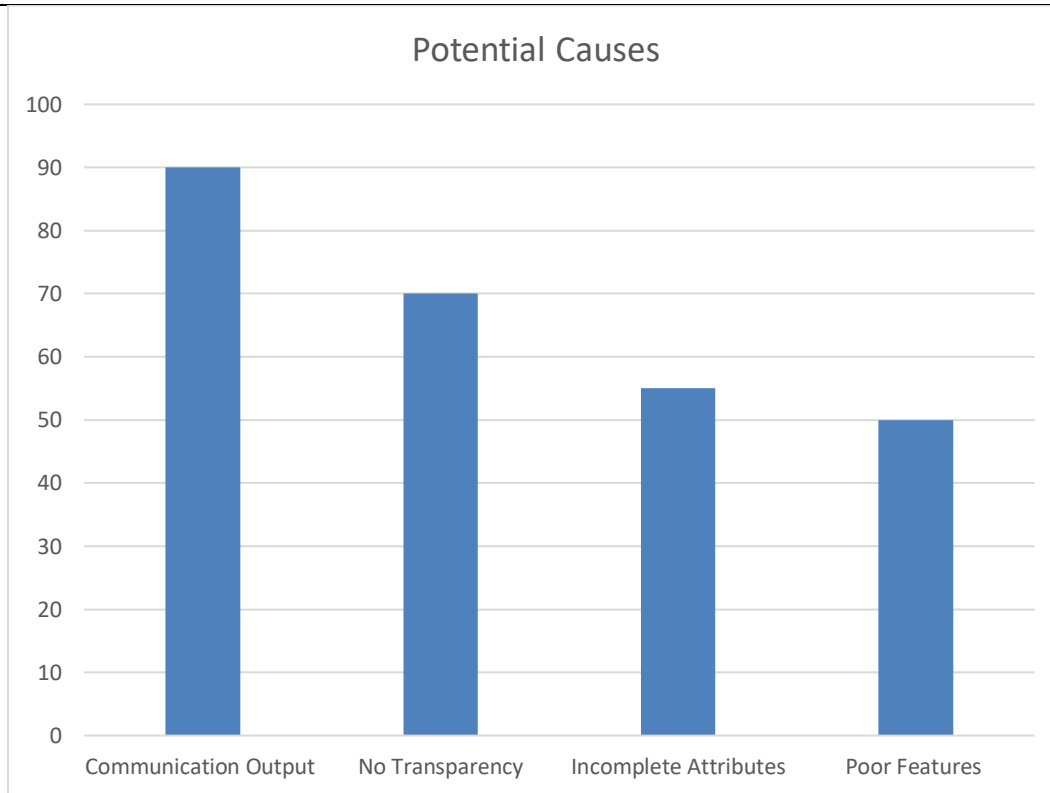


Figure 2.4 Rating of Contribution to Part Set-Up Limitation.

2.2 Current Information Technology Tools used in Supply Chain at Company XYZ

2.2.1 Power BI (Microsoft)

This is utilized for cost comparison purpose of freight cost of different lanes for heavy air and parcel. This gives a detailed analysis of inventory turnover, on time shipping rate, days of supply, return reason, inventory velocity, inventory days of supply, freight bill accuracy etc. Power BI helps to forecast demand and resource utilization, as well as make better strategic decisions to save yourself from market disruptors. It gives the real-time view of what's going on plus ability to analyze data from multiple source feeds. Ability to access data and reports from anywhere, anytime. Makes it possible to instantly measure the performance of various business functions and resources (worst performing KPIs, see quarterly & yearly performance reports etc.)

2.2.2 Oracle Transportation Management (OTM) and Global Trade Management (GTM)

Transport Management Software (TMS) takes the form of a digital tool or software program that companies use to control their logistics and transport functions. This software solutions helps the company to address comprehensive quote before job booking to ascertain the profitability and required approvals, tracking of shipments on a real-time basis, updating status and exceptions to the customer on a real-time basis, the online placing of bookings with carriers, filing manifest and declarations from system, automate the manual process, single Source of truth for end-to-end operational and financial data, job profitability comparison between planned, provisional, and actual, managing complex trans-shipment and bill of lading scenarios. This system records freight rates with nominated forwarders that are awarded for each fiscal year and automatically issues a shipper's letter of instruction (SLI) with all the details required to book a shipment. A notification of the same booking is being sent automatically to the nominated forwarder as well. It lets users manage inbound, outbound and internal transfer orders, upload and maintain rates, generate transportation orders from existing purchase orders.

TMS, including shipment planning and execution, fleet and freight forwarding software and fleet management applications can help you manage and grow your business. Transport Management and Supply Chain Management (TMS) software provides data to make better route decisions and coordinate transit times between carriers. TMS, an organization can move and track incoming and outgoing freight, plan and optimize routes, perform load building and audit paid freight managed by carriers. Transport management software's various features include land transport planning and optimization, return transport, means of transport, supplier selection and management, motor, rail, air and sea transport, real-time transport tracking and services, quality control in form of KPIs, vehicle loading and route optimization, transport cost schedules, shipment simulation, procurement and freight audit.

2.2.3 SharePoint

This tool helps to document management with tagging feature, SharePoint Version Control for documents to keep track of different document versions, tracking the current status of a routine procedure, helps to make updating content easy, document approval workflows of freights to avoid paper works for signatures/approvals, helps to notify users with important news/happenings. Also, SharePoint enables secure sharing with customers. A SharePoint list is one of the most powerful and flexible features of SharePoint, but its potential is often overlooked. SharePoint lists are far from being shiny and new, but used in the right way, they can deliver great value and play a key role in business apps and solutions. SharePoint list is simply a collection of data that has structure to it. It is essentially like a table, a spreadsheet, or a simple database. It can include many different types of information including numbers, text and even images. Within organizations, information that is regularly updated by several people and acts as a wider reference point is often managed on an Excel spreadsheet. Typically, this might be a list of suppliers, a list of employees who are qualified to give first aid or a list of business publications that an organization subscribes too. Excel is a great solution, but there are times when a SharePoint list provides far more value for storing, managing, and visualizing information.

2.2.4 Trax

TRAX, a maintenance, repair and overhaul (MRO) software solution for airline industries. It caters for every aspect of aircraft maintenance management with materials management, resource management and fleet management etc. This tool is utilized in freight audit, rate procurement and maintenance, cost allocation, spot quote, payment process. It is used to manage transportation rates and contracts. Makes it possible to view all updated rates at once and make available for audit. Also, helps to align transportation invoices to meet contractual rate agreements. Helps to check compliance variance by lane, carrier, and region. Trax gives insight into end-to-end sales order cycle time. Ensure correct and timely payment of freight invoices for any carrier, location, currency, or technology.

2.2.5 Tradesphere

Trade Sphere is a compliance manager's ultimate dashboard that helps stay within limited budgets by monitoring and managing global operations from one convenient platform. Trade Sphere is an enterprise-level global trade management solution. Trade Sphere provides regulatory trade compliance automation enabling companies to streamline their global supply chains through reduced trade operations complexity. Utilized in filing shipment information, generating trade documentation, restricted party screening, performing regulatory compliance checks, customs entry filing, performing regulatory checks at the time of order. Also helps to electronically file trade information with the appropriate government agencies. Utilized in checking compliance and restrictions in real time.

2.2.6 CRM – Customer Relationship Management

CRM software - a tool which acts as a single repository to bring your sales, marketing, customer support activities together, and streamlines your process, policy, and people in one platform. Customer relationship management (CRM) is a technology for managing all your company's relationships and interactions with customers, potential customers, vendors and suppliers. CRM possesses graphical presentation of performance data and other company metrics. This tool permits astute management of all leads, sales funnels, reports, quotations and emails, by always constantly updating them. Also, business activities tracking. CRM tools with marketing automation capabilities can automate repetitive tasks to enhance marketing efforts at different points in the lifecycle for lead generation. Some CRM systems include technology that can create geographic marketing campaigns based on customers' physical locations, sometimes integrating with popular location-based GPS (global positioning system) apps. CRM systems help businesses optimize processes by streamlining mundane workloads, enabling employees to focus on creative and more high-level tasks. Sales leads can be tracked through CRM, enabling sales teams to input, track and analyze data for leads in one place. CRM systems help track employee information, such as contact information, performance reviews and benefits within a company. Some CRM systems include features to help users keep track of client project details such as objectives, strategic alignment, processes, risk management and progress. Many CRM systems can integrate with other software, such as call center and enterprise resource planning (ERP) systems. CRM for freight forwarders helps to control sales, marketing, and customer support activities in the supply chain.

2.2.7 Demantra forecasting tool (Oracle)

A supply chain management tool employed for automating forecast process by simultaneously mapping demand forecasting against factors such as supply restrictions, customer commitments and inventory counts. It helps in enabling automated forecast process that simultaneously maps demand forecasting against factors such as supply restrictions, customer commitments and inventory counts. Implementation of Oracle Demantra results in higher service levels, greater customer satisfaction, lower inventory costs and lower distribution costs. Oracle Demantra Demand Management enables an organization to accurately forecast and plan for demand. It uses state-of-the-art Bayesian Markov forecasting, as well as pre-seeded hierarchies, worksheets, and workflows to establish a baseline forecast based on a combination of quantitative or qualitative data.

2.3 Summary Review of IT Tools in relation to PSWP

There existed several shortcomings with the way Supply Chain activities were carried out especially with regards to the Part Set-up Workflow Process; from point of order requested to request completion, there existed a series of redundancies and inefficiency along this process when email and excel were the primary tools used to carry these activities. Nowadays, with the advent of technology, the above listed information technology tools (software) have helped to curb inefficiencies and losses. SharePoint majorly has helped to make the series of activities involved in PSWP easier to manage, by displaying real time and actionable information. All these dribs up customer relationship and overall effectiveness.

III. Literature Review

This chapter reviews in great detail the work of other researchers on the importance of SharePoint as an information technology tool and the several advantages it offers when employing it to streamline workflows across the supply chain of organizations.

3.1 Information Technology in Supply Chain

The adoption of IT in supply chain and logistics management has attracted growing attention of the corporate and academic world. There is growing evidence suggesting that IT-linked knowledge, innovation and ongoing technological change are strong determinants of productivity, growth differentials as well as the capacity of countries to profit from globalization. The evolution of IT poses opportunities and problems for logistics and supply chain.

By adopting new technologies, companies are able to create a huge lever to enhance the operational effectiveness of their supply chains, and these examples are just a scratch on the surface when considering the possibilities digital technologies bring. (Alicke et al. 2017). According to Majchrzak, Markus and Wareham (2016), information and communication technology is a crucial part of the organization required for its development. Information and communication technology have become more pertinent for every organization to actualize its plan. Currently, having technologies like FlashView are essential to running a thriving corporation that is both business and consumer-friendly (Eze, Ayigbe, Eberечи and Jordan, 2015). Through the use of social media, firms can create more open communication with customers, increase the visibility of your company, improve the demand on their products, utilize cost-effective and time-efficient marketing strategies, lower their operational costs, and enhance the company's overall productivity (Rufai, 2014). As stated by Christopher (2016), ICT tools help to improve the efficiency and effectiveness of supply chain by means of customization and its adaptation in the business environment. The major uncertainties in Supply Chain Management can be overcome by specifically tailored systems of information sharing and implementation of ICT infrastructure (Llach and Alonso-Almeida, 2015). The same technologies do not fit to all industries' needs and structures, but this will probably change over time (Abood and Quilligan 2018). According to Wipro Digital (2017), digital transformation can also be very difficult to accomplish.

3.2 Overview of SharePoint as an IT Tool in Industries

Companies are entering a new era where it is a significant advantage for every organization who is able to handle data in order to create both customer and operational value. (Teigland et al. 2018). Highly advanced web technology applications have enhanced the manner in which corporations conduct their day-to-day operations, allowing them to effectively and efficiently deliver business related projects (Woodgate 2012). Web applications such as Microsoft SharePoint enable organizations to deliver business applications in an effective and appropriate manner (Hillier & Pattison 2013). Microsoft classifies the web application as a critical business application that has the ability to perform and deliver cutting-edge business solutions (Goh, Ang & Sikand 2003). The use of SharePoint as a critical business tool has the ability to enable organizations to effectively share knowledge, manage business documents and content, and collaborate during business projects (Herrera 2008). There is a need to power up and improve the use of SharePoint as a business application platform (Holliday et al. 2007). Thus, this study focused on determining how SharePoint enables a retailer to share knowledge, and collaborate and manage its content, and investigating the value brought by SharePoint to the organization, and SharePoint as an enabler for collaboration and efficient project knowledge-sharing (Russell 2013). The use of web technology applications is increasing within organizations, allowing companies to deliver their business needs effectively and efficiently. Many organizations are adapting the use of SharePoint as their primary intranet-enabled platform to collaborate and efficiently share project knowledge (Goh et al. 2003). According to Lindvall, Rus and Sinha (2003) Organizations that use SharePoint effectively will be able to gain access to tacit and explicit knowledge of their employees and workflow will be enhanced, this will occur through features that allows collaboration and the development of new knowledge. Organizations such as Empower CS Consulting Services have been growing successfully using Microsoft SharePoint.

SharePoint monitors an organization's ability to manage the time spent on projects; it also promotes collaboration that ensures the sharing of knowledge amongst employees about the projects in progress (Mckenna 2008). The use of SharePoint is growing in the business environment, allowing various companies to improve knowledge management and knowledge sharing (Herrera 2008). SharePoint users have access to business knowledge and insight (Scale 2009). This allows the creation of a workplace driven by best information-flow practices (Koplowitz & Owens 2009). Previous research indicated that SharePoint has the potential to enable an organization to improve their business operations if the business application platform is used effectively (Holliday et al.

2007). The challenge is getting users to understand the value offered by the platform and learning how to efficiently collaborate more and share knowledge through the platform (Cisco 2011). As a result, many users find the platform too complex and they end up using it only as an information repository instead of realizing its full potential. SharePoint is sometimes complex and does not accommodate users' skills, especially if the right training is not given. To minimize this challenge, it is important to develop certain strategies on how to better use SharePoint through a framework. Thus, it is significant to understand the role it plays in order to improve an organization's performance through collaboration and knowledge sharing.

Microsoft SharePoint as a web-based application has penetrated the corporate market. Over 78% of Fortune 500 companies are using SharePoint; this is a statement from Microsoft (Woodgate 2012). Many organizations today are using the platform for content and collaboration (Riley & White 2013). It is also predicted that the usage rate of SharePoint is just the start. With 67% of corporate organizations considering SharePoint as a workflow platform, Microsoft is positioning the platform as a critical business application (Woodgate 2012).

SharePoint can be defined as a web-enabled application that is installed on Microsoft Windows servers and that can be accessed from different machines in the network through a web browser (Crane 2010). On the website, one can store different information, such as documents, emails and spreadsheets. It enables an individual to store business information including tasks, projects, calendars and more. It therefore acts as a central repository to store all business information (Crane 2010). SharePoint is an automated platform and technology system that has the ability to facilitate knowledge sharing, collaboration and content management (Sy 2012).

SharePoint has unique workflow features that are out of the box such as approval workflow and records routing; this workflow application installed in SharePoint enables the effective workflow within an organization (Favre 2011). Ryan (2010) points out that there are many other benefits of using SharePoint as discussed in the next section.

3.2.1 SharePoint as a collaborative platform for project management

SharePoint plays a significant role in enabling an organization to collaborate and manage business projects. Through project Dashboard, which is embedded within SharePoint as a tool, an organization is able to get a clear picture of the implementation of projects and also view the progress of a project (Laahs, McKenna & Vickers 2002). The platform enables the organization to regulate, automate and control certain aspects of projects through alerts that are programmable. The platform, through the calendar feature, also enables the project team to share meetings and appointments.

Microsoft SharePoint has the ability to track a project's progress, improve productivity and streamline business activities (Millett et al. 2005). The platform allows an organization to develop schedules, and improve communication and feedback on the projects. It also ensures that all project related activities are monitored and controlled. The platform has the capability of informing project managers about a project's performance and possible execution dates (Sy 2010). It is important to note that SharePoint enables an organization to collaborate throughout the business processes. This can be achieved because the platform allows the organization to manage the projects, tasks and the sharing of project and progress-related documents amongst different groups (Seven Technologies 2010). The SharePoint template enables an organization to share content and knowledge about business activities (Bentley 2012). Through the platform, the organization is able to assign and manage tasks to individuals in a group and track the availability of resources and the project's progress. The platform allows employees to report time spent on projects in the form of feedback (Seven Technologies 2010).

3.2.2 Efficient project knowledge sharing through SharePoint

Microsoft SharePoint is significant in enabling an organization to efficiently share knowledge on projects and business as a whole. Tools such as Blogs and Wikis enable employees to participate in online discussions as a team (Williams 2011). These tools also ensure that employees receive daily updates and projects' progresses. Through these tools, employees are able to share skills and competencies that are related to projects they work on in order to improve the process, and this is a form of lessons-learned mechanism (Herrera 2008). SharePoint Wiki tools play an important role in facilitating knowledge sharing for an organization. SharePoint Wikis provide a conversational space for employees to share insights of work-related issues. These tools allow Internet chats, or messaging and video conferencing. The tools also improve productivity through enhanced collaboration and communication through a shared community space (Vasques & Potter 2013).

3.2.3 SharePoint for organizational content management

SharePoint also has the ability to improve content or document management within an organization. The platform allows users to work collaboratively on project documents and content. The document library feature within the platform allows individuals to not only see what content is modified in the document but also who modified the document (Reed 2007). It also allows employees to check in and out of documents, so other users are informed (Herrera 2008).

The most important aspect of the SharePoint document library is the versioning option. It is important to review document versions when collaborating with team members. If changes are made on a document and an individual needs to change the

content, SharePoint will save the documents separately, giving the opportunity to retain original versions and the newly modified document version (Herrera 2008).

Microsoft SharePoint has the ability to enable multiple users to work on the same document and content at the same time (Larrivee 2016). Through SharePoint one can also track changes that are made on a specific document (Larrivee 2016). The platform can improve content management as it enables the managers to give and/or restrict permission of documents or content from certain users, which means certain users must have permission to make changes in a document (Larrivee 2016).

IV. Overview

This chapter gives a detailed explanation on the conceptual model, and the logic principles. It gives a detailed description of how the system can be implemented and used. The validity and reliability of the proposed solution will first be explained and then the limitations will be evaluated. Afterwards it will be discussed if reliability and validity are reached in this study. The investigation will examine the advantages of the proposed solution over the current process.

4.1 Model Development

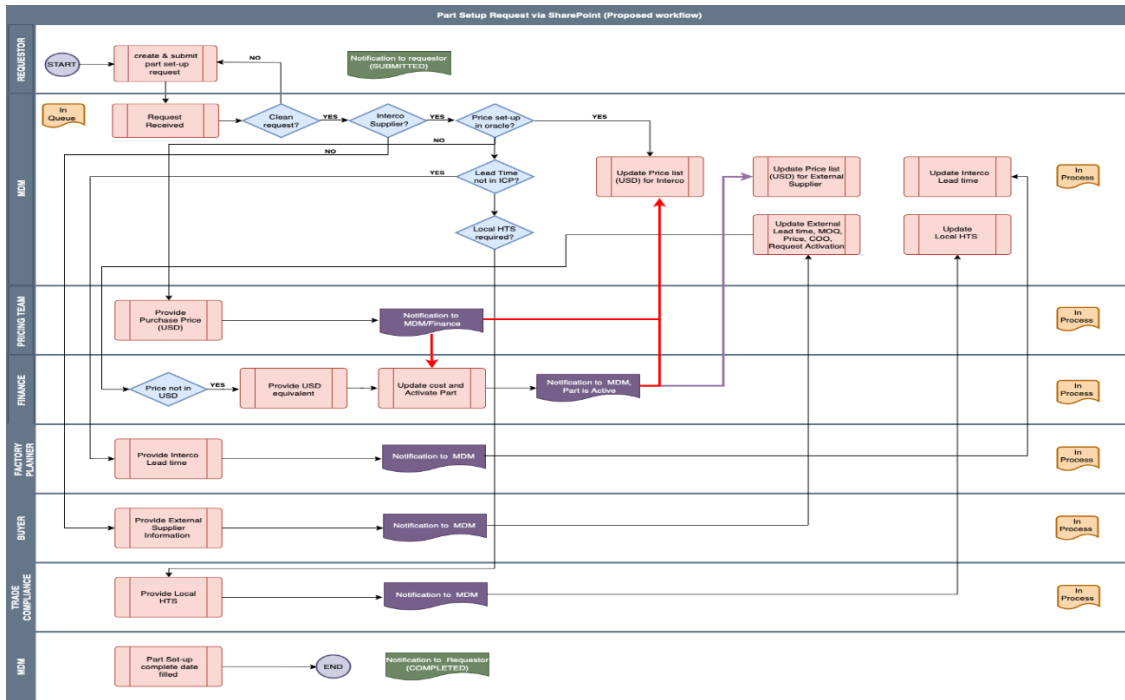


Figure 4.1 Conceptual Model of the proposed Part Setup Workflow Process at Company XYZ.

4.1.1 Logic (flow of information)

As per the requirements;

1. Requestor submit the form with required data or information.
2. A new request appears on dashboard with status showing “submitted”.
3. MDM click to view for further actions on such request.
4. MDM will fill the respective details on the form then submit.
5. Status updates on dash board as “approved by MDM”.
6. Finance team “click to view” and acts on the request for cost update/activation through the already designed finance form.
7. Finance team will submit and status will update on dashboard as “approved by Finance”.
8. Pricing team acts next, submit, and status will update to “approved by pricing”.
9. Next is the Planning team, factory Planner fill the required details and submit. Dashboard updates “approved by planner”.

10. External Supplier completes their form and submit. Status updates on dashboard to “approved by External Supplier”.
11. Trade compliance fill and submit form, Status updates on dashboard to “approved by Trade compliance”.
12. Once approved by Trade Compliance, request goes back to Finance for part activation.
13. MDM updates status to “completed” when part/request is fulfilled.

4.1.2 Rationale underpinning the model

Analyzing the response to the questionnaires sent out to all stakeholders involved revealed some pain points and several issues with the current part setup process using email. Some of which are; all request coming via email which is tedious and ineffective as there may arise varying needs, a respondent said it took an average of 10 email exchange per request to sort the part setup process, this is a lot of messages. Another respondent said there was a need to modify a lot of attributes for the process manually which was cumbersome as a separate manual list was needed for maintenance to capture those details. One of the respondents mentioned that in terms of volume, 8 parts were completed a day since it was difficult to track the activities of several units via email. A respondent noted that during the setup of the part, attributes for trade compliance was enormous, a lot of cleanups needed to be done, at times it took 2 weeks to get a reply. A respondent said that some requests to activate parts were found active already with incomplete attributes, this makes accurate reporting difficult and losses uncured. One respondent admitted that at times the wrong tool has been used to setup the request or the part number is invalid. The proposed SharePoint list would make for a more effective and efficient part setup workflow process.

4.2 Conversion from Conceptual Model to Prototype

Preliminary Planning

Plan the procedures to avoid any interruption and to speed up the process:

- Make a list of the documents to be included, the electronic formats to be used for these files, and existing platforms that will work with SharePoint (ERP/CMS/CRM systems)
- Ensure to have a list of relevant access rights, business policies, and data protection requirements

SharePoint has been enriched with new technologies including client-side APIs using standards such as REST and JSON, JavaScript, CSS, and HTML5. The branding capabilities and the process to brand a web site have also made it possible to build prototype. SharePoint also has a new concept of HTML master pages and HTML page layouts.

The below technologies were used to implement the Part Setup workflow process

Front End technologies	HTML, CSS, jQuery
Back End technologies	Rest-API SharePoint development modal
Workflow	MS – Flow

Table 4.2 Technologies used to implement on SharePoint

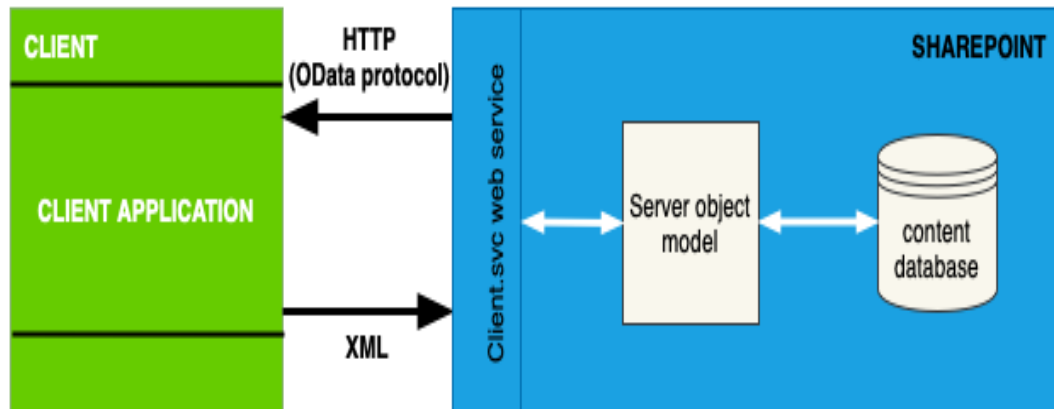


Figure 4.2 SharePoint Technology Interaction

4.2.1 Characteristic of Prototype

Dashboard

A dashboard is a related group of interactive scorecard and report views that are organized together in a SharePoint or Web-hosted site. SharePoint Server enables users to create and use dashboards that provide up-to-date information in a centrally managed, easily accessed location. Users can employ SharePoint Server tools to create and use dashboards that are suitable for an individual, team, group, or the entire organization. A dashboard might resemble the following image:

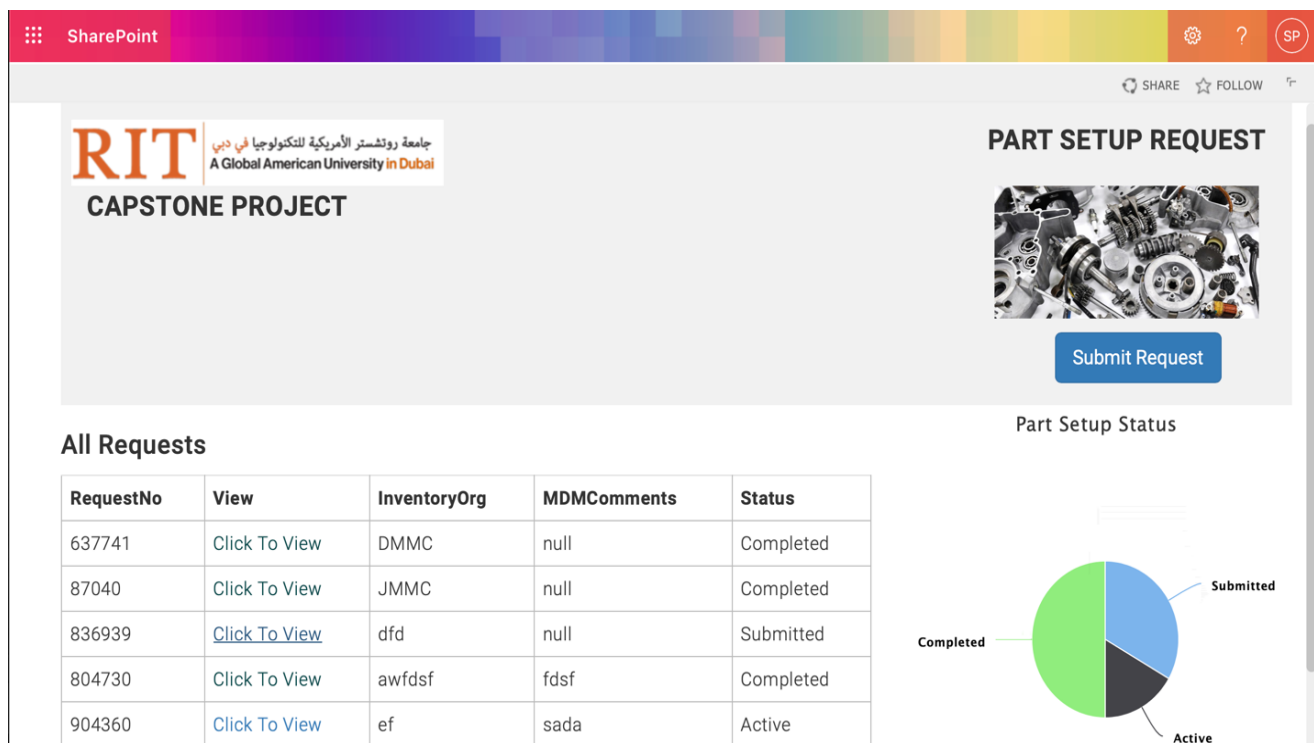
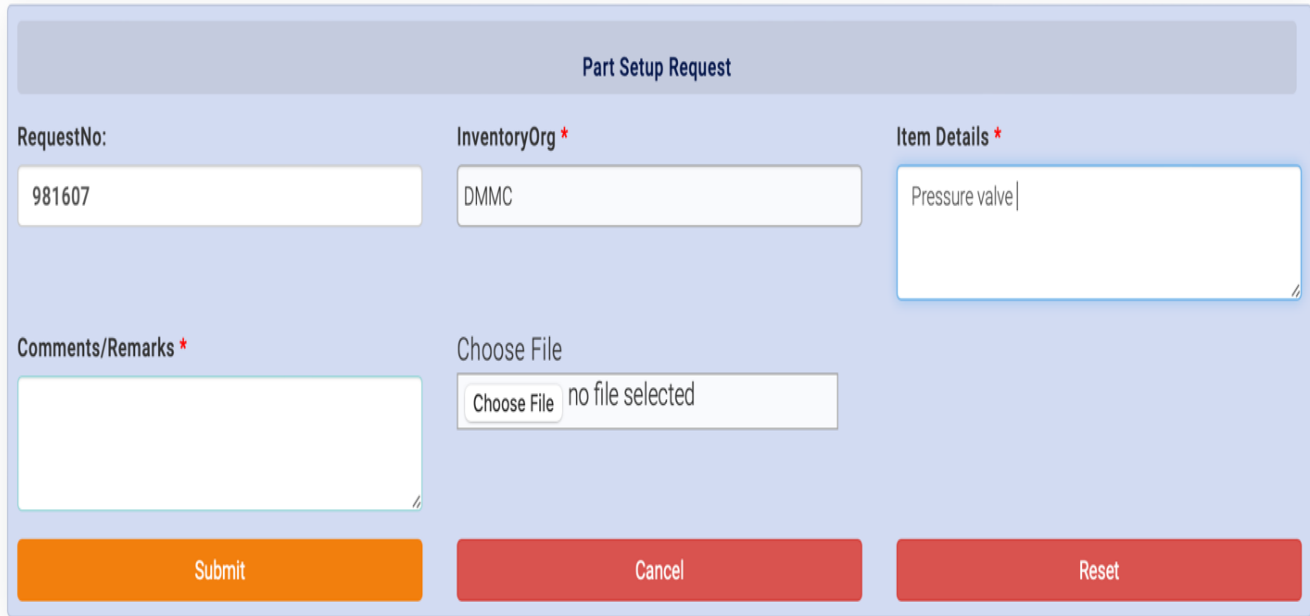


Figure 4.3 Part Setup Request dashboard.

Stakeholder Forms (New & Edit forms)

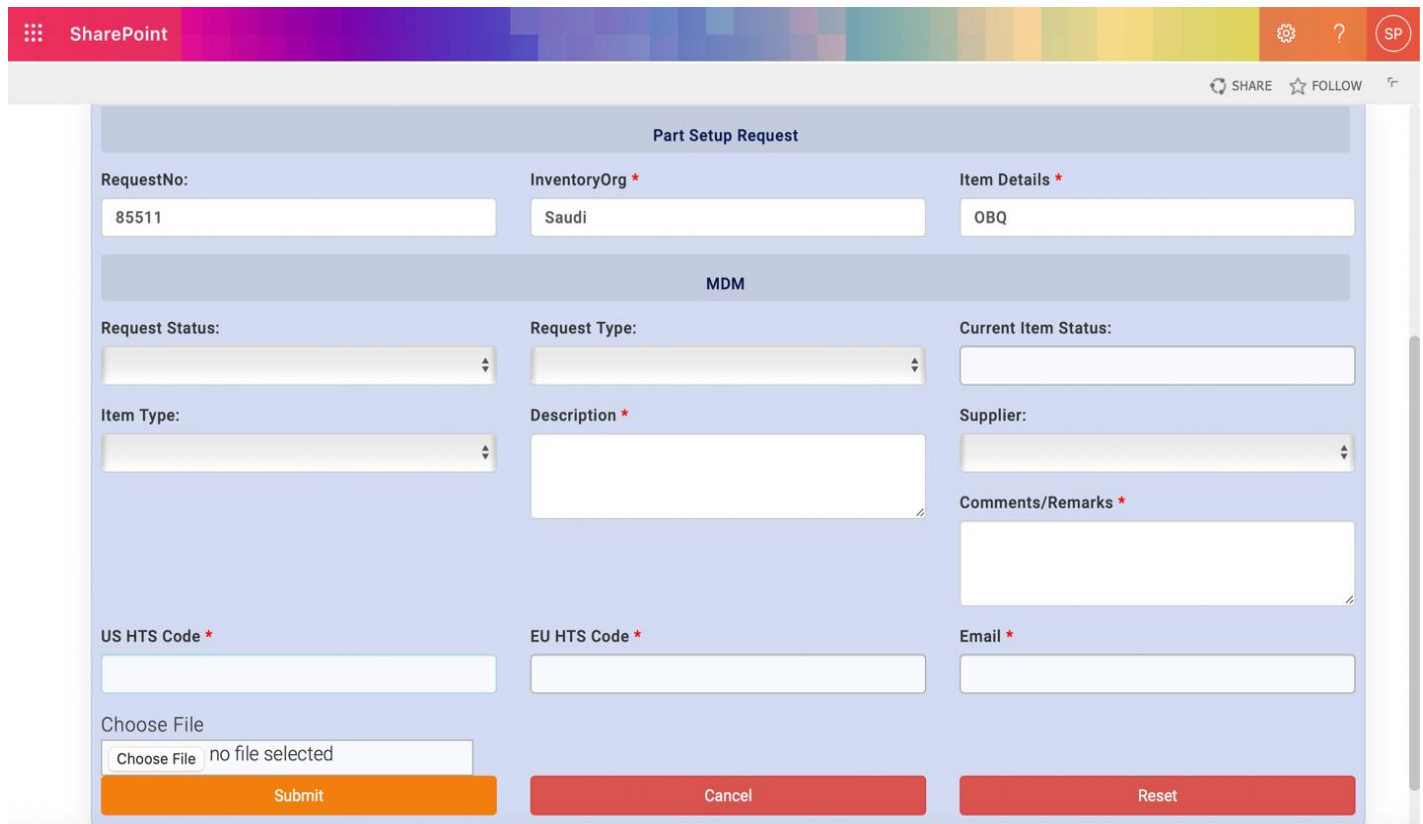
A SharePoint Form is a window with a number of fields with labels for users to enter their data: Request number, email, inventory organization, item details, comments etc. SharePoint forms are created to simplify all business processes, workflows, and also to make working with a database more pleasant and well-organized. In addition, the forms with labels help users to prevent incorrect data from being entered.



The screenshot shows a SharePoint form titled "Part Setup Request". It contains the following fields and controls:

- RequestNo:** Text input field containing "981607".
- InventoryOrg *:** Text input field containing "DMMC".
- Item Details *:** Text area containing "Pressure valve".
- Comments/Remarks *:** Empty text area.
- Choose File:** File upload control showing "Choose File" and "no file selected".
- Buttons:** Three buttons at the bottom: "Submit" (orange), "Cancel" (red), and "Reset" (red).

Figure 4.4 Part Setup SharePoint form



The screenshot shows a SharePoint form titled "Part Setup Request" within a browser window. The form includes the following fields and controls:

- RequestNo:** Text input field containing "85511".
- InventoryOrg *:** Text input field containing "Saudi".
- Item Details *:** Text input field containing "OBQ".
- MDM Section:**
 - Request Status:** Dropdown menu.
 - Request Type:** Dropdown menu.
 - Current Item Status:** Text input field.
 - Item Type:** Dropdown menu.
 - Description *:** Text area.
 - Supplier:** Dropdown menu.
 - Comments/Remarks *:** Text area.
 - US HTS Code *:** Text input field.
 - EU HTS Code *:** Text input field.
 - Email *:** Text input field.
- Choose File:** File upload control showing "Choose File" and "no file selected".
- Buttons:** Three buttons at the bottom: "Submit" (orange), "Cancel" (red), and "Reset" (red).

Figure 4.5 Part Setup SharePoint form.

4.2.2 Potential limitations of your prototyping process

Generally, no severe limitation to the process has been encountered as every relevant personnel has contributed accordingly. The only limitation has to do with the scope of the process which only entailed the request aspect of the workflow, although it could easily be modified for other processes. Also, SharePoint does not support automatic attribute update in Oracle.

4.3 Testing

4.3.1 Testing SharePoint Functionality

Information should be clean, up-to-date and easily searchable. Test functionality cases includes at least adding, deleting, and updating part setup requests. Each page or form was tested. Test cases also includes proper linking, including that on a page and linking to external pages or even other domains, and making sure there are no broken links or orphan pages. Finally, information is transmitted through forms without being corrupted.

4.3.2 Testing SharePoint Compatibility

compatibility focused on OS compatibility, browser version compatibility, and add-in updates, including mobile browsing and any issues arising while using SharePoint on different devices. Compatibility with peripherals should also be added in this step if there is a print option.

4.3.3 Testing SharePoint Performance

The load test ensures the system is usable on different internet connection speeds and that it can be accessible during peak times. The web stress test aims to stretch the limits of the system up to its breaking point.

4.3.4 Testing SharePoint Security

The files and directories should not be reachable directly. A valid SSL certificate is installed and running, notifying the user when they are about to leave a secure area.

4.3.5 Testing SharePoint Interface

Tried resetting the connections during an operation to simulate a defect and understand how the program is handling these situations.

4.4 Evaluation

Work instructions were updated for SharePoint, and testing followed. it was important to adopt a strategy that will ensure seamless integration and wholesome efficiency. The test results showed that SharePoint work much better than the email exchange. After multiple test, it was concluded that SharePoint streamlined the whole process to a very significant level, significantly cutting the lead times, transparency across each phase of the process is visible on a single page, it became quicker to spot anomalies/errors, number of action to complete a request went from 12 to 5, eliminating multiple email handoffs between stakeholders, avoiding the risk of missing a request, requests can be tracked anytime, ability to view the request revision history, faster and easier processing, ability to set alerts and view reports, support automated workflows, can meet target implementation date, it is easy to customize, good and efficient reporting using database style, easy to navigate for all users and stakeholder.

V. Discussion

The main objectives of the study were to review and assess the current Part Setup Workflow Process at Company XYZ; to explore and then design a solution to improve on the Part Setup Workflow Process at Company XYZ using SharePoint. It is important to note that the study intended to understand the stakeholder's perception on the current process in use, and implementation of SharePoint, in an attempt to understand the value of SharePoint. The first finding indicated that stakeholders understood the current process to be inadequate and inefficient. The second finding showed that stakeholders were willing to adopt a more efficient tool for the part setup workflow process. The third finding indicated that SharePoint allows users to effectively collaborate, share business reports and execute their projects. Based on the findings of the study, the SharePoint list enables all participating shareholder to amend Part Setup workflow reports in a single shared space, the platform enables the users to work on the same document at once. The platform permits stakeholders to build and maintain reports quickly.

5.1 Recommendation

This study will help Company XYZ improve other aspect of its business using SharePoint where possible. Surveys should be carried out regularly within the supply chains of the company to find out pain points that may be troubling stakeholders and preventing them from carrying out activities effectively and efficiently. Based on this study, companies should confidently invest more in digital solutions and enhance the proficiencies of managing them because the profits are substantial and plain.

5.2 Conclusion

The Information and Communication Technology (ICT) age has brought significant changes in the manner in which corporations run their day-to-day business operations. Microsoft SharePoint is one of the applications that has developed from the ICT age and has improved the manner in which business is conducted. The platform has also played a major role in enabling effective and efficient project management practice, which allows the retailer to effectively and efficiently deliver best business solutions. Through SharePoint, an organization is able to effectively collaborate and manage organizational content, and improve decision making. This study gives an overview on the current limitations of the part setup workflow process at Company XYZ and the possible advantages SharePoint list brings to the part setup workflow. In conclusion, it is important to note that from the test conducted, SharePoint will significantly make this workflow effective. This study provides a detailed overview on the deployment of SharePoint within the Part Setup workflow process. This overview will provide the incite and tools necessary to successfully deploy SharePoint within any environment. Moving forward, this will serve as a solid groundwork for future implementations in supply chain management. The successful implementation of SharePoint has improved communication and collaboration for this particular workflow and others related to it within the supply chain at Company XYZ. Given its qualities and tools, the stakeholders agree that it will server current and future benefits to Company XYZ. According to the stakeholders involved, the platform has enabled Company XYZ to cut down on time spent creating, and maintaining reports. This has allowed Company XYZ to remain competitive with other manufacturers, as request and management are handled in real time. Furthermore, this has enhanced productivity and business functions.

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Appendix**Appendix I: JavaScript of Part Setup request on SharePoint**

```
"use strict";
var _siteUrl = "";
let charLimitTitle = 50;
let charLimitDesc = 200;
var commonUrl = "";
var _lstPartSetup = "PartSetup";
var _lstRequestStatus = "RequestStatus";
var _lstRequestType = "RequestType";
var _lstItemType = "ItemType";
var _lstSupplier = "Supplier";
var _lstCountry = "Country";
var _RequestStatusCollection = [];
var _RequestTypeCollection = [];
var _ItemTypeCollection = [];
var _SupplierCollection = [];
var _countryCollection=[];
var _homePageURL="https://soutya.sharepoint.com/sites/Tutorial/Pages/PartSetup.aspx";
var _applicationTypeCollection = [];
var currentLoginEmail = "";
$(document).ready(function () {
    document.title = "Home";
    _siteUrl = _spPageContextInfo.siteAbsoluteUrl;
    commonUrl = _siteUrl;
    setInterval(function () {UpdateFormDigest(spPageContextInfo.webServerRelativeUrl,
_spFormDigestRefreshInterval);}, 20 * 60000);
    SP.SOD.executeFunc('sp.js', 'SP.ClientContext', indexStart);});
function indexStart() { var today = new Date();bindListeners();
    var urlforRequestStatus = _siteUrl + "/_api/web/lists/GetByTitle('" + _lstRequestStatus + ")/items";
    var getRequestStatus = SPRestCommon.GetItemAjaxCall(urlforRequestStatus);
    var urlforRequestType = _siteUrl + "/_api/web/lists/GetByTitle('" + _lstRequestType + ")/items";
    var getRequestType = SPRestCommon.GetItemAjaxCall(urlforRequestType);
    var urlforItemType = _siteUrl + "/_api/web/lists/GetByTitle('" + _lstItemType + ")/items";
    var getItemType = SPRestCommon.GetItemAjaxCall(urlforItemType);
    var urlforSupplier = _siteUrl + "/_api/web/lists/GetByTitle('" + _lstSupplier + ")/items";
    var getSupplier = SPRestCommon.GetItemAjaxCall(urlforSupplier);
    var urlforCountry = _siteUrl + "/_api/web/lists/GetByTitle('" + _lstCountry + ")/items";
    var getCountry = SPRestCommon.GetItemAjaxCall(urlforCountry);
```



```
$.when (getRequestStatus,getRequestType,getItemType,getSupplier,getCountry)
.then (function (respRequestStatus,respRequestType,respItemType,respSupplier,respCountry) {try {if
(respRequestStatus[0].d.results.length > 0) {RequestStatusCollection = respRequestStatus[0].d.results;
    CommonUtil.BindDDL("ddlMDMRequestStatus", _RequestStatusCollection, "Select", "ID", "Title");}
if (respRequestType[0].d.results.length > 0) {
    _RequestTypeCollection = respRequestType[0].d.results;
    CommonUtil.BindDDL("ddlMDMRequestType", _RequestTypeCollection, "Select", "ID", "Title");}
if (respItemType[0].d.results.length > 0) {
    _ItemTypeCollection = respItemType[0].d.results;
    CommonUtil.BindDDL("ddlMDMItemType", _ItemTypeCollection, "Select", "ID", "Title");}
if (respSupplier[0].d.results.length > 0) {SupplierCollection = respSupplier[0].d.results;
    CommonUtil.BindDDL("ddlMDMSupplier", _SupplierCollection, "Select", "ID", "Title");
    CommonUtil.BindDDL("ddlGlobalSupplier", _SupplierCollection, "Select", "ID", "Title");
    CommonUtil.BindDDL("ddlFactorySupplier", _SupplierCollection, "Select", "ID", "Title");
    CommonUtil.BindDDL("ddlBuyerSupplier", _SupplierCollection, "Select", "ID", "Title");
    CommonUtil.BindDDL("ddlTradeSupplier", _SupplierCollection, "Select", "ID", "Title");}
if (respCountry[0].d.results.length > 0) {countryCollection = respCountry[0].d.results;
    CommonUtil.BindDDL("ddlTradeSupplierCountry", _countryCollection, "Select", "ID", "Title");}
var ItemID = getUrlVars()["ItemID"];
if (!!ItemID) {bindEditForm(ItemID);}
else { // New record
    generateUniqueNumber();
    bindDashboard();}
catch (error) {console.error(error);}
}).fail (CommonUtil.OnRESError);}

function bindEditForm(ItemID) { $('#middlecontent').show();
$('#divDashboard').hide();
$('#btnSubmitRequest').hide();
$('#btnBack').show();
    //fetch project data by ID
    //fetch project data by ID
    var urlforgetProjectDetailsbyID = _siteUrl + "/_api/web/lists/GetByTitle('"+ _1stPartSetup + "')/items?"
    +
"$select=ID,RequestNo,InventoryOrg,RequesterComments,MDMRequestStatus/ID,MDMRequestStatus/Title,MDMRequestType/ID,MDMRequestType/Title,MDMItemType/ID,MDMItemType/Title,MDMSupplier/ID,MDMSupplier/Title,MDMItemStatus,MDMDescription,MDMComments,PricingteamEmail,FinanceEmail,FactoryEmail,PlannerEmail,BuyerEmail,ITCEmail,GlobalPricingItem,GlobalPricingDescription,GlobalSupplier/ID,GlobalSupplier/Title,GlobalPurchasePrice,GlobalPricingComments,FinanceItem,FinanceDescription,FinancePurchasePrice,FinancePurchasePrice,FinancePurchasePriceSpecifyCurrency,FinancePartSetupOracle,FinanceComments,FactoryItem,FactoryDescription,FactoryQty,FactoryPOLeadTime,FactorySupplier/ID,FactorySupplier/Title,BuyerItem,BuyerDescription,BuyerPurchasePrice,BuyerMOQ,BuyerCOO,BuyerPOLeadTime,BuyerSupplier/ID,BuyerSupplier/Title,TradeItem,TradeDescription,TradeSupplier/ID,TradeSupplier/Title,TradeSupplierCountry/ID,TradeSupplierCountry/Title,USHTSCCode,EUHTSCCode,AEHTSCCode,SAHTSCCode,TradeComments,Status"
```

```

+ "&$expand=MDMRequestStatus,MDMRequestType,
MDMItemType,MDMSupplier,GlobalSupplier,BuyerSupplier,TradeSupplier,TradeSupplierCountry,FactorySupplier"
+ "&$filter=(ID eq '" + ItemID + "')";
var getProjectDetailsbyID = SPRestCommon.GetItemAjaxCall(urlforgetProjectDetailsbyID);
$.when(getProjectDetailsbyID)
    .then(function (respProjectDetailsbyID) {
        if (!!respProjectDetailsbyID.d.results) {
            setEditFormFields(respProjectDetailsbyID.d.results[0]);
            var attachmentfiles = "";
            var urlforgetAttachmentsbyItemID = _spPageContextInfo.webAbsoluteUrl +
            "/_api/web/lists/getbytitle('PartSetup')/items('" + ItemID + ")/AttachmentFiles";
            var getAttachmentsbyItemID = SPRestCommon.GetItemAjaxCall(urlforgetAttachmentsbyItemID);
            $.when(getAttachmentsbyItemID)
                .then(function (respAttachmentsbyItemID) {
                    if (!!respAttachmentsbyItemID.d.results) {
                        var responseAttachments = respAttachmentsbyItemID.d.results
                        for (var i = 0; i < responseAttachments.length; i++) {
                            attachmentfiles += "<a href='" + responseAttachments[i].ServerRelativeUrl + "'><li> " +
                            responseAttachments[i].FileName + "</li></a>";
                        }
                        attachmentfiles = "<ul>" + attachmentfiles + "</ul>";
                        $("#divAttachments").append(attachmentfiles);
                        $("#divAttachments").show();          }      });}
                    else { //Do nothing } });}

function setEditFormFields(listItemData) {$("#txtRequestNo").text(listItemData.RequestNo);
    $("#txtInventoryOrg").val(listItemData.InventoryOrg);
    $("#txtRequesterComments").val(listItemData.RequesterComments);
    $("#ddlMDMRequestStatus").val(listItemData.MDMRequestStatus.ID);
    $("#ddlMDMRequestType").val(listItemData.MDMRequestType.ID);
    $("#ddlMDMItemType").val(listItemData.MDMItemType.ID);
    $("#ddlMDMSupplier").val(listItemData.MDMSupplier.ID);
    $("#txtMDMItemStatus").val(listItemData.MDMItemStatus);
    $("#txtMDMDescription").val(listItemData.MDMDescription);
    $("#txtMDMComments").val(listItemData.MDMComments);
    $("#txtPricingteamEmail").val(listItemData.PricingteamEmail);
    $("#txtFinanceEmail").val(listItemData.FinanceEmail);
    $("#txtFactoryEmail").val(listItemData.FactoryEmail);
    $("#txtPlannerEmail").val(listItemData.PlannerEmail);
    $("#txtBuyerEmail").val(listItemData.BuyerEmail);
    $("#txtITCEmail").val(listItemData.ITCEmail);

```

```

$("#txtGlobalPricingItem").val(listItemData.GlobalPricingItem);
$("#txtGlobalPricingDescription").val(listItemData.GlobalPricingDescription);
$("#ddlGlobalSupplier").val(listItemData.GlobalSupplier.ID);
$("#txtGlobalPurchasePrice").val(listItemData.GlobalPurchasePrice);
$("#txtGlobalPricingComments").val(listItemData.GlobalPricingComments);
$("#txtFinanceItem").val(listItemData.FinanceItem);
$("#txtFinanceDescription").val(listItemData.FinanceDescription);
$("#txtFinancePurchasePrice").val(listItemData.FinancePurchasePrice);
$("#txtFinancePurchasePriceSpecifyCurrency").val(listItemData.FinancePurchasePriceSpecifyCurre);
$("#txtFinacePartSetupOracle").val(listItemData.FinacePartSetupOracle);
$("#txtFinanceComments").val(listItemData.FinanceComments);
$("#txtFactoryItem").val(listItemData.FactoryItem);
$("#txtFactoryDescription").val(listItemData.FactoryDescription);
$("#txtFactoryQty").val(listItemData.FactoryQty);
$("#txtFactoryPOLeadTime").val(listItemData.FactoryPOLeadTime);
$("#ddlFactorySupplier").val(listItemData.FactorySupplier.ID);
$("#txtBuyerItem").val(listItemData.BuyerItem);
$("#txtBuyerDescription").val(listItemData.BuyerDescription);
$("#txtBuyerPurchasePrice").val(listItemData.BuyerPurchasePrice);
$("#txtBuyerMOQ").val(listItemData.BuyerMOQ);
$("#txtBuyerCOO").val(listItemData.BuyerCOO);
$("#txtBuyerPOLeadTime").val(listItemData.BuyerPOLeadTime);
$("#ddlBuyerSupplier").val(listItemData.BuyerSupplier.ID);
$("#txtTradeItem").val(listItemData.TradeItem);
$("#txtTradeDescription").val(listItemData.TradeDescription);
$("#ddlTradeSupplier").val(listItemData.TradeSupplier.ID);
$("#ddlTradeSupplierCountry").val(listItemData.TradeSupplierCountry.ID);
$("#txtUSHTSCode").val(listItemData.USHTSCode);
$("#txtEUHTSCode").val(listItemData.EUHTSCode);
$("#txtAEHTSCode").val(listItemData.AEHTSCode);
$("#txtSAHTSCode").val(listItemData.SAHTSCode);
$("#txtTradeComments").val(listItemData.TradeComments);
if (listItemData.Status == "Request Submitted") {
    IsCurrentUserMemberOfGroup("MDMGroup", function (isCurrentUserInGroup)
{ if(isCurrentUserInGroup)
    {$("#divMDM").show();debugger; // The current user is in the [Members] group! }
});}
    if (listItemData.Status == "Approved by MDM") {
IsCurrentUserMemberOfGroup("GlobalPricingTeamGroup", function (isCurrent UserInGroup) {
if(isCurrentUserInGroup)
    {$("#divGlobalPricingTeam").show(); debugger;

```

```

// The current user is in the [Members] group!}); }

if (listItemData.Status == "Approved by Pricing") {
    IsCurrentUserMemberOfGroup("FinanceGroup", function (isCurrentUserInGroup) {
        if(isCurrentUserInGroup)
            {"#divFinance").show();
            debugger;
            // The current user is in the [Members] group!    }    });    }
    if (listItemData.Status == "Approved by Planner") { IsCurrentUserMemberOfGroup("FactoryPlannerGroup", function
(isCurrentUserInGroup) {if(isCurrentUserInGroup)    {    {"#divFactoryPlanner").show();
        debugger;    // The current user is in the [Members] group!    }    });    }
    if (listItemData.Status == "Approved by External Supplier") {
        IsCurrentUserMemberOfGroup("BuyerGroup", function (isCurrentUserInGroup) {
            if(isCurrentUserInGroup)    {    {"#divBuyer").show();
                debugger;
                // The current user is in the [Members] group!    }    });    }
    if (listItemData.Status == "Approved by TradeCompliance") {
        IsCurrentUserMemberOfGroup("TradeComplianceGroup", function (isCurrentUserInGroup) {
            if(isCurrentUserInGroup)    {
                {"#divTradeCompliance").show();    debugger; // The current user is in the [Members] group!    }    });}
    if (listItemData.Status == "Completed") {
        //Do nothing    }}
function bindDashBoard() {var urlforgetAllItems = _siteUrl + "/_api/web/lists/GetByTitle('" + _lstPartSetup + "')/items?"
+
"$select=Id,RequestNo,InventoryOrg,RequesterComments,MDMItemStatus,MDMDescription,MDMComments,PricingteamEmail,FinanceEmail,FactoryEmail,PlannerEmail,BuyerEmail,ITCEmail,GlobalPricingItem,GlobalPricingDescription,Status"
    var getAllItems = SPRestCommon.GetItemAjaxCall(urlforgetAllItems);
    $.when(getAllItems)
        .then(function (respgetAllItems) {
            if (!respgetAllItems) {
                processDashBoardSection(respgetAllItems.d.results);});});}
function processDashBoardSection(items) {var finalOutput = "";    var eachTable = "";
    var filteredData = items;
    if (filteredData.length > 0) {var output = "";
        eachTable = eachTable + "<table class='table' id='table1'>" +
            "<b><tr>" +
            "<th>RequestNo</th>" +
            "<th>View</th>" +
            "<th>InventoryOrg</th>" +
            "<th>RequesterComments</th>" +
            "<th>MDMDescription</th>" +

```

```

"<th>MDMComments</th>" +
"<th>GlobalPricingItem</th>" +
"<th>GlobalPricingDescription</th>" +
"<th>Status</th>" +
"</tr></b>";

        for (var i = 0; i < filteredData.length; i++) {
var editFormURL = "";
editFormURL = _homePageURL+"?ItemID=" + filteredData[i].Id + "";
eachTable = eachTable +
        "<tr>" +
                "<td>" + filteredData[i].RequestNo + "</td>" +
                "<td><a href='" + editFormURL + "' target='_blank'>" +
filteredData[i].Id + "</a></td>" +
                "<td>" + filteredData[i].InventoryOrg + "</td>" +
                "<td>" + filteredData[i].RequesterComments + "</td>" +
                "<td>" + filteredData[i].MDMDescription + "</td>" +
                "<td>" + filteredData[i].MDMComments + "</td>" +
                "<td>" + filteredData[i].GlobalPricingItem + "</td>" +
                "<td>" + filteredData[i].GlobalPricingDescription + "</td>"
+
                "<td>" + filteredData[i].Status + "</td>" +
                "</tr>";
        }
        finalOutput = finalOutput + eachTable + "</table>";

        $("#divDashBoardSection").append(finalOutput);    }    else{
        //Do nothing}}

function saveFormData() {
        debugger;
        var MDMRequestStatus = !$("#ddlMDMRequestStatus").val() ? $("#ddlMDMRequestStatus").val() : null;
        var MDMRequestType = !$("#ddlMDMRequestType").val() ? $("#ddlMDMRequestType").val() : null;
        var MDMItemType = !$("#ddlMDMItemType").val() ? $("#ddlMDMItemType").val() : null;
        var MDMSupplier = !$("#ddlMDMSupplier").val() ? $("#ddlMDMSupplier").val() : null;
        var GlobalSupplier = !$("#ddlGlobalSupplier").val() ? $("#ddlGlobalSupplier").val() : null;
        var BuyerSupplier = !$("#ddlBuyerSupplier").val() ? $("#ddlBuyerSupplier").val() : null;
        var Status = "";
        Status = "Request Submitted";
        var savePartSetupItemProps = "";

```



```
savePartSetupItemProps = {metadata: { "type": "SP.Data.PartSetupListItem" },
    "RequestNo": $("#txtRequestNo").text(),
    "InventoryOrg": $("#txtInventoryOrg").val(),
    "RequesterComments": $("#txtRequesterComments").val(),
    "MDMRequestStatusId": MDMRequestStatus,
    "MDMRequestTypeId": MDMRequestType,
    "MDMItemId": MDMItemType,
    "MDMSupplierId": MDMSupplier,
    "MDMItemStatus": $("#txtMDMItemStatus").val(),
    "MDMDescription": $("#txtMDMDescription").val(),
    "MDMComments": $("#txtMDMComments").val(),
    "PricingteamEmail": $("#txtPricingteamEmail").val(),
    "FinanceEmail": $("#txtFinanceEmail").val(),
    "FactoryEmail": $("#txtFactoryEmail").val(),
    "PlannerEmail": $("#txtPlannerEmail").val(),
    "BuyerEmail": $("#txtBuyerEmail").val(),
    "ITCEmail":$("#txtITCEmail").val(),
    "GlobalPricingItem":$("#txtGlobalPricingItem").val(),
    "GlobalPricingDescription":$("#txtGlobalPricingDescription").val(),
    "GlobalSupplierId": GlobalSupplier,
    "GlobalPurchasePrice":$("#txtGlobalPurchasePrice").val(),
    "GlobalPricingComments":$("#txtGlobalPricingComments").val(),
    "FinanceItem":$("#txtFinanceItem").val(),
    "FinanceDescription":$("#txtFinanceDescription").val(),
    "FinancePurchasePrice":$("#txtFinancePurchasePrice").val(),
    "FinancePurchasePriceSpecifyCurre":$("#txtFinancePurchasePriceSpecifyCurrency").val(),
    "FinacePartSetupOracle":$("#txtFinacePartSetupOracle").val(),
    "FinanceComments":$("#txtFinanceComments").val(),
    "FactoryItem":$("#txtFactoryItem").val(),
    "FactoryDescription":$("#txtFactoryDescription").val(),
    "FactoryQty":$("#txtFactoryQty").val(),
    "FactorySupplierId":$("#ddlFactorySupplier").val(),
    "FactoryPOLeadTime":$("#txtFactoryPOLeadTime").val(),
    "BuyerItem":$("#txtBuyerItem").val(),
    "BuyerDescription":$("#txtBuyerDescription").val(),
    "BuyerPurchasePrice":$("#txtBuyerPurchasePrice").val(),
    "BuyerMOQ":$("#txtBuyerMOQ").val(),
    "BuyerCOO":$("#txtBuyerCOO").val(),
    "BuyerPOLeadTime":$("#txtBuyerPOLeadTime").val(),
```

```
"BuyerSupplierId": BuyerSupplier,
"TradeItem":$("#txtTradeItem").val(),
"TradeDescription":$("#txtTradeDescription").val(),
"TradeSupplierId":$("#ddlTradeSupplier").val(),
"TradeSupplierCountryId":$("#ddlTradeSupplierCountry").val(),
"USHTSCCode":$("#txtUSHTSCCode").val(),
"EUHTSCCode":$("#txtEUHTSCCode").val(),
"AEHTSCCode":$("#txtAEHTSCCode").val(),
"SAHTSCCode":$("#txtSAHTSCCode").val(),
"TradeComments":$("#txtTradeComments").val(),
"Status":Status, };

var add_PartSetup_URI = _siteUrl + "/_api/web/lists/getByTitle('PartSetup')/items"
SPRestCommon.GetAddListItemAjaxCall(add_PartSetup_URI, "PartSetup", savePartSetupItemProps)
.then(function(respPartSetup){debugger;alert("Form Save Successfully");window.location.href = _homePageURL;
})
.fail(CommonUtil.OnRESError);
}

function updateFormData(ItemID) {
    debugger;
    var urlforgetAllItems = _siteUrl + "/_api/web/lists/GetByTitle(' + _lstPartSetup + ')/items?"
        + "$select=Status"
    + "&$filter=ID eq '"+ItemID+"'";
    var getAllItems = SPRestCommon.GetItemAjaxCall(urlforgetAllItems);
    $.when(getAllItems)
    .then(function (respgetAllItems) {
        if (!!respgetAllItems) {
            var respData = respgetAllItems.d.results;
            if (!!respData[0]){
                var MDMRequestStatus = !!$("#ddlMDMRequestStatus").val() ? $("#ddlMDMRequestStatus").val() : null;
                var MDMRequestType = !!$("#ddlMDMRequestType").val() ? $("#ddlMDMRequestType").val() : null;
                var MDMItemType = !!$("#ddlMDMItemType").val() ? $("#ddlMDMItemType").val() : null;
                var MDMSupplier = !!$("#ddlMDMSupplier").val() ? $("#ddlMDMSupplier").val() : null;
                var GlobalSupplier = !!$("#ddlGlobalSupplier").val() ? $("#ddlGlobalSupplier").val() : null;
                var BuyerSupplier = !!$("#ddlBuyerSupplier").val() ? $("#ddlBuyerSupplier").val() : null;
                var Status = "";
                switch (respData[0].Status) {
                    case "":
                        Status = "Request Submitted";
                        break;
                }
            }
        }
    });
}
```

```
case "Request Submitted":
    Status = "Approved by MDM";
    break;
case "Approved by MDM":
    Status = "Approved by Pricing";
    break;
case "Approved by Pricing":
    Status = "Approved by Planner";
    break;
case "Approved by Planner":
    Status = "Approved by External Supplier";
    break;
case "Approved by External Supplier":
    Status = "Approved by TradeCompliance";
    break;
case "Approved by TradeCompliance":
    Status = "Completed";
    break; }
var updatePartSetupItemProps = "";
updatePartSetupItemProps = {
    __metadata: { "type": "SP.Data.PartSetupListItem" },
    "RequestNo": $("#txtRequestNo").text(),
    "InventoryOrg": $("#txtInventoryOrg").val(),
    "RequesterComments": $("#txtRequesterComments").val(),
    "MDMRequestStatusId": MDMRequestStatus,
    "MDMRequestTypeId": MDMRequestType,
    "MDMItemId": MDMItemType,
    "MDMSupplierId": MDMSupplier,
    "MDMItemStatus": $("#txtMDMItemStatus").val(),
    "MDMDescription": $("#txtMDMDescription").val(),
    "MDMComments": $("#txtMDMComments").val(),
    "PricingteamEmail": $("#txtPricingteamEmail").val(),
    "FinanceEmail": $("#txtFinanceEmail").val(),
    "FactoryEmail": $("#txtFactoryEmail").val(),
    "PlannerEmail": $("#txtPlannerEmail").val(),
    "BuyerEmail": $("#txtBuyerEmail").val(),
    "ITCEmail":$("#txtITCEmail").val(),
    "GlobalPricingItem":$("#txtGlobalPricingItem").val(),
    "GlobalPricingDescription":$("#txtGlobalPricingDescription").val(),
```

```
"GlobalSupplierId": GlobalSupplier,
"GlobalPurchasePrice":$("#txtGlobalPurchasePrice").val(),
"GlobalPricingComments":$("#txtGlobalPricingComments").val(),
"FinanceItem":$("#txtFinanceItem").val(),
"FinanceDescription":$("#txtFinanceDescription").val(),
"FinancePurchasePrice":$("#txtFinancePurchasePrice").val(),
"FinancePurchasePriceSpecifyCurre":$("#txtFinancePurchasePriceSpecifyCurrency").val(),
"FinacePartSetupOracle":$("#txtFinacePartSetupOracle").val(),
"FinanceComments":$("#txtFinanceComments").val(),
"FactoryItem":$("#txtFactoryItem").val(),
"FactoryDescription":$("#txtFactoryDescription").val(),
"FactoryQty":$("#txtFactoryQty").val(),
"FactorySupplierId":$("#ddlFactorySupplier").val(),
"FactoryPOLeadTime":$("#txtFactoryPOLeadTime").val(),
"BuyerItem":$("#txtBuyerItem").val(),
"BuyerDescription":$("#txtBuyerDescription").val(),
"BuyerPurchasePrice":$("#txtBuyerPurchasePrice").val(),
"BuyerMOQ":$("#txtBuyerMOQ").val(),
"BuyerCOO":$("#txtBuyerCOO").val(),
"BuyerPOLeadTime":$("#txtBuyerPOLeadTime").val(),
"BuyerSupplierId": BuyerSupplier,
"TradeItem":$("#txtTradeItem").val(),
"TradeDescription":$("#txtTradeDescription").val(),
"TradeSupplierId":$("#ddlTradeSupplier").val(),
"TradeSupplierCountryId":$("#ddlTradeSupplierCountry").val(),
"USHTSCCode":$("#txtUSHTSCCode").val(),
"EUHTSCCode":$("#txtEUHTSCCode").val(),
"AEHTSCCode":$("#txtAEHTSCCode").val(),
"SAHTSCCode":$("#txtSAHTSCCode").val(),
"TradeComments":$("#txtTradeComments").val(),
"Status":Status,      };

var update_PartRequest = _siteUrl + "/_api/web/lists/PartSetup'/items("+ItemID+)";
SPRestCommon.GetUpdateListItemAjaxCall(update_PartRequest, "PartSetup", updatePartSetupItemProps)
.then(function(respPartSetupUpdate){
    alert("Form Updated Successfully");
    window.location.href = _homePageURL;
}).fail(CommonUtil.OnRESTError); } } });}

function IsCurrentUserMemberOfGroup(groupName, OnComplete) {
    var currentContext = new SP.ClientContext.get_current();
```

```
var currentWeb = currentContext.get_web();
var currentUser = currentContext.get_web().get_currentUser();
currentContext.load(currentUser);
var allGroups = currentWeb.get_siteGroups();
currentContext.load(allGroups);
var group = allGroups.getByName(groupName);
currentContext.load(group);
var groupUsers = group.get_users();
currentContext.load(groupUsers);
currentContext.executeQueryAsync(OnSuccess,OnFailure);
function OnSuccess(sender, args) {
    var userInGroup = false;
    var groupUserEnumerator = groupUsers.getEnumerator();
    while (groupUserEnumerator.moveNext()) {
        var groupUser = groupUserEnumerator.get_current();
        if (groupUser.get_id() == currentUser.get_id()) {
            userInGroup = true;
            break;    }    }
    OnComplete(userInGroup);    }
function OnFailure(sender, args) {
    OnComplete(false);    } }
function btnSubmitRequest_click(e) {
    e.preventDefault();
    $('#middlecontent').show();
    $('#divDashBoard').hide();
    $('#btnSubmitRequest').hide();
    $('#btnBack').show();}
function btnBack_click(e) {
    e.preventDefault();
    window.location.href = _homePageURL;}
function btnCancel_click(e) {
    e.preventDefault();
    window.location.href = _homePageURL;}
function bindListeners(){
    // $("#divRequester").hide();
    // $("#divMDM").hide();
    // $("#divGlobalPricingTeam").hide();
    // $("#divFinance").hide();
    // $("#divFactoryPlanner").hide();
```

```
// $("#divBuyer").hide();
// $("#divTradeCompliance").hide();
$('#middlecontent').hide();
$('#divDashBoard').show();
$('#btnSubmitRequest').show();
$('#btnBack').hide();
$("#btnSubmitRequest").click(btnSubmitRequest_click);
$('#btnBack').click(btnBack_click);
$('#btnCancel').click(btnCancel_click);
IsCurrentUserMemberOfGroup("RequesterGroup", function (isCurrentUserInGroup) {
    if(isCurrentUserInGroup)
        {"#divRequester").show();
        debugger;
        // The current user is in the [Members] group!    }
    else{IsCurrentUserMemberOfGroup("MDMGroup", function (isCurrentUserInGroup) {
        if(isCurrentUserInGroup)
            {"#divMDM").show();
            debugger;
            // The current user is in the [Members] group!    }
        else{
            IsCurrentUserMemberOfGroup("GlobalPricingTeamGroup", function (isCurrentUserInGroup) {
                if(isCurrentUserInGroup)
                    {"#divGlobalPricingTeam").show();
                    debugger;
                    // The current user is in the [Members] group!    }
                else{
                    IsCurrentUserMemberOfGroup("FinanceGroup", function (isCurrentUserInGroup) {
                        if(isCurrentUserInGroup)
                            {"#divFinance").show();
                            debugger;
                            // The current user is in the [Members] group!    }
                    }
                }
            }
        }
        IsCurrentUserMemberOfGroup("FactoryPlannerGroup", function (isCurrentUserInGroup) {
            if(isCurrentUserInGroup)
                {"#divFactoryPlanner").show();
                debugger;
                // The current user is in the [Members] group!
            }
        }
    }
    else{
        IsCurrentUserMemberOfGroup("BuyerGroup", function (isCurrentUserInGroup) {
```



```
}
else {
    saveFormData();
}
});

}

function getUrlVars() {
    var vars = [], hash;
    var hashes = window.location.href.slice(window.location.href.indexOf('?') + 1).split('&');
    for (var i = 0; i < hashes.length; i++) {
        hash = hashes[i].split('=');
        vars.push(hash[0]);
        vars[hash[0]] = hash[1];
    }
    return vars;
}

function generateUniqueNumber() {

    var firstminNumber = "000000";
    var firstmaxNumber = "999999";

    var firstRandomNumber = randomNumberFromRange(parseInt(firstminNumber), parseInt(firstmaxNumber));
    $("#txtRequestNo").text(firstRandomNumber);
}

function randomNumberFromRange(min, max) {
    return Math.floor(Math.random() * (max - min + 1) + min);
}
```