SWORD: Strategic Work Order Request Delivery

A Professional Readiness Experiential Program (PREP) Project Effort

----- Student Project Team Members -----

Yasemin Berlas is a student at George Mason University graduating in December with a bachelor's degree in business and a concentration in management information systems. She has experience in digital transformation projects, data analysis, and strategic planning, supported by her internship at Unison Global.

Vidhi Pathak is a student at George Mason University graduating with a bachelor's degree in management information systems and finance. She is passionate about translating her academic foundation into real-world impact, which she has demonstrated through project management work at Capital One and consulting experience with QinetiQ US.

Noria Danish is a student at George Mason University graduating with a bachelor's degree in business and a concentration in management information systems. She has experience in Process Management with her experience at Capital One.

Mannu Singh is a student at George Mason University graduating with a bachelor's degree in business and a concentration in management information systems. He has experience in data analytics, process improvement, and system design, supported by his internship with the Ohio Public Banking Coalition.

----- Industry Participant -----

Rehan Mahmood
Chief Executive Officer
EngineeRD, Fairfax VA

----- Faculty Member -----

Brian K. Ngac, PhD
FWI Corporate Partner Faculty Fellow
Instructional Faculty & Dean's Teaching Fellow
George Mason University's Costello College of Business
bngac@gmu.edu

Interested in being an Industry Participant and or PREP Sponsor? Please reach out to bngac@gmu.edu, Thanks!

---- Client Testimonial ----

"The team of students from PREP were assigned the job of learning new skills, sometimes independently, and applying those skills immediately on business goals at EngineeRD. With such a short suspense in the semester, I am impressed that the team was able to work with each other, apply virtual collaboration skills, and perform a business case study that discovered valuable insights on a potential opportunity for our business. The PREP students were able to also balance a second project near the end of their commitment, where they took their lessons toward building a brand-new data app for reducing project management inefficiency.

I see this semester as a win for EngineeRD, because we were able to prepare students for prospective employment within our pipeline, where training and onboarding is usually very expensive. Thanks to PREP's partnership we cut the recruiting risks with qualified talent, accelerated workforce readiness, and are on a fast track to hiring capable consultants that may help our revenue goals in 2026."

- Rehan Mahmood | CEO & Chief Dreamer | EngineeRD

Introduction

The purpose of this document is to provide an executive overview of the SWORD: Strategic Work Order Request Delivery initiative and highlight its role in addressing operational inefficiencies within startup environments. Startups often face the challenge of managing repetitive tasks with limited resources, which can hinder productivity and growth. To ease the work order request process, our team designed and implemented SWORD as an automated business process model that streamlines data collection, enterprise resource planning, notifications, approvals, and work order management.

Business Challenge

EngineeRD currently has no standardized or efficient process for submitting and managing work order requests. Requests often arrive through informal or inconsistent channels, making it difficult for engineers to track tasks, allocate resources, understand service locations, or obtain the necessary details to complete work effectively. This lack of structure leads to delays, miscommunication, duplicated efforts, and overall inefficiency.

To address this problem, our team was tasked with designing and automating a streamlined digital workflow for work order submissions. A centralized system will capture critical information, route requests to the appropriate teams, support clearer communication, and provide better visibility into work progress. By implementing this automated process, the organization can save time, reduce errors, improve collaboration, and ensure work orders are managed consistently from start to finish.

Activities Done to Address the Business Challenge

Leveraging Microsoft Power Apps and Power Automate, the team successfully built, tested, and integrated SWORD into EngineeRD's system. This write-up outlines the rationale behind the initiative, details the technical implementation, and provides an overview of the delivered solutions that enhance efficiency, reduce manual workload, and establish a scalable foundation for future process automation.

The following visuals illustrate what each stage of our end-to-end process looked like during development. Beginning with data collection, we created a Microsoft Form for prospective clients to submit key details such as requirements, service location, and urgency level. This form is directly integrated with our SharePoint list through an automated flow, ensuring that every new submission instantly generates a new row in the list, allowing us to centralize and track all incoming request for work (RFW) tickets.

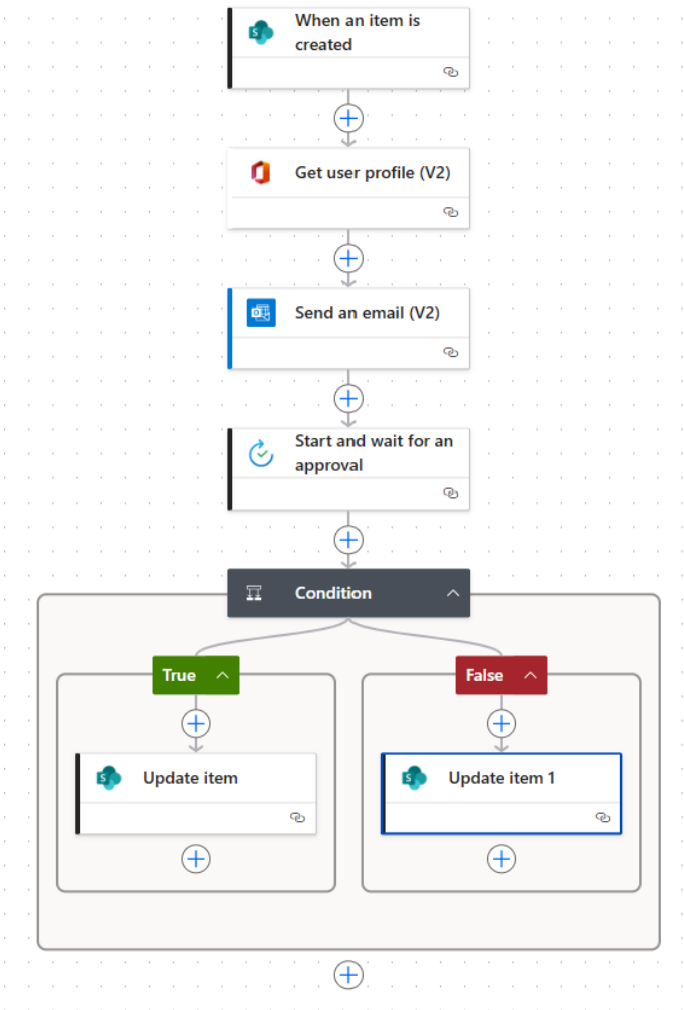
Next, in the ERP stage, we designed a centralized workspace where pending service tickets can be monitored and managed. This interface provides visibility into ticket progress, assigned engineer details, and all relevant request information.

RFW_Tickets ☆

All Items | Add view

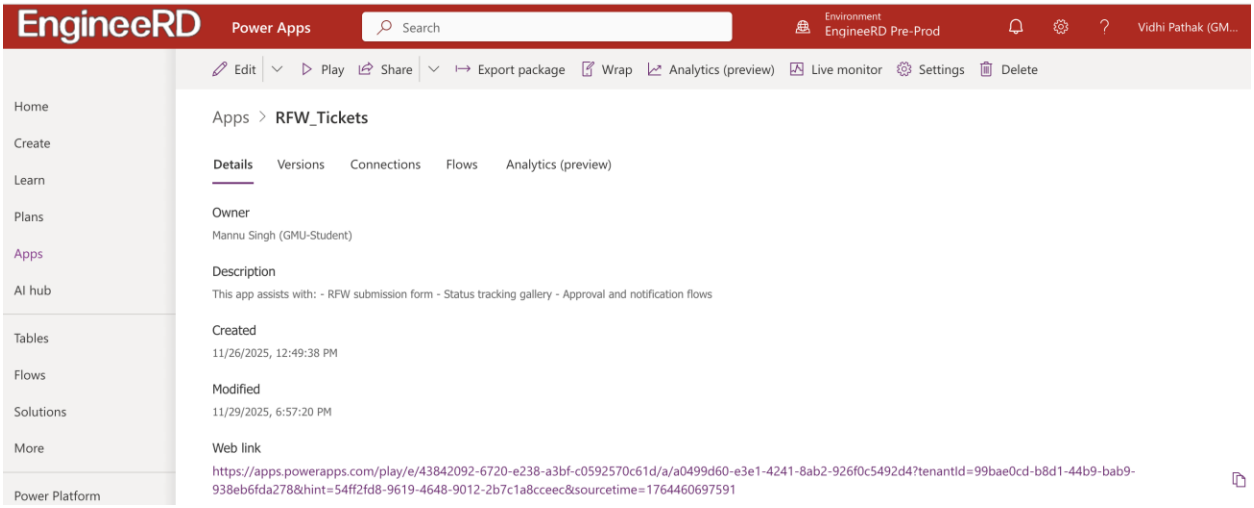
TicketID	Location	Requirements	Status	AssignedTo	PMApproval	_PowerAppsId_	Add column
2234	Fairfax	Requirement 1	Done	employee01@engi...	Approved	5053ceff-6553-4071-a143-6eac5a31a2f8	
7977	Arlington	Requirement 2	Done	employee02@engi...	Pending	4a305df3-a5a7-4d00-8038-775044db84fc	
9975	Fairfax	Requirement 3	Done	employee03@engi...	Approved	aaee413d-6250-4a55-93ea-20c440ba283d	
6487	Fairfax	Requirement 4	Completed	employee04@engi...	Rejected	eb01af90-2c64-4fff-9ba5-c299fc70c9b3	
2689	Arlington	Requirement 5	Approved	employee05@engi...	Rejected	6c5ac41d-1ff3-4e83-8bf5-1c765aea0714	
test	test	test	test	test	Approved	test	

Shown next is the Power Automate flow that supports our notification system. The flow is triggered when a new item is created in the SharePoint list, prompting Power Automate to retrieve the appropriate user profile from Microsoft Entra ID (Office 365) and send an Outlook notification to the designated recipient.



For the approval system, we incorporated a “Start and Wait for an Approval” condition within the flow. When a new request is submitted, the Project Manager receives an approval prompt containing the ticket information. Based on factors such as service location, resource availability, and technical requirements, the Project Manager approves or rejects the request, and the system automatically updates the ticket status accordingly.

Finally, in the work order stage, we embedded the Power Apps interface directly into the SharePoint list. This enables users to view all past and current request for work tickets in one place, ensuring easy access to historical data and improving overall visibility and record maintenance.



Results and Impact

The development of SWORD has delivered meaningful improvements to EngineeRD’s operational workflow by addressing gaps in the request for work order process. Through requirement gathering, process mapping, solution design, and iterative testing, the project provided a clear understanding of the bottlenecks caused by manual communication, inconsistent request formats, and the lack of centralized resource tracking. SWORD’s automated workflow now streamlines data collection, enforces standardized approvals, and enhances visibility into work order status across teams. The integrated notification and documentation features improve collaboration and reduce delays, ensuring that engineers receive timely and accurate information. By deploying a scalable digital system built on Power Apps and Power Automate, this project establishes a strong foundation for future enhancements, such as analytics, reporting, and capacity planning, ultimately strengthening EngineeRD’s operational efficiency, transparency, and ability to support growing service demands.

Conclusion

The development and implementation of SWORD has demonstrated the impact that a well-designed digital workflow can have on operational efficiency, communication, and resource management. By automating the request for work order process, SWORD reduces manual effort, streamlines approvals, and provides greater transparency into ongoing work. The system

not only solves the immediate need for a structured work order process but also positions EngineeRD to scale its operations with greater accuracy and consistency. Continued refinement, user training, and performance monitoring will ensure that SWORD remains a reliable, adaptable, and high-value tool that supports both current workload demands and future organizational growth.

PREP Student Reflection

This project allowed the Green Team to gain hands-on experience in designing a real-world business process solution using Power Apps and Power Automate. Collaborating with stakeholders to understand their challenges taught us how critical it is to build systems that simplify workflows rather than add complexity. Through gathering requirements, prototyping, testing, and deploying, we strengthened our skills in digital transformation, process automation, and cross-functional communication. Overall, this experience deepened our understanding of how thoughtful automation can support organizational performance and reinforced the importance of adaptability, problem-solving, and user-centered design in creating effective technology solutions.