



# Robotic Process Automation of Seniors' Mobility and Enabling Fund Equipment Application

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## BACKGROUND

Seniors' Mobility and Enabling Fund (SMF) was established to allow seniors to age in place within their community by extending subsidies for required mobility and assistive device that facilitate independent living. To qualify for this subsidy, seniors need to be assessed by Occupational Therapists (OTs) to determine and prescribe suitable assistive devices from various vendors.

After submitting equipment applications on the SMF portal, OTs had to complete multiple manual steps to notify vendors for delivery. This repetitive process takes about seven minutes per application, with room for human errors. In 2023, an estimated of 2000 SMF applications were completed by the OT department, amounting to at least 233 man-hours annually. With the national policy extending to support elderly to age in the community the number of SMF applications is expected to increase with a corresponding increased demand for healthcare manpower, as well as a room for various human errors leading to compromises in patient's care.

## ANALYSIS

After submitting an equipment requests on the SMF portal, steps that an OT needs to perform to notify a vendor for delivery include:

1. Downloading, renaming and saving of notification letter with reference to patient's name and SMF number from SMF portal
2. Creating new email with correct vendor from list of contacts
3. Inserting department's email template with financial details
4. Inserting patient information into template
5. Attaching notification letter
6. Sending email to vendor

OTs were surveyed to review potential causes of error between steps 1 to 6 as this multi-step task spans across various platforms (E.g. SMF portal, word document, Outlook Email)

## MISSION STATEMENT/ GOAL

Leveraging Artificial Intelligence & Automation Team's expertise, Robotic Process Automation (RPA) was identified as a solution to replace the manual process of generating, attaching SMF notification letters and sending them to the respective vendors. Through this, this project aims to:

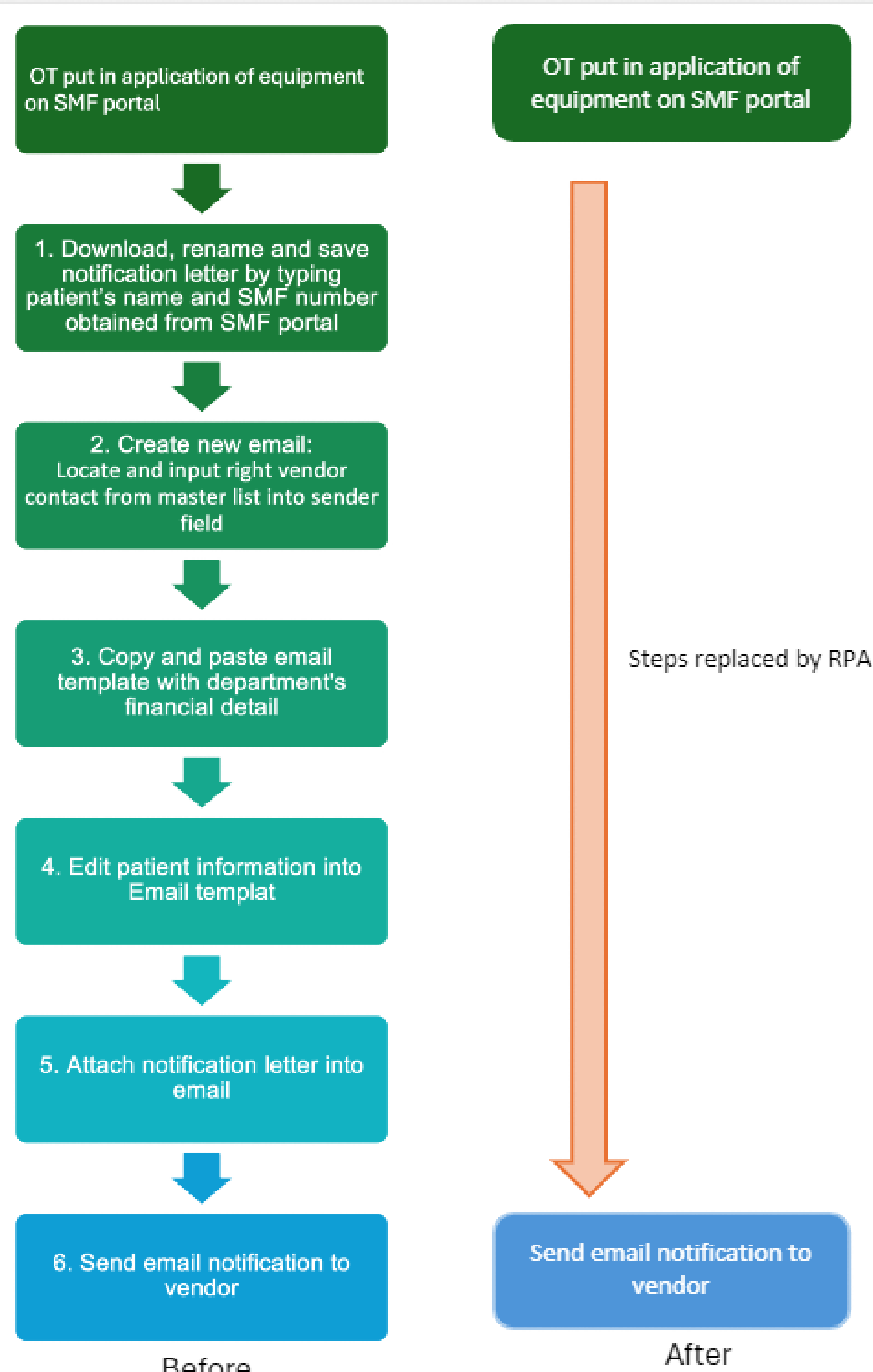
1. Reduce number of man-hours and cost
2. Reduce types of human errors that compromise patient care
3. Increase staff satisfaction

## INTERVENTION

The above solution involved a collaboration between the OT department and AIA team. OTs provided insights into existing workflow, while the AIA team ensured technical feasibility and integration into existing IT systems.

The proposed solution involves a trained therapist assistant (TA) to log on to the SMF website, and to initiate the RPA software 'Uipath Assistant'. RPA then runs independently, mimicking an OT's multi- steps application process, eliminating steps 1 through 6.

A key system change involved creating a centralised department login and shared email account dedicated to RPA and SMF operations to ensure seamless execution of automation.



Restricted, Non-Sensitive

## RESULTS

The use of RPA has reduced this seven minutes process to zero minutes. Based on data gathered over four months of implementation (i.e. October 2024 to January 2025), 681 applications were made with notification letters sent out via RPA.

### Man-hours/ cost savings

Extrapolating from current statistics, 2043 applications can be expected annually, estimated to save 240 man-hours/ \$13,248 cost savings per year within OT department. Across SGH, 498 applications completed by other departments (Audiologist, Medical Social Worker) can be included for potential expansion.

Month	SMF Applications (by OT)	SMF applications in SGH (OT, Audiologists, MSW)	Potential Man-hours Savings (Total)	Potential Cost Savings (Total)
Oct-24	158	294	34.3	\$1,893
Nov-24	182	329	38.4	\$2,119
Dec-24	185	287	33.5	\$1,848
Jan-25	156	269	31.4	\$1,732
<b>Total in past 4 months</b>	<b>681</b>	<b>1179</b>	<b>137.6</b>	<b>\$7,593</b>
<b>Yearly Estimate</b>	<b>2043</b>	<b>3537</b>	<b>412.7</b>	<b>\$22,778</b>

### Human errors

- Quarterly surveys to capture layers of errors (E.g. bot error, user error) as well as user's overall satisfaction were sent out to OTs. From the recent first survey to 32 inpatient OTs:
- **15.6%** of the users experienced one case where RPA bot send to the wrong vendor; 84.4% had nil error.
  - **6.3%** of the users has one case where *user manually input wrong vendor*; 93.8% had nil error.
  - **3.1%** of the users has one case where bot attached the wrong notification letter; 96.9% had nil error.
  - **12.5%** of the users has one case where *user manually input wrong/ incomplete field*; 87.5% had nil error.
  - **6.2%** of the users has one to two cases where equipment delivery was delayed; 93.8% had nil error.

### Staff Satisfaction

100% of users rated 'agree' to 'strongly agree' with regards to the satisfaction with the roll-out of RPA, in replacement of manual email processes for SMF notification letters.

## SUSTAINABILTIY & SCALABILITY

### System

By leveraging existing infrastructure (i.e. UiPath Assistant license) from the AIA team, department-owned computers and an email account, the project was deployed without additional financial investment. Future scalability is cost-neutral, as the solution can be replicated to other departments without additional expenditure.

### Process

The RPA script uses a data reference table on an Excel spreadsheet to dynamically manage OTs' and vendors' contact information, enabling long-term adaptability without the need for changes in the script. Having a centralised department email account with respective OTs-in-charge in carbon-copy will also increase the ease of future audits and ease of follow-up with vendors if necessary.

### Up-skill (OT)

The use of UiPath is a user-friendly software requiring no coding background. This allows the script and system to be easily maintained by a trained staff within the department. Hence, training an RPA citizen developer within the department ensures continued monitoring and script updates to maintain effectiveness. Project champion identified can oversee troubleshooting of bot errors and manage end-user feedback via the quarterly survey results.

### Up-skill (TA)

3 TAs were trained in using UiPath Assistant for the daily operations of RPA. A step-by-step process was also outlined in a document for ease of training others in future.

## REFLECTIONS & INSIGHTS

### Reflections

- With this being the pioneer digital automation project in the department, the initiative demonstrated the value of automation and its impact on streamlining workflows and eradicating manual repetitive task, laying the foundation for future digitalisation projects

### Challenges

- Script troubleshooting took an extended duration of time, due to overlooked outliers. In future, broader pilot phase trials across varied end-users could address this issue.
- Temporary workflow adjustments were necessary for adoption of new digital technology, requiring a mindset shift and additional training to ensure successful uptake of automation