Project Title

The use of robotic process automation to transcribe PDF telecommunication bills into Excel

Project Lead and Members

- Chan Wai Ching, Department of Future Health System
- Evangeline Goh, Call Centre & Telecommunications Services

Organisation(s) Involved

Singapore General Hospital

Aims

The objective of this project is to automate the process of telecommunication bills management using Robotic Process Automation (RPA) so as to free up humans to perform higher value work, and to improve accuracy and productivity.

Background

See poster appended / below

Methods

See poster appended / below

Results

See poster appended / below

Conclusion

See poster appended / below

Additional Information

Singapore Healthcare Management (SHM) Conference 2021 – Merit Award (Operations Category)

Project Category

Automation, IT & Robotics

Keywords

Automation, IT & Robotics, Time Saving, Manhour Saving, Process Improvement, Healthcare Administration, Singapore General Hospital, Operations, Telecommunication, Robotic Process Automation, RPA Bot, Billing System

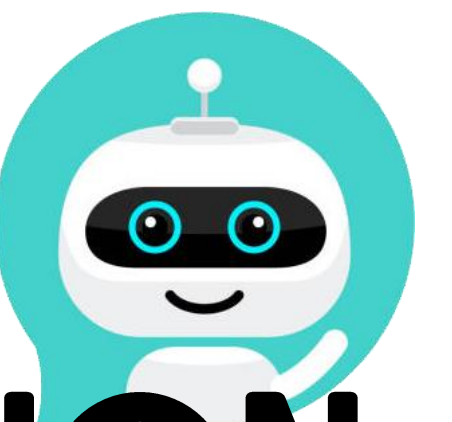## Name and Email of Project Contact Person(s)

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THE USE OF ROBOTIC PROCESS AUTOMATION
TO TRANSCRIBE PDF TELECOMMUNICATION BILLS INTO EXCEL

Chan Wai Ching, Department of Future Health System &
Evangeline Goh, Call Centre & Telecommunications Services
Singapore General Hospital

Sample telco bill ▼

Sample telco bill annotations:
- Number
- Cost Centre
- Department
- Net Amount
- IO
- Local calls, to record Tax Code as <I7>
- Overseas call, to record Tax Code as <IO> instead of the usual <I7>
- Negative value, to record as <Credit> instead of the usual <Debit>

Account No. 11001010
Date 09 Jun 2021
Name: SINGAPORE GENERAL HOSPITAL PTE LTD

TELEPHONE NO. 6611 1111 71101 — ENT   Amount (SGD)
G Local Call Charge 01 May 2021 to 03 Jun 2021 472 Unit(s) 3.77
Total for 6611 1111   3.77

TELEPHONE NO. 6611 1112 72202 – OTO IO GZMOHXVU001
G Local Call Charge 20 May 2021 to 27 May 2021 3 Unit(s) 0.02
Total for 6611 1112   0.02

TELEPHONE NO. 6611 1113 73303 – REN
G Local Call Charge 06 May 2021 to 03 Jun 2021 2852 Unit(s) 22.82

STD Call
Date Time Country Called No. Duration Rate Amount
STD 020 Call
20 May 8:58am Malaysia 0374111113 1m 00s S 0.14
Subtotal for STD 020 Call   0.14
Total for STD Call   0.14
Total for 6611 1113   22.96

TELEPHONE NO. 6611 1115 75505 – PHAR
Discounts and Rebates
G Disconnect of Telephone Line @ 12% 01 May 2021 to 03 Jun 2021 13.15 -
Total for 6611 1115   13.15 -

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1. INTRODUCTION

Every month, SGH receives **18 to 20** telecommunication bills in PDF format (left) from our service providers.

A staff **identifies specific information in each line item in each bill, types in these information into a corresponding row in MS Excel** (below), and uploads the completed Excel files onto a Finance system for billing. This process typically takes **4 hours** and is tedious, repetitive and prone to error.

Sample output Excel ▼

	A	B	C	D	E	F	G	H
1	GL Account	Net Amount	Credit/ Debit	Cost Centre	IO	Tax Code	Number	Department
2	55000010	3.77	D	71101		I7	66111111	ENT
3	55000010	0.02	D	72202	GZMOHXVU001	I7	66111112	OTO
4	55000010	22.82	D	73303		I7	66111113	REN
5	55000010	0.14	D	73303		IO	66111113	REN
9	55000010	13.15	C	75505		I7	66111115	PHAR

The objective of this project is to automate this process using **Robotic Process Automation (RPA)**, so as to free-up humans to perform higher-value work, and to improve accuracy and productivity.

2. METHODOLOGY

Process Mapping

A team comprising of the process owner from Call Centre and an RPA developer from the AI & Analytics team was formed.

The team mapped out the workflow in detail, and adjusted it whenever necessary.

Script Development

Using UiPath software, the RPA developer programmed an RPA bot using 3 sets of bills from Aug to Oct 2020 as samples.

The RPA bot was then tested if it was working correctly using bills from Jan to Dec 2020.

Implementation

The automation went live in March 2021, allowing the process owner to shorten the turnaround time from half a day to one minute.

The RPA bot also performed the task with 100% accuracy.

User Acceptance Test (UAT)

Next, the RPA developer arranged for the process owner to do an UAT, where the RPA bot was tested whether it could carry out the required tasks and respond adequately to all real-life situations.

3. PROCESS FLOW

BEFORE   **AFTER**

Staff logs in to the telco's portal.

Staff exports all the bills for the previous month.

4 hrs

Staff identifies specific information from each line item in each bill and fills up the Excel templates accordingly.

Staff executes the automation.

The RPA bot 'looks through' each line item and fills up the Excel template accordingly.

1 min (99.6% time savings & 100% accuracy!)

Staff uploads the Excel files onto a finance system for billing.

4. CONCLUSION

RPA can **augment our workforce** by taking over repetitive and straightforward tasks. RPA can also complete tasks with **higher accuracy** and **within a much shorter period of time**.

With this successful use case, SGH will continue to roll-out the use of RPA across the entire institution.