Robotic Process Automation (RPA) in Auditing

Feiqi Huang

Miklos Vasarhelyi

Rutgers, The State University of New Jersey

RUTGERS
Rutgers Business School
Newark and New Brunswick

Introduction

- Auditing firms have widely adopted technology to assist audit process.
    - Customize audit plans based the software programs.
    - Replace traditional checklist with decision support systems and interactive checklist.
    - Apply data analytics programs

- The actual audit has remained a largely manual endeavor. (e.g., data extraction, control and monitoring of confirmations, inventory counts)
    - Labor-intensive
    - Human errors
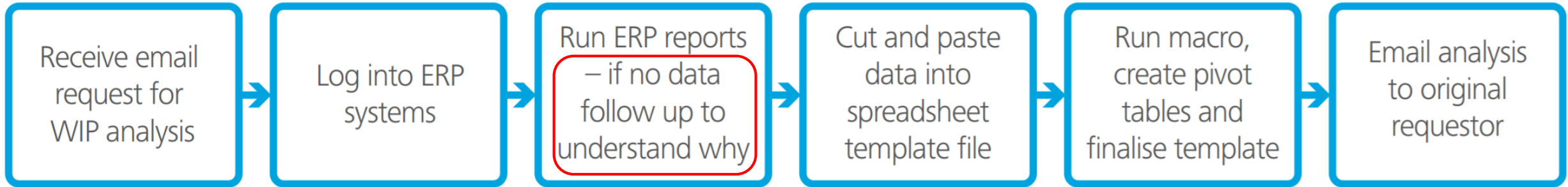
Introduction

- Auditing firms offshore and outsource audit tasks.
    - Approximately 20 percent of U.S. audit hours were offshored or outsourced.
    - Whether certain offshoring arrangements or structures increase audit risk? (PCAOB 2012).
    - Offshored and outsourced audit work has higher risk and lower quality (Lyubimov et al. 2013; Dee et al. 2015).

- Automation will be used for more repetitive, mundane tasks in an efficient and timely manner.
    - Allowing auditors more time to be spent in complex, judgmental areas.
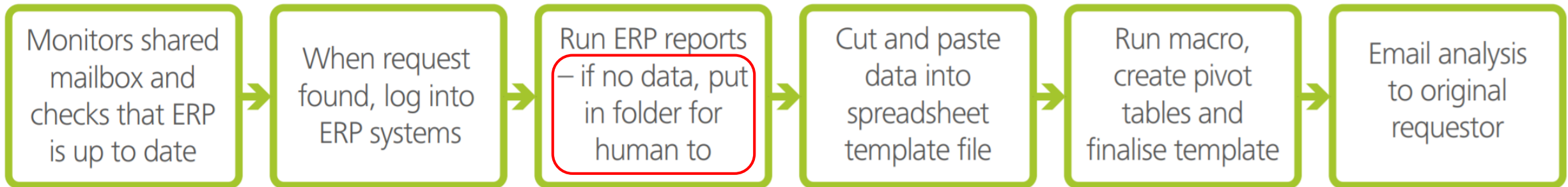
Robotic Process Automation

- Robotic Process Automation (RPA)
    - Software applications.
    - Mimic human actions in highly-structured and routine processes.
    - Performed with very little human interaction, typically to manage exceptions.

- Unique features
    - Sit on the top of existing systems and access these platforms through the presentation layer
    - Easy to implement (within several weeks)
    - Interface with multiple information systems
    - Complete a whole process, end-to-end task

Example of RPA

Manual process

| Receive email request for WIP analysis | → | Log into ERP systems | → | Run ERP reports – if no data follow up to understand why | → | Cut and paste data into spreadsheet template file | → | Run macro, create pivot tables and finalise template | → | Email analysis to original requestor |

Robotic process

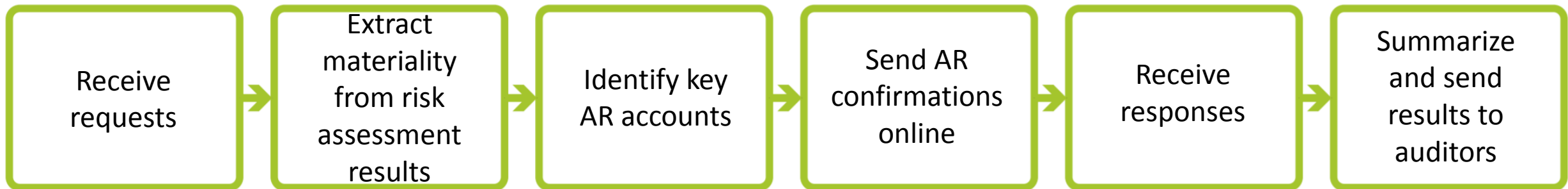| Monitors shared mailbox and checks that ERP is up to date | → | When request found, log into ERP systems | → | Run ERP reports – if no data, put in folder for human to | → | Cut and paste data into spreadsheet template file | → | Run macro, create pivot tables and finalise template | → | Email analysis to original requestor |

Source: Deloitte research

Applying RPA in Auditing

- Criteria of applying RPA (Fung, 2014)
  - Low cognitive requirements
  - High volume
  - Access to multiple systems
  - Limited exception handling
  - Human error

Applying RPA in Auditing

- Replace existing manual audit tasks wit RPA
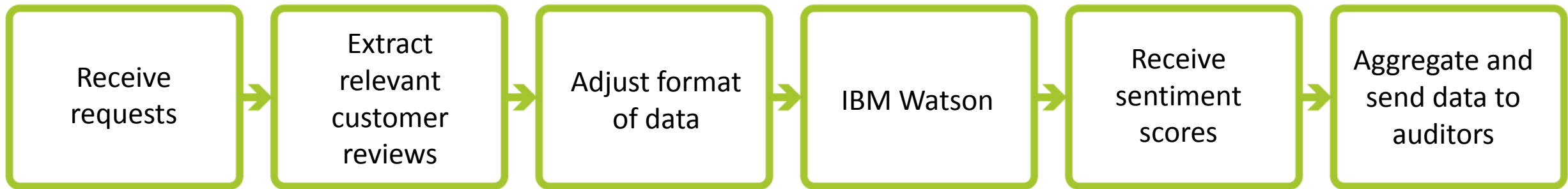- AR confirmation process

Robotic process

| Receive requests | → | Extract materiality from risk assessment results | → | Identify key AR accounts | → | Send AR confirmations online | → | Receive responses | → | Summarize and send results to auditors |

Applying RPA in Auditing

- Expand current audit process
- Evaluate online reviews

Robotic process

| Receive requests | → | Extract relevant customer reviews | → | Adjust format of data | → | IBM Watson | → | Receive sentiment scores | → | Aggregate and send data to auditors |

Applying RPA in Auditing

- Observe a real audit engagement process

- Break the whole audit process into multiple small tasks

- Discuss the feasibility of applying RPA
  - Replacing existing tasks
  - Expand current audit process

RUTGERS
Rutgers Business School
Newark and New Brunswick

Thanks!