R(P)Aban : Process for Robotic Process Automation Projects

K.V. Jeeva Padmini, R. K. O. H Silva, H.M.N. Dilum Bandara, and G.I.U.S Perera

{jeeva, omega, dilumb, indika}@cse.mrt.ac.lk

Dept. of Computer Science and Engineering, University of Moratuwa

ABSTRACT

Advancement of the software industry and artificial intelligence made the way to Robotic Process Automation (RPA). Business processes with structured, rule-based, and repetitive tasks that produce definitive outputs are candidates for automation using RPA. RPA improves accuracy and productivity while reducing cost. However, still, the industry fails to identify a suitable RPA delivery approach, and 30% - 50% of the RPA projects fail due to unmatched delivery approach. In this paper, we propose an RPA delivery approach named R(P)Aban. R(P)Aban is derived based on an extensive study of RPA implementations by a multinational, service-based organization. We identified the best fit RPA delivery approaches based on a set of interviews with the RPA implementation teams. The proposed framework could be used to reduce RPA project failures, as well as improve the project performance while reducing the cost.

OBJECTIVE

Identify best-fit process for Robotic Process Automation project.

PROBLEM STATEMENT

What is the best-fit process to execute RPA projects with high quality, productivity, and efficiency while minimizing cost?

METHOD

- Both the vendor and client are new to RPA implementation.
- No existing study for R(P)A process.
- Vendor is multinational service base software development organization.
- Research conducted for a project in banking domain and introduce bots to market operations in banks to drive operations by RPA and cognitive computing.
- RPA in the bank is to reduce the manual effort involved in the process.
- Also to release subject matter experts' bandwidth to improve overall efficiency and to develop a cognitive framework to automate the processing of unstructured data in the business process.
- RPA tool provider for the project is 'WorkFusion'.
- Below image illustrated the research methodology.
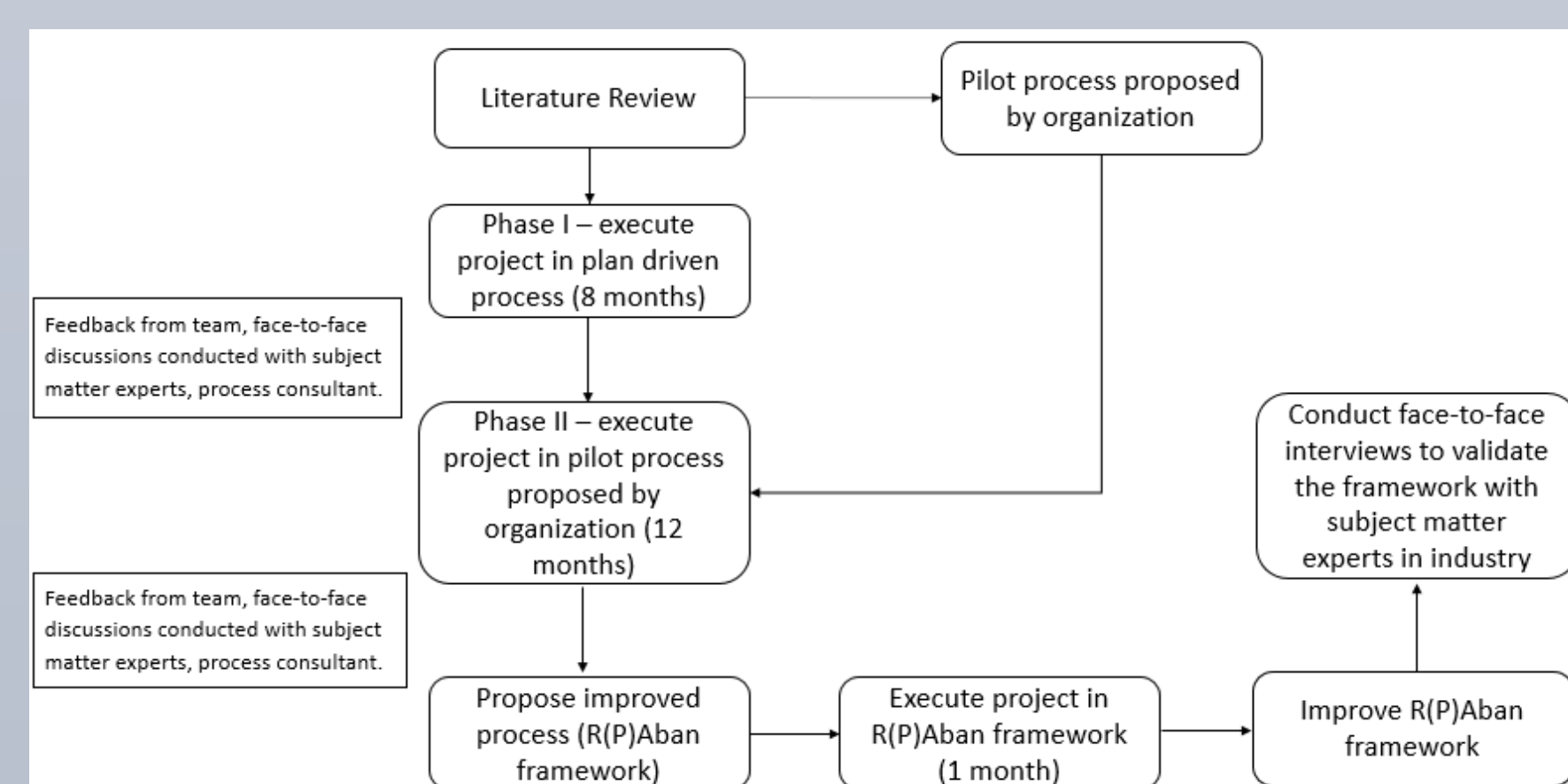
Research Methodology

RESEARCH RESULTS

PHASE I

- Client has identified 182 issues during the User Acceptance Testing (UAT) phase.
- Only 33 (18%) accept as defects.
- 29 (16%) has identified as Change Requests(CRs).
- Project Definition Document(PDD) revised for multiple times during bot development.
- Unable to deliver bots on time.
- Budget Overrun.
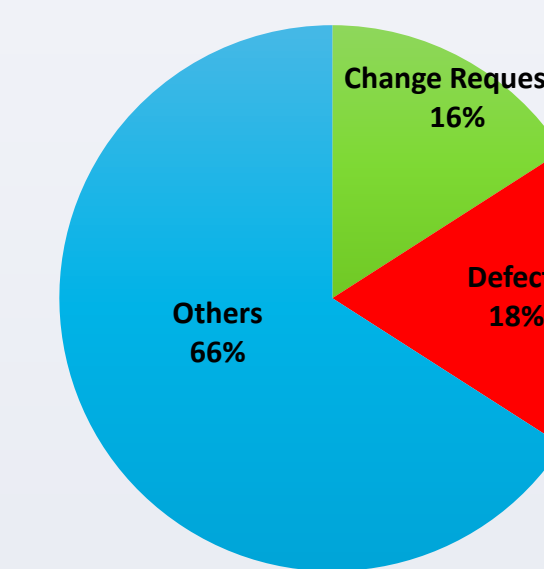
UAT defect analysis	No of defects
Change requests	29
Data error	43
Defects	33
Network failure	17
Incorrect credentials	11
Database error	07
Other loading failures	36
Technical limitations	06

RCA conducted for defect identified during UAT – Phase I

Phase I project execution schedule

PHASE II

- Client has identified 52 issues during the UAT phase.
- Only 10 (19%) accept as defects.
- 20 (39%) has identified as CRs.
- PDD revised for 32 times before start the bot development.
- Unable to deliver bots on time.
- Budget Overrun.
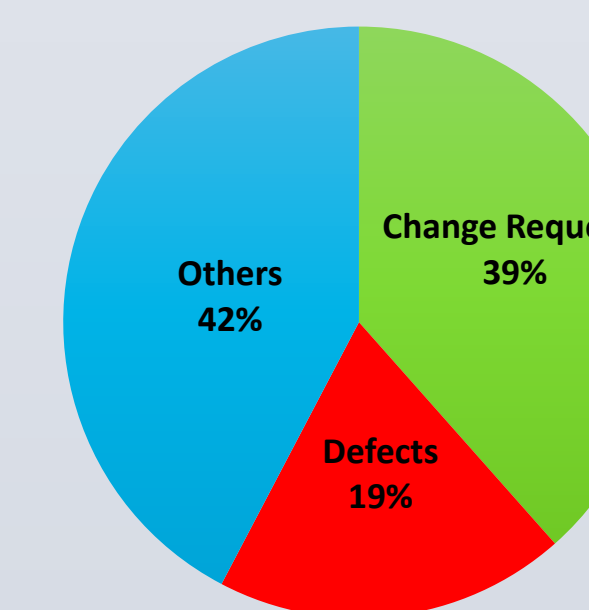
UAT defect analysis	No of defects
Change requests	20
Data error	02
Defects	10
Network failure	05
Incorrect credentials	05
Database error	05
Other loading failures	05
Technical limitations	02

RCA conducted for defect identified during UAT – Phase II

PHASE III

- Zero defects identified during UAT.
- Only 5 CRs identified.
- Deliver bots on time.

Developed R(P)Aban FRAMEWORK
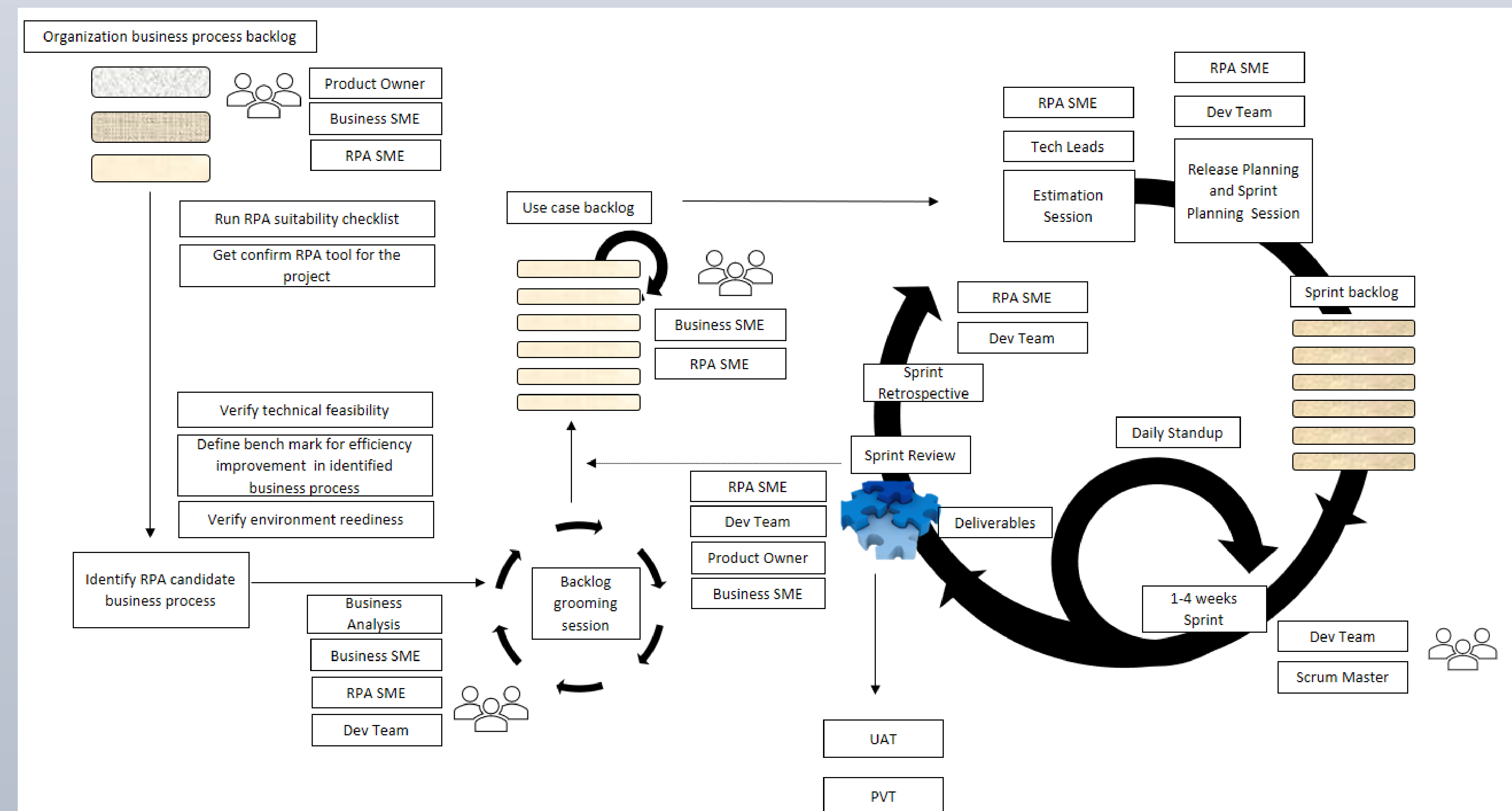
R(P)Aban in Detail

- Identifying the business process for RPA candidate is critical.
- RPA SMEs should consult client on RPA candidate selection for the implementation.
- Business Analyst (BA) start investigating the selected business process.
- BA conduct daily sessions with the business SMEs, RPA SMEs, Dev team, and BAs.
- During the demos and discussions use case diagrams and path flow diagrams should be developed, and PDD.
- Once PDD is finalized and signoff by the client, use-case backlog needs to be developed.
- Team leads and RPA SME should work on estimating the use cases.
- Release planning, and sprint planning session conducted by the Dev team and RPA SME decide the release plan and sprint use-case backlog.
- Dev team starts working on the sprint use-case backlog.
- Daily standups conducted within Dev teams facilitated by a scrum master.
- Sprint review conducted with the client's operational users.
- Sprint retrospective conducted within the dev team.

Agile principles and its applicability to RPA process

CONCLUSION

When project execute using R(P)Aban Framework;

- Team experienced zero defects during User Acceptance Testing(UAT) and Production Verification Testing(PVT).
- Only five Change Requests(CRs) captured during UAT and PVT.
- Industry can use our research results to eliminate the RPA project failures, improve the project performance and reduce the project cost.

FUTURE WORKS

- Further improve the R(P)Aban framework for different technologies.
- Derive/ Identify metrics to measure R(P)Aban process.

REFERENCES

[1] B. C. M. H. C. Justice, "Rise of the Robots," 2016.

[2] Thoughtonomy, "Robotic Process Automation 6 real world use cases," 2016.

[3] A. Asatiani and E. Penttinen, "Turning robotic process automation into commercial success – Case OpusCapita," J. of Information Technology Teaching Cases, 2016.