NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL

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SEMINAR REPORT ON

ROBOTIC PROCESS AUTOMATION

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1.Abstract

Across industries like Banking, Manufacturing, Life Science and others, business operations involve huge volumes of digital transactions that are manually performed. These transactions are more often repetitive in nature, involve high volumes and are bound by stringent industry regulations. In order to overcome the challenges with this ever-growing transaction volumes and ever-increasing need for speed, accuracy and regulatory compliance, several organizations have started embracing automation in general and Robotic Process Automation (**RPA**) in particular over the last few years.

2.Why Robotic Process Automation

Automation of manual processes is not a new phenomenon and has been achieved through excel macros, simple scripts, application technology enhancements etc. The concept of RPA is further advancement in automation where a non-intrusive application is developed using new age tools to mimic human actions. However, it should not be considered as default option for automation. Automation that really benefits from the features of RPA tools should only be considered for RPA. The expected benefits of RPA include

- Increased accuracy
- Reduced turn-around time for voluminous transactions
- Reduced cost
- Optimization of man power etc.

3.What to automate

A business process that is chosen for RPA should be assessed for

3.1 **RPA Amenability** - Processes involving human judgment, multiple human interventions and un-standardized processes should be assessed and the level of automation that is feasible should be understood by business and technology stakeholders. It worthy to note that 100% automation of any process might not be feasible in all cases. There should be mechanisms in place to derive benefits from the level of automation that is possible for a business process.

3.2 **Return on Investment (ROI) Analysis** - ROI should be a factor of volume of data processed, time taken by human user, frequency of the task vis-a-vis the cost to build and maintain the RPA solution including infrastructure and license cost. As a general thumb rule, the ROI should be positive in the first **12-18 months** of RPA implementation

3.3 **BOT Requirements** - Based on our experience the number of BOTs replacing a human FTE should not exceed 1. *Ideally the **BOT to human FTE ratio should be < 1.***

3.4 **Process Optimization:** It is also key to determine if the business process should be first re-engineered to optimize and remove any redundancies that have crept into the process flow over a period of time.

4.How to automate

RPA projects need not be executed using the standard SDLC development life cycle applicable for Development projects.
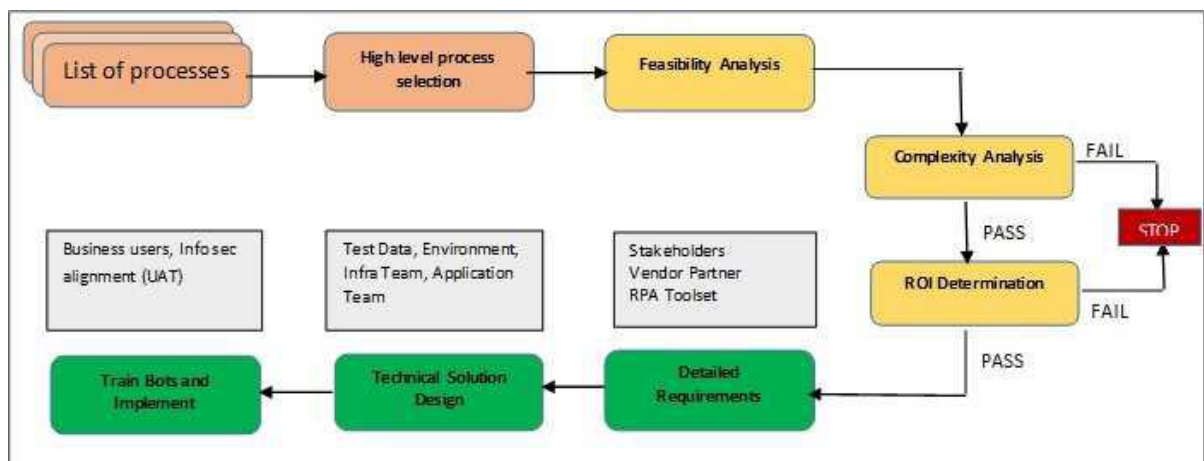
5.Determining RPA amenability

As depicted above, the processes chosen for RPA should be subject to **Feasibility analysis** and **Complexity analysis**. The feasibility analysis should factor the number of human interventions and decision in the process and other technical challenges (like presence of Optical character recognition (OCR), multi factor authentication etc.) which are difficult to be automated using standard RPA features. The complexity analysis should be based on number of users, number of interfaces, types of interfaces, volume of data processed, presence of any complicated business logic, need for standardizing or optimizing the process etc. Based on the feasibility and complexity of the process, the % automation that can be achieved is derived. Effort required to build, test and maintain the BOT should be computed and compared against the expected benefits

6.Requirements and Solution Design

The process selected for automation should go through detailed requirements phase. The AS IS process documentation (Process Manual/Handbook) is likely to be available with the business users. This should be reviewed and converted to detailed RPA requirements document. The requirements should capture all the **business flows** including the normal flows, exception flows and steps that require human interventions. The **solution design** should determine the BOT requirements, performance requirements for the BOTs and the approach to be taken wherever manual intervention cannot be eliminated. This should also cover potential process optimization so that BOTs can efficiently perform the same activity better.

7.BOT Development Life cycle and Support

The **Build** *(Train the Bot) and Test* cycle can be done in agile way in short cycles if the requirements are captured in detail with strong solution design. A separate system testing phase can be done away with and instead an extended User Testing by end users of the business process can be planned. Since BOT behavior is very sensitive to minor changes between the environments, the test environment and test data should be representative of the production environment. Once the BOT is functional in production, the production support team takes over the maintenance aspects of the BOT which includes monitoring of BOT as per schedule and reviewing logs for any failures.

Choice of RPA tools

Several industry standard tools for RPA have emerged over the last few years - Automation Anywhere, Blue Prism, Work fusion, UI Path, Assist Edge to name a few. A Key factor that influences the choice of RPA tools is the ability of the tool to support specific automation needs like ability to process OCR, need for Cognitive decision making, need for Machine learning ability etc. Most organizations have Automation COE which assesses these factors and recommends that right choice of tool.

8. References

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