Case Study: Automating SAP Activities with VBA to gain vast Processing Improvements

Authors: Remedical GmbH, Zurich, Switzerland
Date: 01-Mar-2022

Abstract:
This case study proved through 4 practical studies with a real SAP production environment, that significant cost savings are possible by utilizing the SAP GUI Scripting functionality for common repetitive activities.

Keywords: Quality Assurance, Regulatory Affairs, SAP, SAP GUI, Scripting, Automation, Medical Device, MDR

This case study proved the following;

- **84.6%** to **99.7%** cost reduction
- The SAP GUI Scripting functionality utilized together with MS Excel is a very powerful combination.

1 Introduction

SAP provides ERP (Enterprise Resource Planning) systems for broad spectra of industries operating such as, global mass-manufacturing environments operating in global distributions networks and global regulatory compliance activities.

This report studies the operative benefits for the Quality Assurance and Regulatory Affairs processes by utilizing SAP scripting to automate various common and repetitive activities.

2 Methodology

2.1 SAP GUI Scripting basics

SAP provides libraries which enables the possibility for a Microsoft Excel application to take control of an open SAP GUI session (a window) and execute GUI scripting and/or directly connect to the SAP backend using Visual Basic. This case study focuses at the SAP GUI scripting utilized by automations developed by the author.

2.2 Time Study

Various typical activities were automated, and time was studied by comparing required development time of the automations to the time required for manually performing the same activities.

2.3 Type of activities

Following common activities were selected;

1) Copy Quality Notification information from SAP
2) Copy Article information from SAP
3) Adding material masters in SAP
4) Quality Notification Processing (Complaints) in SAP

3 Result

The automations resulted in the following performance improvements compared to manual labor;

1) Copy Quality Notification information from SAP;
   1118% faster
   99.7% cost savings
2) Copy Article information from SAP;
   533.3% faster
   96.6% cost savings
3) Adding material masters in SAP;
   933.3% faster
   84.6% cost savings
4) Quality Notification Processing (Complaints) in SAP;
   500% faster
   96.35% cost savings

The detailed result is presented as per *Table 1*.

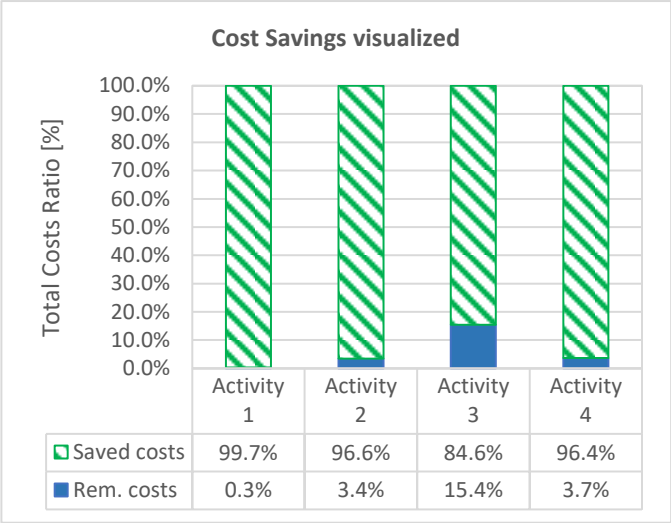

Figure 1. Cost savings visualized

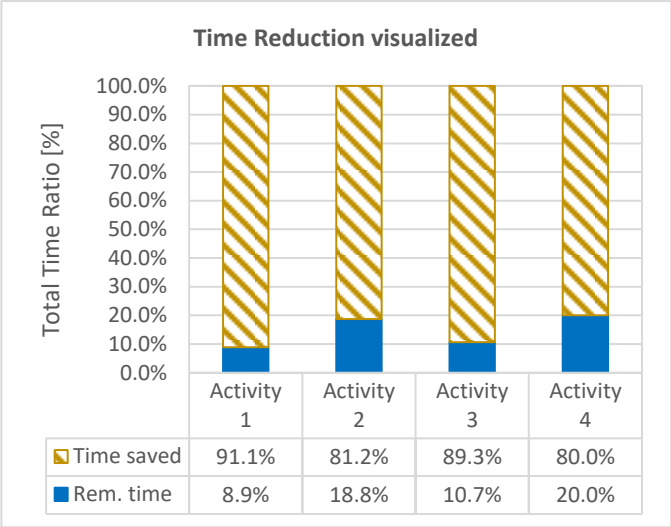

Figure 2. Time savings visualized

4 Discussion

The SAP GUI scripting functionality in combination with MS Excel offers vast potentials for time savings and cost savings. The development time in all the activities presented in this case study resulted in time and costs savings significantly lower than the corresponding manual labor time, with the cost savings ranging from 84.6% up to 99.7%.

It is therefore proven with this case study that SAP GUI Scripting in combination with MS Excel is a very powerful setup which can vastly improve repetitive activities which are common for Quality Assurance and Regulatory Affairs.

Table 1. Detailed result from the studies

SAP Activity	Type	Time Per Activity	Total Activities [#]	Total Time [h]	Processing Time Difference [%]	Total labor time for all activities [h]	Cost difference in labor time [%]
1 - Copy SAP Quality Notification Information (seconds per activity)	Manual	38	410	4.327	8.9	1211.56	**30289%**
	Automated	3.4		0.387 (23min)	1117.6	4	**0.3%**
2 - Copy SAP Article Information (seconds per activity)	Manual	16	6464	28.729	18.8	28.729	**2872.9%**
	Automated	3		4.387	533.3	1	**3.4%**
3 - Adding Material Master in SAP (seconds per activity)	Manual	3.5	6464	6.284	10.7	6.284	**628.44%**
	Automated	0.375		0.6733	933.3	1	**15.9%**
4 - QN Processing (Complaints) in SAP (minutes per activity)	Manual	15	92000	23000	20	230000	**2738.10%**
	Automated	3		4600	500	840	**3.65%**