What is this 'RPA' they are selling?

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Abstract: Robotic Process Automation (RPA) is being adapted by public sector organizations as a means to solve challenges yet new problems and challenges arise. One reason for this may be a mismatch between how RPA is portrayed and what it turns out to be. This paper covers the first analysis in a study that compares the portrayal of RPA by vendors by that of public sector.

1. Introduction

Robotic Process Automation (RPA) is software automation of repetitive tasks. RPA has received significant interest due to its potential to solve some of the current challenges of public sector organizations. The vendors have grand visions and high hopes that RPA solutions will have an almost instant positive effect on clients' operations by eliminating repetitive tasks currently done by humans. However, there are challenges ahead and new problems arising when adopting and implementing RPA. One potential reason may be due to how RPA is portrayed and what it is received to be. We are looking into the differences of how RPA is portrayed and received by the vendors and the public sector. So far we have performed an analysis of the vendor portrayal of RPA, which we present in this paper.

2. Method

We have conducted a content analysis (Krippendorf, 2004) inspired by grounded theory (Glaser and Strauss, 1967). The study is qualitative and interpretative (Walsham, 1995; 1993). The data used is content from websites of the five largest RPA vendors (Gartner, 2019); a ranking based on estimated market share in 2018. These websites describe what RPA is. Prior to analysis the text from these websites were extracted. The steps performed during analysis were: (1) Open coding, where each sentence were coded with its messasge(message) and type of message (category) as shown in the example in Table 1, (2) Cleaning of categories, where categories were consolidated or removed, groups were also formed to categorize categories, (3) Clustering of messages, similar messages were clustered together, and (4) Filtering, where only clusters based on messages from at least three of the five vendors were kept for rigor.

Table 11: Example of Open Coding.

"Robotic Process Automation is the technology that allows anyone today to configure computer software, or a "robot" to emulate and integrate the actions of a human interacting within digital systems to execute a business process."	
What is the message? (Message)	**What type of message is it? (Category)**
RPA is a technology	Description of RPA (describing statement)
RPA can be used by anyone	Feature (a trait of the technology)
Configure a software robot	Operation (information about how it works)
Emulate the actions of a human	Capability (what the technology is capable of)
Execute business processes	Purpose (the purpose of the technology)

3. Results

We present the results in Figure 1 and Figure 2. Figure 1 shows the relative distribution of clusters within their categories and groups. Figure 2 shows the groups, categories and clusters. In total, the results are based on 428 coded rows. In Figure 1, the inner circle represents the groups and the outer circle the categories. The size of the categories is determined by the number of clusters for the respective category. A group contains categories, a category contains clusters, and a cluster is a collection of similar messages.

Figure 1: The Groups and Categories. Size of categories relative to number of clusters.

Figure 2: The Groups, Categories, and Clusters.

	Description	Capability	
Definition	Intelligent	Working with any system	
	A technology or software	Use AI and machine learning	
		Learn and adapt	
		Emulate cognitive abilities	
		Emulate human interaction with systems	
		Handle various types of data and information	

	Application area	Suitability	Purpose
Usage	Back-office administration	Repetitive tasks	Extract data
	Contact-centre and customer service	High-volume tasks	Enter data
		Strenuous tasks	Copying and pasting data
			Interpretation and analysis
			Administrative tasks
			Move data and files
			Transform data
			Calculations
			Reporting

	Features	Reasons	Outcome
Arguments	Fast and efficient	Easy to implement and use	Business growth and success
	Flexible	Is needed to survive and remain competitive	Frees up human workers
	Scalable	Cheap	Time for more valuable work
	Easy to use	Fewer or no mistakes	Efficiency
	Usable by anyone	Leads to business success	Improved customer experience
		Reliable	Happy employees
		Fast ROI	Transformation and change
		Free from human fallacies	
		Fast	

4. Conclusions So Far

We can thus far conclude that the vendors' portrayals of RPA:

- Emphasizes arguments of acquiring RPA, followed by RPA usage and to a lesser degree the definition of RPA. The overall portrayal is positive but, in some parts, vague. The highly optimistic perception of RPA may cause the requirements and efforts needed to be underestimated.
- Is not fully comprehensive, as there are areas of relevance that are covered minimally or not at all. This is unsurprising since the data could be considered marketing material. The absence of certain dimensions may however lead to underestimating requirements and efforts needed for successful RPA implementation and usage.
- Is associated or related to AI, which in turn could risk RPA being interpreted as a smarter concept than it is. This can lead to confusion as to what is what and for which purposes the respective technologies can be used.

5. Continuation

We plan to continue this study by including empirical data from the public sector, to cover both of these perspectives. This is something we already have some data for. We will then compare the two portrayals to spot differences, problematize about the reasons for these differences and discuss possible implications.

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Daniel Toll has a background in cognitive science and information systems and is currently working towards his PhD in information systems at Linköping University, Sweden. His research is focused on how the use of artificial intelligence and automation technologies in public sector organizations affect society.

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