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Organizational adoption of Robotic Process Automation: managing the performativity of hype

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Abstract:
Robotic process automation (RPA) has recently been subject to colossal hype. Although hype and expectations around technological innovation have been researched at length, there is limited research into the impact of hype at a firm level from an adopter's perspective. Through an inductive multi-case study of five organizations from the banking, financial services and insurance (BFSI) sector that have adopted RPA over the past five years, we attempted to answer the question: how does RPA technology hype reach the shores of organizations and what adoption behaviour and decision making does it drive? Findings point to the critical role of senior management as instigators of adoption and legitimation, which goes beyond the sponsorship role identified in extant theory. Results also demonstrate that RPA adoption is driven by a 'hunt' for use cases by interdisciplinary teams, which exposes long-standing operational problems while at the same time offers opportunities for organizational learning. We contribute to a theoretical understanding of the organizational performativity of hype and draw lessons for industry practitioners considering RPA and other hyped technologies for organizational adoption.

Keywords:
RPA; hype; adoption; automation; organizational change; performativity.

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1. Introduction

Robotic process automation (RPA)is the use of software to automate organizational processes in order to eliminate repetitive and mundane tasks previously carried out by humans [1], [2]. More specifically, a software program interacts with the presentation layer of applications by mimicking human behaviour (click mouse, open file etc.), allowing human tasks to be automated [3]. Each bot is an instance of the software program [4]. According to Gartner [5], in 2018 RPA was the fastest growing segment in the enterprise software market. The RPA market was projected to grow to $2.9 billion last year from $250 million in 2016 [1]. This extraordinary growth is reflected in the growth of the industry's biggest players and the eye watering investments and valuations they have been attracting. UiPath, a RPA company, went from 700 customers in early 2018 [6] to over 6000 in 2019 [7], and doubled their annual recurring revenue from $100 million to over $400 million in the 24 months to July 2020 [7]. UiPath raised $225 million in their series E funding round in mid 2020, at a valuation of 10.2 billion [7]. Their main rival Automation Anywhere raised $290 million in late 2019 at a valuation of $6.8 billion [8].

Existing academic research on RPA generally consists of single case studies focused on the practicalities of implementation [3], [9], [10], [11], [12], information technology (IT) and business governance [3], [9], [13], [14], and business process selection [3], [15], [16]. References to the RPA adoption decision-making process and dynamics are limited.

The notion of hype is centred on exaggerated expectations [17]. The effect of hype and expectations on technological innovation and the formation of markets has been well researched over the past few decades. There is interesting work on the dynamics of hype in relation to the development of specific markets such as graphene [18] and digital health [19]; and a comparison of hype across voice over internet protocol, gene therapy and high-temperature superconductivity [20]. Hype dynamics are powerful and performative forces that bring about technological developments that give rise to new markets [18], [19], [20], [21]. There is less research, however, into the impact of hype at the firm level from the adopter's perspective. Existing work on RPA does little to illuminate how hype permeates organizations and the decision-making behaviour it drives. In this study we therefore ask: how does RPA technology hype reach the shores of organizations and what adoption behaviour and decision-making does it drive? We will seek to answer this question through an inductive multi-case study. This research methodology is particularly suitable for understanding processes and 'how' based questions [22]. Our analysis contributes to (a) the understanding of hype from an adopter's perspective, (b) technology adoption decision-making and processes, and importantly how these two themes intersect. Our research has several implications for practitioners trying to navigate this world.

The paper is structured as follows: we present a review of existing literature on hype and expectations and RPA adoption. This is followed by the methodology, which leads to the presentation of empirical findings and discussion of them. We conclude with an outline of our contributions, limitations and future work.

2. Literature review

2.1 Hype and expectations

The definition of 'hype', both as a noun and a verb, includes the public promotion of a product or an idea but in an extravagant and often exaggerated way. Oxford Learner's Dictionaries, for example, define the verb hype as "to advertise something a lot and make its good qualities seem better than they actually are, in order to get a lot of public attention for it" [23]. This suggests that with hype come inflated expectations that may create promises that go beyond the capabilities of a certain technology [24]. Despite the enthusiasm, therefore, that those inflated expectations might cause, there is also hyperbole and uncertainty about how new technologies for information systems are actually going to be applied and diffused among organizations [25]. Indeed, many technologies have gone through a hype and a subsequent disappointment phase [17] where the enthusiasm that comes with initial passionate bandwagons of adoption subsequently fades away [24]. This phenomenon is often referred to as a hype cycle [18], [20], although some suggest that it is more useful to view hype as a wave, rather than a cycle [18]. Indeed, as the wave passes through space and time, different actor groups experience different levels of hype at a given time. Hype is also said to be increasing in

comparison to previous years, with expectations becoming ever more unrealistic [21]. Expectations and hype are widely thought to be performative, in the sense that they do not only create an enthusiastic atmosphere around a new innovation by attracting attention, but also help mobilise resources, seek and achieve organizational support from key stakeholders and secure funding [18], [19], [20], [21]. This way, hype and expectations motivate organizations and communities to achieve those expectations and shape technological futures [19] through legitimizing decisions of technical functions [18] and enabling agenda-setting by innovation actors [20]. This notion of performativity is not equal to a self-fulfilling prophecy for every technological vision or claim [21]. However, it has been suggested that once a technology is underwritten by coordinating practises and market investments, its course may be very difficult to change and once investment reaches a certain level, expectations 'become too big to fail' [19]. Such commitment in certain innovations enable their assimilation into everyday work practice even after initial enthusiasm has faded away [24].

During the course of a hype wave, different actor groups are involved in the governance and coordination of expectations about an innovation [17] through journals, conferences, articles, market reports. Some of them, such as industry analysts like Gartner emerge as particularly influential in shaping new markets by pushing technology providers towards conforming to their market construct [21]. At the organizational level, a powerful actor group for innovation is senior management in the adopting organization. Their support is very important for technology innovation to succeed in organizations [26], [27], [28], [29]. More specifically, they provide legitimation [30], a key feature of successful information systems projects [31]. Also, in cases of resource scarcity, senior managers may be involved in securing access to resources and funding [32]. Specifically, in relation to RPA, c-suite support has been found to lead to greater programme success [3], [33]. This study will look at the chain of events and decision-making relating to adoption in the context of hype, including the relevant key actors; rather than looking at the ultimate success or acceptance of RPA.

We intend to look at the RPA hype wave from an adopter's perspective, including how hype penetrates organizations, the role of certain key actors, and what behaviour it drives within the adopting organization.

2.2 RPA adoption

Technology adoption has received attention in a variety of contexts, such as, cloud computing [34], enterprise collaboration systems [35], decision support systems [36] and so on, whereby scholars tend to focus on benefits and motivations of adoption. Similarly, research in the area of RPA has tended to focus on benefits, suitable use cases and implementation methods. Much of the work has espoused its benefits including: easy and fast set up [3], [37], increased productivity and efficiency [9], [15], [16], growing the digital workplace [16], increased accuracy [9], [15], [16], lower reliance on IT workforce [10], rapid scale up and easing IT workloads [3], allowing people to do more interesting work [16], [33], and facilitating system integrations that were not previously possible [37].

In line with the apparent benefits, existing studies frequently position the decision to adopt RPA as being a response to a need to cut costs [1], [14], increase efficiency of business processes [12], [13], renew processes [13], or as part of process innovation [3]. However, research does not tend to go beyond these very high-level goals, or into the details of how and why such goals become linked to RPA. We learn a limited amount about the source of these expectations, how they are internalised by the adopter organization and the early adoption processes, including how organizations choose particular use cases, an important and often challenging step in the adoption process [3], [15]. There is also a limited amount of research on how alternative solutions are appraised. Penttinen et al. [10] looked at how organizations should choose between RPA or more heavyweight automation solutions that rely on application programming interfaces (APIs). The study resulted in some interesting factors that may influence the decision, most of which hinge on whether backend or presentation layers are stable enough to cope with heavyweight or lightweight integration respectively. However, the actual cases did not appear to have undergone a serious assessment of heavyweight alternatives.

As with any technology implementation, RPA should be considered in the context of an organization's goals, challenges and process management capabilities [15]. Research suggests taking a broader view of RPA from the very start by seeing it as complimentary to other Artificial Intelligence (AI) technologies [37]. Similarly, RPA could be seen in the wider context of cognitive capabilities which can be delivered through a range of different technologies [38]. This

includes learning about cognitive technologies, identifying opportunities based on business need, then assessing use cases in terms of their contribution to business strategy [38]. Davenport and Ronanki [38] warn against injected projects from senior management and companies that simply 'pave the cowpath' (p. 9), by automating processes with RPA and foregoing value by taking this narrow approach. Moreover, organizations adopting RPA are often overly focused on the technology and its features as a potential technological solution, something that prompts them to build organizational teams, such as robotics labs, whose purpose is to hunt for solutions [39]. Another perspective is to embed RPA in an organization as one of many approaches to automating or optimising business processes [40]. Empirical evidence to support or oppose these recommended adoption approaches is, however, in short supply.

A lot of RPA research has focused on the mechanics and governance of implementation. RPA is seen firmly in the domain of lightweight IT [9], [10], [37], meaning IT that is more business and user-driven, and often side steps the IT function [10]. This has a bearing on how organizations should and do implement RPA. It is often the case that specific RPA teams [3] or centres of excellence (central shared resources) [33] are assembled to implement and govern RPA. There is much debate on how to set up the team: whether it is centralised or decentralised [13], [14], whether it should be in the business or aligned to IT [3], [9]. As part of implementation, organizations often conduct proof of concepts (POC) before beginning in earnest [12], [13]. However, what is not clear from existing research is the series of events leading up to the implementation activities, and who the key internal and external actors are.

This study is intended to fill in some of current research gaps in relation to RPA adoption, including inter and intra organizational interactions, decision-making processes and the influence of hype. Ultimately, it is the intention of this paper to illuminate the impact of hyped technologies like RPA on organizational behaviour, as it is adopted by companies in the banking, financial services and insurance (BFSI) sector.

3. Methodology

We conducted our research as a multi-case inductive study [41]. This approach enabled building theory on the relationship between hype and the process of adoption in organizations. This study is exploratory in nature and using multiple cases should enable better generalisability of the theoretical outcomes [41], [42].

3.1 Sampling of case-study organizations

Five organizations, which have all implemented RPA were selected. A high-level summary of the cases is set out in Table 1.

Table 1. Case study organizations (anonymised)

Case Ref.	Overview	No. employees	Informants
LargeIns	UK subsidiary of large multinational insurance company.	7,000	1A – IT strategy/Operational Excellence 1B – IT Operational Excellence, RPA lead 1C – IT architect
InsServ_1	UK based company. Provides solutions to insurance industry.	1,800	2A – IT Director 2B – Operations Director
LargeBank	Large multinational bank.	200,000+	3A – Operational Excellence, Automation lead
MedBank	Medium sized multinational bank.	8,5000	4A – IT Automation lead 4B – IT Product Manager 4C – Operational change manager/process owner
InsServ_2	Insurance division of multinational services company.	1,200	5A – Operational Excellence 5B – Operational Excellence, RPA modeller 5C – Operations Director

In order to strike a balance between building theory that is generalisable, but also controls for extraneous variation [22], [43], all cases were selected from within the BFSI sector. We understand the BFSI sector as a community of different actor groups, which may be at different stages of the RPA hype wave than other sectors [18]. By no means do we claim to produce an exhaustive, sector-level analysis. Our sampling strategy, however, was driven by the variation in levels of

RPA adoption in different industry sectors and the different points they are at in the hype wave. In 2019, for example, BFSI was the largest industry vertical within the RPA market with 29%, whereas in the retail and consumer goods sector, RPA revenue was less than half that of the BFSI sector [44].

3.2 Data Collection

The primary data source was interview data, which provided in-depth and rich descriptions of events, the roles of key individuals and processes involved. Although Eisenhardt & Graebner [42] recommend multiple data sources, they acknowledge that interview data often becomes the primary data source and recommend limiting bias by using multiple well-informed interviewees. For all cases but ***LargeBank***, multiple informants were interviewed to triangulate information and get a more robust understanding of various situational factors and relationships between them. The informants were a range of individuals, all of which had been closely involved in the adoption and implementation of RPA within their organizations. Some interviewees were more oriented towards business operations, others were more aligned with technology functions. Interaction with participants consisted of an initial introductory meeting, followed by semi-structured, recorded then transcribed 60-minute interview via video conference. Follow ups by email and phone were used to fill in missing pieces of information or clarify statements where required. Figure 1 below shows the data collection process.

Fig. 1. Data collection

Interviews were structured as informant interviews [45]. All informants had in-depth experience of RPA adoption and could explain the events and history of what had occurred. We followed a generic interview guide with the following sections: (1) how was external hype internalised in the first instance and who were the key actors in the early stages; (2) how did things move from an idea/expectations to implementation; (3) how were internal expectations crafted; and (4) to what extent have expectations been met. Many of the questions were generative in order to elicit rich responses (see Appendix A). We used tour, timeline and experience questions [45]. For example, in relation to how RPA first came about, we asked informants, 'can you talk me through how this came about, including who the key people were?'. As informants toured us through past events and processes, we would interject as appropriate for more specific details with directive questions such as, 'when was that' or 'what was their role'. We also used some compare and contrast questions to get informants to think about how RPA outcomes compared with their earlier statements on expectations. Informants often spoke about the roles of others, and where appropriate we probed their potential motives, but generally stayed away from this type of question to limit guessing or philosophising.

3.3 Data Analysis

Our analysis was conducted as follows for all cases and a clear timeline of adoption for each case was established: We worked through each case in turn, undertaking a primary cycle of coding of the transcripts [45]. This consisted of assigning descriptive words or phrases to sections of transcript without any references to previous theory or research questions. This gave us a list of topics and sub-topics. As we added data sources, the list of codes expanded and new topics arose [46]. For example, 'the beginning' was the code used for all data pertaining to how the RPA initiative first started including early activities, key actions and decisions. Once we had completed the initial coding for each set of case transcripts, we then fractured the data into smaller pieces. For example, when we were fracturing data for ***LargeIns***, 'the beginning' had sub-topics including 'role of group company' and 'role of senior management' added to it. For each case, we then undertook a second cycle of coding [45]. By looking at each primary cycle code we were able to see certain themes emerge. We used memos to detail analytical coding, generate ideas and questions [46] together

with pertinent quotes. We completed all these steps before moving onto the next case. This process allowed us to pick out key themes for each case. Each case expanded the list of topics and themes, although minimally by the time we had reached the third, fourth and fifth case.

Cross-case patterns [41] emerged as we revisited our finer grained topics and analytical coding memos for each new case comparing to the prior ones. By analysing the data that coalesced around a certain theme, we were able to compare cases, noting similarities and differences. Initially between two cases, then three, etc. The key to developing cross-case patterns was ensuring that where themes emerged, each case acted as an appropriate replication [42], confirming or not prior findings from other cases [47]. We encountered some situations where one source from a case seemed to confirm the presence of a cross-case pattern, but another source suggested a different interpretation of events. In such cases, we revisited the divergent sources by probing the transcripts more deeply and where possible revisited with the informant. Understanding why certain themes emerged between cases, involved reviewing of extant literature, both confirming and contradictory [41]. In order to generate possible explanations [43] and extend theory where appropriate, the outcomes of this process will be set out in the following sections of this paper. Figure 2 below summarises the data analysis process.

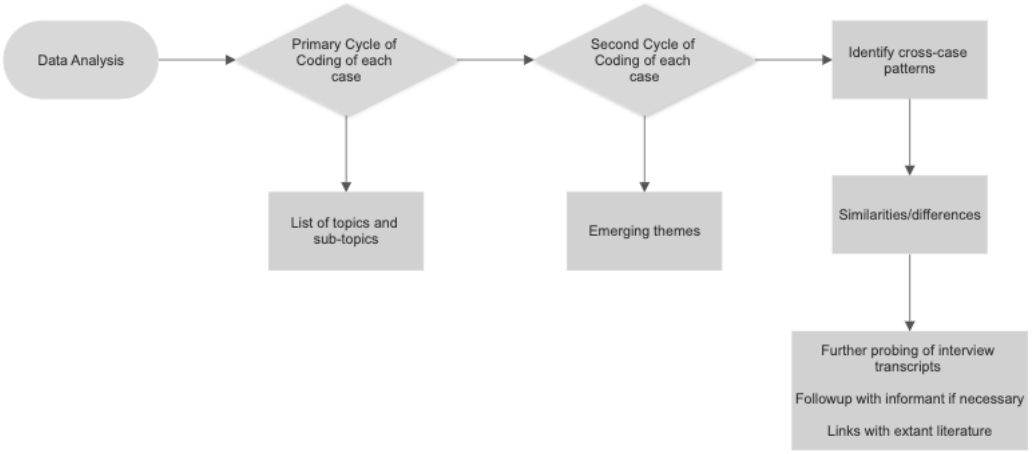

Fig. 2. Data analysis

4. Empirical Findings

4.1 Role of senior management

All but one case that we looked at began their forays with RPA between 2016-2018. This was the time when RPA was attracting a lot of attention and a steep growth in interest. As shown in Figure 3, publications (Primary docs) that were retrieved using "robotic process automation" from Scopus started rapidly increasing right around that period and after.

In this context, in all our case firms, except ***MedBank***, it was a senior manager who was engaged with this rise in RPA interest and became the spark that ignited the implementation of RPA. In ***LargeIns***, it was the CEO who provided the spark by directing her IT team to establish a business case for it. She was, however, heavily influenced by external management consultancy firms and vendors whom she was interacting with. The promise, upon adoption, was framed around cost-cutting and operational efficiency. A senior IT strategist in ***LargeIns*** explains: "You can automate a lot of your mundane, repetitive tasks and processes and thereby reduce headcount. That was pretty much the hypothesis that they were sold, and that I was given to try and prove or disprove". Similarly, in ***InsServ_1***, the spark was generated by members of the board who pushed the IT team to explore RPA. The ***InsServ_1*** IT director explains: "The beginning of the journey was sitting at a board meeting and combination of the CFO and CEO saying words to the effects of, there's a lot of people doing stuff with RPA, shouldn't we be doing stuff?". With respect to ***LargeBank***, one of the senior general managers of the bank was credited as having launched the initiative. The Automation Lead at ***LargeBank***

confirms: "It would have been [Senior Manager] … who wanted to look at automation". ***InsServ_2*** commenced their activities in 2014, a fair bit earlier than the other four cases. The division's Operational Excellence lead explained that the initiative had begun as a result of the actions of a senior executive (SE): "The spark was [SE]…. He used to work at [X]… and in that role he'd come across robotics. That started a conversation that started a cascade…which landed to me… to start something called robotics".

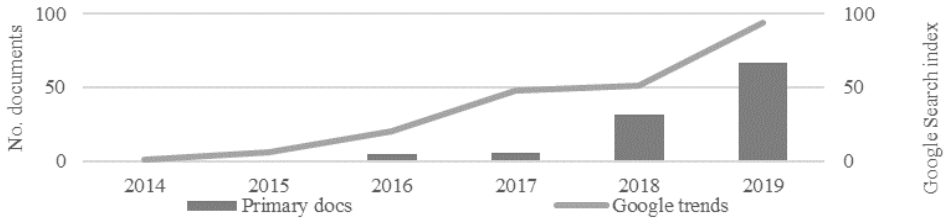

Fig. 3. Google trends index base period is January 2020 = 100. Annual index figure is based on annual maximum. Source: Graph generated by the authors.

In ***MedBank***, the situation was slightly different in that an analyst in the IT team at the time, together with his manager both came to learn about RPA at a similar time. They then put their RPA idea forward to be part of a hackathon. The company's Chief Operations Officer (COO) had a critical role in pushing the initiative, something that became apparent when he left the company. The Automation Lead at ***MedBank*** explains: "When [the COO] disappeared, all the stakeholders disappeared … And my boss … wasn't sure what was going on. And he didn't want to push it anymore".

Table 2 summarizes the sources of hype at the point adoption together with the expectations of senior management. In all cases but ***InsServ_2*** (explained by their earlier adoption), prior to adoption, several colleagues were beginning to learn about and discuss RPA at around the same time.

Table 2. Source of adoption/hype and senior management expectations

Case	Source of adoption/hype	Senior management expectations
LargeIns	- Group parent company - Conferences - Management consultancies	- Cost savings - Employee reduction - Improve quality - Improve Service Level Agreements (SLA)
InsServ_1	- Competitors - Clients - Industry talk - Email adverts	- Do more with less - Redeploy staff - Data accuracy
LargeBank	- Management consultancies - RPA vendors	- Cost savings - Customer experience - Risk reduction
MedBank	- Investment news (on RPA vendors) - RPA vendor was customer of bank	- Cost savings / reduce headcount - Remove menial work - Improve SLA
InsServ_2	- Previous employer	- Cost savings - Redeploy headcount

4.2 A solution looking for a problem

In relation to the process of implementing RPA, there was a clear pattern between the cases. Following a decision or clear expression of intent to adopt RPA, each of the cases undertook an almost identical process. This involved looking for processes and sub-processes which could potentially be automated.

After receiving direction from their CEO, ***LargeIns*** brought in an external consultancy to help them identify a list of potential processes to apply RPA to. The internal team worked alongside the consultancy analysing processes, tasks, the effort involved and problem areas. A senior IT strategist explains the approach, "It was a combination of looking within tasks, listening to people [hearing] their frustrations… looking at data around time and motion… put all that together, and it created that first list that had around 14 opportunities". ***InsServ_1*** also brought in an external party to look for potential processes. They decided to start their effort in a part of the business with known problems around re-keying data, something they understood to be a good use case for RPA. The consultancy spoke to operations staff in this area to understand which processes could be automated. The IT Director summarised: "We had a proposal from [Consultancy] having done an initial assessment, where they'd worked with people like [X] to identify what processes… they worked with them to create a proposal on what processes could be automated, and what the supporting implementation plan etc., would look like". After the initial activity of identifying processes was complete, board approval was sought to implement RPA for these processes. After ***MedBank*** completed their initial POC in early 2018, they too engaged a third party to begin looking for activities which RPA could automate. The Consultancy worked with operations staff across the division about their processes and divided potential opportunities into different categories i.e. easy, hard. The Automation Lead confirmed, "In the beginning [Consultancy] came in … They spoke to all the people in the business, they talked about all the tasks and the processes that they were doing. And they came up with a sort of…quadrant type analysis [of automations]". The Automation Lead also implied that the COO was pivotal to this approach. He explained that when the COO left, the approach to finding RPA opportunities changed, he said, "I think if he'd [COO] hung around, we would have carried on doing it like that".

InsServ_2 did not use a consultancy to assist their RPA efforts, instead the Operational Excellence team learnt about the potential of RPA and shared this insight with their operations colleagues to "Try to produce a list of opportunities where we felt the business could gain by using that automation tool". In ***LargeBank***, the business operations team started with a POC. After this they established a large multi-year programme and set about systematically looking for activities, they could apply RPA to. All areas of the bank were encouraged to work through their operations areas to build a pipeline of potential processes to automate. Regarding his own area of the bank, the Automation Lead summarised "We then got asked to look at opportunities for the RPA program. We identified about 40 or 50 different processes". Significant effort was spent on workshops, communication, knowledge sharing and analysis to complete this activity. The Automation Lead describes what his team did: "discovery workshops, robotics awareness sessions at the major operational centres, …pull[ing] the relevant ops leads in". Finding activities appropriate for RPA and calculating the potential savings was replicated around the bank, and also supported by a consultancy partner.

4.3 Internal promotion of RPA

After their initial tranche of activity, most of the cases, continually added to their lists or pipelines of potential activities to automate with RPA. The technology itself and characteristics of activities it could automate were at the heart of the search. In many cases they did this through advertising their achievements internally amongst their operations colleagues. ***LargeIns***, ***LargeBank*** and ***MedBank*** all took this approach. In all these cases RPA lead individuals for the organization or division were established. The Automation Lead at ***LargeBank***'s team did a number of things to spread the word about RPA and to identify additional opportunities, for example, his team launched a SharePoint site for people to submit automation ideas and do Public Relations (PR) around it. Likewise, in ***LargeIns***, the automation team did a lot of internal PR and communication to encourage colleagues to consider RPA and identify new opportunities. The Automation Lead explains what they did, "A lot of PR, a lot of communication. We've done huge numbers of roadshows, we publish a lot of articles".

InsServ_2 took a more systematic approach and went through every process in their organization with their operations colleagues. In order for a process to be considered for RPA, once automated it had to generate savings equivalent to the work of one full time member of staff. A Process Modeller explains, "Myself and the other process modellers…then sit with the business and then go through all of their processes, and identify if that process was within the criteria for working in robotics". This activity was led by the Process Modeller and her colleagues: individuals whose sole job it was to implement RPA. Finally, ***InsServ_1*** is at an earlier stage, having not implemented RPA for any new processes beyond their initial implementation. They have however, recently appointed someone to look for more RPA opportunities as well as process design work. The IT Director explains, "[The individual] is working with the business on processes, to identify where we can do more of this stuff [RPA]".

4.4 Criteria for selecting processes

Our case organizations embarked upon a process of selecting organizational processes that would be considered for RPA. Some of them pursued this through their IT function, others through their Operations team; while some also followed a combination of the two.

The teams leading on RPA in ***LargeIns*** and ***InsServ_2*** focused on operational excellence and lean techniques. As a result, they seemed to emphasize the importance of combining process improvement with RPA, or sometimes even as an alternative to implementing RPA. For example, in ***LargeIns***, they have developed a decision tree to evaluate how appropriate something is for RPA, or whether it requires process improvement. The tool also helps estimate costs and potential savings. A senior IT Strategist explains the output of the decision tree, "You can get to: yes, automation's the end result or you need to improve it, but it's just Operational Excellence". In ***InsServ_2***, the team only considered RPA as a potential solution when appraising processes. A Process Modeller confirms, "Our main tool is just robotics. So, if it's come to us, then we're looking at it from a robotics point of view". Blackbelt lean qualified colleagues in the business improvement team do however work with the RPA team to perform process assessments alongside RPA work. Similarly, in ***LargeBank***, the Automation Lead and his team sit in the wider process engineering team, and before beginning any RPA initiative they always look at it through a wider Operational Excellence lens and assess whether the process itself has been properly designed and implemented. He explains, "I shouldn't really automate anything that hasn't been through a standard OPEX type review as well. To say, is this process standard, is it consistent, should it exist at all, why are we doing it?".

Although these organizations utilised their operations experts to search for suitable processes, there were also experts with a technical background that would look at processes from a more technical point of view. In ***LargeIns***, an IT Solution Architect who is an integral part of the RPA delivery mechanism seemed to use his personal technical expertise to determine when RPA might not be appropriate and something else should be considered. He explains, "If I think there's a better way of doing it, I will tell [X] and suggest that it's not done as a robotic process".

In ***LargeBank***, the Automation Lead has a business architecture and IT background, using his range of expertise he attempted to consider a range of possible technology solutions alongside RPA. Although he acknowledged, that currently he was only able to implement RPA. Such technical perspectives also bring into the discussion questions around whether heavyweight integration is more appropriate. In ***LargeBank***, for instance, the Automation Lead adopted an IT lens to consider more heavy weight integration at the business logic or data layer. He explains "We should always, where possible, automate through API to API between systems. Often the answer will be - we don't have the resource to do that it's going to take us too long… So, every automation opportunity, one of the first things that we do is talk to the IT system owners, etc. and the architects and say, right, is there a better way to do this?". This account was consistent with what was happening across all cases. Where system-to-system interaction was required (a very common RPA use case), more heavyweight integrations such as APIs were not possible or desirable due to cost and time. As an example, in ***InsServ_2***, the Operations Director explains, "I think because our legacy system's so complex, trying to get the API's to work was virtually impossible". There was however, very little evidence of rigorous debate around API versus RPA or serious assessments having been undertaken.

We have also observed some tensions between the RPA IT team and operations people. The reason is that operations people are trying to shift volumes of process automation cases away from other IT teams towards the RPA team. In ***MedBank***, for example, operations people gravitated towards the RPA project because they thought that any operational

problems would be easier to solve than through alternative IT teams. The RPA Automation Lead explains, "I've become a lot pickier about what I automate now as well. Because in the beginning, I realized we were getting used by some of the business areas to solve all the stuff that none of the other IT teams wanted to solve". He cited time, money and resources as reasons why IT had not been able to resolve some of these things.

4.5 Revealing hidden problems and organizational learning

Across the case-firms, many use cases that were identified represented long-standing problems. For example, in ***MedBank***, in relation to one prominent RPA project the process issue being tackled by RPA had existed for many years. A Change Manager confirms, "The issue was not a new issue in terms of operations it's been in there for years". In many cases, there was also genuine surprise at the problems unearthed. This was observed in ***LargeIns***, ***InsServ_1*** and ***MedBank***. The Automation Lead in ***LargeIns*** explains: "I started to get quite shocked on, firstly how bad it had got on the front line for people". In ***InsServ_1***, there was similar surprise at the problems uncovered during the process analysis work. This led to more questions being asked around the business. The IT director describes the questions prompted amongst team members, "I didn't know you didn't do it that way. Why are you doing it that way? Why does that take too long?". More broadly he described the effect this had amongst management: "These things start bubbling to the surface which creates conversations further up the chain. So why don't we know about this stuff etc?... where else is this happening?". On one prominent project in ***MedBank***, the analysis work and data generated by the RPA project team led to uncovering issues around very poor data entry and associated re-work, something which was unexpected and of which there was no visibility previously. The Automation Lead explains: "It's created so much management information around how bad incoming data is… And a lot of the time the work's being created by the fact that people couldn't be bothered to input dialling codes correctly". Regarding a separate process, the RPA team also surprisingly uncovered that updates were being made to systems by operations staff that were never accessed or used. A Change Manager confirms, "Systems being updated, that were never used and didn't go anywhere".

In ***LargeBank***, during the RPA programme, there was significant learning activity around process complexity and variation. This learning reflects the gap between people working in operations and those people tasked with implementing RPA. The original assumptions the team had made about processes were wrong as they had not appreciated the level of variation between regions, products and system landscape. As a result, the savings were significantly over estimated. An Automation Lead explains, "The business case pretty much evaporated or became so complex that it was going to take way longer for [consultancy] to build it than initially planned".

Given that all informants in ***InsServ_2*** were from the operations team, they would have been familiar with operational issues and not surprised by them. They were coming at it from the opposite angle; knowing their operational environment but not knowing the potential of technology to resolve issues. RPA gave people a new way to look at the way they were working. A Process Modeller explains, "It was more about giving them [operations] a new way of thinking about things, because we think until this [RPA] came along, nobody considered or thought about another way of doing things".

Overall, tangible quantified results varied across the different organizations with some showing more progress than others in relation to the number of hours saved and the number of processes automated. ***LargeIns***, for example, saved over 30,000 hours and automated 114 processes, whereas ***MedBank*** automated about 35. Across some cases, there was sensitivity in relation to the communication of such specific numbers due to fear of job cuts. Savings achieved were generally recorded as hours saved, with the time saved being redeployed as opposed to roles being made redundant.

5. Discussion

The research question for this study was: how does RPA technology hype reach the shores of organizations and what adoption behaviour and decision-making does it drive? Our findings point to three different dimensions of introduction of RPA and subsequent adoption behaviour: a) the role of senior management; b) the processes and practices that organizations set up in order to 'hunt for use cases'; and c) the effects these have on the adopting organization. We discuss these below.

5.1 Senior management as key instigator of adoption

Extant theory does provide some possible explanations for the actions of senior management reported. The presence of hype is likely to place adoption pressure on senior management. As more and more organizations adopt a technology, they are likely to be increasingly concerned about being left behind [26], and felt the need to join the bandwagon [20]. All but one case began their first forays with the technology between 2016-2018 and this aligns with the steep increases in publications and web activity set out in Figure 1. The varied and numerous sources set out show how noisy the market hype had become and exemplifies the activities of a diverse group of actors during a hype wave. This diversity is likely to have increased the sense that everyone else was doing it. This kind of external pressure pushes senior managers to assume roles of sponsors and key agents of RPA adoption and make them engage with formal and informal networks of experts in the broader technical field [48]. Although bottom-up movements within the adopting organizations might have eventually taken off, these required senior management direction and legitimation [30], a key feature of successful information systems projects [31]. This legitimation is also useful in overcoming internal barriers to change such as resource scarcity, lack of budget and governance processes. These barriers slow or inhibit bottom-up innovation and in many situations a senior champion is required to remove obstacles [32].

Although senior managers are important as key instigators for RPA adoption, we showed that in some cases, while trying to overcome those internal barriers, they shifted a large amount of resources to focus on RPA. Consequently they might have neglected other alternatives or trying to consider RPA alongside similar or complementary technologies. A one-sided focus on RPA increases the levels of commitment to the technology as the only option which 'has to work'. This leads to a 'hunt for use cases' within the adopting organizations.

5.2 The 'hunt for use cases'

The pressures of making RPA fit within the adopting organization created a rush for use cases that organizations could apply RPA to. To do this, our case organizations set up structures and started surveying their landscapes in search of processes that aligned to what is suitable for RPA. In a technology hype context, this situation is more likely to prompt organizations to follow a technology-push approach, whereby decision-making on technology adoption is not necessarily driven by a need to resolve existing problems [48]. Instead, adoption is driven by technological capabilities and the efforts of organizational actors to locate problems which can be served by them [49]. Huff and Munroe [49] found that technology-led approaches are facilitated by technical experts lower in the organizational hierarchy, in the case of this research, the hype surrounding RPA and the involvement of senior management made it more of a top-down approach.

Nevertheless, adopting organizations assemble specialist RPA automation teams utilising internal expertise or outsource to a third party, with the aim to hunt for use cases. We observe that those teams adopt an operational processes lens to identify use cases. This means that they will have to start collaborating with "Operations" in order to identify use cases. There was however a disconnect between experts in Operations and the RPA automation team. More specifically, this chasm did not allow bottom-up initiatives to develop and at the same time, tensions were created between experts in the two organizational groups. For example, RPA experts would create additional criteria to filter out use cases that were pushed to them by the Operations team. On the one hand, Operations who did not understand RPA were considering as a suitable use case every operational problem they could not solve, whereas RPA experts would filter a number of cases out as unsuitable. This disconnect is a source of tension that can pose additional barriers and delay adoption. Specifically, it does not allow teams to meaningfully merge their expertise but instead any solutions that emerge from such a collaboration mirror the structure and the skills composition of separate organizational groups [50].

5.3 Organizational gaps

The gap between RPA automation teams and Operations and the effects it had while adopting organizations were scanning for use cases, allowed long-standing operational problems to surface. Indeed, the distance and the siloes between the IT experts and Operations revealed long-standing operational issues which became obvious when experts from the two teams had to interact during the use cases hunt. In this sense, the RPA adoption process generated

organizational learning between previously disconnected experts which overall benefitted the RPA adoption projects [51].

This relates to the issue of how to organize and assemble teams during a use case hunt in the context of a changing scope of the IT function from being a support and maintenance activity to becoming a digitalization and new business development function [13]. Our research suggests that it is more beneficial having new hyped technologies explored by an organization more broadly rather than just by the IT function. This will increase the proximity of the technology to use cases and instigate organizational learning that can reveal long-standing hidden operational problems. This is more important in cases of lightweight digitalization, as in the case of RPA, where it may be unrealistic to expect IT experts alone to be in charge of maintaining legacy infrastructures and at the same time navigating the techno-hype for and creating business value through digital innovation [3]. In this sense, heavyweight IT (core systems maintained by the IT function) should be separated from lightweight IT as they constitute different knowledge regimes [52].

6. Conclusion

In this paper we explore mechanisms and processes followed by adopting organizations in the BFSI industry when adopting a hyped technology such as RPA. We found that the role of senior management plays an important role driving the initial stages of adoption. They do so by legitimizing a digitalization vision for the organization and also by attracting internal resources and support. Subsequently, usually with the help of external consultants, organizations set up mechanisms and organizational structures directed towards a 'hunt for use cases'. In this process, criteria for selection are being established and we observed tensions amongst different expert teams trying to determine and define suitable use cases. Overall, RPA adoption projects allow organizations to unearth existing but hidden problems and also provide opportunities for interdisciplinary collaborations between different expert organizational groups.

6.1 Contributions to theory

The paper contributes to a theoretical understanding of the organizational performativity of hype in cases of technology adoption. More specifically, our analysis adds to approaches which understand the performativity of hype not simply as a rhetorical enthusiasm stemming from exaggerated expectations, but as an organizational process aiming to mobilise resources, situate the technology in question as a viable option alongside complementary and even competing technologies and finally achieve organizational legitimation. We argue therefore that considering a hyped technology, requires a specific kind of adoption practice which we discuss below.

6.2 Contributions to practice

Adopting a hyped technology such as RPA requires senior management approval and support. This will help legitimize the technology and secure resources. Moreover, it requires engaging the whole organization more broadly and not just IT expertise. As hyped technologies are usually not well-established yet, use cases need to be constructed so that problems will be formulated and linked to associated RPA-related solutions. This requires assembling interdisciplinary teams from different parts of the organization. However, practitioners should be warned that this will most likely generate tensions between different knowledge regimes. Such tensions should be embraced as they are essential to learning and identifying 'hidden' gaps and problems. Organizations that are geared to learning, we suggest, are the ones who would be in a position to adopt RPA in a more meaningful way.

6.3 Limitations and future work

Our research has limitations in relation to the number of informants we spoke to from each case firm. Given that fieldwork was carried out during Covid 19 lockdown, we were not able to engage our informants in person and build rapport that would have allowed us to dig deeper into each of the case studies. Nevertheless, we spoke to a range of employees that touched upon different organizational units (both technical and business-oriented) which gave us useful and valuable insights.

Future studies could look more closely into the organizational aspects of technology adoption, not only in relation to RPA but at various emerging technologies, such as AI, blockchain, IoT. More studies on how organizations mobilise internal and external resources to manage the hype and expectations surrounding such technologies will shed light to innovative practices of technology adoption.

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Appendix A. Generic Interview Guide

*A.1. Opening interview (e*xplain research project and secure inform consent)

A.2. Explore hype around RPA and how it leads to adoption

Indicative themes:

- When and how did you come across RPA within your organization?

- Who are the key actors both internally and externally that drive information about RPA and also adoption processes?

- Understanding of RPA and its potential

- Do you know what other companies in your industry doing in this field?

- What are the expectations within your organization about the potential of RPA and the problems it can solve?

A.3. Moving from expectations to implementations

Indicative themes:

- Explain the process of matching business problems with RPA-related solutions

- Explain the process of going from an idea to someone's head to an actual implementation

- How are decisions made in relation to what technology to adopt and how?

- Where external parties involved in this process? What was their role?

- Where problems discussed in the context of RPA also previously identified?

- Where there attempts to solve them in another way?

A.4. Crafting internal expectations

- How did people involved in RPA adoption identify potential benefits and risks from implementing RPA?

- Any specific departments within the organization that were involved in RPA adoption?

- Any external parties involved in this process? If yes who and how?

- How did you select where to apply RPA?

A.5. Outcomes

- Has the RPA project met the initial expectations?

- How do RPA benefits match actual outcomes achieved?

- Any positive or negative implications from RPA implementations?

- Does your company have an end state it is trying to reach through RPA use?

- Where do you think this will go next?

A.6. Wrap up

- Anything else to add?

- Thank you.

- Possibilities of follow up?

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