Will robotic process automation transform back-office services? Mary Lacity of the University of Missouri-St. Louis and Leslie Willcocks of LSE look at what happened at Telefónica O2.

IT, phone home

"For the last 15 years, large organisations have widely adopted the first five transformational levers to the point at which they have become institutionalised."
Back offices are always under pressure to contain costs in highly competitive industries such as telecommunications, but cost efficiency must be balanced with other performance imperatives such as service excellence, business enablement, scalability, flexibility, security and compliance. From years of research on back offices, we learned that low-performing back offices can be transformed to high-performing back offices through six transformation levers: centralise physical facilities and budgets, standardise processes across business units, optimise processes to reduce errors and waste, relocate from high-cost to low-cost destinations, technology enable with, for example, self-service portals, and automate services. For the past 15 years, large companies have widely adopted the first five transformation levers to the point that they have become institutionalised. However, it is only in the last three years that the real power of service automation has become unleashed. Robotic process automation (RPA) adopters such as Telefónica O2 have automated more than 35% of their transactions.

For business processes, the term RPA most commonly refers to configuring software to do the work previously done by people, such as transferring data from multiple input sources such as email and spreadsheets to systems of record, such as enterprise resource planning (ERP) and customer relationship management (CRM) systems. To be clear, we are not talking about technology enablement where technologies such as desktop scripts assist human agents but actual software automation that replaces some or all of the work previously performed by people. In this case study, we describe Telefónica O2’s implementation of RPA and share the lessons it learned to attain results.

**Telefónica O2’s pioneering RPA journey**

Telefónica O2 is an RPA success story (Table 1), in three years reporting £950,000 in net benefits. For some processes, it reduced the turnaround time from days to just minutes. Subsequently, customer “chase up” calls have been reduced by more than 80% a year because fewer customers needed to inquire about the status of service requests. On scalability, its robotic workforce could be doubled almost instantly when new products were about to be launched, and then scaled back down after the surge.

In 2013, Telefónica UK employed 21,580 people and its revenues were £6.69bn (about £4.8bn). Telefónica O2’s back offices needed to scale up to match business growth while keeping costs low to thrive in the highly competitive mobile market. Like many large organisations, its 10-year journey of back-office transformation began with the transfer of work from the UK to India in 2004. Telefónica O2 initially did a “lift and shift” of a significant amount of back-office work from the UK to India by engaging a BPO provider with a delivery centre in Mumbai. By 2005, there were 200 full time equivalents (FTEs) working in India, while 98 FTEs remained onshore in the UK. By 2009, the headcount in India swelled to 375 FTEs and headcount in the UK was reduced to 50 FTEs. Telefónica O2 was reaching the ceiling on extracting any more value from offshoring. Furthermore, wages in India were rising. Finally, the contract did not incentivise the BPO provider to innovate to reduce costs per transaction. As the volume of work offshore grew from about 400,000 transactions a month to more than a million transactions a month, Telefónica O2’s back-office costs escalated. The mandate became: do more work with less money. The vision was to reduce FTE count by 50%, reduce average response time by 50% and reduce customer calls about back-office failure by 50%.

In 2010, Telefónica O2 managed more than 60 core processes (amounting to about 400 sub-processes). To reduce costs further, it began eliminating non-value added processes and optimising and simplifying the processes that remained. Besides process elimination, the company also sought to optimise processes by simplifying them, and by bringing the BPO provider onshore to gain a better understanding of Telefónica O2. The entire process rationalisation initiative – which included process elimination, simplification, and optimisation – reduced labour headcount by 10%. During this two-year-long journey, the possibility of automating processes surfaced. After an initial assessment of Blue Prism’s capabilities, Telefónica O2 decided to conduct two pilot projects to prove the concept.

### Table 1: Telefónica O2’s 2015 RPA capabilities at a glance

<table>
<thead>
<tr>
<th>Number of processes automated</th>
<th>Number of RPA transactions per month</th>
<th>Number of robots</th>
<th>Number of FTEs saved or redeployed</th>
<th>Payback period</th>
<th>3-Year ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 core processes</td>
<td>400,000 to 500,000</td>
<td>&gt; 160 and growing</td>
<td>Hundreds</td>
<td>12 months</td>
<td>Between 650% and 800%</td>
</tr>
</tbody>
</table>

**RPA proof of concept**

Telefónica O2 needed the answers to three questions. Will RPA integrate with Telefónica’s systems of record without breaking them? Will the technology provide quality services? Will the...
However abstract the Customer journey...

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technology provide enough of a return on investment?

In 2010, Telefónica O2 launched an RPA trial on two high-volume, low-complexity processes. For the pilot tests, Blue Prism’s consultants came on site and configured the “robot” to perform what people normally did to execute the processes. The robot was assigned a login ID and password and it logged in, executed the tasks perfectly on test accounts that used actual data and logged out of the systems, just as people did. The pilot was completed within two weeks.

The trial proved that the technology could seamlessly work with Telefónica O2’s systems and it performed tasks as expected. But the IT team had a mature business process management system (BPMS) in-house and questioned why additional automation software was needed. The IT team also incorrectly assumed that Blue Prism was a “screen scraper” package that recorded how computer screens were altered when users executed tasks. Telefónica O2 wanted to test whether the BPMS could achieve the same results as RPA.

A team was assigned to automate two processes with BPMS technology. The BPMS team successfully automated the two processes within three weeks, which was comparable to the RPA trial. However, when it came to the financials, RPA was the clear winner. The three-year business cases estimated zero net financial benefits with BPMS and nearly £1 million with RPA.

The financial discrepancy between the business cases for BPMS and RPA was attributed to the former’s additional IT resources. BPMS projects required IT resources such as developers and SCRUM teams, whereas RPA projects just needed reassigning of existing process improvement staff members from back office.

RPA rollout
After the trials, RPA was selected as the obvious choice over BPMS. Before adopting Blue Prism at the software vendor, Telefónica O2 issued a request for proposal. It also asked its Indian-based provider to consider doing the automation on its behalf. Telefónica O2 understood that the commercials would need to benefit both parties. After a six-month investigation, the BPO provider backed off and the company chose to implement RPA on its own with the help of Blue Prism.
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Two back-office staff members attended a week-long training programme at Blue Prism’s headquarters, then a Blue Prism consultant worked alongside them for about a month at Telefónica O2. After that, Blue Prism support was reduced to once a week to review the staff member’s work. The staff members became nearly 100% independent in about 12 weeks.

Telefónica O2 began its rollout with 20 robots, increasing next to 75. Eventually, a third staff member was trained. With just a team of three RPA developers in-house, the company automated 15 core processes including SIM swaps, credit checks, order processing, customer reassignment, unlatching, porting, ID generation, customer dispute resolution and customer data updates, representing about 35% of all back-office transactions by the first quarter of 2015.

The estimated FTE savings are in the hundreds. Despite these high levels of automation, Telefónica O2 continued to have a good relationship with its Indian-based BPO provider. Although the provider’s FTEs had been reduced on the automated processes by a few hundred, it continued to deliver the non-automated back-office processes with about 250 FTEs. (Without automation, the offshore FTE headcount would be closer to 500 because of Telefónica O2’s growth since 2010.) Beyond the back office, the BPO provider also handled nearly all of Telefónica O2’s email and web chat services. In total, the BPO provider had about 900 FTEs supporting Telefónica O2 in first quarter of 2015.

As of mid-2015, Telefónica O2 planned to continue to automate processes, estimating that RPA could increase volumes to more than 700,000 per month.

Learning from Telefónica O2
Potential adopters of RPA often ask how to assess its suitability relative to their existing processes. Although RPA is new to many organisations, shared services and outsourcing are long-standing practices that can serve as a starting point for comparing and understanding the suitability of RPA for existing processes (see Figure 2).

One of the advantages of RPA is that it is highly interoperable and can readily run on any platform – mainframes, client/server or cloud systems. RPA only requires access to the presentation layer, i.e., the screens the user sees. A robot can be configured to log in to many systems and execute tasks just like a human would. Early adopters have reported that compliance risks are minimal with RPA because every action executed by the robot is logged and thus auditable. The business value of increased speed and accuracy are also critical considerations where process issues of speed to market, product quality, customer satisfaction, or regulatory compliance are to the fore. Telefónica O2 developed a simpler heuristic – a process is automatable provided automation can save at least three FTEs. It uses volume of transactions and process complexity as guides (see Figure 3 overleaf).

**Lessons learned**
As a pioneer of RPA, Telefónica O2 offers five lessons for other companies considering automation.

1. RPA is one tool along with process elimination, process improvement and other business process tools.
   Although Telefónica O2 is clearly an RPA proponent, it views RPA as a complementary tool along with process elimination, process improvement and even with other automation tools. It also stressed the importance of sequencing these tools so that process elimination and process improvement preceded RPA. It continued to use both BPMS and RPA solutions.

   Another way to compare BPMS and RPA is to consider the process value and degree of specialisation as depicted in Figure 2. BPMS solutions are typically deployed using IT resources for...
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specialised, higher-value processes to justify the IT development investment. RPA solutions are typically deployed by business operations staff with IT oversight (but not with IT developers) for processes that are lower value and more generalised. The significantly lower IT investment costs now makes automating these processes financially beneficial. Pat Geary, CMO for Blue Prism, said: “We are not trying to replace enterprise IT, and we are not really trying to compete with BPMS. It’s really this long tail of processes that are typically deployed by humans that are most suitable for RPA. Humans can be redeployed to more intelligent decision-making tasks.”

2. Robots need more explicit instructions than humans.

When humans execute processes, they make many little judgements based on common sense. Robots will only execute exactly what they are configured to execute. In short, robots lack common sense. Thus, the explanation of rules for robots must be much more detailed than for humans. Telefónica O2 provided an anecdote that illustrated this lesson well. When the Apple iPhone was announced, Telefónica O2’s customers could preorder the phone. In their exuberance, some customers preordered multiple times. Whereas a human would probably recognise that a single customer is really requesting a single phone, the robot did not and shipped customers multiple phones. Telefónica O2 learned that in processes that had hard and sufficient rules around them, when they put it into RPA and completely removed humans, they still had to implement additional “common sense” type rules not needed previously.

3. Make sure your own internal infrastructure grows in pace with automation.

Telefónica O2 reported that the Blue Prism software was resilient and stable. However, the company’s internal infrastructure that runs Blue Prism incurred significant launch problems and growing pains. For launch, Telefónica O2 decided to run RPA on virtual machines (VM) where a “lead” VM orchestrated all the robots. The VMs initially ran two to three times slower than when people were executing the processes. Telefónica O2 had to change server, database and system locations to increase processing speed. It took about 16 weeks to optimise the infrastructure. Once optimised, Telefónica O2 learned that it needed to scale up the infrastructure as the RPA adoption scaled. A lead VM machine worked fine when there were 20 robots deployed, but it imploded when the number of robots quadrupled. Wayne Butterfield, then head of back-office services, mused: “It was like driving a Ferrari with a lawn mower engine.” Since Telefónica O2’s initial RPA adoption, VM desktop technology has advanced considerably and Blue Prism has developed technical guidelines to minimise network latency.
4. Consider carefully the best sourcing option.

Earlier, we identified six levers for transforming low-performing back offices into high-performing ones. These transformation levers can be deployed using a variety of sourcing options ranging from full insourcing to full outsourcing. In 2010, Telefónica O2 did not have many sourcing options when it came to automation. It initially approached its BPO provider to see if it would develop automation capabilities. At the time, the BPO provider’s business model relied primarily on labour arbitrage, so it ultimately decided to pass on the automation opportunity. But for other organisations just now looking at RPA, there are more sourcing options, including:

- **Insourcing**: buy RPA licences directly from an RPA software provider.
- **Insourcing and consulting**: buy licences directly from an RPA software provider and engage a consulting firm for services and configuration.
- **Outsourcing with a traditional BPO provider**: buy RPA as part of an integrated service delivered by a traditional BPO provider.
- **Outsourcing with an RPA provider**: buy RPA from a new RPA outsourcing provider.
- **Cloud-source**: buy RPA as a cloud service (still emerging).

The benefits of insourcing, like Telefónica O2 did, were high levels of control and retaining all cost savings. In 2010, BPO providers and advisers did not offer RPA services. Today, many traditional BPO providers have developed significant automation capabilities and the benefits of engaging one include a full suite of integrated services that combine labour arbitrage, process excellence, change management maturity and technology expertise. New RPA providers like GenFour and Symphony are also emerging, GenFour, for example, is a licensed reseller of Blue Prism and Celetron.

5. To be an RPA pioneer, you will need to take some risks.

Returning to Telefónica O2’s pilot test, Butterfield almost lost his job because he did not inform IT or other parts of the organisation that he was testing new software. Butterfield defended his early pioneering behaviours, pointing out that in large organisations things can get stuck in governance for years and years, and in the same circumstances again he would be equally as assertive on RPA. He certainly got the attention of IT and gained some valuable allies there. But the eventual lesson to be learned is more likely to be “bring IT onboard early”. Pat Geary, CMO for Blue Prism, said: “The minute we engage with business owners, we insist on speaking with the IT function. When we talk to IT, we explain that we have a product that is designed to appease their requirements for security, scalability, auditability, and change management.” But business innovation that seems to threaten existing procedures and technological configurations is always going to be challenging, and never going to be risk-free.

Mary Lacity and Leslie Willcocks are completing a book on Service Automation and The Future of Work to be published in February 2016. Website: www.lse.ac.uk/management/research/outsourcingunit