

Digital Transformation through Artificial Intelligence – BRISA BRIDGESTONE SABANCI Tyre Man. and

Trading Inc.

This case was written by **Nukhet Vardar, El Izi Communications Consultancy UK Ltd**. It was compiled from Brisa Bridgestone Sabanci Tyre Man. and Trading Inc. Istanbul, Turkey in 2020, by putting together primary data collected from the company. It is intended to be used as the basis for class discussion rather than to illustrate either effective or ineffective handling of a management situation.

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El Izi Communications Consultancy UK Ltd. nukhetvardar@elizi.net



Digital Transformation through Artificial Intelligence – BRISA BRIDGESTONE SABANCI Tyre Man. and Trading Inc.

Part 1: Companies and Artificial Intelligence

The effects of digitalisation are being felt increasingly in our daily lives. Companies are integrating various software and different forms of Artificial Intelligence (AI) into our world, in order to remain competitive in the marketplace. As a result, we are constantly hearing about new examples of AI and Machine Learning (ML), being tested by companies and actually experiencing them in our own lives.

Our aim has been to transform Brisa from a production and sales-oriented company to one providing end-to-end mobility solutions, through innovation. So, from 2018, we started integrating AI into all of our business processes and hence into our daily lives. These steps gave Brisa a competitive edge by making our business processes simpler and more efficient, while acting as significant leverage for supplying added value goods and services to our customers. It motivated our employees by allowing them to concentrate more on creativity, instead of spending time carrying out repetitive tasks. Overall, digitalisation started to become part of our daily lives from 2018.

I want to address the importance of the human/ technology relationship. During times of great change, one of the critical factors is that employees should not consider technology to be something beyond their control. Humankind is capable of maximizing the benefits of technology. Technology is not something which is forced upon us or something which we can accept or decline. We need to remember that AI and ML are the creations of humankind. People and



companies, therefore, have both the potential and the necessary capabilities to direct technology accordingly. All that is needed is for them to be enthusiastic about it and, like at Brisa, to be courageous enough to take the necessary steps to collaborate with technology.

<u>Part 2: From a Production-oriented Company towards</u> <u>Innovation</u>

Brisa is among the leading tyre manufacturers in Turkey and in Europe. It has been the market leader in the Turkish tyre market for a long time. Out of every three tyres sold in Turkey, one is Brisa branded. Brisa was founded by Sabancı Holding in 1974 under the brand name Lassa. In 1988, Sabancı Holding of Turkey and Bridgestone Corporation of Japan set up a joint venture, forming Brisa. Our aim has always been to achieve production with added value. Our company has made a total of 1.8 billion USD worth of investment in Turkey since we started. We have two factories, one in Izmit and the second one in Aksaray, which started operating in 2018. We made a 300 million USD investment for our Aksaray factory alone. We have around 3,000 employees, and 1,500 sales points domestically, enabling us to reach total sales of 3.5 billion TL in 2019, which was roughly 617 million USD in 2019.

Exhibit 1 Briefly about Brisa

Exhibit 2 Brisa's second production plant at Aksaray is worth 300 Mio USD

We export our national brand Lassa to more than 80 countries, selling through 6,000 sales points. We supply products and services through a number of brands. We produce specially designed tyres under our Bridgestone, Lassa and Dayton brands for passenger vehicles, light commercial vehicles, buses, trucks, agricultural and construction vehicles.

We also have Kinesis tyres for industrial machinery; Firestone for agricultural tyres, and Bridgestone motorcycle tyres. Overall, we supply 1800 different types

of tyres. However, we do not consider ourselves to be only a tyre production company. We try to create value for our customers through the services and complete solutions we supply. For instance, we have a range of service-related brands such as Otopratik and Propratik for quick vehicle servicing; Lastik.com.tr for online sales, Profleet for fleet services, Lastik Hotel for tyre storage, all the way to Brisa Academy, which we launched as an educational platform for our industry. In today's world, we know that production alone will not suffice. We also have to make sure that we constantly supply a range of innovative, value-added and product-related services to sustain our competitive edge in the marketplace. With the help of AI, therefore, we have started to integrate technology, not only into our production line but throughout our business processes.

Exhibit 3 Brisa brands - products and services

Part 3: 2018 Strategy and Digital Transformation

In 2017, we started questioning different ways of implementing the digital transformation of all our processes so that we could convert Brisa from being solely a production company to an innovative company, to retain our competitive edge. To do this, we had to create awareness within the entire company. This was not something to be considered as a supplementary project. On the contrary, it needed to be ingrained into the company structure, becoming the backbone of every task we undertook. Digitalisation meant ensuring that each and every task was driven by data, completed on target with zero faults. This enabled the company to be more agile and more efficient. Increased efficiency also meant increased motivation for our employees. It spared them from having to undertake time-consuming, repetitive tasks, requiring a lot of attention and prone to mistakes. This meant they could allocate their time to more creative tasks, thus gaining increased job satisfaction. If we could achieve this, it could create a huge advantage both for our employees and for our company.

Therefore, when we were formulating our 2018 company strategy, we used the symbol of a sailing boat. As usual, in 2018, we said our guiding star would be 'indisputable leadership'. Steering our sailing boat, our number one priority would continue to be our 'people'. The power required for our sailing boat would come from 'growth', 'innovation' and 'exports'. We considered digital transformation to be the essential element for our 'people'. As a result, twelve months later, when we were formulating our 2019 strategy, we had reached a stage where we could call our digital transformation 'Smart Culture'.

Exhibit 4 Brisa strategy in 2018

<u>Part 4: Redefining Business Processes with a Unified</u> <u>Approach</u>

But how could we effect this digital transformation? We never considered it as 'technology for technology's sake'. On the contrary, our first priorities were how to fulfil the needs of different departments, by increasing the competence of our employees. Therefore, we reviewed all our processes, redefined some of them and in general simplified them. Under the coordination of our IT department, we started questioning every step and asking ourselves: "how can we improve it further?". We asked ourselves how Brisa could make use of recent advances in digitalisation technology. First of all, we started by writing down all our manual processes, noting inefficiencies. We even videoed them as they were being performed. This showed us bottlenecks and the most time-consuming steps in every process, as well as helping to identify processes which were obsolete. As a result, we updated our own processes, simplified and standardised them. At this point, with the ownership and engagement of our employees, we found ways to benefit from new digital technologies, bringing the employees' creativity to the fore. To achieve this, all of our units and departments had to be aware of the company targets as a whole, in addition to their own functions. We all



needed to accept the problems we faced and had to work towards the same goal of finding solutions to these problems. All our employees understood and accepted this, and all agreed that there was room for improvement. So internally we were all aligned. We had a long way to go and whenever we started to lose motivation, we reminded each other of Brisa's slogan: "we drive on with courage" to boost our confidence.

Part 5: In 2018 ROBI is Born

As I mentioned, we first started with a series of meetings organised by our IT department. In February 2018, our company started talking about RPA technology - Robotic Process Automation. RPA is a software. AI, on the other hand, is an umbrella concept, encompassing RPA. We could say that RPA delivers the job; whereas AI works out how to do it. If you can put down what needs to be done, step by step in an algorithm, you can actually teach a robot to deliver that task. And then the robot can deliver that specific task faultlessly in an automated way.

Exhibit 5 ROBI: Metal collar co-worker Exhibit 6 How does ROBI assist at Brisa?

We named our robot 'ROBI', because it was catchy and made us think of robots and the digital world. And now we consider ROBI to be our metal-collar coworker. ROBI makes use of RPA, chatbot and OCR - Optical Character Recognition - technology. ROBI enables our employees to be more productive by undertaking automated tasks which are repetitive and take a long time to do manually. We can activate ROBI by sending an email, setting an alarm, by writing, or even just by talking to ROBI.

RPA's other important quality becomes apparent when working with closed systems where data integration is not possible. In such systems you cannot take



any data out of them or upload any new data to them. Before the days of RPA, an employee had to perform this task manually. With the help of RPA technology, ROBI acts just like a human being - logging into the system, getting the data and writing that data in the assigned cell.

As of January 2020, our IT department has developed various applications using ROBI for 11 of our departments. These are: Supply Chain, Production, Technology, Quality Control, Marketing, OE, Export, Sales, Accounting, Finance and Human Resources.

Exhibit 7 11 Departments making use of RPA at Brisa

As you can see, the applications we have developed for each department are all very different. The common denominator of all these applications is that they all make life easier for our employees, completing repetitive tasks 15 times quicker than when done manually, working faultlessly 24/7, when needed.

Exhibit 8RPA applications and departmentsExhibit 9Brisa's RPA use and monthly savings made in man hours

Using ROBI leads to considerable time savings but savings in man hours or man days differ quite a lot between tasks. For instance, the R&D Laboratory's Test Demand Report application enables the Technology department to save 40 man days every month; whereas the pricing application done for the Export department allows them to save 2 hours every month. However, when we analyse different applications currently used by Brisa, we see that every task led to improved time savings of between 50-98.6%, compared to doing the same tasks manually.

Exhibit 10 Improved time savings through RPA (%)



Here I would like to explain in detail just two of the applications used at Brisa. These examples will demonstrate clearly how the use of AI actually yielded added value for our whole company.

As a pilot study, we decided to undertake a price update task done by our Marketing department. This task was being repeated for more than three thousand products, in 10 different sales channels and for three different brands. Previously it was being iterated manually twice or three times every month, taking a day and a half or two days each time. If foreign exchange rates changed rapidly, they would end up repeating this task six or even seven times a month. Each time, they would download the prices from our SAP (or Systems Applications and Products in Data Processing), apply the price increase, reformat the Excel sheet and then upload the updated prices to the SAP. The task could easily be automated, making it ideal for RPA. We worked with a team of six people for a month in five different locations, in order to be able to align ROBI with Brisa's existing processes. Now ROBI can complete the same task in 4 hours, compared to the 9 hours originally spent, leading to a saving of a minimum of three days every month.

Exhibit 11 How does ROBI assist the Marketing department?

Another application was completed for our Supply Chain department to automatically update shipping arrival dates of our raw materials. As you know, Just-In-Time (JIT) delivery is critical for production. You can imagine how the process is further complicated when you consider that we are producing 1800 different types of tyres. Furthermore 88% of our raw materials come from the Far East, increasing our risk for on-time delivery. We cannot continue our production plant if we run out of raw material stock. However, we cannot stock extra raw materials to eliminate the risks of running out of stock, as this would increase our production costs. On average, Brisa has 2,400 shipments annually and of these shipments, nearly 5% run a late delivery risk. Previously, four of our employees were checking shipment arrival dates manually, around 450 times every day, from five different freight company's websites. When we decided to delegate this task to ROBI, we first identified related parameters both in our SAP and on the freight companies' websites and defined the exact cells for delivery dates to be copied to our SAP. We scripted each and every notification that would be sent to different departments, informing them about the current shipment status. When freight companies had any updates on their websites, we also made sure that this data would be automatically updated in our systems. Now ROBI copies all of our shipment dates from our SAP and by using the shipment numbers, it actually tracks down our own shipments directly from the freight companies' websites.

Exhibit 12 The process applied for the supply chain Exhibit 13 How does ROBI assist the supply chain?

Then it takes expected delivery dates of vessels carrying our raw materials from the freight company websites and updates the information in our own SAP. It sends an email to related departments, saying that the dates have been updated. It also notifies us if there are no updates. Furthermore, if there are any deviations of plus or minus two days from the expected arrival dates, then it warns the related departments by email. We had to test this application many, many times but in the end, we managed to make our shipment updates compatible with ROBI. We were the first Turkish company to complete such a project. As a result, ROBI enabled us:

• To notice risky shipments in advance and take timely precautions

• To minimise the risk of running out of raw material and bringing production to a halt

• To make positive contributions to Brisa's net working capital by conducting effective stock control for production planning

In other words, this meant that we started seeing RPA's added value for our 'people' just as we had stated in our 2018 annual strategy



Exhibit 14 How does ROBI make life easier? (video)

Part 6: Making Use of Chatbot for ROBI

After Google's Dialogflow product was translated into Turkish at the beginning of 2019, we decided to develop our first chatbot internally. At that time Dialogflow was being used very little, even internationally. We worked on it for nearly two months and then started the tests. As we were one of the pioneering companies, trying to integrate different technologies, we faced various difficulties.

Exhibit 15 Chatbot applications used at Brisa

As of February 2020, we are mostly using chatbot for our sales force. One of the factors that affected the company's results was the sales force facing problems when using their mobile devices. They had to be able to access the correct data very quickly, wherever they were. For instance, if one of our distributors rang our sales rep, asking the price of a specific product, our sales rep would have to pull his car over, turn on his laptop and try to connect to the internet. Even when he reached our SAP and CRM database and downloaded the data, he would then have to work his way through to find the exact answer he was looking for. Now he can access the exact info he is looking for in ten or twenty seconds or one minute maximum. As a result, our sales force adopted the application very quickly and sales department increased its productivity.

Subsequently different chatbot applications were developed for all of our employees, through new applications such as filling out annual leave forms or changing passwords or checking the daily lunch menu served for our employees. In a way, ROBI has become our virtual assistant. We actually managed to integrate our chatbot to Microsoft Teams in Office 365, which we were already using. And Brisa was one of the first companies to do this. This enabled us to talk or write to ROBI on our mobiles or laptops, without clicking on a new



application or a program. The chatbot applications we are currently using help us to save time 75-99.9% compared to the time required to carry out similar tasks manually.

Exhibit 16 Improved time through chatbot (%)

Part 7: OCR Applications with ROBI

Similarly, we made use of OCR or Optical Character Recognition, which is another RPA technology. OCR is a technology converting images or PDF format documents taken by a digital camera, to data which can be read by machines. With the help of OCR and our employees, we have developed applications using OCR for our Accounting, Finance and HR departments in 2019.

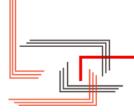
Exhibit 17 What is OCR? Exhibit 18 OCR applications at Brisa

For example, now with the help of OCR, robots can read cargo documents, which is a great help for our HR department. First, the cargo receipt is scanned via the printer. Then, the machine takes the relevant data from each defined cell and fills out the form automatically. In a way, by adding OCR to ROBI, we have enabled ROBI to 'see', as well. As we use the software more, it also starts making better guesses, i.e. the machine 'learns' and improves itself.

Exhibit 19 Registering delivery receipts with the help of OCR

<u>Part 8: How AI Contributed to Digital Transformation at</u> <u>Brisa</u>

As of January 2020, over the past twelve months we have developed 22 different projects, helping 11 different departments. Of these 22 projects, 14 made use of RPA, six used chatbot and two OCR technologies. Our ROBI worked 15 thousand times over 335 hours, saving our employees 1350 man hours.



When we compare the number of tasks that different departments have undertaken with these newly developed applications from September 2018-November 2019, we can see that their usage is on the rise. This is another indication that ROBI is being increasingly accepted. When something goes wrong, our employees, as users, are usually the first to let the IT department know.

Exhibit 20 Number of tasks undertaken by ROBI in some departments of Brisa

Our employees there, stress that ROBI has been a game changer for them, making them question the way they think and do business. They highlight that now, whenever they complete a task, they are thinking about how they can automate it. Although previously 80% of all their tasks were operational and only 20% were on different projects, after a year, they say that these ratios have switched. Now they spend 80% of their time working on different projects.

Apart from this, maybe the most critical advantage of using RPA for Brisa was the documentation of all business processes and know-how. It enabled us to have all our company logs updated. Now this metadata, which has been compiled, will provide us with the right infrastructure to keep our logs updated at all times. These developments also forced us to take a big step in forming our own data lake.

All these advances tell us that, in fact, we are on the brink of a new era. Our pioneering steps in making use of RPA for our company actually motivate all of us. Since Autumn 2019, we have also received a number of very prestigious awards. For instance, we have been awarded the Golden Award in Management Fundamentals by Bridgestone EMEA.

We reflected all of this in our company strategy. When we were working on our 2019 strategy, we called the wind in the sails of our boat 'Smart Culture', because we believe it has given us competitive advantage. We are now talking



about integrating digital technologies throughout our company, making sure it has a positive impact on every employee and as a result, improving our entire corporate culture. The RPA projects we completed only a year ago, now seem very basic. Now we are making new additions as a result of the confidence we have built over 2019. Our aim is to connect the entire business processes from end to end, with the help of ROBI.

Exhibit 21 Brisa strategy in 2019, including 'smart culture'

Today there are books being published on how RPA can aid companies to have competitive advantage in the marketplace. We can see that making use of RPA enabled us to adapt to changing market conditions much better, making us more agile. All these benefits gave us a competitive edge.

Therefore, I would like to extend our heartfelt thanks to our IT department, together with all our departments who have contributed and become part of this renaissance at Brisa. Digitalisation is something that everybody talks about. But here at Brisa, we are really proud of having taken an active part in this journey and achieved concrete results in the marketplace.



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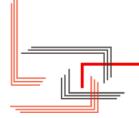
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Suggested Videos

- Robotic Process Automation (RPA): how does it work? <u>https://www.youtube.com/watch?v=xW95yb6J1eU</u>
- Robotic Process Automation | Steve Shepley | Exponential Manufacturing <u>https://www.youtube.com/watch?v=mdWLEHTNjXY</u>
- Robots Will Steal Your Job, but That's OK | Federico Pistono | TEDxVienna <u>https://www.youtube.com/watch?v=kYIfeZcXA9U</u>
- Gartner Predicts 2020: RPA Renaissance Driven by Morphing Offerings and Zeal for Operational Excellence <u>https://www.uipath.com/</u>
- Porter's Generic Strategies Choosing Your Route to Success https://www.mindtools.com/pages/article/newSTR_82.htm



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Project Idea and Design Dr. Nukhet VARDAR, El Izi Communications							
Consultancy UK Ltd.							
English Case Content	Dr. Nukhet VARDAR, El Izi UK						
Production	ElaPro Ajans – Nuri COLAKOGLU						
Music Rondo	alla Turca (Mozart) MUZIKOTEK/Boosey Classics						
English Translation	Joanna MARSH						
English Voiceover	Dick DALEKI						



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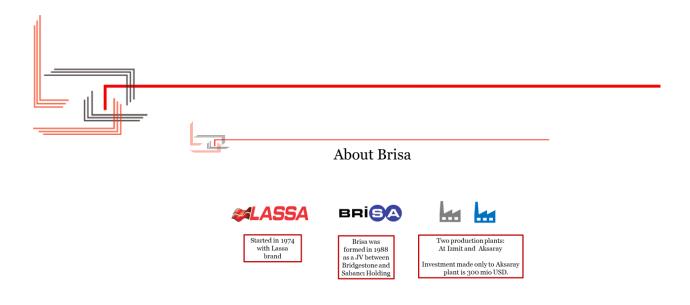


Exhibit 1 Briefly about Brisa



Exhibit 2 Brisa's second production plant at Aksaray is worth 300 Mio USD



Exhibit 3 Brisa brands - products and services

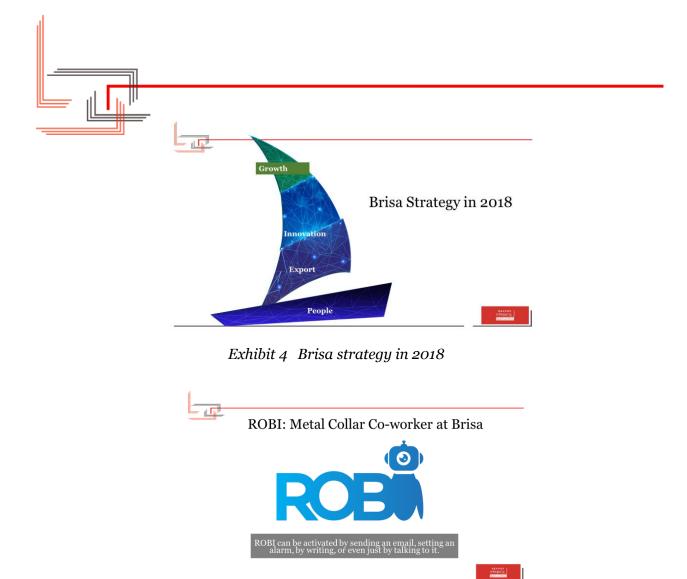


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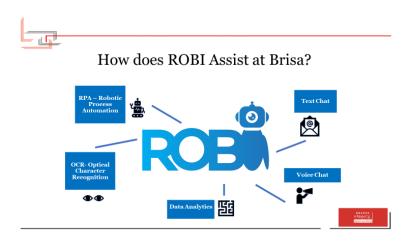


Exhibit 6 How does ROBI assist at Brisa?

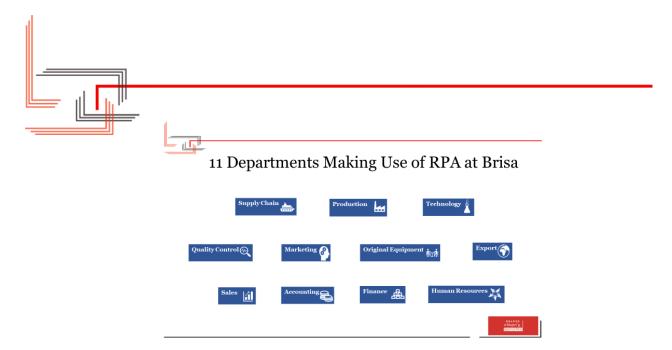


Exhibit 7 11 Departments making use of RPA at Brisa

RPA Applications and Departments											
Supply Chain	Production	Technology	Quality Control	OE	Export	Marketing	Sales	Accounting	Finance	HR	
Updating estimated time of arrival data at SAP	Extruder shift report	R&D Laboratory test results reporting	VOR daily report	OE RMI pricing	Brisa export price determination process	SAP Sales Price Entry	Manuel order entry to the system for special clients	Monthly closing tasks (Part 1)	Credit risk insurance process	Brisa user port general repor	
Logistics invoice entry process				OE MIR pricing				Monthly closing tasks (Part 2)		Academy use creation and training plann	
										Entring SAP annual leave da	

Exhibit 8 RPA applications and departments

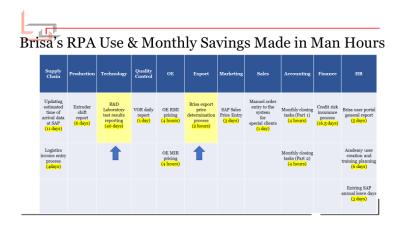


Exhibit 9 Brisa's RPA use & monthly savings made in man hours



Exhibit 10 Improved time savings through RPA (%)



How does ROBI Assist the Marketing Dept?

Exhibit 11 How does ROBI assist the marketing department?



Exhibit 12 The process applied for the supply chain









Exhibit 14 How does ROBI make life easier? (video)

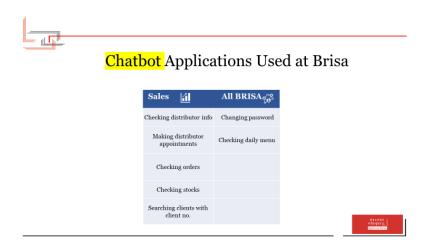


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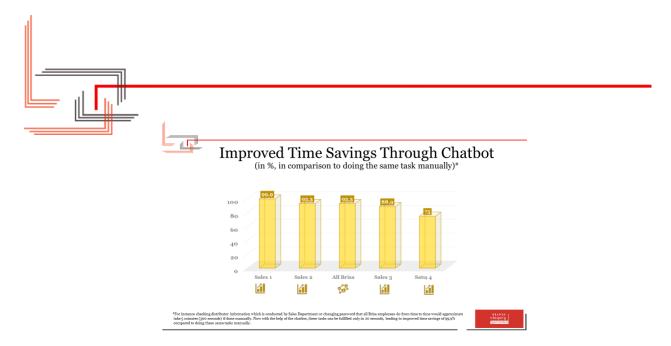


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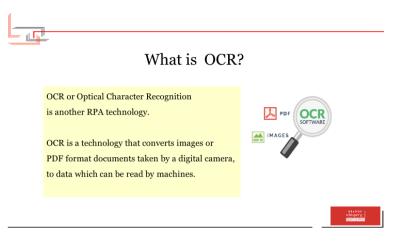


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Exhibit 18 OCR applications at Brisa



Registering Delivery Receipts with the Help of OCR



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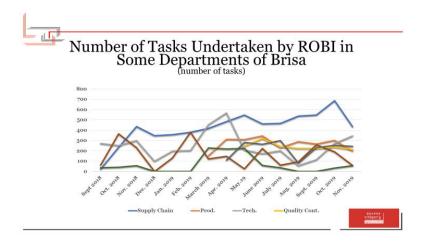


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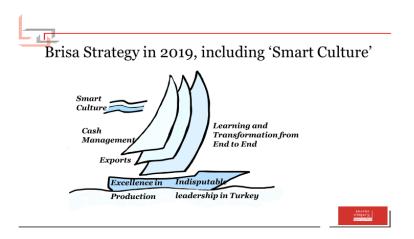


Exhibit 21 Brisa strategy in 2019, including 'smart culture'