



Revisiting Net Working Capital

Management-

BRISA BRIDGESTONE SABANCI Tyre

Man. and Trading Inc.

This case was written by G. Gursoy and G. Tunc, Okan University, Istanbul, Turkey for **Brands Whisper'g® Video Case Series** and prepared for English publication by N. Vardar, of El Izi UK. It was compiled from Brisa Bridgestone Sabanci 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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Revisiting Net Working Capital Management: BRISA BRIDGESTONE SABANCI Tyre Man. and Trading Inc.

Part 1: About Brisa

Brisa Bridgestone Sabanci Tyre Man. and Trading Inc. has been the undisputable market leader of the Turkish tyre market for many years; a long-standing success story. Brisa was founded by Sabanci Holding in 1974. In 1988, Sabanci Holding of Turkey and worldwide tyre leader, Bridgestone Corporation of Japan set up a joint venture, forming Brisa. Brisa was the first company in Turkey to be awarded the European Foundation for Quality Management (EFQM) in 1996. So, Brisa has always been considered to be exemplary, both within Sabanci Holding and Bridgestone internationally, managed by competent executives throughout. We have two factories, one in Izmit and one in Aksaray, which started operating in 2018. Brisa is one of Turkey's leading manufacturing companies, overseeing a total closed area of more than 500 thousand square metres in two production plants, with an annual production capacity of approximately 13 million tyres, producing one tyre every 2.5 seconds.

Exhibit 1: Brisa's Izmit production plant in 2019

In 2019, our total sales were 3.558 billion TL, which equalled roughly 627 million USD (average 2019 USD F/X USD= 5.6712 TL) with a net profit of 20.1 million USD (114 million TL) and total assets of 931 million USD (5.28 billion TL). In February 2020, our market value was 512.8 million USD (3.10 billion TL; USD= 6.0453 TL), with 10% of our shares publicly quoted.



Part 2: Brisa at the end of 2016

Towards the end of 2016, Brisa started to show some warning signs, mostly due to market conditions, despite its long-standing successes and absolute market leadership. We had completed three quarters of our new investment for the Aksaray plant. Although the Turkish tyre market had expanded by 28% from 2010 to 2015, reaching 22 million unit sales; it remained stagnant in 2016 with roughly 22.5-22.8 million sales. We, however, had begun our 300 million USD new plant investment in Aksaray in 2014, taking on an additional financial burden.

Exhibit 2: Aksaray plant

Furthermore, we were faced with a cash flow problem. Our total liabilities were as high as our gross profit. When we analysed the company financials, we saw that our problems did not stem from our income statement but from our balance sheet. Therefore, we decided to put together a new strategy which would bring Brisa's strong points to the fore. We set up a series of meetings with our executives, the successful driving force of Brisa for many years. Very openly, we discussed the question: "what do we need to do?" and we started taking action based on these decisions. We were faced with the following facts:

- Although we had continued to be market leader from 2014-2016, our total sales were behind our five-year forecast made in 2014.
- Due to a drop in demand, our gross profit margin was not as high as expected in 2017.
- We had only been able to deliver a small portion of the planned cost savings from operational costs over the past three years.
- Although our EBITDA (earnings before interest, taxes, depreciation and amortization) margin was satisfactory, it was lower than planned.
- Our ongoing new plant investment costs had risen due to the devaluation of



Turkish Lira against USD.

- Due to our expansion strategy, our cash conversion cycle was 52 days higher in 2016, than planned in 2014. Although we had stopped carrying out our expansion strategy at the end of 2016, our bad debt risk was still on the rise.

All these factors led us to have more liabilities in 2017 than initially planned in 2014. As a result, our cash conversion cycle reached a peak of 192 days at the end of 2016. The problem was so drastic that even when our net profit was at its maximum level, our free cash flow was negative 38.1 million USD - (115 million TL; 2016 F/X average USD= 3.0181 TL). In March 2017, our net debt were seven times our EBITDA. Although our new plant investment contributed to these increased liabilities, half of this liability was due to our working capital figure.

***Exhibit 3:** Brisa financials at end of 2016*

***Exhibit 4:** Brisa's average trade working capital (TWC in days; 2013-2016)*

Part 3: Determining the situation

We conducted workshops with company executives in the summer of 2017 with three focus points: 1) setting clear objectives; 2) alignment; 3) taking action. We decided to make our first priority improving our working capital and our cash flow figures and began the transformation of the company in Summer 2017.

- Clarity

One of the ways to establish clarity was to see our company through a third party's eyes. So, we worked with a consultancy company to help determine a road map to make everybody join forces for a common goal. They began by determining the situation in September 2017 and putting forward an action plan detailing steps for a possible solution. In October 2017, the first analyses and evaluations were presented to top management, detailing everything related to working capital, problems faced and priorities. Then



it was time to talk about alignment.

- **Aligning Ourselves**

After we took some initial steps to improve the working capital, we saw some positive effects on the company's cash flow and on our operational efficiency. However, this strategy for change had to be shared with and accepted by all employees and relevant stakeholders. Everybody from top management down, right to our dealers were aligned around the same company vision. In all departmental meetings, we stressed the importance of cash flow for the company, adding that any problem faced by any department should address cash flow as the first priority. Following the alignment stage, we were now ready to take the necessary actions.

- **Analysing Brisa's Working Capital**

Initially we considered three main factors which have a direct effect on the working capital: These were: 1) Days of Sales Outstanding (DSO); 2) Days of Inventory Outstanding (DIO); 3) Days of Payable Outstanding (DPO).

Exhibit 5: Factors affecting working capital

Parallel to our earlier expansion policy, an increase in our receivables was to be expected. However, it was worth noting that our Days Sales Outstanding (DSO) was also on the rise. We analysed DSO figures, splitting by sales channels and saw that the increase in DSO stemmed from our dealer sales.

Exhibit 6: Brisa's Days of Sales Outstanding (DSO; 2013-2016)

Therefore, we first had to focus on improving receivables from our dealers, mainly because:

- Due to the global and national economic conditions of 2014-2017; dealers were faced with serious payment problems. Instead of concentrating our efforts on the end consumer, we were busy maximizing our dealer sales through dealer campaigns. We were not monitoring the inventory levels or sales figures of our dealers.

- We were trying to sell more to dealers by extending payment terms as a



dealer campaign tool, without first considering dealer risk levels. As a result of this aggressive strategy of pushing sales, we were actually financing our dealers, whilst taking unaccounted risks.

Also, Brisa's Days of Inventory Outstanding (DIO) had already reached 107 days at the end of 2016, with the inventory reaching a peak value of 130.5 million USD (394 million TL ; 2016 F/X average USD= 3.0181). With the actions taken in 2017, it was possible to reduce DIO to 97 days in August 2017.

The reasons behind increases in DIO were:

- **Finished Goods Inventory**

Tyres which were produced two or more years ago are considered inactive inventory. Our inactive inventory had reached 15% in 2017. Also, due to the fact that our demand forecast accuracy rate was lower than 50%, our stocks were increasing, eventually leading to higher inactive inventory levels. In particular, demand forecast accuracy rates were even lower for imported goods: imported tyres made up only 6% of our total sales, but their share of inventory had reached 67%.

Exhibit 7: Brisa's Days of Inventory Outstanding (DIO; 12/2013-06/2020)

We ran a few campaigns to reduce our inactive inventory levels and managed to lower them. We also realised that by making our order processes more efficient, we could stop any unwanted stock from building up at our dealers in the future.

- **Raw Material Inventory**

Raw material inventory is calculated by adding the raw materials in our warehouses and those in transit. Raw materials in transit are the one which have been dispatched by the supplier to Brisa. Therefore, they need to be included in our balance sheet. In August 2017, our total raw material



inventory was 28 days, with a split of 16 days for our warehouse inventory and 12 days for raw materials in transit. The consultancy company clearly demonstrated that we needed to lower inventory levels for raw materials in transit, most of which, including natural rubber, synthetic rubber, steel cord, bead wire and various chemicals, were imported from the Far East. So, we also started working on finding alternative raw materials from closer sources, monitoring the shipment deliveries in detail, also helping decrease raw material inventory levels (see “Digital Transformation through Artificial Intelligence – BRISA BRIDGESTONE SABANCI” case).

- Machine and Equipment Spare Parts Inventory

Since machine and equipment spare parts cannot be resold and turned into cash, they do not directly affect cash flow. But we also analysed spare part inventory levels. Our investigations showed that we were carrying spare part inventory which had not been in use for the last five years. We also realised that some spare part inventory levels were much higher than the required levels. The main issues were to do with minimum and maximum inventory levels, purchase of unnecessary materials and an inefficient inventory monitoring process, with no reporting system for spare part inventory. We saw that we even had spare parts for scrapped equipment. Also, our two production plants had separate inventories, which had not been consolidated.

What is more, as a result of various steps taken, we also managed to increase our Days Payable Outstanding (DPO). Although our DPO was 56 days in 2014; by 2017, we had increased it to 92 days.

Exhibit 8: Brisa’s Days Payable Outstanding (DPO; 2013-2016)

Part 4: Revisiting Working Capital Process

In the light of further analyses and data, from 2018 we started taking



action to improve Brisa's working capital management including:

- **Dealer management:**

We started extensive training programmes for our sales force to enable them to monitor dealer financials closely, such as inventory levels and sales, eventually leading to decreases in dealer stock levels. (See "Empowering Sales Force Through Digital Technologies – BRISA BRIDGESTONE SABANCI" case). To this end, we worked closely with the Brisa Academy and put together a sales force training programme for effective dealer management, including checks and balances within the system. We devised monthly dealer plans to standardise the dealer management process across the entire sales force, showing monthly sales levels to dealers, maximum risk levels to be taken by each dealer and dealer inventory levels. Our sales force started monitoring the marketplace closely in light of these plans. These steps helped to reduce dealer inventory levels. Whenever they showed signs of increasing, we organised regional sales campaigns targeted at the end-customer.

- **Pre-order dealer campaigns**

We also started monitoring rates of dealer inventory turnover. As inventories started building up at dealers, we would start planning regional campaigns. Previously, we would have pre-order campaigns only once, during the winter months. We realised that having only one pre-order campaign every year, led our dealers to ask for more stock than they were able to sell. Having more than one dealer campaign during the year helped us reach our sales targets, while enabling our dealers to operate without holding an unnecessarily high level of inventory.

We also began monitoring the process constantly. Those dealers who did not carry any unnecessary inventory were able to make their payments on time, thus solving our own cash flow problem. This was a critical point in



solving our own cash flow management problem. As we started getting satisfactory results, we realised that it was actually a long-term solution for us.

- **Setting and Monitoring Dealer Credit Limits**

When we were setting our dealer credit limits, we took into consideration their actual monthly plans, setting maximum sales according to their sales volume and payment dates. We also set a credit limit for receivables exceeding the amount of their letter of guarantee.

We calculated the maximum amount that each dealer could buy, according to our planned sales figures and their sales terms. We identified these limits in our ERP (Enterprise Resource Planning) for each dealer. When a dealer reaches its credit limit, our ERP system does not allow any further sales to that specific dealer, ensuring that dealers do not take on any more risk than they can handle. This also stopped unnecessary inventory build-up at our dealers. For our part, we no longer produce risky tyres that will not sell or create inactive inventory and we collect payments on time. We convinced our dealers that their businesses would also benefit from such close and proactive risk management. The positive attitude of our dealers, added to the efforts of our sales force in getting guarantees from dealers for higher amounts, yielded a much lower risk ratio in our sales. Our dealers, who had taken on extra responsibility by increasing their guarantees, started to manage their own risks better, making their payments to Brisa on time and reducing our overdue receivables.

Furthermore, with the help of a virtual POS (point of sale) system that we uploaded to our dealers, we started receiving 65-70% of our payments via credit card. This solution enabled us to reduce our ratio of bad debts as well as our DSO.



- **Demand Forecasts**

We knew that the accuracy of our demand forecasts, based on domestic market trends was around 50%. To improve this, we formed a task force to map out the processes we use in our supply chain, from end to end.

Although we had been measuring the demand accuracy rate for some time, we were not using this to take any corrective action. It was seen only as an end-result, not as one of the causes. We also realised that responsibilities were not clearly assigned. So, we made our Sales Operations unit responsible for the demand forecast accuracy rate.

Then, we defined a new process: first of all, Sales Operations would collate sales forecasts from regions, split them according to different tyre sizes and forward them to the Marketing department. Then forecasts agreed between the Marketing and Sales Operations teams would be shared with our Supply Chain. Subsequently, production plans would be put together accordingly after checking production capacities. Hence, we were able to clarify each department's responsibilities and standardise the entire process.

During the same period, we were surprised to see that by increasing the number of pre-order campaigns, we were also able to improve our production plan forecasts. As we were taking more pre-orders, we were able to enter actual sales data into our production plans, instead of sales forecasts. As our forecast accuracy increased, our finished product inventory dropped, having a positive impact on our cash flow.

- **Management of Inactive Inventory:**

We identified the root cause of inactive inventory build-up as the discrepancy between our production forecasts and the actual sales figures. When our forecasts were higher than actual sales, unsold tyres would start



accumulating; eventually leading to inactive inventory. We firstly had to find ways of reducing this and then put a new system in place which would stop such inactive inventory building up in the future. As a result, we were able to reduce our inactive inventory level from 230,000 in September 2017 to 37,000 in December 2017. In addition, we defined inactive inventory level as a key performance indicator and assigned it to Sales Operations, now being reported monthly to our CEO.

- **Management of Spare Parts Inventory:**

We put together an automated reporting system which would enable us to monitor slow moving spare parts in different product groups. We identified spare parts belonging to old machines and equipment which were no longer in use and tried to sell their spare parts or scrap them. We set out rules to be followed in spare part purchases. We started controlling spare part movements especially in slow moving items and determined minimum and maximum spare part levels to be kept. We also consolidated spare part units in both of our production plants. All these steps led us to reduce our spare part inventory levels by 40%.

Part 5: Market Results

Although our net debt were seven times our EBITDA figure in March 2017; we managed to reduce it to 1.7 times by August 2020. And we know that this is the success of effective working capital management. As mentioned before, there are three main factors affecting working capital. These are: Days of Sales Outstanding (DSO); Days of Inventory Outstanding (DIO); Days of Payable Outstanding (DPO). Through our actions, we were able to decrease our DSO from 166 days to 80 days; our DIO from 107 days to 81 days and DPO from 81 days to 121 days. As a result, our working capital which was 192 days in December 2016, was reduced to 41 days in June 2020. Although our working capital turnover rate was 1.9 times at the end



of 2016, we succeeded in speeding it up to 8.9 times in June 2020.

Exhibit 9: Factors affecting working capital and Brisa financials

Exhibit 10: Comparative results of Brisa

Exhibit 11: Brisa's average trade working capital days (12/2013-06/2020)

We were able to increase our EBITDA by 22% in the first half of 2020, reaching an EBITDA margin of 19%. I am proud to say that we have achieved these extraordinary results during the COVID-19 pandemic, while giving top priority to health and safety and taking all necessary precautions as part of our crisis management plan. I would also like to thank each and every Brisa employee for making this happen and showing us how efficient teams can succeed.



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Suggested Videos

➤ **Working Capital Turnover Definition**

<https://www.youtube.com/watch?v=EovKfDwRt9Q>

➤ **Net Working Capital**

<https://www.investopedia.com/terms/w/workingcapitalturnover.asp>

➤ **Factors Determining Working Capital Requirement**

<https://www.youtube.com/watch?v=ptFPVQIGN40>

➤ **Liquidity Ratios - Current Ratio and Quick Ratio (Acid Test Ratio)**

<https://www.youtube.com/watch?v=bmZVPks4yQg>

➤ **How To Analyze a Cash Flow Statement**

https://www.youtube.com/watch?v=wI_jV3olTM



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Commercial Prod. and Profleet Marketing Man. Berk Berksoy,
Engineering (Region 1) Man. Berkan Cerkezoglu,
Mixer and Extruder Prod. Man. Burhan Basaran,
Sales Operations Man. Cem Citak,
Contracts and Risk Man. Cigdem Ozer,
Consumer Products Marketing Man. Efe Attila,
Management Systems Manager Ekim Ozaydin Yeni
Financial Controller Huseyin Kurt,
Regional Sales Man. (South Marmara) Irfan Gonca,
International Markets Director Kemal Yilmaz,
Purchasing Man. Lutfu Yuksel,
International Sales (Region 2) Man. Tuna Ozturk,
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Exhibits



Exhibit 1: Brisa's Izmit production plant in 2019

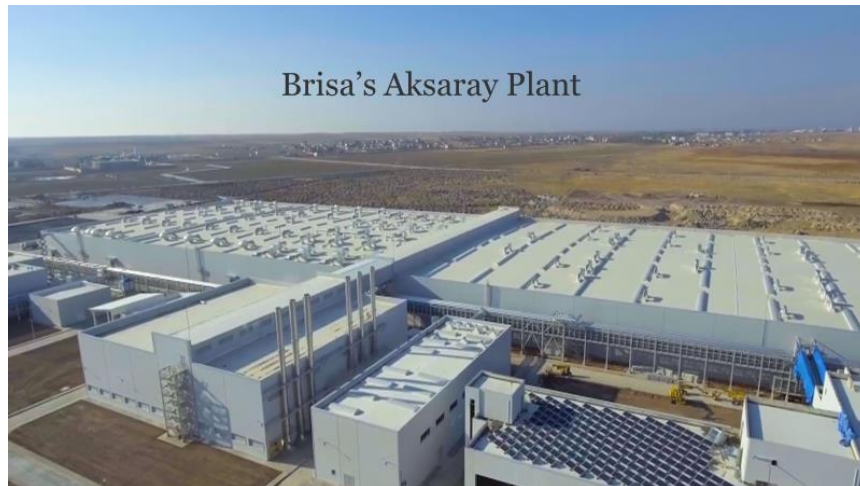


Exhibit 2 : Aksaray plant



Brisa Financials at the end of 2016

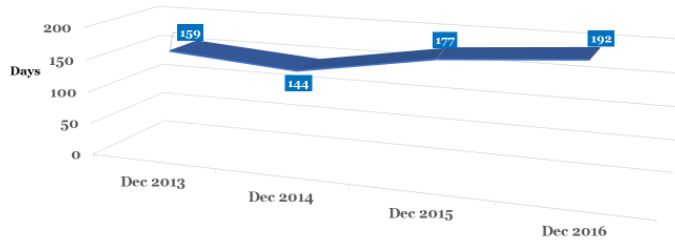
- Total liabilities equal to total turnover.
- In March 2017, net liabilities were seven times EBITDA



Exhibit 3: Brisa financials at the end of 2016



Brisa's Average Trade Working Capital (TWC in days; 2013-2016)



BRISA MTP2019 Strategic Planning Document, June 13, 2019

Exhibit 4: Brisa's average trade working capital (TWC in days; 2013-2016)



Some Factors Affecting Working Capital

Days Sales Outstanding (DSO)

Days Inventory On-Hand (DIO)

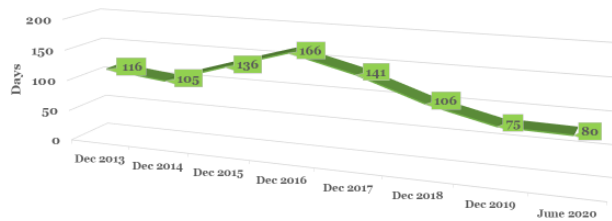
Days Payable Outstanding (DPO)



Exhibit 5: Some factors affecting working capital



Brisa's Days Sales Outstanding (DSO; 2013-06/2020)

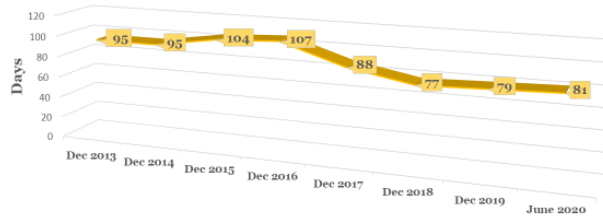


BRISA MTP2019 Strategic Planning Document, June 13, 2019, Brisa 2019 Annual Report and Brisa 06/2020 financial results

Exhibit 6: Brisa's Days of Sales Outstanding (DSO; 2013-2016)



Brisa's Days Inventory On-Hand (DIO; 12/2013-06/2020)

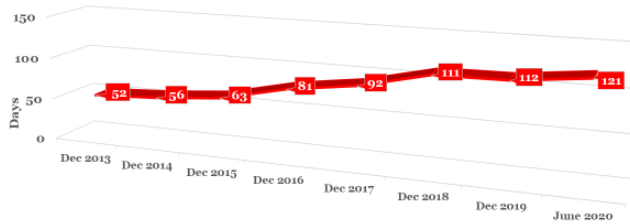


BRISA MTP2019 Strategic Planning Document, June 13, 2019, Brisa 2019 Annual Report and Brisa 06/2020 financial results

Exhibit 7: Brisa's Days of Inventory Outstanding (DIO; 12/2013-06/2020)



Brisa's Days Payable Outstanding (DPO; 12/2013-06/2020)



BRISA MTP2019 Strategic Planning Document, June 13, 2019, Brisa 2019 Annual Report and Brisa 06/2020 financial results

Exhibit 8: Brisa's Days of Payable Outstanding (DPO; 2013-2016)



Some Factors Affecting Working Capital and Brisa Financials

Factors affecting working capital	End of 2016	June 2020
▪ DSO	□ From 166 days	□ To 80 days
▪ DIO	□ From 107 days	□ To 81 days
▪ DPO	□ From 81 days	□ To 121 days

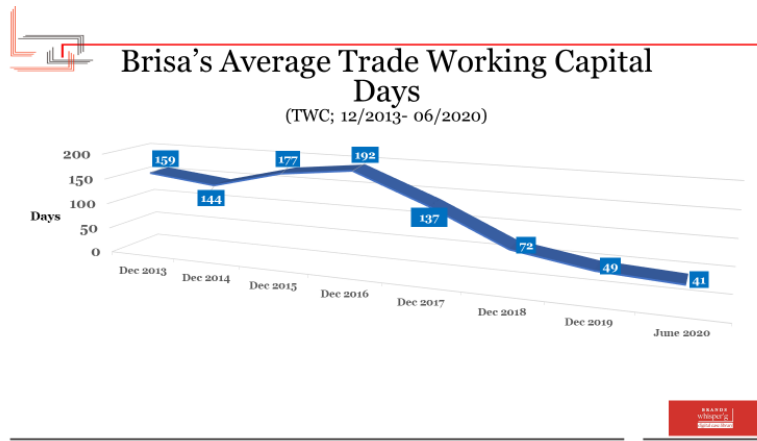


Exhibit 9: Some factors affecting working capital and Brisa financials



Comparative Results of Brisa		Comparative Results of Brisa	
End of 2016	End of 2019 / June 2020	End of 2016	End of 2019 / June 2020
<ul style="list-style-type: none"> Total liabilities equal to total turnover In March 2017, net liabilities were 7 times EBITDA 	<ul style="list-style-type: none"> End of 2019, equal 1/3 of total turnover Reduced it to 1.7 times by August 2020 	<ul style="list-style-type: none"> Total liabilities equal to total turnover In March 2017, net liabilities were seven times EBITDA Working capital turnover rate was 1.9 times at the end of 2016 Working capital was 192 days in December 2016 	<ul style="list-style-type: none"> End of 2019, equal to 1/3 of total turnover Reduced it to 1.7 times by August 2020 Speeded up to 8.9 times in June 2020 Reduced to 41 days in June 2020

Exhibit 10: Comparative results of Brisa



BRISA MTP2019 Strategic Planning Document, June 13, 2019, Brisa 2019 Annual Report and Brisa 06/2020 financial results

Exhibit 11: Brisa's average trade working capital days (12/2013-06/2020)