Strategic Sourcing at Whirlpool China: Finding the Ideal Supplier

**Table of Contents**

[**Executive Summary** 2](#_heading=h.3znysh7)

**[Analysis](#_heading=h.2et92p0)** [3](#_heading=h.2et92p0)

[**Key Issues** 3](#_heading=h.tyjcwt)

[**Supplier Performance Criteria** 4](#_heading=h.3dy6vkm)

[**Alternative 1: Delay the launch outside of the desired 6-month timeframe in order to find a qualified supplier.** 6](#_heading=h.1t3h5sf)

[**Alternative 2: Source the DC motor from a new supplier within the 6-month timeframe** 6](#_heading=h.4d34og8)

[**Alternative 3: Source the DC motor from a current supplier & provide training** 7](#_heading=h.2s8eyo1)

[**Decision Criteria** 7](#_heading=h.17dp8vu)

[**Recommendation** 9](#_heading=h.3rdcrjn)

[**Implementation Plan** 9](#_heading=h.26in1rg)

[**Conclusion** 10](#_heading=h.lnxbz9)

[**Appendices** 11](#_heading=h.35nkun2)

[**References** 12](#_heading=h.1ksv4uv)

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# **Executive Summary**

On April 10, 2011, Whirlpool decided to launch a new energy-efficient refrigerator within six months. Whirlpool is one of the biggest home appliance producers, and part of their strategy was to adhere to the worldwide consumer trend of buying more energy efficient products by adapting their product line. Gianluca Castelletti, head of Whirlpool’s Asia International Procurement office in Shanghai, immediately spotted the challenge of completing this launch within the six month time frame. New energy saving products require new technology, in this case, Whirlpool needed to replace the current motor of their refrigerators from AC to DC motors. However, this was a tight timeframe to meet, and any delays; especially from finding a supplier, would negatively affect the new product’s sales if outside the six months. Choosing a suitable supplier was crucial for this product’s launch to be a success, and finding one was the biggest challenge faced by Whirlpool within six month timeframe. Since sourcing the right components was such a critical step in the production of the new refrigerator launch, Castelletti decided to complete a four step Sourcing Strategy Development (SSD) process; which allowed the team to complete an internal analysis, external analysis, strategy development and the implementation process. Whirlpool’s current suppliers faced many challenges, including: agreeing to aggressive payment terms, a long process for sample-tests, cost and quality improvement on an annual basis and Whirlpool’s strict selection criteria. Any new supplier would also have to be able to overcome these challenges.

Whirlpool has three alternatives that could be used to find a supplier for their motor. The first alternative is to delay the launch outside of the desired six month timeframe in order to find a qualified supplier. Although this alternative would not resolve the timeframe issue, it would provide optimal time to strategically find a supplier that provides the best quality and cost for the new launch. The second alternative is to source the DC motor from a new supplier within the six month timeframe. The third alternative is to source the DC motor from one of Whirlpool’s current suppliers and provide training. After careful consideration, we recommend that Whirlpool should source the DC motor from a current supplier and provide training to meet the six month timeframe. This alternative will take the full six months to implement, starting with reviewing current suppliers and completing the supplier performance criteria to narrow down to the top potential suppliers in month one. After this step, the procurement team should complete sample testing, training, and finalize contracts. By the fourth month, the production of the new launch should start, and an on-going testing of the quality should be implemented. By the fifth and sixth month, Whirlpool should start transporting the new refrigerators to store locations.

**Company Background**

Whirlpool is the world leader in the manufacturing of home appliances. This includes items such as stoves, washers/dryers, and refrigerators; to mention a few. Furthermore, they are also known for producing and marketing popular brands, including Maytag and KitchenAid. Regarding the operations of the business, Whirlpool has 68,000 employees in 67 manufacturing and technology research centers around the world (Lockstrom et al., 2012). They have outlets located around the world and sell their products in over 130 countries (Lockstrom et al., 2012). This industry is heavily competitive and there are many large competing companies such as General Electric and LG. To compete in this industry Whirlpool has focused on producing reliable and long-lasting products, with an emphasis on continually improving their product quality. This has helped foster a guiding company philosophy focused on creating customer loyalty; which has been a critical factor in their success over the years.

As a large company, Whirlpool has developed a sourcing strategy that has played a critical role in identifying suppliers for manufacturing components for the variety of appliances they produce. One of the key strengths to their selection strategy is that they have developed extremely detailed requirements. These requirements include a minimum quality score, manufacturing efficiency, and continuous innovation. Furthermore, Whirlpool has a clear four step process called the Sourcing Strategy Development Process. This includes completing an internal analysis, external analysis, strategy development and implementation.

Nonetheless, Whirlpool’s strategy has some weaknesses that can present a challenge in finding a supplier. As previously mentioned, having such strict selection criteria has presented a problem since some suppliers find the payment terms challenging to accept (this may discourage suppliers from making proposals). Furthermore, the focus on quality and cost requires suppliers to make improvements each year; which can be difficult for many suppliers to meet. Additionally, ongoing testing of products to ensure superior material quality puts strain on the suppliers since this is a time consuming process. Finally, it has been proven to be difficult to find suppliers in China that meet all of Whirlpool’s requirements, with most local suppliers missing the minimum requirement by 10%.

# **Analysis**

# **Key Issues**

Whirlpool is facing many challenges in order to launch the new energy-efficient refrigerator. Firstly, since the new refrigerator requires a DC motor; as opposed to the formerly used AC motor that Whirlpool used in their refrigerators, the procurement team has been tasked with finding a suitable supplier within a very short six month timeframe. Whirlpool’s manufacturing office is in Shanghai, China since it reduces capital investment, increases market share, increases the flexibility of production, and has cost advantage of raw materials. However, the downsides of having a supplier in China are having inconsistencies in quality and reliability, lacking capable service providers, shortcomings in transportation and IT infrastructure. For these reasons, suppliers in China do not meet the minimum score of 60/100 for the selection process of suppliers within the Whirlpool Supplier Quality system. Also, Whirlpool’s extensive selection criteria for the optimal supplier makes it a challenge for the procurement team to find a suitable supplier that consists of all requirements. There are also multiple issues that need to be addressed if the team should choose to use a current supplier or find a new supplier. This creates a significant challenge to find a suitable supplier that meets all the requirements within the desired six month timeframe.

## **Supplier Performance Criteria**

If quality and cost cannot both be achieved simultaneously, we suggest that Whirlpool should focus on the quality of their product rather than the cost. With Whirlpool being the world’s leading manufacturer of major home appliances, there are high expectations for the company to produce top quality products. As mentioned in the case study, Whirlpool’s products were viewed as high-quality by Chinese consumers. Whirlpool has a focus on customer loyalty, and they build products to be reliable and long lasting. The factories their refrigerators are produced in also had an established joint venture with one of the largest Chinese appliance producers: Hisense. Not focusing on quality could lose Whirlpool significant market share if the Chinese consumers view their newest product to be of significantly lower quality. Lower quality could also harm their relationship with Hisense. The average lifespan of a refrigerator is 14 years (Mr. Appliance, n.d.). If the company was to put more emphasis on cost rather than quality, the new DC motor may malfunction and break within the early years of its lifespan. This would devalue the company, losing millions of dollars and customers. It would be more beneficial in the long run for Whirlpool to spend more money now to ensure the motor lives up to its value, rather than losing money in the future. For this reason, on the supplier performance criteria template, anything that had to do with quality or time was given the most priority, while cost was given the least. Since Quality and Design/Technology have to do with the physical product, these criteria were given a high weight along with Delivery (see below). Cost Management, and Capital & Tooling Cost were given a low weight as they are associated with cost. Each company will then be scored from 1 to 5 based on Whirlpool’s assessment. The scores and weights will be calculated to find the total weighted score. Due to the short timeframe, we believe the minimum score should be a 50 rather than 60. Any company that scores a 50 will be further assessed to become a potential supplier for the DC motors.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Supplier Performance Criteria  (Template) | Weight | Sub-weight | Score  (1-5) | Weighted Score | Subtotal |
| Quality  Technical/Process  PPM  Corrective Action Response Rate  PPAP (FPA) | 20 | 5  5  5  5 |  |  |  |
| Delivery  Delivery Lead Time  Manufacturing Location/Risk | 15 | 8  7 |  |  |  |
| Design/Technology  Technology is new, innovative  and/or superior, providing  competitive advantage to WHR | 15 | 15 |  |  |  |
| Supplier Alignment with Corporate Strategy  Technology Roadmap  Commodity Mgmt Strategy  Existing Whirlpool Supplier | 10 | 4  3  3 |  |  |  |
| Manufacturing  Manufacturing Reliability | 10 | 10 |  |  |  |
| Support Representation  Regional Representation | 10 | 10 |  |  |  |
| Financial Stability  Distressed Supplier Score | 10 | 10 |  |  |  |
| Cost Management  Overall Delivered Part Cost  % Cost to Target  Material Cost Productivity  DPO (Pay Terms) | 5 | 2  1  1  1 |  |  |  |
| Capital and Tooling Cost  Tooling TCO  Tool Technical Lifecycle | 5 | 2  3 |  |  |  |
| TOTAL | | | | |  |

**Alternatives**

Whirlpool needs to find a supplier for DC motors in order to launch their new energy efficient refrigerator in the Chinese market. To find a supplier for the DC motors, Whirlpool must choose between using an existing supplier or a new supplier. With the option of using a current supplier, they will already have an existing relationship and their needs will already be known. This is also one of the fastest alternatives. There are a variety of ways to find a new supplier; one of which includes contacting sales representatives. It is important to note that purchasers in the industry often receive information from sales representatives about new suppliers and their innovations. If Whirlpool maintains a record of these, it can be easy to contact and follow up with representatives, especially with the use of platforms such as Linkedin. Additionally, trade journals are a source of advertisements for suppliers. Trade journals include articles about innovations from within the industry which are useful when making decisions on selecting suppliers based on their capabilities. Another option for finding a new supplier is to attend trade shows. This allows for direct contact and information exchange with prospective suppliers. For Whirlpool finding a new supplier, it would only require a minor to moderate information search regarding the level of effort and time required to find said supplier. This is a result of the high capabilities of their current suppliers as well as the high strategic importance of their requirements (Monczka et al., 2016).

Whirlpool can choose from the following three alternatives to find an optimal supplier:

## **Alternative 1: Delay the launch outside of the desired 6-month timeframe in order to find a qualified supplier.**

Whirlpool has the option to delay their launch date by two months; giving them a total 8-month timeframe to find a new supplier for their refrigerators’ DC motor, instead of their original 6-month timeframe. Whirlpool’s current suppliers face many challenges to supply components for Whirlpool’s products; since it is “one of the largest home-appliance maker(s) in the world” (Lockstrom et al., 2012). The challenges include aggressive payment terms, long sample-testing process, cost and quality management, and strict selection criteria. We are assuming not all suppliers would be willing/able to agree to follow Whirlpool’s payment terms; which decreases the number of potential suppliers Whirlpool can source from. Whirlpool requires their suppliers “to provide samples that passed the sample tests and application tests,” (Lockstrom et al., 2012) which increases the sample-testing period. We are assuming the long sample-testing process can eliminate multiple potential suppliers due to manufacturing times and delivery times, and that delaying the timeframe by two months will alleviate a lot of this time pressure. Whirlpool’s strict selection criteria also requires a minimum score of 60/100 from its potential suppliers when audited, and the “local suppliers [score] was approximately 50” (cite case). The additional two months would give Whirlpool more time to audit potential suppliers and not have to settle for less. Additionally, increasing the timeframe allows Whirlpool to branch out internationally to find a supplier that is capable of meeting their strict selection criteria if they cannot find a local one. Overall, we are assuming delaying the launch would allow Whirlpool’s Procurement Office to find more potential suppliers that would be a good fit, so they can then choose an optimal supplier.

If Whirlpool is still unable to find a qualified supplier after the two month delay; since it is known that the quality of Whirlpool’s products is very important to both the company and its Chinese consumers; we are suggesting Whirlpool offers an extended warranty on its new refrigerators. Whirlpool can negotiate ashort-term contract with the most qualified supplier that they assessed so they do not lose all their sales to their competitors. We are suggesting the extended warranty because it will ensure the Chinese consumers are buying a product that they can have for a long time. Whirlpool can then do a more extensive search for a long-term supplier that meets their quality standards. The pros and cons of Alternative 1 are described in Appendix A.

## **Alternative 2: Source the DC motor from a new supplier within the 6-month timeframe**

In order to find a supplier in the desired 6-month timeframe, Whirlpool can address some of the challenges the suppliers face when supplying goods for the company. The first challenge they can address is the long sample-testing process required by Whirlpool. Whirlpool can shorten the sampling-testing process by sampling the potential suppliers’ products at the same time they do the quality system audit. If the potential supplier passes both then they can consider them as a supplier. This unfortunately would be more expensive for Whirlpool if they are doing this for multiple suppliers at once; but we are assuming it would improve their chances of finding a quality supplier in their desired timeframe. We are also assuming this would not be significantly more expensive since Whirlpool could test multiple products from different potential suppliers all at once, instead of testing and failing potential suppliers until they find the right one. The second challenge they can address is the suppliers having to follow Whirlpool’s strict selection criteria. Whirlpool usually requires a minimum score of 60/100, but they could lower their minimum score for their selection criteria to 50/100 to match the local suppliers’ abilities. They could additionally provide training to address their new supplier’s performance in their weakest areas to increase their score before production, or shortly after production starts. Again, providing this training would be an additional cost to Whirlpool; but we are assuming it would increase the overall quality in the long run and raise their score above the minimum 60/100 after training is complete. We are assuming lowering the minimum score will not affect Whirlpool’s perceived quality in the Chinese market because the suppliers of Whirlpool’s competitors were also scored lower than 60/100 when audited as potential suppliers. The pros and cons of Alternative 2 are described in Appendix A.

## **Alternative 3: Source the DC motor from a current supplier & provide training**

Instead of finding a new supplier, Whirlpool has the option to utilize one of their current suppliers to source their new DC motor. This is a fast alternative to avoid finding a brand-new supplier; because Whirlpool will already have a relationship with them, and they will be familiar with the quality standards of Whirlpool and the challenges involved with supplying such a large home-appliance maker. In order to use one of their current suppliers, we are assuming that Whirlpool could provide training to develop their suppliers who either: already make AC motors for refrigerators, or already make DC motors for their other products (e.g. dishwashers). If Whirlpool sources DC motors from one of their current suppliers already makes AC motors, they would be training them about the differences of AC and DC motors and how to adapt their current product line to be more energy efficient. If Whirlpool sources DC motors from one of their current suppliers that already makes DC motors for their other products, Whirlpool would provide training on the different motor needs for refrigerators (e.g. how powerful the motor must be, size restrictions, wiring, etc.) that differs from the current product they are supplying motors for (e.g. dishwashers). The training will be an additional cost for Whirlpool, but we are assuming that the cost of lost sales from a delayed launch would be significantly higher than the costs for training. The pros and cons of Alternative 3 are described in Appendix A.

# **Decision Criteria**

The decision criteria we decided to use are quality, time, return on investment (ROI), cost, Risk, reliability and useful life. We believe these are the most important factors to consider when it comes to choosing which alternative would be best. As previously stated, we believe quality is more important than cost with the short time frame provided for choosing a DC motor supplier. With Whirlpool being a multi-million-dollar company, the cost of suppliers is not a major issue compared to the quality of the products. Therefore quality, time, reliability and useful life were given the highest weights, while ROI and cost were given a lower weight.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Score (1-3 Scale)** | | |
| **Decision Criteria** | **Alternative 1**  **8 months** | **Alternative 2**  **New supplier** | **Alternative 3**  **Current supplier** |
| Quality (25%) | 3 (0.75) | 1.5 (0.38) | 2 (0.50) |
| Time (22%) | 1 (0.22) | 2 (0.44) | 3 (0.66) |
| Reliability (20%) | 3 (0.60) | 1 (0.20) | 3 (0.60) |
| Useful Life (15%) | 3 (0.45) | 2 (0.30) | 3 (0.45) |
| Risk (10%) | 1 (0.10) | 2 (0.20) | 3 (0.3) |
| ROI (6%) | 2 (0.12) | 1 (0.06) | 3 (0.18) |
| Cost (2%) | 3 (0.06) | 1 (0.02) | 2 (0.04) |
| **TOTAL** | **2.30** | **1.60** | **2.73** |

For scoring, we used a scale of 1 to 3, with 1 being low and 3 being high. Alternative 1 got the highest score for quality as we believe a longer in-depth search for a well-suited supplier would result in a high quality DC motor. If Whirlpool had more time to find a supplier, they could continue using a minimum score of 60/100 for the Supplier Quality System. However, since they are in dire need to find a supplier, we believe Whirlpool should drop the minimum Supplier Quality System score to a 50/100 if they still cannot find a supplier in the delayed timeframe. This gives Whirlpool more options for suppliers, but it may not result in the superior quality they expected. Alternative 3 got the highest score for time as it would be quicker and easier to go with a current supplier rather than a new one. Finding a new supplier can take a long time and it could take a lot of time to negotiate a new contract. Current suppliers would already be familiar with Whirlpool’s contracts, so there would be less details to be negotiated, resulting in a quicker implementation. Alternatives 1 and 3 got the highest scores for reliability and useful life. With Alternative 1, once again a longer search time would result in a higher quality supplier. High quality suppliers’ products would have long useful lives and their products would be reliable. With Alternative 3, reliability would be high since Whirlpool would be using a company that has already passed the Supplier Quality System assessment, meaning they already trust the supplier and know they have reliable products. Alternative 3 would have the lowest risk since Whirlpool would be using an existing supplier. Whirlpool would already have knowledge and experience on how they operate, unlike finding a new supplier. ROI would be highest with Alternative 3 as well because existing suppliers may provide cheaper prices as they would want to keep a friendly relationship with Whirlpool. Cost would be cheapest with Alternative 1 as Whirlpool would have more time to find suppliers with cheaper prices. Since Alternatives 2 and 3 are more rushed, Whirlpool should be willing to accept higher prices for high quality products rather than trying to save costs by accepting a low-quality supplier. After rating each alternative based on the decision criteria, we calculated the total score. Alternative 3 got the highest score, leading us to select it as our recommendation.

# **Recommendation**

Based on the decision criteria and examining the pros and cons of each alternative, we recommend Alternative 3; source the DC motor from a current supplier & provide training. This will allow Whirlpool to evaluate their current suppliers for motors and provide them with training to develop their current manufacturers to produce the new DC motor that is required for their energy efficient refrigerator. This is the best option because it will provide optimal quality from suppliers that have already passed the Whirlpool Supplier Quality System. Also, the current suppliers would already be considered reliable since they have provided their services before. Lastly, there are less risks associated with sourcing DC motors from a supplier that has already built a relationship with Whirlpool since they are aware of all the requirements.

# **Implementation Plan**

By selecting alternative three, it is expected that implementation will be completed in six months. Whirlpool should complete the following steps:

In the first month of implementation, Whirlpool will review their current suppliers and complete the Supplier Performance Criteria in order to select which supplier has the best potential to create a high-quality DC motor for the new refrigerators. The needed training systems can also be developed throughout the month by Whirlpool.

In month two, the chosen supplier’s employees will do the necessary training systems to learn how to make the DC motors. The chosen supplier will then also do Whirlpool’s quality system audit and provide samples to the company for their own sample and application tests at the end of the month.

In month three, Whirlpool can finalize the new product contract with the chosen supplier after it passes all of the previous testing.

In month four and five, Whirlpool can build an initial inventory to prepare for the expected sales volume. Near the end of month five Whirlpool can start transporting some of their new products to store locations to avoid possible transportation delays.

In month six, Whirlpool can continue to transport their products to their stores from inventory and at the end of the month officially launch their new energy efficient refrigerator.

# **Conclusion**

To conclude, Gianluca Castelletti, head of Whirlpool’s Asia International Procurement Office, should implement the third alternative in order to launch the energy efficient refrigerator within the 6-month deadline. This strategy will allow Whirlpool to source the DC motor from a current supplier; enhancing their current relationships. Increased efficiency will allow Whirlpool to consider quality as the most important factor in the new launch. This alternative will hopefully provide Whirlpool with the highest quality motors for their new product, and secure their sales in the market. This is also a very cost effective alternative due to Whirlpool not losing a large portion of their potential sales to their competitors due to delaying their launch and being a straggler.

# **Appendices**

**Appendix A: Alternatives Pros and Cons List**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Alternative 1** | **Alternative 2** | **Alternative 3** |
| **Pros** | - Has the potential to source a high-quality motor from a supplier that is an expert in this type of motor | - Has the potential to source a high-quality motor from a supplier that is an expert in this type of motor | - Better relationship due to providing training |
| **Cons** | - Whirlpool *will* lose significant sales due to the delay and Whirlpool will be considered a straggler in the market | - Whirlpool may not have sufficient time to properly analyze new suppliers and quality might be at risk, or costs might be higher than usual to acquire a high quality supplier in a short time frame  - Whirlpool has no previous relationship built with the supplier - won’t know if the supplier will deliver on time - additional delays can lose market share in the competitive market even though project was launched within the short timeframe | - Cost of training  - Will have to develop training for the supplier |

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