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## VAVVA - CONVERTIBLE WOMEN'S WORK SHOES

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### ABSTRACT

Designed to be more comfortable, VAVVA, allows working women to own both high heel shoes and flats in one pair of elegant work shoes. The main four features of this product are its easy convertible mechanism from low to high heels and vice versa, insole padding for extra comfort, safe heel structure, and elegant standard shoe design. The product's goal is to provide the user with total comfort and satisfaction without compromising the product design's aesthetic aspect. A working person usually has a daily routine from choosing breakfast to choosing the outfit and transportation. Therefore, most working women wear heels daily to suit the work environment. This phenomenon creates a perception of women wearing heels to work daily despite their discomfort. However, history has shown that women have willingly worn them, and it is not easy to imagine women not wearing them. Thus, heels will not be eliminated in new working women's shoes. Therefore, the VAVVA project research focused on making heels easier and user-friendly, less painful and more functional for working women.

**Keyword:** Convertible shoes, work shoes, women's footwear, high heels

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### INTRODUCTION

Working women have been blooming, and at work, they can make some compromises and lifestyle adjustments to be disciplined and committed to their jobs. A working person usually has a daily routine, from choosing their breakfast to choosing their outfit and transportation. Some women have compromised their comfort and wear high heels daily to suit the work environment.

Despite misleading mindsets forcing women to wear heels daily with discomfort, some women prefer wearing heels to work by choice and some to formal events. About 72% of women already wear heels at some point. Women have been willingly wearing heels throughout history, and it is hard to imagine women not wearing heels at all. Hence, heels will not be eliminated but given another way of self-expression and representation. This research project focuses on making high heels easier, user-friendly, less painful, and more functional.

### CONCEPTUAL PROCESS, PROCEDURE AND SCHEMATIC

Based on the DSM framework developed by Kasali et al. (2017), problem identification and motivation define the specific research problem and justify a solution's value. Defining the objectives for solutions defines what is possible and feasible. Such artefacts are potentially constructing models, methods, or instantiations. The demonstration of the developed design showcases the design development process. Evaluation and testing after that are to ensure product functionality and user experience. Finally, communication and product introduction in the market goes as the last step of the framework, creating a coherent product delivery into the market. The research goes through all the stages of the DSM framework and covers both theoretical and technical aspects of this design thesis.

### SIGNIFICANCE OF STUDY



Figure 1: VAVVA high and low heel adjustments

The study of convertible shoe applications and fabrication can open the gate for Malaysian shoe manufacturers to explore more on customised and convertible high heels to enhance the high heel as a product and its market. The design research goal is to help develop an improvement in the shoe industry worldwide, experimenting further with high technological and digital alternatives to make the product even smarter, more functional, and beautiful for today's modern women in the workforce.

## TARGET USER AND USER EXPERIENCE

The target user of these convertible work shoes is working women who wear high heels daily at work, at events, and even on a business trips. In Figure 2, the storyboard of the user experience of this particular project is illustrated. The storyboard starts with the problem statement, then proceeds with the solution to each problem, and ends with the practicality of the final product.

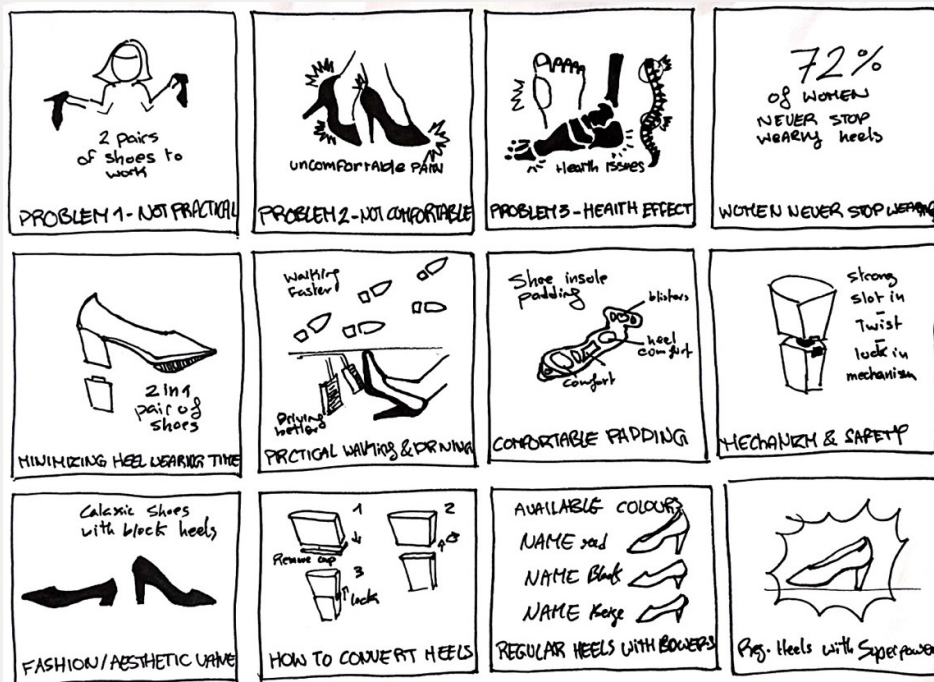


Figure 2: Story board of User Experience

## DESIGN DEVELOPMENT PROCESS

Figure 3 shows that the design development process starts with stage one, ideation and initial ideas of how the product can look and operate. The second stage is design development, improvising, and refining a few ideas from the ideation phase. The third stage is design finalisation, further detailing, and the development of one of the design proposals. The fourth stage is model making, crafting the final product proposal for testing. Finally, the fifth stage is design promotion, designing product packaging, brand image, and advertisement materials. These stages are more blended in the practical design development process, allowing the design to improve flexibility.

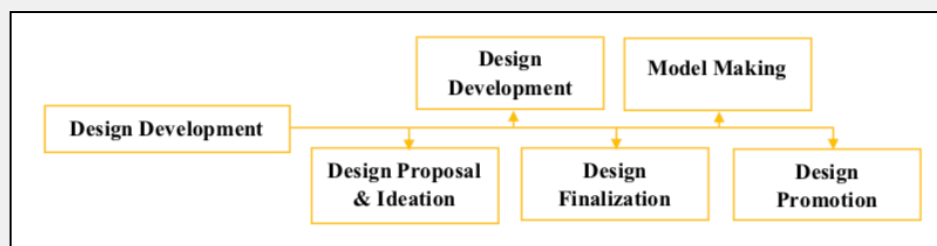


Figure 3: Design Development Process

## DESIGN DEVELOPMENT, SKETCHES AND DRAWINGS

The design exploration journey focuses on four aspects of shoe design. The first is the shoe's main body profile. In this project, the main body profile resembles the classic silhouette of the pointed-toe high heels. The second is the mechanical transformation of heels from low to high. The third is the lining to extra comfort to the wearer with extra softness, and finally, the fourth aspect is the heel extension storage, as illustrated in Figures 4 & 5.

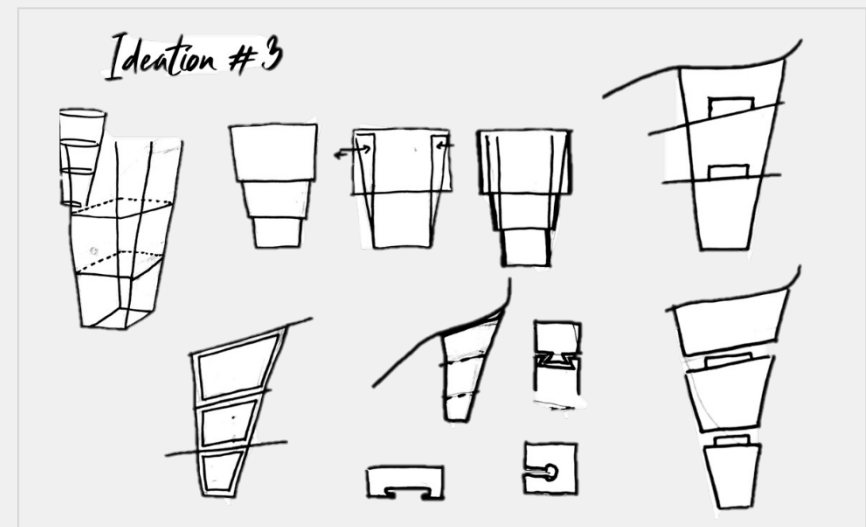


Figure 4: Ideation



Figure 5: Product Development

## FINALISED DESIGN AND MECHANISM

The final proposal is developed after testing based on the last heel mechanism development. The branding design process was also studied to represent the brand identity to the user experience along with packaging design, brochure design, and catalogue design.

In Figures 6 & 7, the final proposal illustrates a pouch design for heel extension storage. The product brand image represents the character of the brand, its values, and its goal in the market. Brand representation is one of the most powerful influencing factors on target users and potential customers. The customer first sees the brand identity and image, which consist of colours, typography, slogan, images, and product presentation, as in Figure 8.

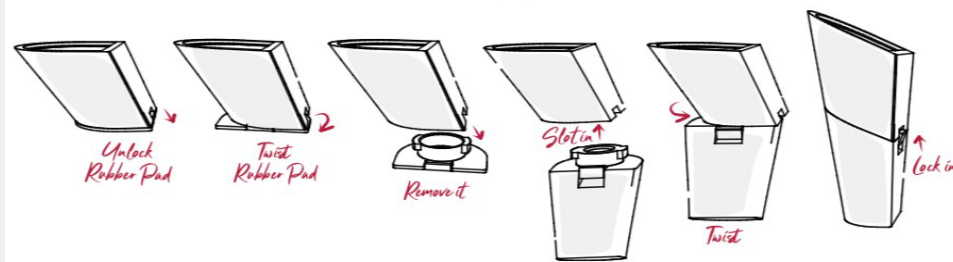


Figure 6: Story board of User Experience

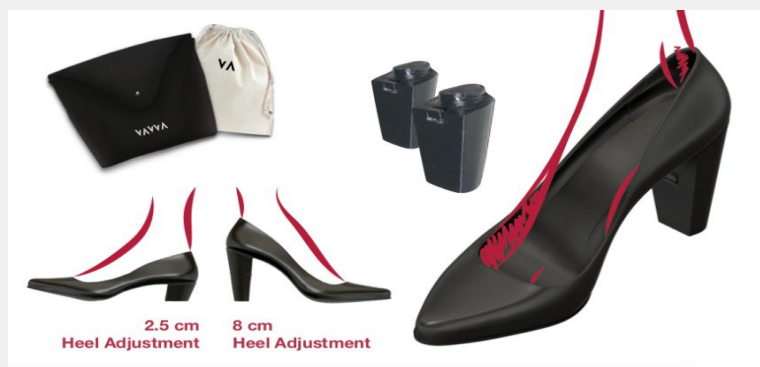


Figure 7: Story board of User Experience



Figure 8: VAVVA Brand Image

For the VAVVA brand image, the chosen colour scheme of the brand incorporates cool-toned Red (HEX Code: B21E36), Beige (HEX Code: E5DAD), and classic jet Black (HEX Code: FFFFFFFF). The typography consists of the casual cursive handwritten font (Font Name: Clattering) and modern sans serif font (Font Name: Helvetica Neue). The Brand image is demonstrated in Figure 9.






Figure 9: VAVVA shoes and branding merchandise

## TECHNICAL DRAWING

The pouch is designed to be manufactured in leather with an extra washable cotton membrane. The heel extensions are first inserted into the cotton pouch; after the cotton pouch is inserted into the leather case. The cotton pouch can be removed after some time to be washed for hygiene purposes. The brand logo is imprinted on all parts, including the rubber cap base, pouch, and shoe sole.

The shoe as a product is manufactured in three main colours: classic black leather, feminine deep red leather, and seamless nude beige leather. They are versatile shoe colours in the market for formal high heels and classic shoes. Colour variations can be developed according to trending seasonal colours and fashion. Each season, the brand investigates seasonal trends and manufactures three extra colour or texture variations of the product.

Table 1: Product Line-up of Comfortable High Heels

| Brand name  | Online | Shoe Type               | Features  | Comfort   | Country                            |
|---|--------|-------------------------|---|---|------------------------------------|
| <b>Antonia Saint NY</b><br>          | Yes    | Classic Design          | - Hidden Soft Surround System™ for extra comfort in the insole.           | Heels and flats design to offer work shoes for women that can be tolerated for long period of wearing on daily basis. They look classic on the outside, and feel like sneakers on the inside. | New York, United Stated Of America |
|   |        | High heels and flats    | - Strong outer structure for durability.                                  |   |                                    |
| <b>Clarks Kaylin Cara</b><br>        | Yes    | High Heeled Court Shoes | -Comfortable feet arch support and insole                                 | Clarks shoes are known for their comfort and long-lasting wear with technological advancement.  | United Kingdom                     |
|   |        | Height: 3.5 inch        | -Durable materials and structure  |   |                                    |
| <b>Marc Fisher LTD Zala Pump</b><br> | Yes    | Wide heeled pumps       | -They have a shorter block heel which makes it so much easier to walk in. | They're sleek and comfortable.  | New York, United Stated Of America |
|   |        | Height 3 inch           | -Distributed weight force   |   |                                    |

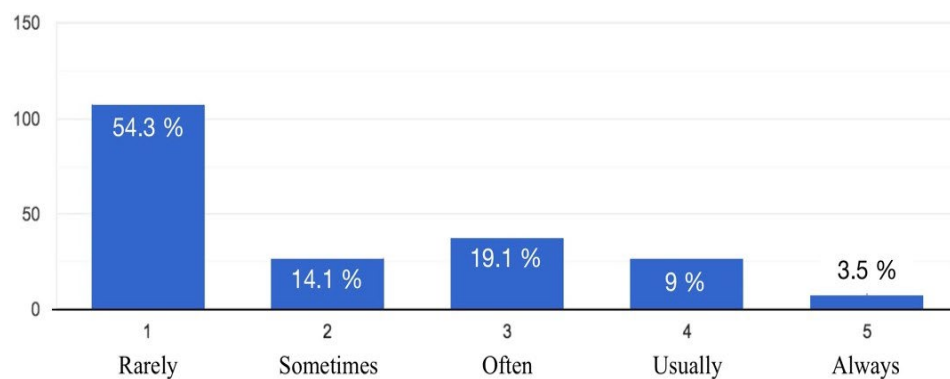
## ANALYSIS

In the product line-up in Table 2, three top-rated regular high heels for daily and long use were listed. The data collection focuses on the type of shoes chosen for the workplace, special features, comfortability of shoe structure, durability, and height. Antonia Saint NY High Heels is the most favoured product among those three products. It is a well-established brand of high-quality footwear designed and developed for working women.

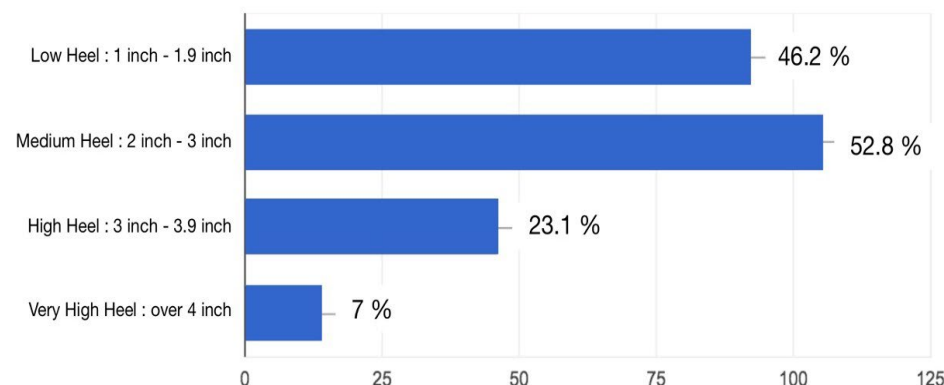
As an industrial design product, it is one of the best footwear brands discovered throughout this research, and it covers many aspects of shoemaking and shoe design. The factors highlighted in this brand as high-quality are the patented Ballistic Nylon heel wrap designed for environmental protection, the SoldSurround insole padding technology that maximises comfortability, and the durable shoe structure that enables proper foot arch support.

## SURVEY RESULTS

How often do you wear high heels to work? from (1) Hardly to (5) Always.



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## FINDINGS

The findings show that high heel wearer prefers regular court shoes/ pumps for their formal and professional look in the work environment proposed settings. The other preferred aspect related to heel design is wide-heeled shoes which work hand in hand with functionality and trending shoe fashion. Not all women wear high heels to work, yet many do wear high heels to work occasionally or daily.

The aspects agreed most by the surveyed participants to be the most desirable in a pair of shoes are comfortability and elegance. In terms of consumer-product relation, the collected information shows a significant level of acceptance from the users as consumers of high heels, which do not solve the main problem of daily use of high heel. However, after the existence of a comfortable and convertible pair of high heels, the brand will probably gain loyal consumers to product brand as it serves both elegance and practicality.

The product features' observation is divided into two categories which are 1) Convertible shoes and 2) Work shoes. Two line-up studies are conducted to focus on the different features of each product. The best-suited features, design, and technicality are chosen for the design development and model-making. This analysis is further strengthened by analysing the data collected through a questionnaire from 199 respondents on their design preference for work shoes. The survey results were evaluated and illustrated in diagrams.

As analysed in Table 3, the overall findings from observational and product line-up studies conducted on convertible and work shoes are presented by highlighting the best features collected from all products studied earlier. The product line-up was conducted on ten products divided into two line-up tables, as shown in Tables 1 and 2. To design a new product that focuses on comfortability, the analysis of the product line-up is considered in the design process. Functionality is the main aspect to be considered for comfortability and transformation mechanisms.

Table 2: Analysis results

| Product Line-Up          | Analysis Results<br>Best Features   |
|--------------------------|---|
| <b>Convertible Shoes</b> | Easy usage and simplified mechanisms<br>Easy to convert on the go while standing or sitting<br>Interchangeability seamlessness Elegance of design Minimal parts |
| <b>Work Shoes</b>        | Wide heeled shoes Comfortable insole padding<br>Good foot arch support Durability and strength of materials   |

## RESEARCH / PROJECT FINDINGS

Table 3: Product Line-up of Convertible Shoes

| Brand name   | Online | Mechanism  | Parts  | Comfort  | Location                           |
|--|--------|--|--|--|------------------------------------|
| <b>1. Fashion</b><br>       | Yes    | Heels and sole attachments with different heights<br>Heights:<br>Flat - 3 inch Flat - 4 inch   | 4 Parts for each shoe (two height adjustments)<br>Main shoes, Sole support, High heel, Flat seal   | The heels gets converted into a totally flat shoes which makes it the most reliable in this line-up.<br>The heel is centered which makes it more ergonomic in high heels adjustment.                           | USA<br>San Luis Obispo, California |
| <b>2. Runway heels</b><br>  | Yes    | Hinged heel that gets locked and unlocked<br>Heights: 1 inch - 4 Inch  | 1 Part the main shoes with built in mechanism  | All in one kind of shoes that doesn't need storage for extra attachments<br>*Heel base is not centered   | USA                                |
| <b>3. Gena</b><br>          | Yes    | Convertible pumps with no attachments<br>Built in hinge and clicking mechanism<br>Heights:<br>2 inch - 3.5 inch                          | 1 Part the main shoes with built in mechanism  | All in one kind of shoes that doesn't need storage for extra attachments   | Singapore                          |
| <b>4. Mime et Moi</b><br>   | Yes    | Low and High heels separate attachments<br>Heights:<br>2.7 inch – 3.9 inch   | 3 Parts for each shoe (for two adjustments)<br>-Main shoes<br>-Low heel<br>-High heel              | Looser when it's flat and stiff when heeled with hinges at the foot frontal joint to change from low to high heels. Positioning of the heel to the base of the feet in not centered hence not quite ergonomic. | Europe                             |
| <b>5. MOSSTO</b><br>      | Yes    | Heel vertical attachment to increase the height of existing heel<br>Heights:<br>2 inch - 4 inch  | 2 Parts for each shoe (for two adjustments)<br>-Main shoes with low heels<br>-High heel attachment | A bit stiff and looks a bit odd in a low heel adjustment<br>*Heel base is not centered   | Europe                             |
| <b>6. Tanya Heath</b><br> | Yes    | Press fit mechanism from the back of the heel<br>Heights:<br>30 models of shoes and 120 pairs of heels with different shapes and heights | 3 Parts for each shoe (for two adjustments)<br>-Main shoes<br>-Low heel<br>-High heel              | *Heel base is not centered   | Canada<br>Paris                    |
| <b>7. MESTRAE</b><br>     | Yes    | Heel vertical attachment to increase the height of existing heel<br>Heights:<br>2 inch – 3.5 inch  | 2 Parts for each shoe (for two adjustments)<br>-Main shoes with low heels<br>-High heel attachment | *Heel base is not centered   | Malaysia<br>USA                    |

## CONCLUSION

These findings lay the foundation of this design research as they contain a variety of design aspects and considerations from manufacturing to users' experience. In the market's product line-up of convertible shoes, the data collection focuses on parts and mechanisms used, comfortability, height settings, and manufacturing countries. The products ranked as the three best products that align with the benchmarking and data collection aspects are Fashion, Gena, and Tanya Heath.

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