



# COMPANY ANALYSIS

DEUTER SPORT GmbH

## TECHNOLOGY ENTREPRENEURSHIP (ENT600): CASE STUDY

**FACULTY & PROGRAMME** : FACULTY OF APPLIED SCIENCES  
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**PROJECT TITLE:** : DEUTER HIKING BACKPACK

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## EXECUTIVE SUMMARY

This case study was assigned to research and develop how a company design, manufactures, and markets their product. In this research, I have chosen to do an investigation on one of the most well-known recreational backpacks manufacturer which is Deuter. When it comes to outdoor activities such as hiking, it is important to ensure basic features when hiking such as the air-ventilation system, attachment system for hiking poles, padded shoulder straps, and so on. The key factors that the company focus on are fit, ventilation and function when building a backpack. Deuter managed to innovate the first patented fully ventilated backpack with a mesh back system.

The outdoor activities sure are exhilarating and fun but sometimes even a good product can be lacking something. It is important to make sure that safety is complied when using them. Most of the products manufactured are basically good enough to use but then one model caught my eye which is the Speed Lite 24. Even though this model has a lot of advantages, there are some that needs to be modified in order be a better backpack that satisfies. Firstly, the backpack may lose its sustainability to extreme weather. Next, the safety of user cannot be guaranteed if one uses them. Thirdly, one backpack might burst suddenly so we need a more secure zipper system. Other than that, in case of doing activity near aquatic surroundings, there is no safety features for that. Lastly, the backpack's shoulder straps can cause discomfort and pain to neck, shoulder and back.

By studying the features available, some ideas can be developed from a miniscule of lacking features such as; integrated rain cover in the backpacks. Next idea is an embedded distress beacon that can produce loud sounds and sends transmitter of their precise location when in emergency or disaster happens. Third idea is a unique pattern of zipper so that they can be attached tightly even without using lock and key. Another idea is a detachable inflatable life jacket that can save individuals from drowning as it inflates when immersed in water. Lastly, a horizontally adjustable shoulder straps to reduce discomfort.

In a nutshell, it is important to do research and development in this type of products so that none of accidents occur and to also satisfy enthusiasts that enjoys outdoor activities and other customers as well.

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## **1. INTRODUCTION**

This chapter of introduction will analyze and develop in detail about this case study which is hiking backpack. This chapter includes details such as background of the study, problem statement and purpose of the study.

### **1.1 Background of The Study**

Knapik, Reynolds, & Harmann (2004) have been studying and focusing different methods of load carriage including, but not limited to, trunk vests, hip belts, shoulder satchels, head basket, hand bags, shoulder yokes, backpacks, and double packs (Eagle, 2016). Optimal load carriage method depends on the size, shape, and weight of the load to be carried. The implementation of load carriage should also be considered especially its duration the load to be carried, climate of the environment, and terrain to be traversed. Furthermore, we need to consider the individual that is carrying the load for example the physical condition of the user (Eagle, 2016). Years after developing, the common form of load carriage used for variety of applications are by using backpacks. Backpacks are classified into two categories which are general use backpacks and special application backpacks. In this case study, we will be focusing more on special application backpacks which one of them is hiking backpacks-recreational backpacks. According to The Editors of Encyclopedia Britannica (n.d.), hiking is walking in nature as a recreational activity. It is a natural exercise that promotes physical fitness which is economical, convenient, and requires no special equipment unless there is physical strain. This activity usually involves carrying a load on the back for an extended period of time over miles of distance sometimes for multiple days at a time (Lobb, 2004). Hikers typically carry between one fourth and one third of their bodyweight on their backs. Given that hikers travel quite the distances while carrying heavy load, it is obvious that hiking backpacks should be designed with comfort and equipped with complex frames and suspension systems (Eagle, 2016). In this case study, we will be focusing on one of the largest backpack producers in the world-wide markets which is Deuter, a company founded in Germany.

## **1.2 Problem Statement**

*Speed Lite 24* is one of the hiking backpacks that is suitable for unisex and produced by Deuter. Some limitations that can be found on this model is there is no rain cover given. Although the backpack's fabric material is made up of polyester and nylon which are waterproof, but in the regions of South East Asian countries which happens to have seasons of long periods of rain and extreme humidity can penetrate into the backpack through the seams and zips. As the product have been used frequently, the fabric material that is coated with polyurethane (PU) however can lose their effectiveness, so they are no longer deemed waterproof anymore (Deuter Sport GmbH, n.d.). Furthermore, the safety of users cannot be guaranteed when used. For instance, hikers who went hiking alone can encounter multiple problems such as accidents and losing their way. Moreover, security lock can hardly be seen in hiking backpack, not to mention in the model as well. Next, in case the activities involve around water surroundings, there are no guarantee that the user can survive while carrying a backpack with a heavy load. Lastly, using backpack with heavy loads can causes discomfort and pain near the user's neck and shoulder.

## **1.3 Purpose of The Study**

The purpose of the study is I want to create a more sustainable hiking backpack that able to withstand climate change. For example, countries such as Malaysia, Indonesia, Thailand and Vietnam are part of South East Asian countries. These regions that characterized by tropical climate undergo only two seasons which are wet and dry thus, we are exposed to either very hot or rainy seasons. Furthermore, to satisfy the hiking enthusiasts, I would like to ensure the safety of hikers by implementing special features into the backpacks. Other than that, security features can also be added as an extra precaution for the user and for the backpack itself. Moreover, the activities of hiking varied by the locations, so it is better to prepare an extra precaution in case the activities involved different surroundings. Lastly, backpacks should be made more ergonomic and universal so that the exertion to the body can be reduced.

## 2. COMPANY INFORMATION

### 2.1 Background of The Company

Name of the company	Deuter Sport GmbH & Company KG
Business address	Headquarters: Daimlerstrasse 23, Gersthofen, Bavaria, 86368 Germany
Sector	Consumer Discretionary
Industry	Retail and Wholesale- Discretionary
Product/ Service	Sporting Goods
Company type	Limited Liability Company Subsidiary
Date of registration	Founded: 1898 Incorporated: 2013
Website	<a href="http://www.deuter.com">www.deuter.com</a>
Company size	41-200 employees (headquarters only)

**Table 1 Basic Information of Deuter Sport GmbH**

Deuter was founded in 1898 by Hans Deuter in Aughburg-Oberhausen. Starting in the early 1900s, Deuter Sport supplied post sacks and mail bags to the Bavarian Royal Mail. After that, the company expanded in 1905 from producing linen weaving, sackcloth, freight, car and horse blankets to also include a department that offered tent rentals. In 1910, Deuter Sport began to manufacture satchels, backpacks, knapsacks, belts, mess tents and store tents for the military as there were in increasing demand for the military. The company expanded once again in 1919 and started to manufacture suitcases, backpacks, tents, and truck canopies. Although the company suffered in 1939 when all the equipment and production were taken over by the armed forces, by developing new products in 1945, they were able to expand.

Deuter first range of Nylon backpacks were produced in 1968 and becomes the new fabric norm. Throughout the years, they become a leading manufacturer in the Federal Republic of Germany with its productions (Deuter Sport GmbH, n.d.). In 2001, they managed to form a subsidiary company which is Deuter USA. After 2006, the company was owned by Schwan-Stabilo Group (Deuter GB, n.d.).



## 2.2 Organizational Structure

**Bill Hartrampf**  
President, Deuter USA



**Martin Riebel**  
CEO, Deuter USA



**Robert Schieferle**  
Managing Director,  
Deuter Sport GmbH



**Jonathan Degenhardt**  
Managing Director,  
Deuter USA



**Steve Buffinton**  
Head of Research and  
Development, Deuter  
USA



**Gerline Kaltenbrunner**  
Mountaineering  
Expert and Deuter SL  
Team Development



**Iris Devlin**  
Operations Assistant,  
Deuter USA



**Rebecca Smith**  
Marketing Manager,  
Deuter USA



**Katharina Handwerker**  
Head of Trade  
Marketing, Deuter Sport  
GmbH



**Gregor Cerwinski**  
Head of Online  
Marketing, Deuter  
Sport GmbH



Figure 1 Some employees of Deuter Sport GmbH and their subsidiary company Deuter USA

## 2.3 Products/Services

Deuter produces outdoor products such as: backpacks, bags, sleeping bag, and accessories.

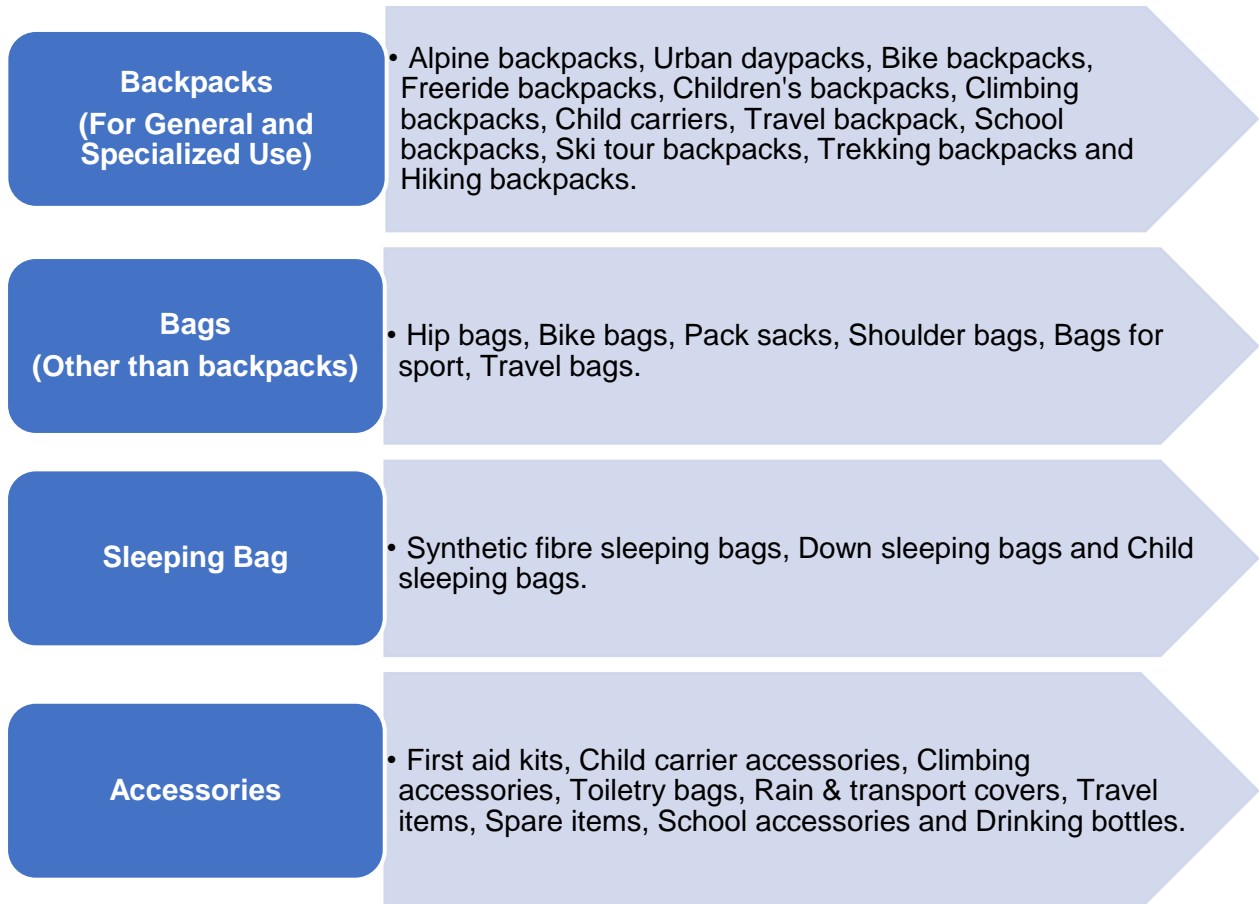


Figure 2 Products manufactured by Deuter Sport GmbH

## **2.4 Business, Marketing, Operational Strategy**

### **2.4.1 Business Strategy**

According to their CEO, over the course of the year, Deuter has been looking up for the best quality and innovative ideas for their products. They are searching for more sustainable product that can extend the lifetime of a product. That is why they use the most durable materials and construction methods, and also guarantee that their products can be repaired by them as they offer a lifetime repair services. Deuter also set themselves goals such as:

- i. Determining and trying to minimize the impact that they have,
- ii. Improving working conditions,
- iii. Adopting a holistic approach to creating sustainable products.

Other than that, they are also steadily increasing the proportion of recycled materials as their choice of materials for their collection pieces (Deuter Sport GmbH).

### **2.4.2 Marketing Strategies**

Since the company's budget are quite low, thus Deuter is not a marketing driven company (Deuter Sport GmbH). However, most of their target markets are:

- ✓ Individuals that enjoy outdoor recreational activities or mountain sports such as hiking, biking, trekking, mountain climbing, freeriding and so on.
- ✓ Athletes.
- ✓ Adults.
- ✓ Teenagers.
- ✓ Children.
- ✓ Child carrying adults (parents).

The company has expanded their business to all over countries throughout the years. They keep on doing the research and developing for more innovative ideas to satisfy their customers. They also created backpacks with version of SL (slim line) and EL (extra long) tailored for women and for people with longer backs respectively.

### 2.4.3 Operational Strategies

Deuter has been working for more than 20 years with their exclusive manufacturing partner, Duke which is based in Vietnam (Riebel, 2018). Also, their sleeping bags are also manufactured in Myanmar and China. The reason why they did not produce their product in Germany is because, elaborate and technically high-quality sewing products can no longer be manufactured in line with market prices. In addition, it is hardly possible to find enough qualified personnel for this type of sewing work – each backpack is sewed together by hand from up to 220 parts. According to their website, almost no one is trained to work as a “bag maker” or “heavy duty fabric sewer” anymore (Deuter Sport GmbH, n.d.). Other than that, the materials for high-quality backpacks, especially typical robust backpack tissue, are no longer available in Germany and Europe. However, the product development and design are carried out at the Deuter company headquarters in Gersthofen in close consultation with athletes, mountain guides, customers and the retail trade though all Deuter products are hand-stitched in Asia.

Deuter complies with Fair Wear Foundation (FWF), which is an independent verification initiative that works with companies and factories. The goal is to improve working conditions in the textile and clothing industry, especially in low-income countries. They are working hard to increase wages, reduce amount of worktime and transparent pricing. Next, as part of the bluesign® membership that Deuter started in 2008, they actively work on ensuring that our products and the entire product cycle, from planning on the computer to delivering to retail, are even more resource-conserving and environmentally friendly. A long product life cycle is the simplest and most effective contribution to resource conservation and, thus, environmental compatibility. Even decade-old products, if technically still possible, are repaired in our repair service in Gersthofen and made functional again. Deuter also joins the European Outdoor Conservation Association (EOCA) that supports environmental conservation projects. Their products are also PFC-free.

### 3. COMPANY ANALYSIS

#### 3.1 SWOT

STRENGTHS	WEAKNESSES
<ol style="list-style-type: none"> <li>1) Recognized as the leading manufacturer of backpacks, suitcases and bags in Germany.</li> <li>2) Patented the very first 'aircomfort' mesh carry system.</li> <li>3) Strong relationship with suppliers from Vietnam, Myanmar and China.</li> <li>4) Produces universal backpacks with multiple sizes and design models- SL and EL.</li> <li>5) Each unique spare parts and accessories are available separately in their official website.</li> </ol>	<ol style="list-style-type: none"> <li>1) Difficult to directly handle the manufacturing supplier if anything happens.</li> <li>2) Reducing market demand since there are a lot of rival and due to COVID-19, people can hardly go out to do outdoor activities.</li> <li>3) Products that were supplied may be late due to delay of shipment.</li> <li>4) Not a marketing-driven company so customer might not know the existent of the products.</li> <li>5) Relies on devoted and loyal retailers.</li> </ol>
OPPORTUNITIES	THREATS
<ol style="list-style-type: none"> <li>1) The products are tested in multiple conditions before being supplied.</li> <li>2) Continuous guarantee of highest quality with more innovative designs of products.</li> <li>3) Efficiently handling the growing workload.</li> <li>4) Utilizes state-of-the-art engineering and resource efficient technologies such as geothermal energy to lower the environmental impact.</li> <li>5) Target market can be more expand since the product made were universal.</li> </ol>	<ol style="list-style-type: none"> <li>1) The product can be quite pricey since the quality of the products were top notch.</li> <li>2) Knock-off products can easily be found on markets.</li> <li>3) High rivalry with other well-known companies' products.</li> <li>4) Growth in request for different types of products.</li> <li>5) Products can losses its durability over time if not taken care of.</li> </ol>

**Table 2 SWOT analysis of Deuter Sport's company**

## **4. FINDINGS AND DISCUSSION**

### **4.1 Findings**

#### **4.1.1 The backpack can no longer be waterproof and sustain from extreme weather**

In our country for example, we undergo a tropical climate which are dry and wet annually so we either go through seasons of heavy downpour or drought. Thus, if the backpack is used frequently with no interest of taking care properly, the coating of polyurethane could no longer withstand from being waterproof and moisture can easily penetrate through zips and seams of the backpack thus causing the contents inside become wet.

#### **4.1.2 Safety of user in case emergency occurs**

Another problem that I find is that, if suddenly emergency or accident occur in remote areas, there is no guarantee that the user is safe. Depending fully on smartphones can be dangerous too in case no signal coverage nearby and the battery is dead.

#### **4.1.3 Contents in the bag that is fully loaded can suddenly burst**

Sometimes, what if a backpack is fully loaded with things and suddenly it decided to burst and scattered the contents inside? It must be frustrated right? Thus, the security of the backpacks or zips could be improved.

#### **4.1.4 Unexpected situation of creek crossing or any aquatic surroundings**

During outdoor activities, we can come across a lot of things including aquatic surroundings, and sometimes we do not even know if the water surface is shallow or not. What if we suddenly slipped and drowned in the water and sadly there is no one to save us? At worse, the strong water current take place and we cannot swim?

#### **4.1.5 Shoulder straps that can cause discomfort on shoulder and neck**

Nowadays, shoulder straps and hip belts were designed with padded mesh fabric. To reduce the pain bore by the shoulder, the backpacks were developed into putting exertion of heavy load to the hip to carry and support the weight. Deuter has created systems such as The VariQuick and VariSlide System that can adjust back length. However, it can cause discomfort too.

## **4.2 Discussion**

### **4.2.1 Integrated rain cover**

One way to prevent backpack from losing its ability to repel water is by properly handling the backpacks during heavy downpour. Other than that, we should not wash dirty backpacks in the washing machine because it will tear up the fabric and thus reducing its ability to be waterproof. This might sound obvious but other than improving the backpack's fabric material, this the best way to protect the backpack during outdoor activity which is integrated rain cover. The integrated rain cover attached into the backpack can be easily reached and set up. Normal rain cover might be available but sometimes people forgot where they put it and it is troublesome to buy it separately.

### **4.2.2 Embedded personal locator beacon**

Ever heard of personal locator beacon? It is a tiny device with three levels of integrated signal technology such as GPS positioning, 406 MHz signal, and 121.5 MHz homing capability. With one touch, it can relay your position quickly and accurately to a worldwide network of search and rescue satellites. A built-in strobe light can provide visibility during night rescues (Riajati, n.d.). The example of PLB that has been in the market is The ResQLink+ as attached in the appendices. Unfortunately, it was an expensive tiny device that requires subscription. By using this idea, a mini version of distress beacon can be invented though it needs more research and development. User that came across emergency or disaster by accident can easily activate the device and your position are exposed for rescue.

### **4.2.3 A good quality zipper with a secured lock system**

Most of the time, the backpacks will be filled till fully loaded. While hiking or doing any rough outdoor activity, the contents in the bag can suddenly burst and scattered everywhere which can cause you trouble and frustration at the same time. So, to ensure that the bag won't burst and zipper to be far apart, one of my ideas is to create a unique pattern of lock made up of only zipper with extra material such as magnets and so on. It can be much more secure but not in a complex, traditional way of using key and lock.

#### **4.2.4 Inflatable life jacket that can be detachable**

If we are doing outdoor activities near aquatic surroundings, we need to be extra cautious as more incidents can happen. It is possible that while hiking, we can come across a deep river or even a shallow one. If one suddenly slipped out and drowned in the water of strong or mild current with heavy loaded bags what should we do? If this is possible, I would like to create a detachable inflatable life jacket at the shoulder straps. In case this situation occurs, the vest will automatically or manually activate themselves to inflate upon immersed in water.

#### **4.2.5 Adjustable shoulder straps horizontally**

To reduce discomfort to shoulder and back, we are encouraged to wear both padded shoulder straps than slinging with only one strap on one shoulder. Hiking backpacks are usually designed with padded waist strap or chest strap, so we need to use it as it helps to distribute the weight load to the hips while chest strap helps keep the shoulder straps in place and reduces swaying. The straps should be adjusted so that it is comfortable on your shoulder (Bumgardner, 2019). Other than that, Deuter have also created an invention of adjustable back length. The problem is, even though the padded shoulder strap can be comfortable, but sometimes people who wears it can find it unbearable since their width and shoulder broadness does not fit. Thus, the idea that I came up is adjustable shoulder straps but not ordinary adjustable shoulder straps. It is a movable system that can adjust straps horizontally so that user can adjust to their comfort. Moreover, this system can reduce applied pressure to the neck, shoulders, and back.



## 5. RECOMMENDATION AND IMPROVEMENT

According to Traynor (2019), product improvement is the process of making meaningful product that could bring new clients or increased advantages realized by regulars. The ways on how to make product improvement could be by adding new product features or by improving the present ones.

One of the most significant aspect that needs to be taken when buying or designing a product especially one that involves a life is safety. Even though there are people who enjoy doing various kind of activities may be professional but sometimes accidents can occur too. In my humble opinion, that is why I choose to develop and improve more on the safety of the backpacks.

The first features that I would like to add is a distress beacon that can be embedded to the backpacks so that in case of unexpected emergency and disaster, the user can trigger the button to activate the transmitter and a loud sound of alarm. The transmitter will send out signals accurately and gives out your position to nearby rescue satellites. After that, rescue personnel that alerted of your position will do a search for you as soon as possible.

Other safety features that I would like to add is the unique pattern of zippers. Usually, a pair of zippers will be located on the main compartment thus triggers an idea of making it clipped like a pair of magnets. When it comes to security, most lock design came out with zip holes that can be usually secured together with a combination lock. However, in this situation, using complicated with keys and lock can be quite annoying especially when you are in a haste, but you forgot the key combination or even lost the keys. Moreover, when your backpacks contents are fully load and they suddenly decide to burst can be frustrated too. And so, this unique security clip for zippers can be made to reduce the probability for these situations to happen. After all, it does not involve any usage of lock and keys, and it is simple as ABC!

Finally, the last safety features that I would like to add is a detachable inflatable life jacket. The idea popped out when I see that there are less features made when encountering aquatic surroundings. In case of drowning, the life jacket can be inflated when immersed in water either manually or automatically. Or even when you want to rest after hiking while enjoying swimming at the waterfall, you can even detach the life jacket and enjoy your swim with no worries.

Although some of the features can be quite pricey when sold separately, but if we developed and managed to design with similar characteristics, it will be good enough if it can function properly.

## **6. CONCLUSION**

As a conclusion, based on the research made on the findings and discussion, we can find out few lacking problems and ways to modified them to be better. Basically, the solutions made to overcome these lacking features are mostly focused so that the backpack designed to be safer and even provided with extra features. The ideas made includes a distress beacon, unique security zip pattern and detachable inflatable life jacket. All of these features gave a huge opportunity for me to invent a better version by solving some lacking problems that could be found while studying Speed Lite 24. The new product that will be invented should be more beneficial and give full satisfaction to the customers. By conducting this study, deep learning, keen observations and multiple brainstorming process had been taking part by considering the Speed Lite 24 as the basis. Of course, the new product invented should be more ergonomics and safe for everyone to use and comfortable to carry.

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8. APPENDICES



Figure 3 Front and back look of Deuter's Speed Lite 24



**Figure 4 ACR ResQLink+ View Personal Locator Beacon**



**Figure 5 Onyx Manual/Automatic Inflatable Life Jacket & Manual Belt Pack Inflatable Life Jacket**