
NOVA
THE FUTURE OF ADVENTURE

If happiness is the goal
– and it should be,
then adventure should
be a top priority.

RICHARD BRANSON

TABLE OF CONTENTS

INTRODUCTION

The COVID-19 pandemic shook the global economy and disrupted the fashion industry in an unprecedented way. It forced designers as well as consumers to re-evaluate their list of priorities - something that had remained relatively unchanged for many years. Even the biggest industry players were hit by the “black swan” event as demand plummeted almost overnight. Orders were cancelled and production lines were adapted to manufacture equipment for health services instead of luxury garments or cosmetics.

It was said that a miracle was needed to awaken one of the most environmentally destructive industries in the world to the reality that urgent change is needed. Maybe this “miracle” came in the form of a global crisis that causes diverse, long-lasting repercussions yet acts inclusively effecting every corner of the industry.

The relevance of the current events to the Nova-project is undeniable. The emergence of future trends concerning consumer behavior has been accelerated and it has become evident that wellbeing, emotional connection and longevity are now the driving factors of consumer decision-making.

As stakeholders at all stages of supply-chains are forced to focus on the essentials, make compromises and adapt to limi-tations, the role and importance of good design is highlighted. But what is good design?

Good design tells a story, it connects people from different times, cultures and life situations. Good design represents unique-ness while also celebrating the charac-teristics of daily life that unite people from around the world. Good design serves a purpose without drawing attention to itself, it is humble yet memorable.

GOOD DESIGN TELLS A STORY

The aim of the Nova-project was to reinvent a universal everyday item and turn it into more than just an object that is used to carry other objects. The aim was to design a companion, an object that supports, empowers and most importantly, enables lifelong adventure.

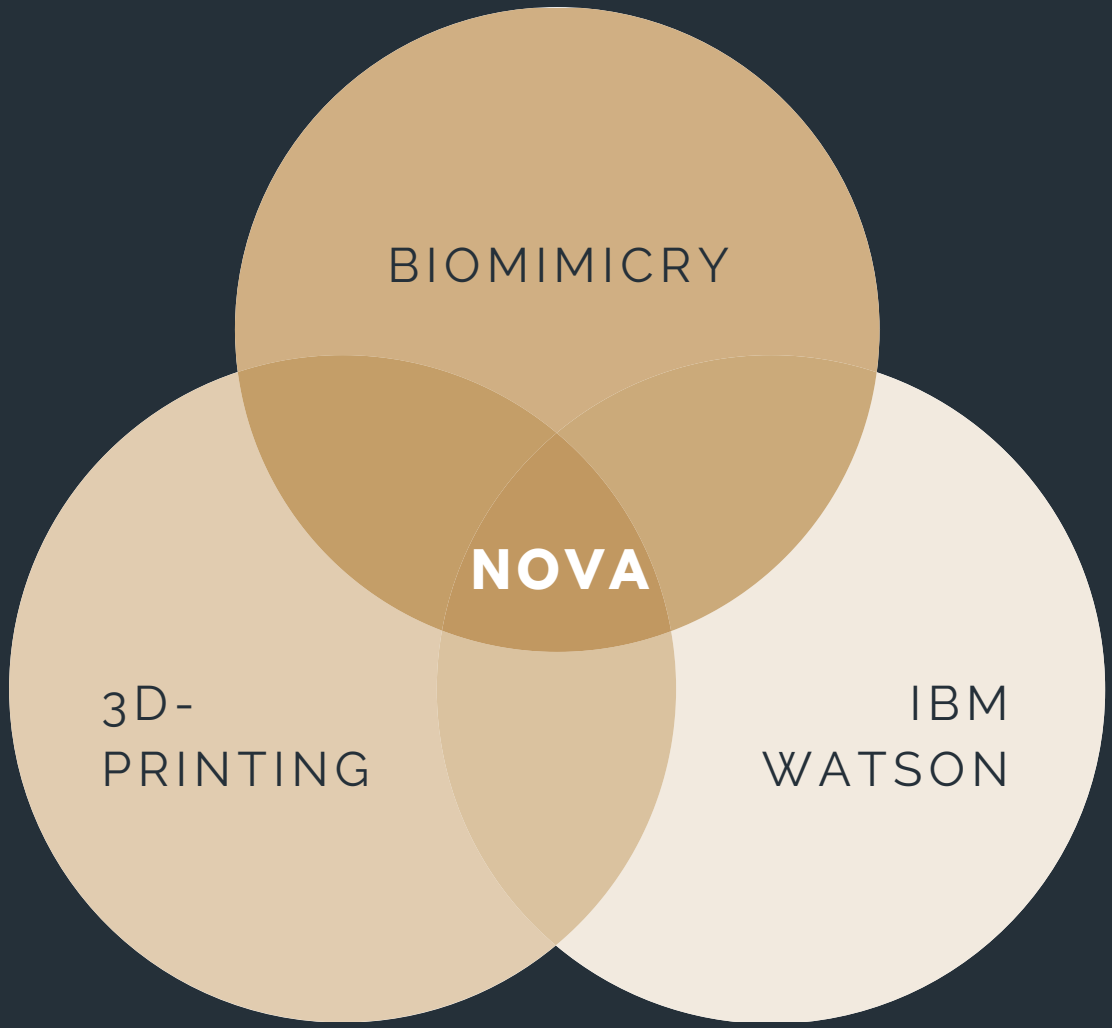
CONTEXTUALISATION

The Nova bag combines

State-of-the-art machine learning technology with the ingenuity of naturally found structures

Answering to the growing demand for customised and personalised products

In the form of a 3D-printed bag that supports posture improvement and balanced distribution of weight



FUTURE TRENDS (WGSN)

SUSTAINABILITY

"END OF MORE" MINDSET

- next gen and futuristic materials
- sustainable sourcing
- tapping into the minimalist lifestyle
- sustainability and value driving consumer demands
- reducing material waste

CUSTOMISATION

"ONE-OFF EFFECTS"

- enhancing comfort with personalisation
- gathering data using scanners and wearable sensors
- catering to the individual needs of the user with 3D-printing

PERFORMANCE

"HEIGHTENED EXPERIENCE"

- materials that react, restore and heal = support wellbeing
- structured support in activewear
- the "human upgrade" trend
- wellness properties embedded into fibres

SURVIVALISM

"ADAPTABILITY WILL BE KEY"

- prioritising strenght and durability
- light-weight fibres = resilience and endurance without bulk
- combining performance and agility with practicality
- products that are built for survival

USER PROFILE

VANESSA

EDUCATION

BSc INFORMATION TECHNOLOGY

(WORKING PART-TIME FOR A SOFTWARE COMPANY)

HOBBIES

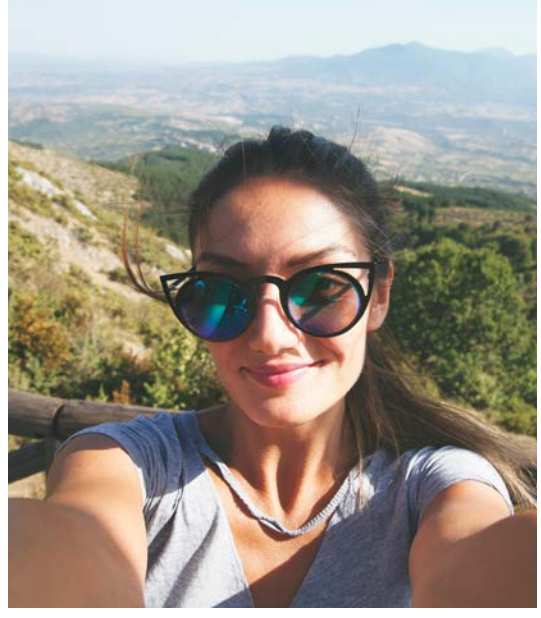
- BICYCLING
- YOGA
- HIKING
- VIDEO GAMES

INTERESTS

- PHOTOGRAPHY
- HISTORY
- TRAVELLING
- FASHION

VALUES

- HONESTY
- QUALITY
- HEALTH
- HAPPINESS
- PEACE



EMPATHY MAP

VANESSA

Does

- Packs her bag in the morning
- Goes to yoga after work
- Goes hiking with friends
- Goes on weekend trips

Thinks

- Did I remember to pack everything?
- About trip to Croatia
- What do I need to pack today?
- What is the weather going to be like?

Feels

- Excited, motivated
- Adventurous
- Sweaty, tired
- Stressed, unorganized

Says

- Can I have coffee?
- What time is our meeting?
- Where should we go hiking next?
- What do you think of my new shoes?

PROBLEMS

AND SOLUTIONS

Problem 1

Bag is too heavy, uncomfortable to carry and the straps don't offer enough support.

Solution 1

The straps and posture support system is 4D-printed to match the unique needs of the user. The bag will be co-created with the user.

Problem 2

The colour of the bag doesn't coordinate with my clothes.

Solution 2

The outer surface of the bag is programmable: it can be customized by the user to coordinate with their closet. There are no distracting patterns or logos.

Problem 3

I don't like changing my bag according to the occasion and size I need.

Solution 3

The user no longer has to have a different bag for every occasion. The structure and capacity of the bag can be modified and changed according to the needs of the user.

SCENARIOS

The following two scenarios are snapshots of Vanessa's life. The scenarios demonstrate the effects of the Nova bag on Vanessa's holiday experience. The first scenario is without the Nova bag and the second scenario describes the experience with the Nova bag in use.

AS IS...

Image: Unsplash

At the beginning of their university studies, Vanessa and her friends had decided that they would book a hiking and canoeing trip together after they graduate. During their last year, they started scheduling meetings to plan the holiday and decide on the location. They finally reached an agreement and booked their trip to Croatia.

Vanessa has planned everything out carefully. However, she has forgotten one critical item; how was she going to carry her camera, her water bottle, earphones and her portable charger during their day-long hikes in Croatia?

Image: Unsplash

She has her suitcase, her carry-on tote and her cross-body bag but none of those is suitable for hiking. She quickly opens her laptop, types in ‘backpack’ and orders herself a camping-style backpack from a store that specialises in outdoor wear. A week later her new bag is delivered, and Vanessa packs it into her suitcase.

Image: Unsplash

A few days after the group has arrived in Croatia, it is time for their first hike. Vanessa packs her water bottle, some snacks, her headphones and camera, her phone and her portable charger. She also packs a change of socks, some plasters in case of blisters, a cap and a jacket. She lifts her bag and tries it on her back. It feels heavy and a little bit uncomfortable.

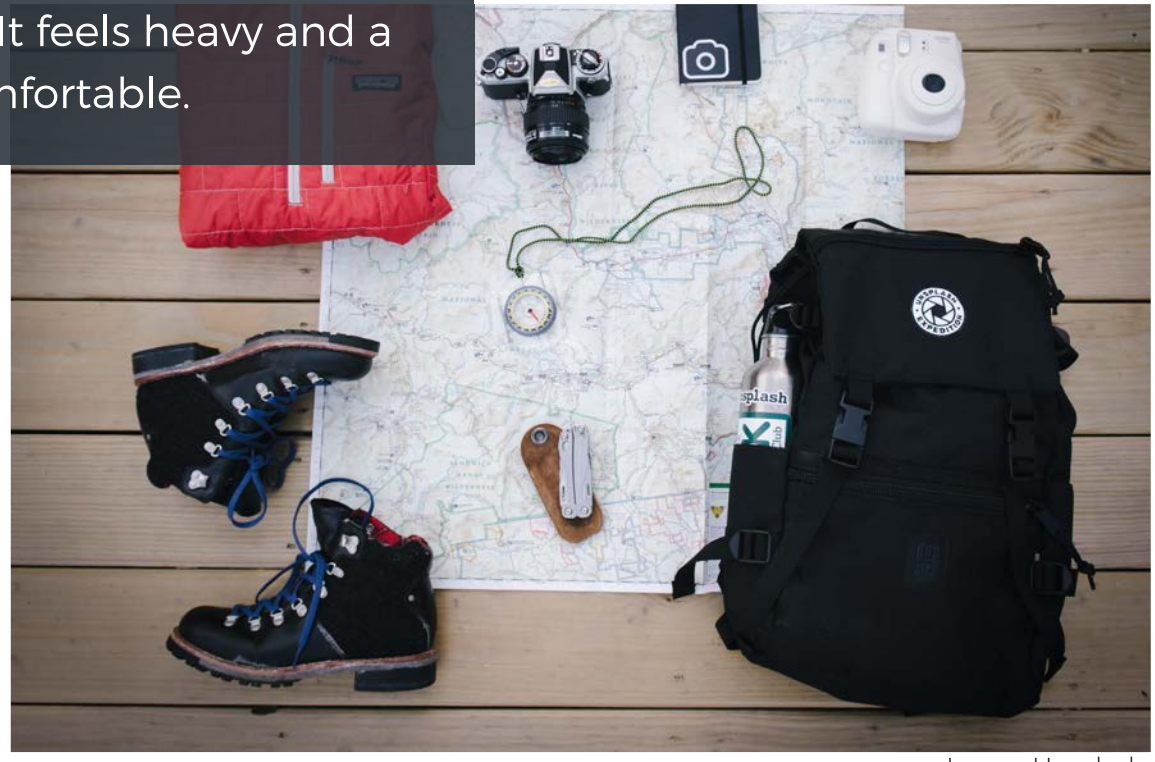


Image: Unsplash

The group arrives at the starting location and the set off on the hike. After only a few miles, Vanessa's back begins to hurt. The bag is too heavy, and the straps are digging into her shoulders. She tries hard to keep going but soon realises that she will have to turn back.

Image: Getty Images Pro

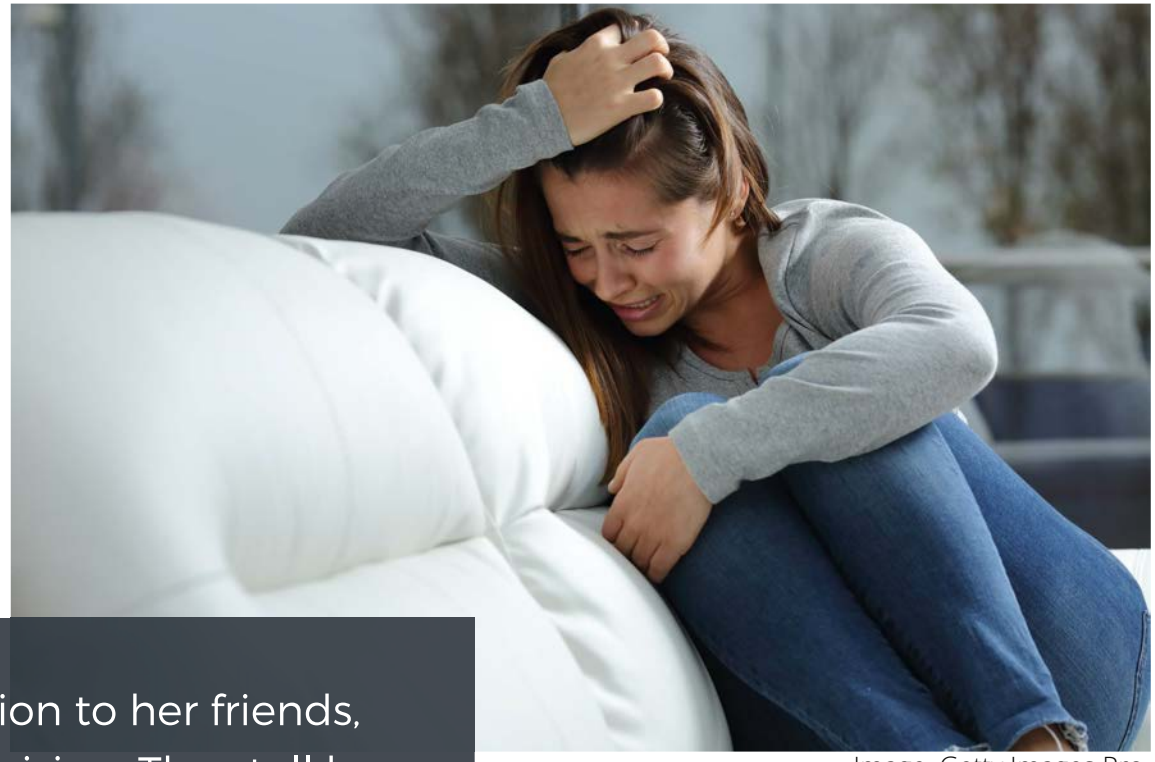


Image: Getty Images Pro

She explains the situation to her friends, and they support her decision. They tell her to wait for them to get back to the hotel in the evening. With a heavy heart, Vanessa waves her friends goodbye and wipes a tear off of her cheek. She returns to the hotel feeling left out, disappointed and frustrated.

TO BE...

Image: Pexels

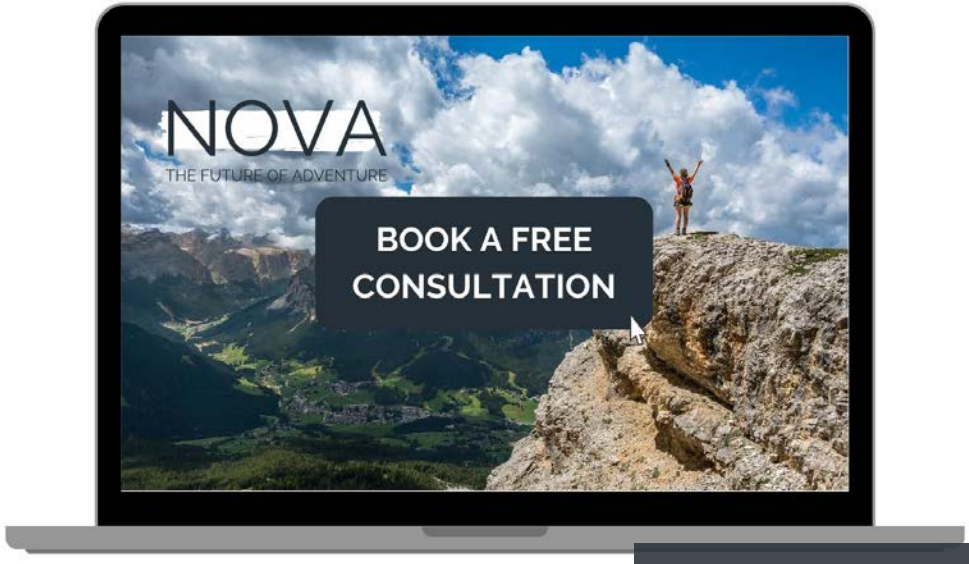
At the beginning of their university studies, Vanessa and her friends had decided that they would book a hiking and canoeing trip together after they graduate. During their last year, they started scheduling meetings to plan the holiday and decide on the location. They finally reached an agreement and booked their trip to Croatia.

Vanessa was feeling excited; she started making a packing list and preparing herself for the holiday she had been dreaming about for the past three years. She was not an experienced hiker or trekker, and she has been searching online for tips on how to prepare for a more extended hiking holiday.

Image: Pixabay

Image: Getty Images Pro

While scrolling through travel blogs, she came across a post titled “Nova Bag: the Future of Adventure.” She read the post that talked about how the author had purchased a custom-made bag that corrected and supported her posture, enabled a balanced distribution of weight and allowed her to wirelessly charge her phone on the go.



Vanessa continued to read more about the Nova bag on the brand website. She was able to find all the information she needed and also read numerous customer testimonials. She decided to book an appointment for measuring and scanning through the website and shortly after received her booking confirmation with the details of her appointment.

A week later, Vanessa arrives at the Nova scanning point. She is welcomed by the sales advisor and instructed to step into the scanning device. The advisor connects the sensors to her back and neck area as well as her hands and legs. Vanessa's measurements are then traced by the sensors, and a detailed image of her body emerges onto the screen.

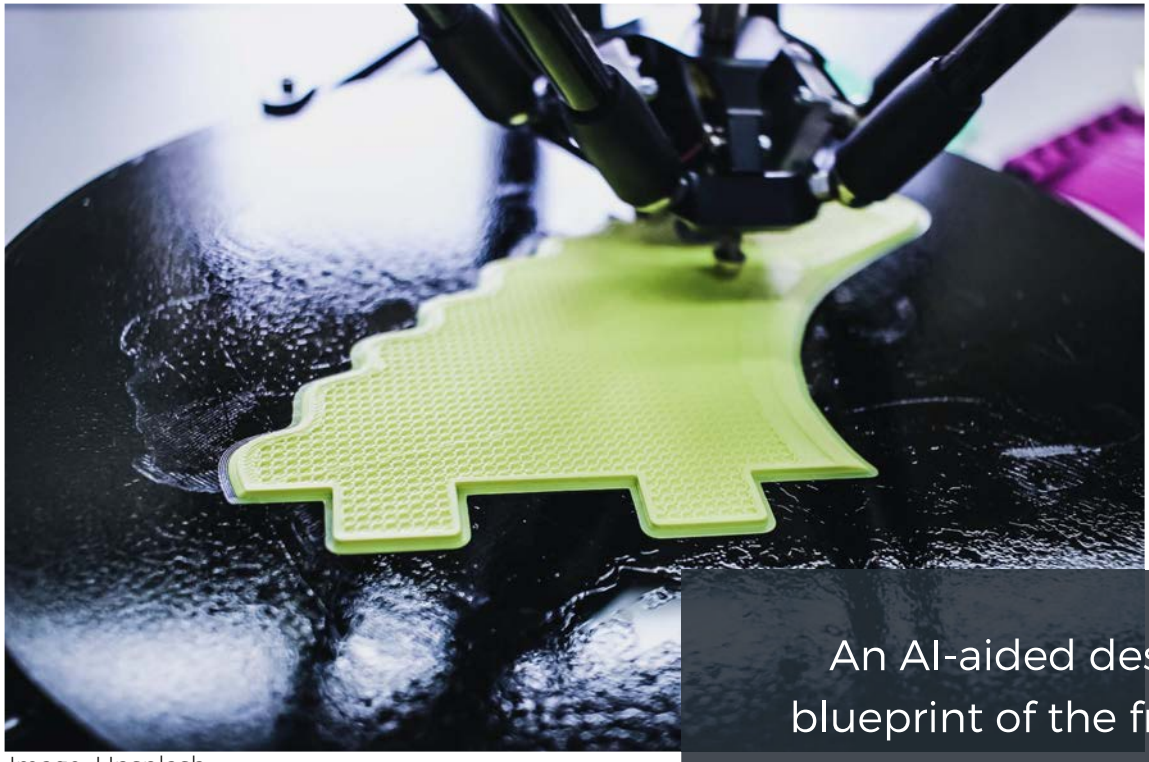


Image: Unsplash

An AI-aided design process creates a blueprint of the frame that will form one component of the backpack. The frame is tailormade for each user. It is powered by kinetic and solar energy to adapt and change shape according to the movements and needs of the user. The silicone frame is manufactured on-site by a state-of-the-art 3D-printer.

While Vanessa waits for the component to form, the sales advisor explains the functions of the bag: “You are the co-creator of this bag” she smiles. “You can change the colour and size of the bag; you can also make it reflective if necessary. It will be powered by energy harvested from the sun and your movement; you can use that energy to charge your devices as well. It will immediately begin to improve and support your posture. It will make you feel strong and confident. Think of it as a silent companion on your adventures.”

A few days after the group has arrived in Croatia, it is time for their first hike. Vanessa shows off her new bag to her friends while packing her water bottle, some snacks, her headphones, camera and phone. She lifts her bag and tries it on her back. It feels comfortable and balanced, it supports her back, and she can feel how the bag adapts to the weight of the load and distributes the weight and pressure equally.

Image: XiXInXing

The group arrives at the starting location and the set off on the hike. The bag on her back feels supportive, and after a few miles, Vanessa stops at the edge of a cliff to enjoy the beautiful view and take a few photographs of her friends. She notices that the power of her camera battery is running low. Luckily her new Nova bag has a pocket that allows for the charging of electronic devices. She slides her camera into the charging compartment and lifts her bag back onto her back. The bag tightens “connecting” onto Vanessas back for a supportive and comfortable fit.

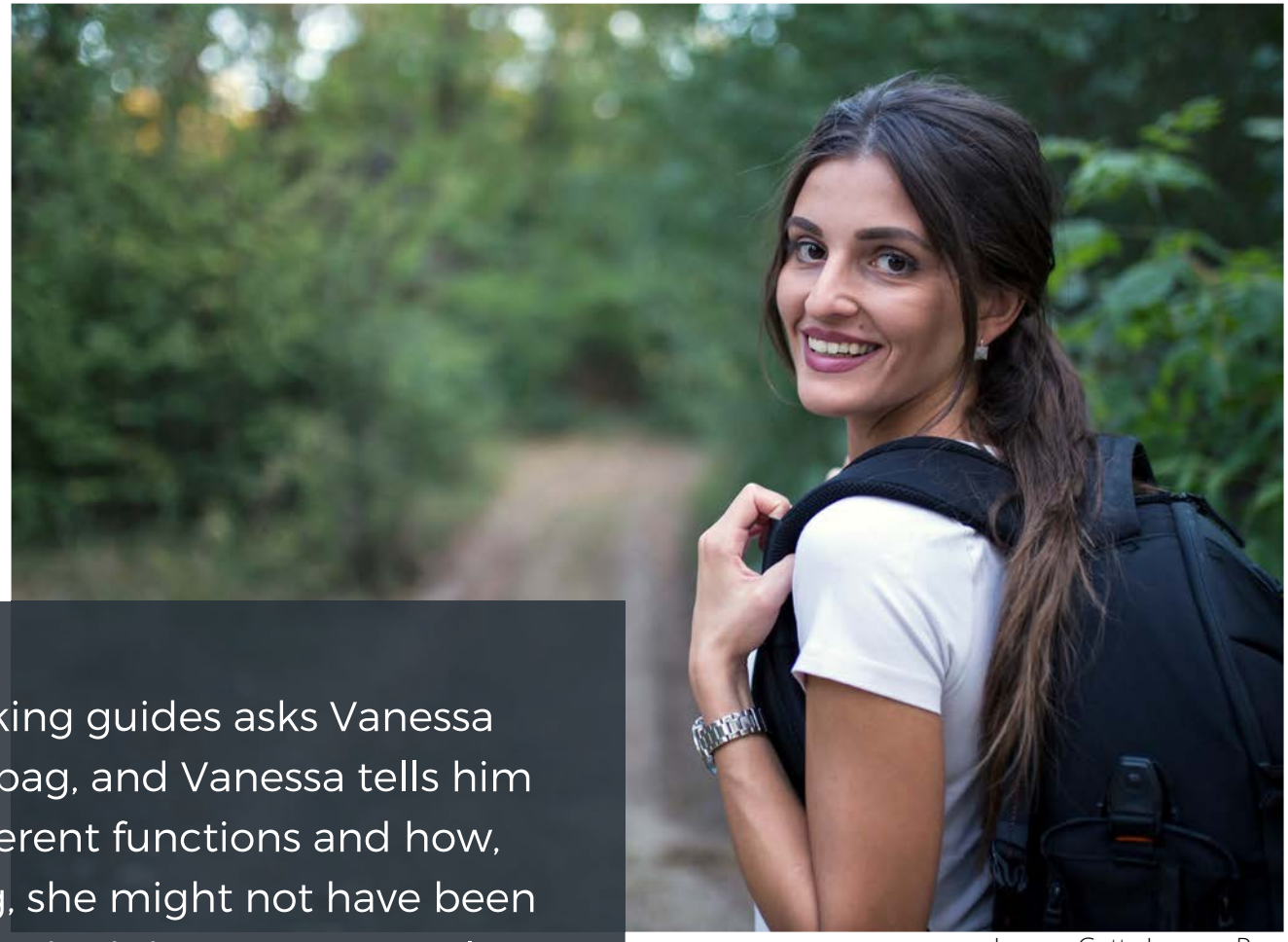
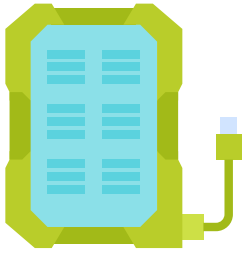


Image: Getty Images Pro

One of the hiking guides asks Vanessa about her new bag, and Vanessa tells him about the different functions and how, without the bag, she might not have been able to manage the hike. Vanessa smiles confidently at the guide:

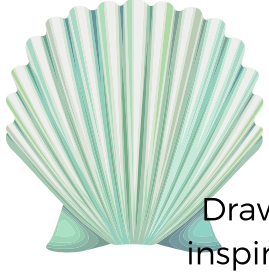
“This is more than a bag to me.”

DESIGN
DEVELOPMENT

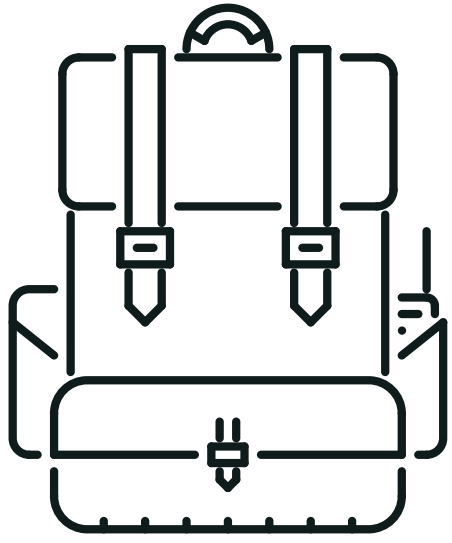


Using kinetic and solar energy for built-in power sources to enable adaptability functions and charging of user devices

Using recycled materials in the additive manufacturing process



Drawing architectural inspiration from natural structures



Integrating tailor-made, adaptable components that offer maximum posture support and weight distribution

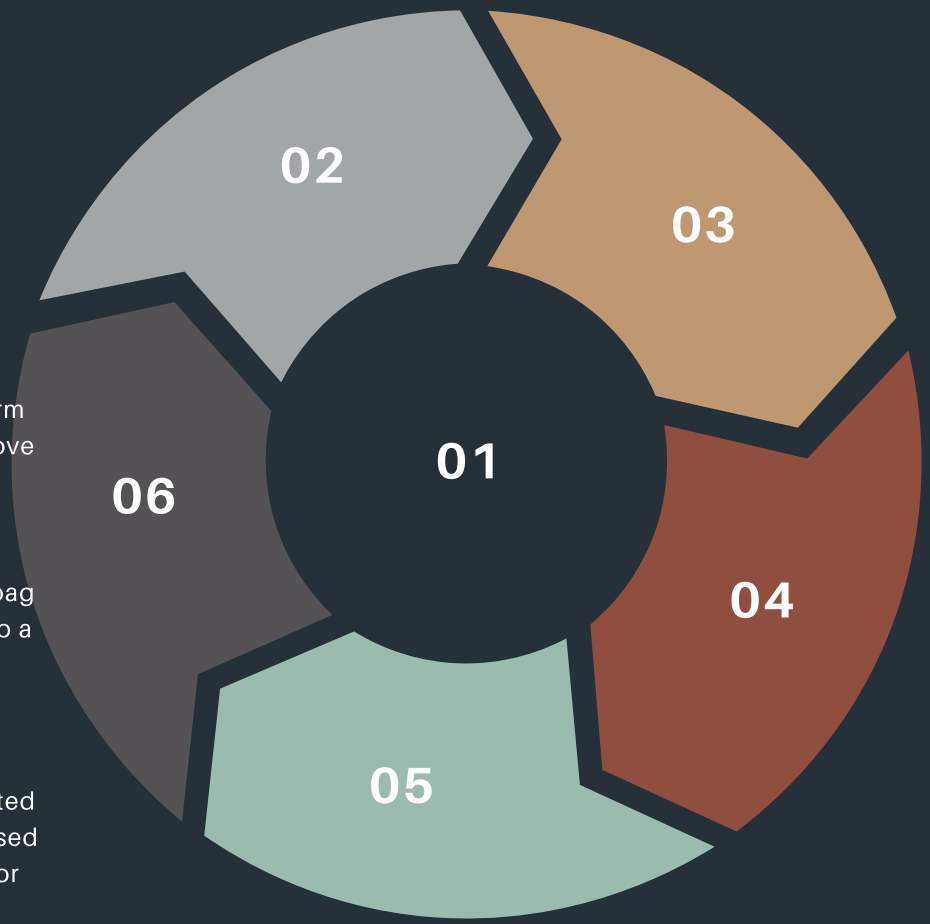
Image: www.3dprint.com

Using IBM Watson to create dynamic user profiles through machine learning

The growing ubiquity of 3D scanning, printing, artificial intelligence and wearable technologies will push brands to incorporate a greater level of user input into the production cycle. In addition to making the shopping experience more fun and interactive, customers will enjoy the satisfaction that their purchases are uniquely made to measure.

(Mintel 2019)

PRODUCT LIFE CYCLE



Stage 1

User books a consultation appointment to find out more about the product and for initial scanning.

Stage 2

A user profile is created and based on the users needs the frame is manufactured through 3D-printing.

Stage 3

The user uses the bag in various situations, adapting it for each occasion. The bag collects data and begins adapting to changes faster and more accurately.

Stage 4

The software within the bag uses the IBM Watson platform to gather insights and improve the user experience.

Stage 5

After years of enjoying the bag the user wants to upgrade to a newer model.

Stage 6

The bag can be deconstructed and the material can be reused to manufacture a new bag for the user. Using the dynamic user profile the fit will extremely accurate and the user data can be transferred straight into the new bag.

IMPLICATIONS

The Nova bag is designed to enhance life; for an individual but also on a macro-level. Because the user is involved in every stage of the product life cycle, a stronger emotional bond between the product and the user is formed. As a result the bag becomes a trusted companion.

By sourcing recycled materials and promoting life cycle thinking it contributes to positive change. Nova also creates a sense of togetherness as it gathers data from its users and uses that data to further benefit the community;
to enable new adventures.

Image: Pexels

WHAT'S NEXT?

IBM CAKE ROADMAP

STEP 1

Contacting specialists in the areas of 3D-modelling, 3D-printing and material technology

STEP 2

Building team of experts, prototyping and testing materials, developing the software the design

STEP 3

Pilot testing the prototype for proof of concept, pitching to investors to raise funding and further develop the product