

BLACKWING.



TEAM PROFILE

TEAM NAME

The name "**Blackwing**", inspired by **crows** and **ravens**, symbolizes **intelligence and agility**. Like them, we think fast, adapt, and move.

We're more than just a team, we're a team of thinkers who believe in pushing our boundaries. Every millisecond, every adjustment/fix, every decision, it all matters. Our motto says it all: "**elevating performance, defining speed, chasing excellence**".

Blackwing isn't just a name though, it's **how we work, how we think** and **how we soar**.

TEAM FEATURES

Now, we're focused on showing **creativity, innovation, and design** to achieve our goal whilst maintaining a **sleek, professional look**. To achieve that, we carefully chose our fonts, color scheme and overall design.



- **Poppins** is great for headings and paragraphs. It just screams elegance.
- **Horizon** was chosen by us for our big headers and well, our full logo. Just classy and bold.



We chose **black (#000000)**, **grey (#4D4D4D)**, and **white (#FFFFFF)** for our palette.

- **Black** symbolizes our **strength, determination, elegance** and **wits**.
- **Grey** stands for **balance, precision** and **simplicity**.
- **White** represents **purity, perfection** and **positivity**.

OUR VISION

As a team, we're all about

- **sustainability** and bringing a **classy, clean, simple, and elegant touch** to everything we do.

Through this, we've built our social media, car and our image which reflects our standards.

Sustainability is huge not only for us but, the environment. We make eco-friendly choices wherever we can. We aim to lead by example through our classy, clean, and elegant identity, inspiring others to be **innovative and sustainable**.

TEAM LOGO

A first impression is a must when presenting anything in any form, It defines who we truly are and what we do.

Logo Design #1:

Version #1



- In our first design we used **horizon**, with a **bird** to symbolize **speed and stealth**.
- This logo **lacked the uniqueness** as the font didn't show originality. Nonetheless, it served as a good base to start on.

Final Logo Design #2:

Version #2



- The second design made upon the previous logo with more professionalism and uniqueness without the font.
- It exceeded our requirements. Our graphic designer made it look easy to remember and clean.

ABOUT US

OUR MOTTO

Our team lives by a simple motto:

"Elevating Performance, Defining Speed, Chasing Excellence."

For us, this isn't just words, it's how we approach everything we do.

- "**Elevating Performance**" means we're always **pushing to be better**, aiming for higher standards in every detail.
- "**Defining Speed**" isn't just about raw speed, it's about achieving it through our unique, classy, and sleek design.
- "**Chasing Excellence**" means we're constantly **going for perfection** in all our work. It's the core of who we are.

MEET THE TEAM

Our team has 6 members :



Shashank S.	Dheeran K. C.	Manvir S.	Himani B.	Anas M.	Pallav.V
Team Principal	Graphic and CAD Designer	Chief Engineer	Marketing Manager	Sustainability Director	Resource Manager

Each member played a crucial role in the smooth functioning of our team, and played a vital role in our project.

TEAM UNIFORM

The uniform/jersey is a very important aspect in terms of our team features. We've gone for **black** as our majority and **white/gray** as our minor colors.

In terms of sustainability, we made the uniform such that it's suitable to re-use and wear the uniform in public. This approach not only **saves the environment** by reducing waste, but also **brings recognition** to our sponsors and our team.



FRONT VIEW



BEHIND VIEW

PROJECT MANAGEMENT

PROJECT TIME

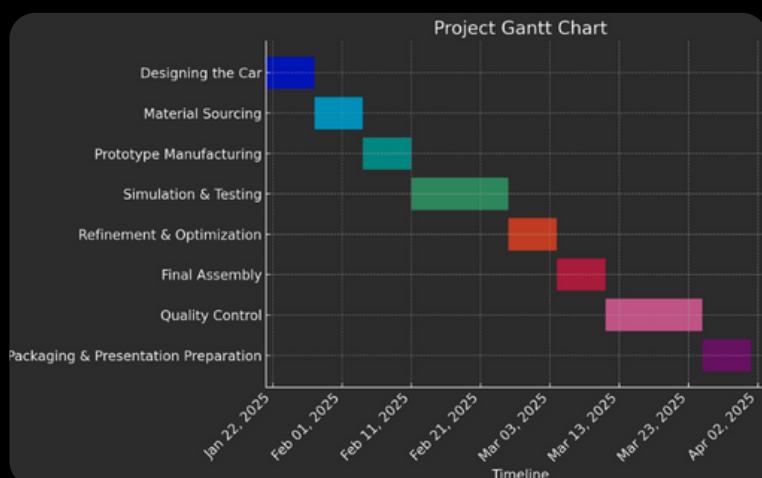
Our project timeline spanned from January to June. In that period, we focused on finishing our tasks whilst meeting deadlines and assigned responsibilities using a team Google Sheet.

- Regular check-ins ensured steady progress and accelerated task completion.
- We held team meetings to address challenges and collaborate on our strategies.
- Engaging in discussions, sharing ideas effectively, and maintaining coordination between the team, accelerated our progress.

Category	Task	Responsible	Deadline	Progress	Notes
Engineering	Front Wing Refinement	Anas M. / Pallav V.	-	Hold	
	Wheel Manufacturing	Manir S.	-	Done	
	Rear Wing Optimization	Shashank S.	-	Done	
	3D Printed Components	Anas M. / Pallav V.	-	Done	
	Final Car Rendering	Dheeran CH. / Manir S.	-	Late	
	Logo Evolution	Dheeran CH.	-	Late	
	Brand Color Palette	Himani B. / Shashank S.	-	Done	
	Uniform Design & Production	Dheeran CH.	-	Done	
	Merch Concept Development	Dheeran CH.	-	Hold	
	Social Media Campaign	Himani B. / Shashank S.	-	Done	
Team Identity	Brand Leaflet Creation	Himani B.	-	Late	
	Design Finalization	Everyone	-	Done	
	Design Input (CAD)	Anas M. / Pallav V.	-	Hold	
	Full Background Print	Himani B. / Shashank S.	-	Done	
	Colored Decal Printing	Anas M. / Pallav V.	-	Done	
Pit Display	Display Design Execution	Himani B.	-	Done	

We created a **Gantt chart** for our project to **monitor our progress**.

- This chart was made using **python**, a coding language we were experienced in using **Matplotlib**.
- It **shows our planning** and data skills by helping us track how long tasks take, how we use our resources, and manage the full project schedule in a clear way.



RISK MANAGEMENT

During *qualifying*, we quickly learned how crucial it was to *identify potential risks early*. If we didn't, there was a higher chance the project wouldn't stay within our financial limits, be completed on time, or meet our standards.

To tackle this:

- When planning our sprints, we first looked into all the tasks that needed to be done.
- For relevant tasks, we conducted a Strength, Weaknesses, Opportunities and Threats (SWOT) analysis.

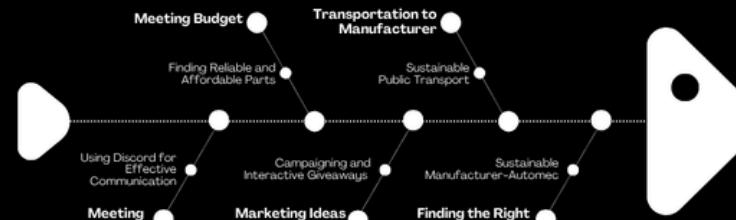
RISK IDENTIFICATION

For *Risk Identification*, we pinpointed potential dangers throughout design, manufacture, and testing, allowing us to put preventative measures in place immediately.

This was crucial for:

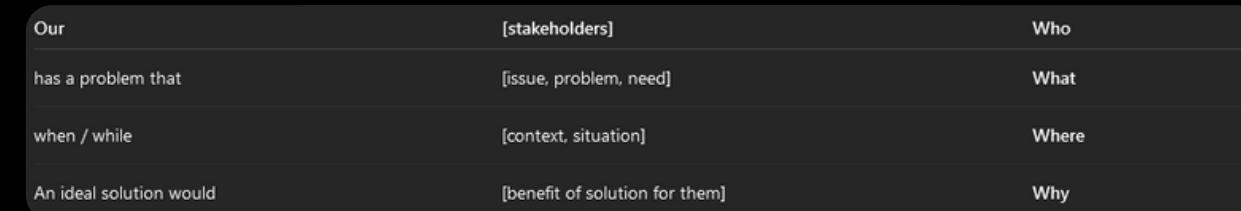
- Helping us stay precisely on schedule.
- Significantly boosting our overall project success through careful planning.

PROBLEM SOLVING



- For *problem management* and solving, we used the **Ishikawa or Fishbone diagram**. It is a tool for identifying problems in a system by linking the causes to the effects. Developed by Kaoru Ishikawa, it solves complex issues using the 6m's, manpower, mother nature, methods, machinery, materials and measurement.

PROBLEM SCOPING

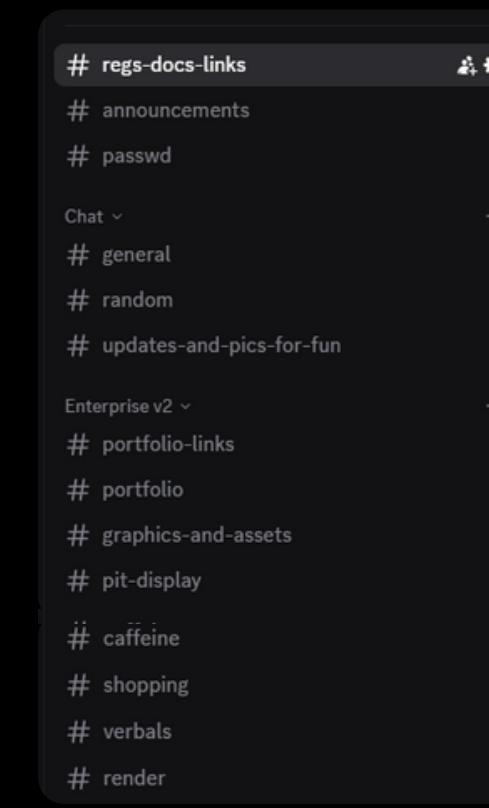


The *4Ws Problem Canvas* helps identify key elements of a problem by answering: **Who** are the stakeholders, **What** the problem is, **Where** it occurs, and **Why** the solution benefits the stakeholders. It guides clear understanding of the issue, its context, and the value of the proposed solution. We used this in our Problem Statement templates.

COMMUNICATION

We utilised *Discord* (below) as our communication platform, making dedicated channels to organise tasks and topics.

- This allowed us to separate discussions by focus areas, ensuring clarity and productivity.
- Discord's versatility across sharing files and division of information enhanced our teamwork and the overall collaboration process.



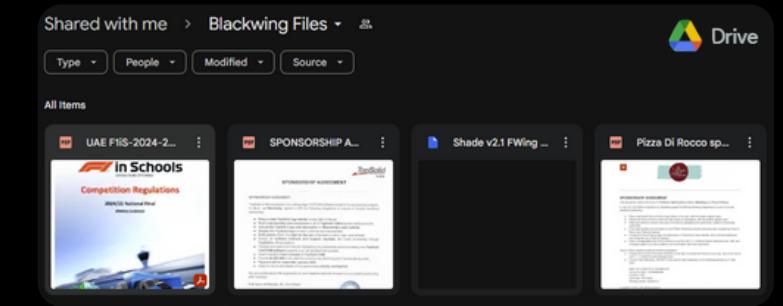
FILE SHARING

For **sharing** all the important documents and files, we used *Google Drive*. *Google Drive* enabled team collaboration through its shared document feature, which let us jointly edit documents.

It ensured that everyone in the team was kept in the loop and that there were no misunderstandings.

We used this file format for sharing the names of car files:

'Car name' + 'Version' + 'Brief notes'

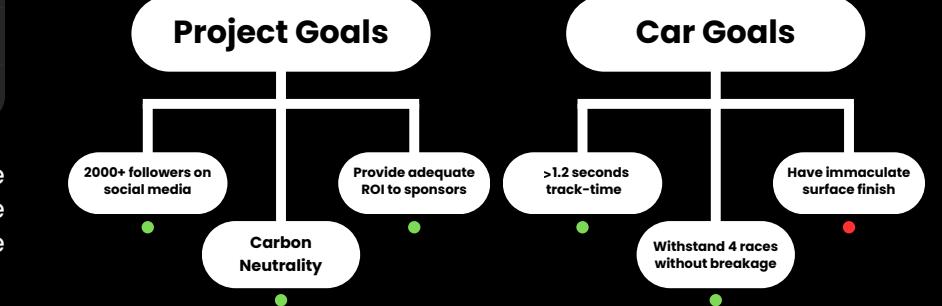


QUALITY CONTROL

We had a simple rule for quality, *every task had to be top-notch*. This meant everyone involved had to give their absolute best and deliver their part on time. While it sometimes made tasks take a little longer, *it guaranteed every piece of our project was done*.

DELIVERABLES	QUALITY CONTROL PROCESS	STAKEHOLDERS
PIT DISPLAY LAYOUT	Check structure, and design consistency with branding before printing and setup	GRAPHIC DESIGNER TEAM PRINCIPAL
ENTERPRISE & ENGINEERING PORTFOLIOS	Review layout, clarity, and accuracy; ensure visuals and content align with brand image.	CAD ENGINEER MARKETING MANAGER GRAPHIC DESIGNER
QUALITY AND FINISH OF CARS	Inspect surface, weight, and structure for precision and competition compliance.	CHIEF ENGINEER CAD ENGINEER
MAINTAINING TEAM IDENTITY	Ensure consistent branding across all platforms, including uniforms, pit, and social media.	TEAM PRINCIPAL GRAPHIC DESIGNER MARKETING MANAGER

GOALS



SUSTAINABILITY

Encorporating SDGs

We realized that the main way to incorporate sustainability in our day to day life's was to work towards the **SDG Goals**, so here are some of the SDG goals that our team has applied to our life's as well as in our teams progress.



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Blackwing supports SDG 8: **Decent Work and Economic Growth** by making sure everyone is always working. We give our team a chance for each and every aspect of our journey, whether it's the car or the socials.

We encourage innovation within ourselves. Our *design, engineering and testing* have to be at a level that cannot be outperformed by any car. This *promotes the culture of creativity, problem solving and future readiness skills*.

One of our *main goals* is to **reduce the intake of materials**, which is why we only use resources when required. *Overconsumption can result in depletion of resources*, and can also *result in pollution* if proper disposal is not ensured. All of our models that are produced are necessary, and all of our physical prototypes are absolutely vital to our project.

PLASTIC COLLECTION CAMPAIGN

We also coordinated with the members of our community to do a quiet plastic collection from the comfort of their own homes. The plastic collected was used in creating recycled plastic filaments for our prototyping, and the excess will be donated to the school who have organized a partnership with EEG organization, to choose our planet before a plastic bag or bottle.



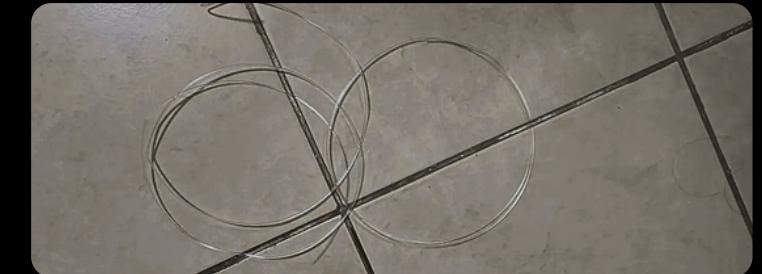
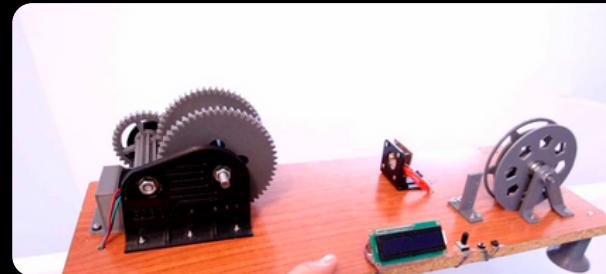
#PlanetOverPlastic

RECYCLABLE PIT DISPLAY

Our pit display banner and table decor are made of recyclable materials. This adds into our branding principle of sleek and sustainable innovation. By choosing eco-friendly options, we reduce waste and promote a greener future. Our designs seamlessly integrate style and sustainability, proving that high performance can coexist with eco-consciousness. Each element of our display reflects our dedication to quality and planet-friendly practices.

PET BOTTLE RECYCLING

As a part of our sustainability efforts, we collected over a 100 plastic bottles and recycled them into high quality, affordable filament for our 3d printers. This was done with a Bottle-to-filament recycler, designed by Electronoob. The leftover bottles were given to EEG for more recycling.



CARBON NEUTRAL

We are a carbon-negative team. We utilise public transport to get to and from meetings and places. To offset the carbon footprint generated from our research, development, transportation, and manufacturing processes, we planted 20 saplings (with the help of Teamtrees).

Our total footprint came to about 18 metric tonnes of CO2. Assuming that all of the saplings turn into healthy trees (as each tree can offset about 0.96 metric tonnes of CO2 across its lifetime, Arbour Foundation), we would be a carbon-negative organization.

SOCIAL MEDIA

We also campaigned for sustainability and awareness through our social media pages, by posting stories related to sustainability, launching a fundraiser for trees, and calling for plastic bottle drives.



MARKETING

SOCIAL PRESENCE

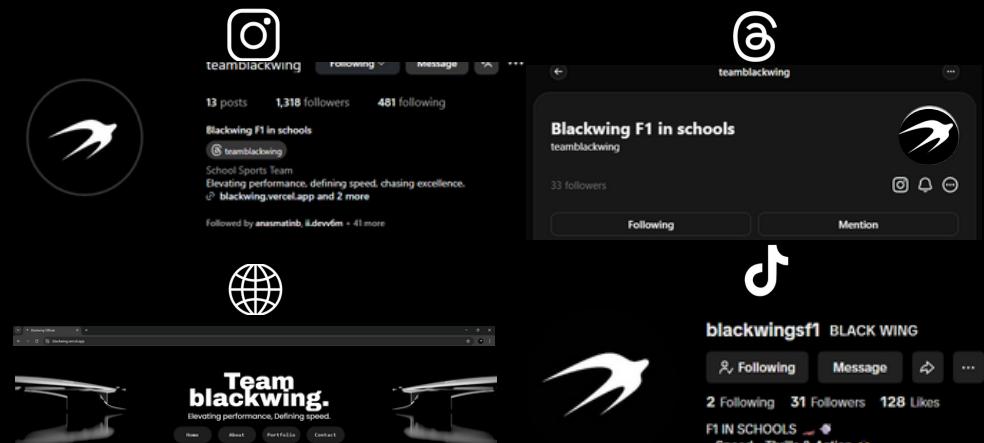
To boost our digital marketing, we put up constant updates and posts up on our Instagram page, as well as our LinkedIn and TikTok page. The support we receive inspires and drives us to keep moving forward and to help the upcoming motor enthusiasts to pursue their dreams as well.

Step 1: Identifying the Target Audience.

Being teenagers ourselves, we went into marketing with a clear idea of what our demographic found interesting- what they found interesting, their preferences, what they would shell out money for. Since the competition F1 in schools is for teenagers, we found it intuitive to appeal to them, and tailor our approach to what they would pay attention to. This went hand in hand with one of the objectives of our sponsors, that is to reach teenagers, as they were recognized as a valuable, rapidly growing target audience.

Step 2: Recognising Audience Preferences

Our plan was to take advantage of social media platforms like Instagram, Tiktok, and Youtube, where teenagers like us spent a lot of our time. We talk to them in their language- using relatable content that is in fashion with current trends, aiming to create genuine engagement with our audience. We planned to build a sense of exclusivity and personal connection through limited-edition items, immersive content and opportunities for the audience to feel like they are a part of our team; one big family.



Step 3: Matching the plan with marketing

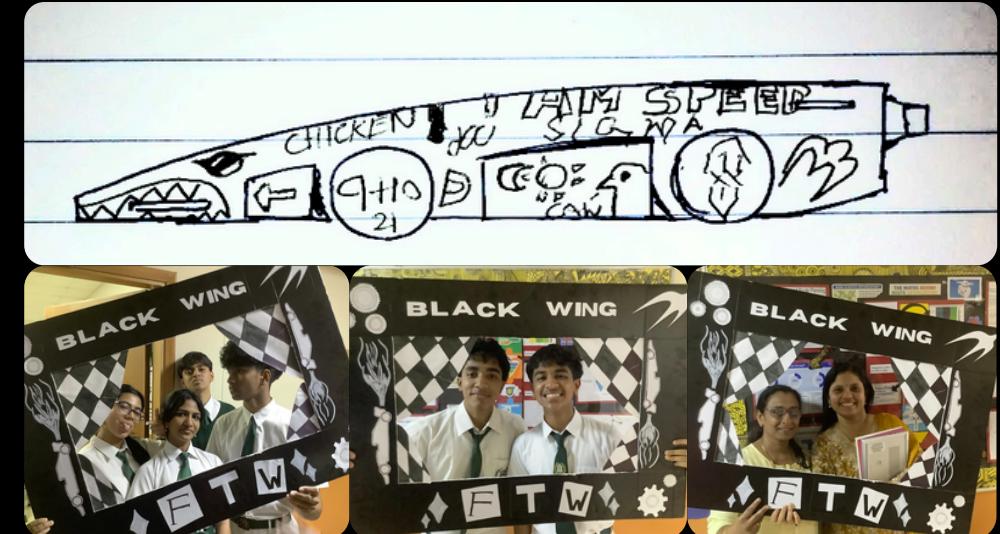
We used multiple social media platforms such as Instagram, TikTok, LinkedIn, GitHub, Threads and our Website. On these accounts, we posted clips and montages of team collaboration and development of the cars. We posted regular updates on our stories and made new posts for major milestones such as declaring new sponsorships or releasing our merchandise. Along with that, we conducted events and marketing stunts.

With further collaboration in our school, we were able to expand into a larger fanbase inside the school, gaining publicity from peers and teenagers, maintaining our relevance and instilling our ideals into these communities.

INTERACTIVE FAN EVENTS

To make fan interactions successful, we organised activities in our school to make our peers feel more involved. **On days that we did activites, we averaged more than 20 follows a day, compared to the normal 5-6.**

- Frames, for fans to take pictures in.
- Along with a fan livery board, so fans can contribute to a livery. (recreation, right)



STEAM RACING AROUND THE WORLD

As a part of our marketing strategy, we partnered with other teams to form an international alliance of teams in the F1 in Schools competition, from all around the world such as Brazil, China, Saudi Arabia, Mexico and Australia.

We are planning to create content related to our engineering, design, and entertaining skits with these teams to boost coverage for this competition. This alliance shows the team's cooperation, sportsmanship and stride for overall benefit.

This collaboration will be highly beneficial, as it will attract an international audience of teenagers keen on STEM, on which we can further project more targeted marketing.

FINANCE

BUDGETING

We require good budgets to be successful, and we ensure to spend money well on every aspect of our projects. Our expenditure table reflects that we spend most of our money on significant areas such as creating, testing, and presenting.

We spend most of our money on creating exact parts and components which assist with air flow, such as the wings, to enhance performance. We covered the cost of all the tests, and we could test and refine our car design.

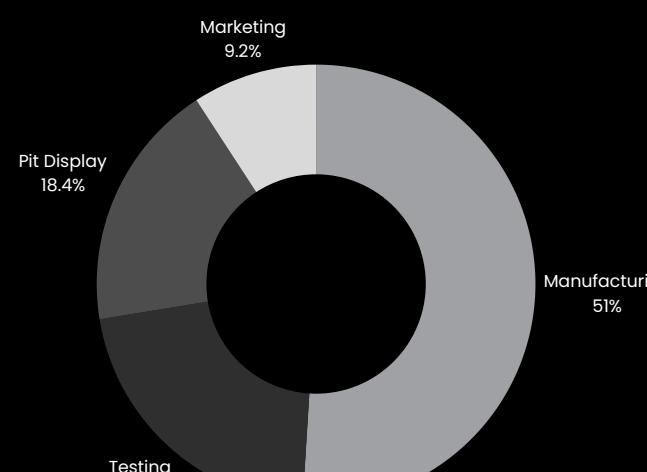
We spent a significant amount of our budget on our pit display. It demonstrated that we pay attention to appearance and wish to appear professional at the competition. We spent our marketing budget on contacting potential sponsors and advertising our brand.

Being realistic and flexible was of benefit to our team regarding the cost plan, so each spent dirham creates added value and makes the end product more competitive.

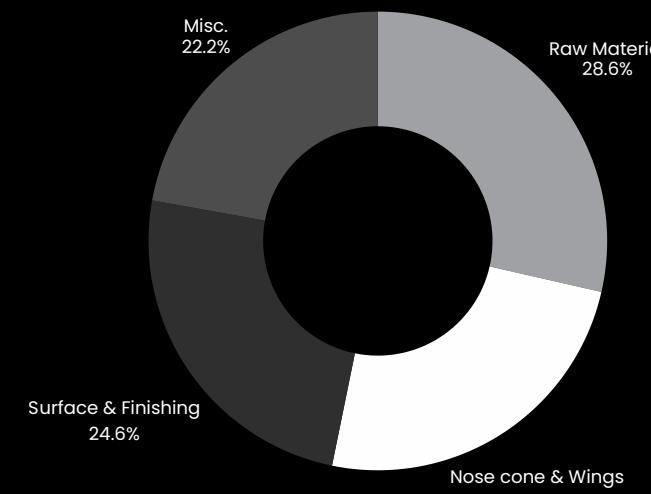
RETURN ON INVESTMENT

Sponsors benefit from:

- Widespread offline and online brand visibility
- Increased engagement via student and community networks
- High-quality content media and commercials.



TOTAL SPENDING



MANUFACTURING SPENDING



SPONSORSHIP & ROI

SPONSORSHIP

Sponsorship is the lifeblood of our team. Securing worthwhile sponsorship is what enables us to work to a high standard.

We believed that it is pointless to work with sponsors on a hierarchy, or offering different packages. **Instead, we tailored our offerings** to each business. For example, one might want brand representation at the competition, but another would want a few commercials.

OUR SPONSORS

Pizza di Rocco

An award-winning traditional Italian Pizza Restaurant in UAE. their crispy and authentic artisanal pizzas are all handmade to order using classic techniques, and only the freshest and finest ingredients baked to perfection in their Neapolitan pizza, hand-crafted cupola-style oven. They also offer healthy salads, vegan-friendly pizza options, homemade hearty soups, and delicious dolce.



TOPSOLID

TOPSOLID is the world's leading publisher of CAD/CAM software. With 40 years of experience under its belt, TOPSOLID is in a position to offer a fully integrated CAD/CAM solution. The company mainly targets the mechanical sector (machinery, tools, etc.), sheet metal work and the wood industry.



COW FOREST COOKIES

Cow Forest Cookies is a creative cookie brand known for its unique flavors and whimsical designs. They specialize in handcrafted cookies that blend quality ingredients with imaginative themes, making them a favorite for all ages seeking delightful treats.



SIMSCALE

SimScale is a cloud-based engineering simulation platform that enables users to perform simulations such as CFD (Computational Fluid Dynamics), FEA, and thermal analysis directly in a web browser. It eliminates the need for high-end hardware and allows fast, collaborative simulation workflows.



BRAND REPRESENTATION

Through sponsoring BlackWing, brands align themselves with invention, learning, and upcoming STEM career leaders. Sponsors benefit:

- Brand positioning with national-level STEM competition and distinction.
- Tailor-tailored marketing materials for their brand.
- Public awareness by schools, communities, and social media.

