

ENTERPRISE PORTFOLIO

F1 IN SCHOOLS™

WORLD FINALS'19



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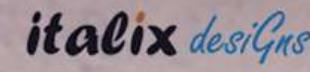
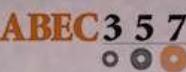
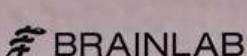
CLASSIC MARBLE



AMITY



www.gemsindia.in



TEAM NAME

Our team name, 'Matadors', is the product of a simple, linear thought process. The team's name was to be the most crucial part of its identity, so it had to be indicative of what we brought to the table as a team. Reflecting upon our team's defining characteristics, we realised the name we chose had to be representative of the team's dynamicity, pragmatism, and efficiency- all of which are embodied in the image of a matador. Moreover, the name also acts as a tribute to the AMC Matador- a racecar that stemmed from an unlikely source but still managed to perform excellently and win several prestigious titles.

Similarly, we aspire to withstand and defy all displays of grandeur and aggression to achieve our goal of being the best team in the competition.

TEAM LOGO

The team logo is a bull in action. The reason behind choosing the image of a bull instead of a matador lies in the relation between the two. The bull behaves as an independent threat, while, keenly eyeing the bull's movements, it is the matador who integrates himself into the bull's environment.



The logo evolved into its present form as depicted in the graphic. The bull was made more angular, while the font was gradually changed from its bolder, more standard origins into a sleeker, more dynamic style. While the manifested changes were considered to suit the aura of the F1 title given to the car, the evolution of its design, in retrospect, quite resembles the process of designing an F1 car, which from its bulkier, more abstract roots turns into a swift and aerodynamic finished product. Once the logo was complete, branding guidelines were chosen for the team's collateral.

TEAM IDENTITY

The prime forebearers of a team's identity are its logo and its colour scheme, projected outwards by the team's uniform, pit design, and proposal aesthetics. Our team embraced the idea of a matador performing in an arena, and the colour scheme stemmed from the same. The colour red is most prevalent throughout our designs, for it embodies a traditional matador's cape, symbolizing both his/her dexterity and the bull's vigour. The black and white undertones are meant to resemble a typical racing flag while symbolizing speed too. A more detailed discussion of the uniform is placed elsewhere in the proposal.

The team identity is upheld in every aspect with our motto "Dazzle them with your speed, baffle them with your bull" being our driving force.

WORLD FINAL '18

Team Matadors was one of the three Indian teams to qualify for the F1 in Schools World Finals in Singapore. Among the Indian teams, it was the highest scoring team, both overall, and in most individual departments. The World Finals provided a first-hand glimpse at the higher echelons of the competition and introduced the team to international standards for design engineering and enterprise management.

The team's experience at the World Finals was a definite aid to this round's design process, and its learning points were kept in view throughout the competition.



SUKRITI GUPTA (TEAM MANAGER)

Sukriti's immense interpersonal and organizational skills turned what would otherwise be glimpses of diamonds in the rough into immaculate objects of engineering precision. Her experience- a unique blend of debating, aerospace design, and marketing- brought ideas like the DEFCON-M communication system to life, and created a management framework on par with industry standards.



VIVAAN WADHWA (MANUFACTURING ENGINEER)

Vivaan specialises in materials research and design, and stayed on top of relevant journals and publications to keep a constant influx of information on materials and construction methods, which he later filtered as per the physical limitations we faced. A human database, Vivaan's precise and industrial research methodology and practicality proved a cornerstone of the Matadors' engineering department was essential in creating the final design.



SWETABH CHANGKAKOTI (SYSTEMS AND DESIGN ANALYST)

While Swetabh contributed to designing the car itself, the crux of his role in the team was getting into the gritty details of vehicle design and analysis. His experience in aerospace design, fluid flow, and systems management proved to be the perfect background for his role as a systems engineer overseeing the design process and checking the underlying physics of the vehicle.



Jaisal Kothari (DESIGN AND GRAPHIC ENGINEER)

Jaisal's design methodology can best be described as a blend of functionality (in its clear yet sleek aerodynamic aesthetic), minimalism, and personality. His designs permeated our pit booth and proposals, and his creative vision and suggestions often gave rise to ideas in fields like marketing and sponsorship proposal as well. His contributions were integral to constructing our team identity and projecting it to the outside world.



AARYAN GOYAL (DESIGN ENGINEER)

Aryan's contribution to the team spanned from research and development, in which he took control of most software-based simulations and testing, 3D modelling, and, primarily, overseeing the main designing process of the car. His overwhelming enthusiasm and imminent will to learn propelled the team forward, and his work ethic was an object of inspiration.



SUPPORTERS

RACHITA KHUNTIA



KUNAAL GAUTAM

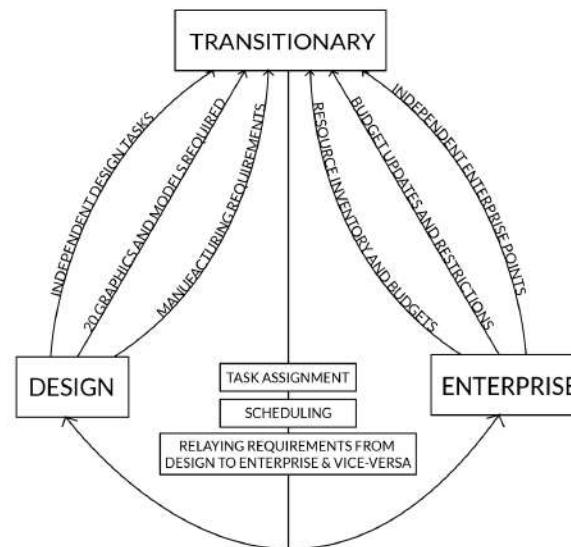
VIBHU KHARE

TEAM STRUCTURE

TEAM WORKING

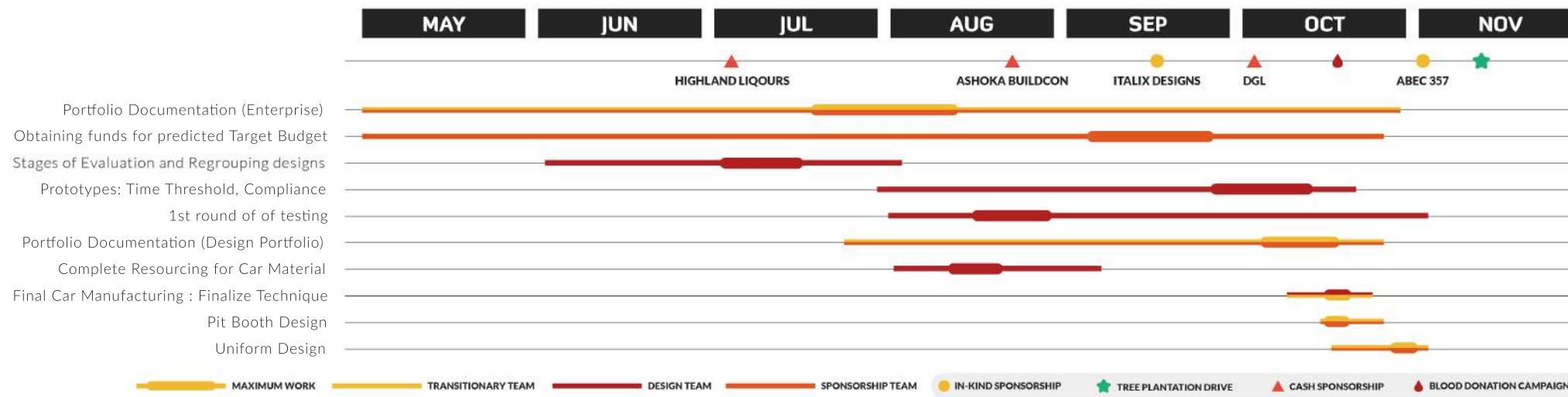
FABRICATIONS MATADORS 2019

Gathering from the experience of their stint in the 2018 run of the competition, the three members who stayed on the team for the 2019 competition had a firm understanding of what roles and what skills were required from the prospective entrants. Accordingly, they announced an open application process for the entire senior wing of the school. Applicants were initially required to submit their CVs. After screening for the top contenders among them, the 2018 team interviewed each prospective Matador and zeroed in on the top 3. Each of these turned out to be people who had worked with some or all of the 2018 members, and their niche specializations in aerospace design, graphic design, web development, and industry-scale management proved to be immensely useful going forward. They were individually tutored by the previous team and rigorously prepared for what they were expected to do.



DESIGN ENGINEER <ul style="list-style-type: none"> Designing car components Virtual testing and devising physical tests 	MANUFACTURING ENGINEER <ul style="list-style-type: none"> Selecting materials Devising manufacturing procedures and constraints
DESIGN TEAM	

TEAM MANAGER <ul style="list-style-type: none"> Managing interactions and streamlining communications Periodic progress and morale reviews 	GRAPHIC DESIGNER <ul style="list-style-type: none"> 3D modelling and 2D illustrations Team identity fabrication and maintenance 	SYSTEMS & DESIGN ANALYST <ul style="list-style-type: none"> Reviewing hypotheses Design evaluation and analysis Design R&D supervision
TRANSITIONAL TEAM		
SPONSORSHIP TEAM		
SPONSORSHIP AND MARKETING MANAGER <ul style="list-style-type: none"> Sponsorship portfolio development Industry collaboration management Marketing and enterprise R&D 		



NATIONALS 2019

The 2019 Nationals established the new Matadors team, proving quantitatively that the three new members fit the team's original vision and are capable of working efficiently towards it in a competition environment. This round marked drastic improvements in both design and enterprise from the perspectives of conceptualization and presentation. The team was the overall National Runner-Up, submitting the highest-scoring enterprise portfolio and the second-highest design score. The upgraded presentation, with a new design aesthetic, also prompted special nods for its team identity, scrutineering, and verbal presentation. While our performance was noteworthy, we noted certain shortcomings in design efficiency and manufacturing in particular. Extensive discussions on errors with the judges led to several improvement points going into the World Finals. The Nationals, in the end, solidified the effectiveness of our new team dynamic, and with the work that followed, signified a good potential performance in the World Finals.

TEAM COMMUNICATION

COMMUNICATION

Being able to communicate swiftly and effectively was an integral aspect of completing tasks in an ordered manner. Efficient communication was paramount to being able to stick to a tight schedule. The team used platforms like Google Drive, Skype, and Discord. Their use was also distributed across different DEFCON-M stages to facilitate maximum productivity.



Google Drive

Google Drive and the associated cloud software like Google Docs, Slides, and Sheets enabled real-time modification of various kinds of documents. Collaborating over documents simultaneously made research and presentation composition easier, and tagged comments on the same served as a method of communication in itself.

Our work during DEFCON-4 was based primarily on Google Drive and Gmail.



Discord

Though conceived as a platform for chat accompanying collaborative or competitive video gaming, Discord served as a suitable platform for DEFCON-3. The call feature on Discord helped carry out short meetings during the earlier stage of the competition, when fresh ideas had to be discussed. Sharing the screen time proved especially beneficial when discussing the car design or any other project element.



Skype

Skype served as a more immediate method of communication, used for more urgent purposes requiring face-to-face deliberation and discussion. Given its easy accessibility, Skype was also the medium used for most formal communication, including meetings with mentors and industry professionals. Skype was our go-to platform for DEFCON-2.

The screenshot shows a Skype group video call interface. At the top, it displays the time as 10:56 PM and battery level at 39%. The call is titled '# general'. Below the title, there's a timeline section with a grid of dates from 1 to 30. The first few rows are labeled 'Testing', 'Design Process Evaluation', and 'Quality & Clarity'. The last row is labeled 'VivaanWadhwa 04/14/2019'. The bottom of the screen shows a video feed of several people in a room, with a progress bar indicating the video is at 100%.



Team Meetings

Apart from serving as the medium of DEFCON-1, the team met at weekly intervals as well. During each meet, individual tasks were allotted dates or a given range of period. These meetings ensured that within the large swathe of tasks our management schedule accommodated, activities of different portfolios were undertaken during a given period. Our weekly trackers were also uploaded during these meets. Moreover, these meetings gave a morale boost as the team members could finally visualise their efforts take concrete form, in front of others.



DEFCON-M

DEFCON 4: No dx required

Team Members Required: All required

Mode of communication:

Google Drive/Gmail

Action: Bi-weekly schedules of individual team members was prepared and adhered to. Weekly progress monitoring meetings were organised to cross-check aggregate team work.



DEFCON 3: Steady Velocity

Team Members Required:

Team Manager, Department head

Mode of communication:

Conference Call/Discord

Action: Schedules were revised to suit any plan changes. These were handled internally within the department or required Team Manager's involvement.



DEFCON 2: Loaded Cartridge

Team Members Required:

Team Manager, Department Heads and any other voluntary member(s)

Mode of communication:

Skype

Action: In case of special scenarios, more priority was given to certain tasks outside the planned schedules. Cross-department working was encouraged in certain cases.



DEFCON 1: Hot Box

Team Members Required:

Team Manager and any voluntary members

Mode of communication :

Mitigation Session

Action: In order to take immediate actions at the time of extreme burden of miscellaneous tasks, members were assigned work on the basis of their individual skills, rather than department.



EVALUATION

Issues

- Communicating with different team members during the holiday season posed a difficulty.
- Due to additional commitments of team members, the team communication was hampered.
- Inability to work during school hours.



Improvement Actions

- Online meetings were pre-scheduled and organised accordingly.
- DEFCON-M was developed, so that meetings could be held as per department requirements.
- Arrangements were made with the restaurant 'Big Fat Sandwich' to allow us to work on specified days. It served as our official workplace, due to its logistical supplies and working environment.

To avoid overlap of work and ensure clarity of work assigned, different platforms were assigned for the completion of different tasks:



- Group messaging
- Allotment of work
- Creation of timeline
- Discussion of tasks



- Conference calls
- Primary mode of communication
- Sharing images and documents



- Primary contact with external personnel
- Sharing documents
- Forwarding data, research work and designs



- Group chat for doubt clarification
- One on one communication
- Online group work
- Creation of subgroups.



- Primary storage of documents
- Associated platforms used for organisation and planning.
- Finalizing content for

SPONSORSHIP



BRAND ASSOCIATION PROPOSAL

A prospectus, which served as the brand association proposal, was prepared at the first stage of the sponsorship strategy. This included the ROI table, which provided the companies an opportunity to visualise the exposure that could be gained for different sponsorship packages, before and during the competition. The proposal was kept flexible and some negotiations were attended in special conditions.

TARGETING SPONSORS

The team identified the cash sponsors and in-kind sponsors separately, depending on our financial and materialistic requirements. Keeping in mind the special conditions provided by the Indian market, the cash sponsors were divided into two categories:

Establishments with more assets:

PLATINUM

GOLD

SILVER

BRONZE

Ranging from \$2800 - \$700

Establishments with fewer assets

Following this categorical division, we approached the potential sponsors of these two sub-groups with different sponsorship packages and ROI exposure activities.

CONTACTING SPONSORS

Initially, a spreadsheet was prepared with the contact mail addresses of the potential sponsors. Later, it was realised that sending mails did not yield any results. The plan was revised and a new strategy was adopted. We, now, started calling the companies. This led to the procurement of new mail addresses or contact numbers, which helped us contact the marketing departments of the companies.

CONFIRMATION

Once the collaboration with the sponsors was confirmed, a letter of confirmation was sent to the sponsors. This formally recognised the agreement from the team's side. It also presented the final benefits and exposure the sponsors would receive, in return for their support. The sponsors were expected to fill the Sponsorship Declaration (Annexure C) to validate their side of the agreement.

SPONSORS

To increase our visibility and maintain accuracy in targeting potential sponsors, we directed our efforts at prioritising and identifying enterprises that had some relevance to, or focus on the STEM community, project management or satisfied our materialistic or technical requirements. We also targeted local business firms which wanted exposure at a national level.

PLATINUM

Ashoka Buildcon Ltd. is one of the leading highway developers in India. The Company is an integrated EPC and BOT player. It has a portfolio of 36 PPP projects, which is the largest in number by any private player in India. Besides construction of highways and bridges the company is also engaged in Power Transmission and Distribution on EPC basis.



GOLD

Delhi Gemological Lab is an institute that aims at imparting quality and professional training based on international standards in various fields related to the gem and jewellery trade. DGL helped us establish ties with the STEM community and allowed for relevance between our team and the sponsors.



In Kind - SILVER

Italix Designs specialises in making exhibition trade displays. Collaboration with the company helped us carry out our printing tasks and construction of pit booth modular structure all at one place, due to in-house printing machines and wood working units.



EXECUTION OF ROI ACTIVITIES

Now, the mandate fell on the team to fulfill the promised ROI activities and provide exposure to their sponsors. A variety of strategies were drawn and activities were undertaken for the dissemination of our goal. Our weekly newsletters kept them updated of our progress.

ROI ACTIVITIES

WEBSITE

To promote and create a positive PR by raising awareness of the sponsoring organisation



Our website, one of the most visited domains by our supporters served as the perfect platform to present our sponsors. To introduce new partners to our Team, a special mention was made in the News section of the website. It also provides regular updates, such as latest offers available on their goods and services, etc. The partners tab on our website allows visitors to view more information about the sponsors.

A click on the Sponsoring Company's logo redirects visitors to the company's website.

SOCIAL MEDIA

We featured them on our social media handles through various posts, stories, news articles, display of the organisations logo, etc.

We initiated a "Sponsor of the Week" series to put individual focus on our platinum and gold sponsors. "Mondays with Matadors", a segment to provide a transparent picture of our weekly milestones was also created.

To welcome new members, an introductory post was made, it also included the latest developments in the sponsoring organisations and a "fun facts" section to provide intriguing facts about the sponsors to leave viewers curious to learn more about the sponsor, thereby encouraging them to look into the organisation on their own free will.

LAUNCH EVENT



To provide our sponsors exposure to new audiences.



Our Launch Event helped us provide our sponsors with fresh material to expand their content strategy. By connecting them with new audiences, we assisted them in finding relevant targets for their marketing and sales strategy.

The sponsors are not solely featured by us, but also our visitors. A research reported that 98 percent of consumers create social content during events. When attendees share photos, quotes, videos, and blogs, exposure to much larger networks is achieved. User-generated content has a greater impact on customers, so we make it easy for people to tag our sponsoring organisations by popularising the business on social media.

UNIFORMS



Use our team uniforms to showcase our sponsors in front of large audiences



The uniforms served as a part of the ROI for the sponsors. The size and placement of the logos of the respective sponsors depended on the package chosen by them. These uniforms were worn by the team during all the photoshoots, events, product displays, etc.

NEWSLETTER / BROCHURE



Introduce our sponsors to new audiences



Newsletters and brochures were created and distributed through our online and offline channels. These included the logos of our bronze and silver sponsors, and company information and logo of the Gold and Platinum sponsors. These brochures were handed out during trade displays and various other events, helping our sponsors reach new audiences. The newsletters were mailed to our customers individually on their email id.

CSR ACTIVITIES



To provide our sponsors with direct contact to new audiences through product interaction at these events.



The team organised a blood donation drive and a plantation drive, "Chop Stop." These events gave our sponsors an opportunity to provide a live demonstration of their products. Italix Designs was able to put up stalls for the other sponsors, the others distributed Flyers. The free Face masks distributed during the events had logos of our sponsors printed on them.

TRADE DISPLAY



To use the focal nature of the trade display as a tool to display information and graphics reflecting our team and our sponsors



The trade display was exhibited at a number of events. Space was allocated to display our sponsoring organisations logos. The logo and merchandise displayed allowed their brand to spread on an international level.

MARKETING

ADVERTISING METHODS

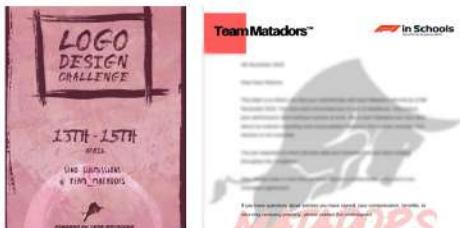
An advertisement strategy was drawn to communicate and interact with our target audience. Systematic methods were used for the purpose.



Interview with the Global Times



Trade Display at the NXP Convention



OFFLINE ACTIVITIES

Public Endorsement

One of the most crucial ways of standing out as an enterprise is creating a brand for oneself, and getting that brand out into the public. For us to build a memorable brand and garner a degree of recognition in the eyes of the public, and more importantly, those of potential sponsors, we had to employ two main methods of public endorsement:

Interviews and Media Outreach:- An interview would be most effective. This would give public exposure to both the team and its ideals. Therefore, we approached different publications for the same, and had a team interview published in the newspaper 'The Global Times'.

Meeting Renowned Personalities:- We looked for additional means of social media outreach, of which the most effective method turned out to be meeting with renowned personalities. We thus held meetings with Shahji Prabhakaran (President of the Delhi Soccer Association), Atul Chauhan (Chancellor of Amity University), and Dr. Abhay Bansal (Head of Amity School of Engineering and Technology).

Pit Booth

Another method of public outreach we often employed was the use of pit booths. The team set up pit booths containing portfolio drafts, model concept cars, merchandise, and referral lists for sponsorships. The sheer allure of seeing a pit booth, even when it would be incongruous with its surroundings, drew several people in, and provided an excellent means of advertising. Pit booths were set up in our school on days when parent-teacher meetings or major competitions and events were scheduled.

ONLINE ACTIVITIES

Online Competitions

In order to further build our brand and establish our identity within the school, as well as to experiment with rough ideas pertaining to the team identity and aesthetic, the team organized certain online competitions. This also lent us an array of additional ideas and perspectives, especially through the uniform-designing competition we organized, which allowed us to eliminate certain design ideas we had initially thought of but found unsatisfactory when actually penned down on a canvas. To incentivize students to participate in these competitions, several lucrative (but cost-effective) prizes were offered. We implemented such contests on a smaller scale as well, through class activities.

Newsletter

In order to maintain a professional relationship with our sponsors and to assure them of our progress, we had initially thought of regular sponsor meets, but given the mismatch of schedules and the dearth of representatives on their part, we were forced to consider other methods of relaying information. Of these, we found the publishing of periodical newsletters to be the best option. In doing this, through a weekly segment we later named 'Mondays with the Matadors', we managed to boost our social media, while simultaneously delivering news of weekly progress, major events, and crucial alerts, thereby building our sponsors' trust in us and ensuring their cognizance of our ROI activities for them. Furthermore, using social media platforms allowed us to put the same newsletters out for the public too.

CSR ACTIVITIES

The team realised that it is granted an immense platform for sharing its vision and reaching out to important dignitaries during major events taking place both within and outside the school. Establishing contact with the numerous attendees and participants and networking with the often esteemed chief guests at these events proved quite useful for our overarching aim of publicity. Therefore, the team organized events like a Model United Nations conference, which also served as a platform for advertisement. Moreover, on the occasion of Indian Republic Day, we helped organize an event in our school where classical dances and acts were performed to show our societal involvement.

Plantation Drive

The team organised a plantation drive, "Chop Stop" with the school's interact club. Each volunteer received a Matador facemask. With over 40 volunteers, we were able to successfully plant 100 saplings.



Blood Donation Drive

The team partnered with the Indian Red Cross Society to organise a Blood Donation Drive at their sponsor, Ashok Buildcons Headoffice in Noida.



MERCHANDISE

As a promotional tool and to showcase our team identity we created a variety of branded merchandise. As these were created to represent our team, we selected items in accordance to our main color scheme. In order to decide the team merchandise, various aspects such as insights received from our social media pages to know more about the customers' preferences and age groups were taken into account. Placement of team name and logo were key factors in deciding the design of the items, ensuring they were put on places with maximum visibility.



PEN



CAP



BADGE



KEYCHAIN



PEN DRIVE



LAPTOP BAG



DIARY



FOLDER

PROJECT MANAGEMENT

PROJECT SCOPE

The scope of Team Matadors as an enterprise envelops the following areas:

Brand: To maintain a consistent, recognizable, and conspicuous team brand, i.e. team identity in the Team Matadors portfolios, design aesthetic, and merchandise. In doing so, we aim to market both F1-in-Schools, and Team Matadors to the highest capacity.

Industry Interaction: To develop a network of industry collaborations for assistance and mentorship in design processes, obtaining monetary and in-kind sponsorships, and management and marketing guidance.

Methodology: To monitor progress and ensure uniqueness by defining distinct evaluation procedures for the team, to assess all limitations in materials and manufacturing procedures, and create a design that optimizes their usage.

Design: Conceptualizing and testing an F1-in-Schools car both virtually and physically, and analyzing test results to design a car that is ultimately compliant, fast, durable, and efficient.

TECHNICAL
1) DESIGNING
2) MANUFACTURING
3) MENDING
4) TEAMMANAGEMENT
AND ENGINEERING PORTFOLIO

CREATIVE
1) MARKETING
2) LEADERSHIP
3) ENTERPRISE PORTFOLIO AND DISPLAY

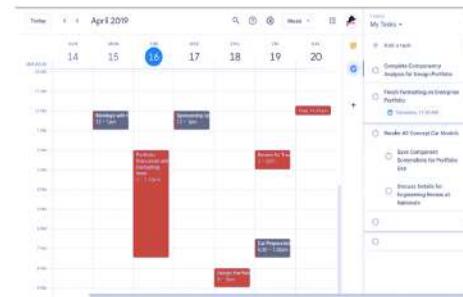
TIME MANAGEMENT

In approaching time management, our aim was to minimize backlogs and ensure that every self-imposed and official deadline was met. We accounted for task logging, reminders, deadline proximity, member preferences, and mental health in developing our strategy, with Hofstadter's Law as a working mantra: "It always takes longer than you expect, even when you take into account Hofstadter's Law."

Task Logging

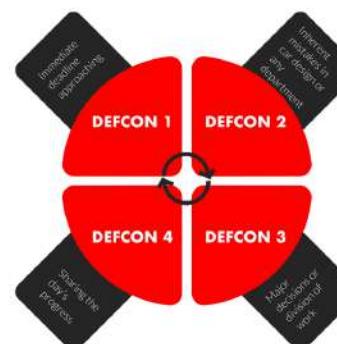
In order to maintain logs of tasks and

reminders, we made a spreadsheet containing a queue of short-term tasks and events with details including their starting and deadline dates, the "owner" of the task, i.e. the member primarily responsible for ensuring its completion, the priority of the task, and the task's category (design, enterprise, or transitional). A column for additional comments for descriptions and repetition was added mid-project. In addition to hosting this sheet on Google Sheets, our Systems Analyst developed a Python program to push tasks entered on Google Sheets onto the team's collective Google Calendar, ensuring timely notifications of tasks and schedule updates straight to the members' mobile devices. This system, in particular, used Google's Sheets and Calendar APIs.



DEFCON-M

While the DEFCON-M status categorization system dictates the requisite mode of communication and financing, it also indicates the overall time requirement at any given stage of the competition. During DEFCON 2 and above, for example, it is understood that each member will log several hours more work per week than usual.



Milestones

Tasks were scheduled such that every four weeks ended in the achievement of a milestone, i.e. a major goal contributing towards the completion of the final project. Using this milestone system, we managed to develop our working period into three phases:

1. The Pledge
2. The Turn
3. The Prestige

As we observed that representing the project as a multilayered tree of tasks helped us visualize progress better, where the three phases would be the nodes in the second layer. The end of each milestone was met with a special team get-together to celebrate and boost team morale before mapping out the next phase of operations. These milestone meetings also served as checkpoints for project evaluation, and gave us space to document and analyse any available learning points.

Member-Task Pairing and Efficiency

Towards the middle phase of the competition, we noticed that when near deadlines, the lines between members' individual roles were increasingly blurred, given the miscellaneous nature of tasks available at the time. Consequently, members were often stuck doing tasks they weren't completely familiar with, leading to decreases in efficiency. Therefore, members were often paired with the tasks they were most familiar with.



MANAGEMENT SESSION

The team members attended a seminar on different methods of management over the years and an example-based study of the management studies of some of the world's most successful leaders and entrepreneurs. The seminar was hosted by Anita Gale, one of the first women in the field of aerospace design and management to work on major projects such as Rockwell International's Space Shuttle program, and presently a Senior Project Engineer in Space Shuttle Payload & Cargo Integration, for The Boeing Company in Houston. She provided invaluable input in

terms of illustrating important management frameworks, and by sharing some of her own experiences in industry, she gave us important tips on management- both in general, and of risks. We picked up her strategy of forming 'tiger teams', i.e. small teams of highly versatile individuals, to deal with crucial risks at hand. Moreover, we conveyed her experience of having routine 'red team' checks to our teachers, who employed the same for checking our progress.



EVALUATION

In our first evaluation meet, a common issue observed was the mismatch of members to tasks, as the abundance of incomplete tasks meant that it was necessary for some members to take on tasks outside their preconceived comfort zones. In this process, we decided to note how efficiently each member carried out different categories of tasks. Doing this helped us allocate tasks more efficiently at higher DEFCON-M levels.

It was observed, for example, that while both our Graphic Designer and Marketing Manager were both equally responsible for handling social media posts, but it was observed that while the latter handled regular posts better, 'Mondays with Matadors' posts were more rapidly handled by the former.

Similarly, we noticed that the Systems and Design Analyst was the most efficient writer for technical purposes, and allocated tasks accordingly.

Moreover, when we observed a decrease in efficiency during certain particularly busy weeks, we realised we had failed to account for the possibility of burnout in our original time-management system. Considering the psychological factors that play into efficiency, we decided to make provisions for adequate breathers and free time for each member in our overall schedules, and decided to add a celebratory and recreational element to our end-of-milestone meetings.

RISK MANAGEMENT

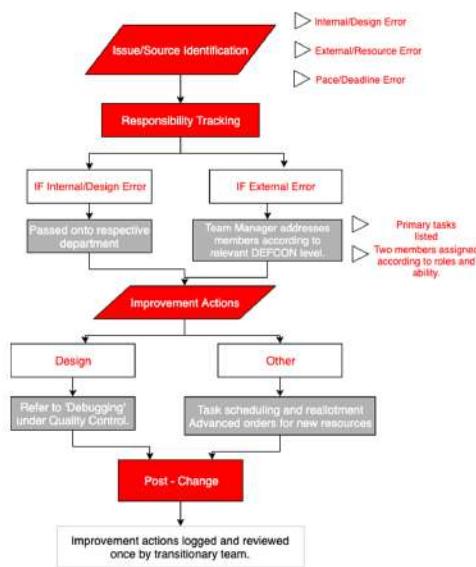
CATEGORY	RISK	SOLUTION
Finance	<ul style="list-style-type: none"> • Unable to finance working expenses • Unable to meet long-term budget due to different material or sponsor pulling out: Focus shifted to in-kind and product sponsorship to satisfy our requirements with the given budget. Future expenses were reassessed and the remaining money was re-allocated. 	<ul style="list-style-type: none"> • Team meeting to reallocate short term budget and reschedule expenses. Less urgent purchases pushed back in favour of these working these • Focus shifted to in-kind and product sponsorship to satisfy our requirements with the given budget. Future expenses were reassessed and the remaining money was re-allocated.
Regulation	<ul style="list-style-type: none"> • Critical regulation violation found • Non-critical regulation violation found <ul style="list-style-type: none"> 1) Affects other design elements 2) Does not affect other design elements 	<ul style="list-style-type: none"> • Root of violation identified by backtracking modelling edits and history; design team meeting organized, affected changes examined and modified. Errors and mitigation measures reported to and documented by the Systems and Design Analyst and Team Manager. • 1) Backtracking to origin of violation and correction • 2) Immediate correction
Human Factors	<ul style="list-style-type: none"> • Illness or absence of a team member • Mental strain 	<ul style="list-style-type: none"> • The work was either distributed among other members of the team or the working schedule was changed to compensate for the work which couldn't be completed in time. • Periodical sessions were held where team members were encouraged to discuss the pressure they were facing and common solutions were found that suited all, while the work was redistributing.
Material Resources	<ul style="list-style-type: none"> • Material availability threatened • Manufacturing issues 	<ul style="list-style-type: none"> • Alternative suppliers were found to supply the required materials. Alternative materials were considered by relevant department, in case of unavailability of the material. • Causative factor was identified by the engineering team and suitable changes were made, while comparing with the original design.
Car Malfunction	<ul style="list-style-type: none"> • Externally manufactured parts broken accidentally or unusable parts obtained or manufactured. • Car disassembled mid-trial during physical testing. • Virtual models / orthographic sketches not matching physical measurements 	<ul style="list-style-type: none"> • Alternative industry collaborations explored; towards the latter stage, we had the option to choose bet

PLAN CHANGES

The working of the team was kept flexible to provide some space for correction, in case of any changes, which were quite frequent given the extensive nature of the competition.

As already mentioned, daily and weekly trackers were maintained for each team member, as well as that of the entire team. Whenever any changes occurred, the trackers were immediately updated and the mitigation action was also mentioned alongside.

- **Absence of team member(s):** Work was divided among other members to meet the deadlines. Google hangouts was used to schedule meetings in advance, after taking consent.
- **Sponsors/ Partners were unavailable:** Meetings were rescheduled to a more suitable date and timing.
- **Rendezvous point and timings:** Last minute changes were made after ensuring that the new meeting schedule and point is conveniently accessible to the entire team.



QUALITY CONTROL

The magnitude of risk could be evaluated with the impact or outcome of the event and the probability of it to occur. A chronological mitigation check was applied to each of the tangibly recognized risk factor:

- **Ranking the risk:** DEFCON M (Defense Readiness Condition for Matadors) system was developed for communication and control after the risks were prioritized based on their impacts.
- **Parallel solutions:** Deliberation sessions were held where the entire team contributed towards solution, if a particular department incharge sought aid.
Implementation: The proposed control measures were checked for their efficiency after their implementation and finally approved by the team under the specific department head.
- **Debugging:** Subpar or poor-quality work done in the past is not modular or independent; rather, it affects a large portion of the content written afterwards. Therefore, in the process of posthumous quality control, along with the original issue itself, it was necessary to scan all changes made thereafter and separate the independent content from the content dependent on the original issue. This independent content was re-used in order to save time, while the dependent changes were taken and fixed in a chronological, bottom-up sequence, ensuring no loose-strands or void dependencies were left unaddressed.

OVERVIEW

A comprehensive budget had to be drawn before seeking sponsorship to ensure that we could present our financial requirements before our potential sponsors. It was to be ensured that adjustments could be made possible in our plan, if and when needed. For this, we made a strategy that was flexible.

Our incentives changed based on the sector of the company, while making contacts. For instance, while seeking sponsorship or developing a network of industry collaborations, the firms we approached for cash sponsorship were different from those we approached for in-kind sponsorship.

Since the contribution of R&D activities is an indispensable aspect of marketing measurements, details and tactics were drawn to propel the strategy for a good marketing plan.

We had:

- **Short-term goals** (such as deciding upon the deliverables and merchandises)
- **Long-term goals** (such as working upon packages according to the deliverables and manufacturing requirements)

EXPENDITURE

Strategic marketing helped us meet our on-going expenditure despite our inability to collect the expected amount of funds. The team focused more on in-kind and product sponsorship than on cash sponsorship, due to special conditions offered by Indian market. Furthermore, a comparative study was carried out for different prices offered by different establishments to ensure the minimum possible budget.

To ensure that our expenditure does not exceed the limit, set according to our budget, we drew comprehensive schedules, and adhered to it, barring a few exceptions when we had to meet some urgent needs or other intermittent expenses. These limits were set on bi-weekly basis and reassessed at the end of each month.

EVALUATION

ALLOCATION

After facing a few instances of lack of resources, we landed on the conclusion that the allocation of resources on the basis of broader categories, rather than individual tasks, proved to be more viable, contrary to what appeared obvious. Now, after consulting with them, we allocated a specific amount to the Enterprise and the Design teams, giving them sovereign power to use the budget for further sub-categories.

RESOURCE MANAGEMENT

Budget Concerns

Drawing from our approach to finances and time as aspects of our overall budget, we looked to develop an efficient resource management model with a similar rationale. The master document for this model was maintained on a Google Sheet. The Sheet contained a dynamic list of required resources divided into the following categories: car materials, marketing materials, transport, and finance (a subhead expanded upon in another section). To each of these, we assigned properties of sponsor-ownership, referring to either the sponsor that provides that material in kind or a common list of financial sponsors, the next deadline when the resource is required, the cost of the resource, and its required quantity. Below the master table itself, we linked quotations of the enterprises concerned. Our actions for different availability-vs-needed levels for various non-financial resources are mentioned under Risk Management, while those for financial resources are mentioned under the financial DEFCON-M discussion.

Corporate Social Responsibility

Team Matadors, as an enterprise, throughout the competition, had taken up environment and sustainability as a social responsibility goal. While this goal translated to large-scale enterprise events elsewhere, it was also expressed in our commitment to sustainable materials. The modular nature of our pit booth and its reusable, woodless materials makes it durable, reusable, and environment-friendly. We maintained a preference for reusable resources in other places as well, and consequently maintained a log of what materials we had already acquired that could be reused. This 'warehousing' of sorts also helped measure our current level and frequency of expenses, helping monitor our rate of consumption of resources along with their need and availability.

MEETING TARGETS

The inability to meet the monetary limits that we set for the first two months, led us to devise the DEFCON-M system for financial management. Thereon, the adverse mitigation mechanism was strictly adhered to.

REVENUE AND SPONSORSHIP

The novelty of the competition, towards the earlier stages, led us to accept sponsorships, especially in-kind payments, before considering other options. This led to some poor-quality resource deliveries, and consequently, missed deadlines. Noting this issue, we modified our initial marketing output in terms of communication and marketing to bring in multiple offers. In doing so, we were able to bargain for better deals and ensure high-quality resource output too. This resulted in our sponsorship from Ashoka Buildcon.

BUDGET

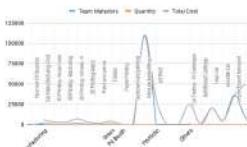
Based on the selected inputs which were aerodynamically and experimentally desirable, the Manufacturing Engineer provided a list of materials to the Transitory Team.

A system of comparison of prices of products in the market led to a rough budget, drawn by the Sponsorship and Marketing manager.

This budget was further presented before the Team manager who, along with the marketing manager, set the sponsorship packages and prioritised companies accordingly. The plan included a sponsorship strategy that estimated external funding and in-kind contributions.

We prepared a spreadsheet to keep track of our expenditures and regularly compared it with our projected budget.

Our budget came out to be Rs. 4,00,000, which was of course rounded off to ensure some extra funds and keep margins in case of financial emergency.



SUPPLY

Increasing self-dependency, where we were, in the past, too dependent on external supplies, e.g. extensive use of our school 3D printer.

DEFCON-M FINANCING SYSTEM

DEFCON 4: No dx required

Availability of funds with respect to current requirements: High

Action: Immediate requirements met with ease and without any particular constraints; surplus funds set aside for future.



DEFCON 3: Steady Velocity

Availability of funds with respect to current requirements: Medium

Action: Certain budget constraints drawn; No requirement was postponed, but future prospects were considered while spending and seeking sponsorship.



DEFCON 2: Loaded Cartridge

Availability of funds with respect to current requirements: Low

Action: Less urgent needs were put to hold until more funds were acquired; More cost-effective alternatives were sought while spending.



DEFCON 1: Hot Box

Availability of funds with respect to current requirements: Negligible

Action: School/ families of team members were requested to split the cost to meet urgent requirements; innovative alternatives were employed. For instance: school stationery was used as merchandise at marketing events.



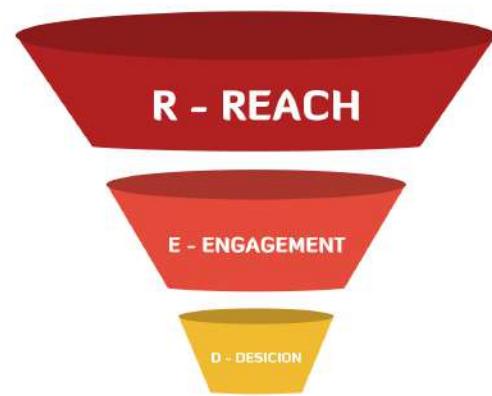
CSR

Towards the middle of the competition, we began to observe slower delivery times and decreased willingness on the suppliers' part to make deliveries over long distances. This intensified when pollution became a larger issue, particularly in the National Capital Region. We saw this as an additional opportunity to fulfill our social responsibility as an enterprise, and as a result we arranged a tree plantation drive in collaboration with Indian Modern School and marketed F1-in-Schools and Team Matadors over there with specialized gas masks and regular merchandise.

FINAL EVALUATION

SPONSORSHIP EVALUATION

Given the existence of multiple independent stages in the process of obtaining a sponsorship, it was decided that our sponsorship evaluation metric had to account for the effectiveness of each step. This is exemplified in the **RED** evaluation process:



EVALUATION

Evaluation of our tasks and progress was a crucial part of our project management. Regular team meetings were held to evaluate the progress, address problems and improve on those fronts. Trial runs of new strategies were scheduled, results recorded and then through voting we decided the final strategy.

SKILL DEVELOPMENT

SUKRITI GUPTA (TEAM MANAGER)

Sukriti, in her second National Finals, acted as the Team Manager. Being a transitional member of the team, she was involved in both departments, design and marketing which helped her develop many proficient skills. Her work as Team Manager gave her mastery over conflict resolution. She gained experience from her functions and got in touch with sponsors while also helping in designing the car. A major part of her work was managing interactions and streamlining communications which required her to develop interpersonal and team working skills. She recorded the periodic progress of the team and reviewed the work which evolved her data analytical skills.

AARYAN GOYAL (DESIGN ENGINEER)

The competition helped him develop an eye for detail and devise a methodical work process. Although not new to this field, Aaryan improved significantly on his analytical and numeracy skills, while also developing a creative problem solving ability. Aaryan's contribution to the team spanned from research and development, which demanded a considerable amount of communication and coordination with the other members, consequently enhancing his ability to work in a team. Aaryan learned a number of programs such as photoshop,etc. and gained subject specific technical knowledge and expertise required for creating the car.

INITIAL BROADCAST : REACH

- **Metric-** Number of replies to each wave of sponsorship proposals sent out.
- Low measures signal potential missteps in two departments- sponsor targeting and sponsorship proposal design, with the latter being affected by either poor graphic design or Undesirable financial prospects.

A focus group, followed by a team-wide evaluation, determines the root cause of poor yield out of those stated above, which is then addressed by a graphical redesign or a re-analysis of market conditions and companies.

DIGITAL INTERACTION RETENTION : ENGAGEMENT

- **Metric-** Number of in-person meetings secured after digital interaction via email or calls.
- The inability to retain sponsors after digital interaction signals either ineffective communication over the chosen medium or an inability to schedule meetings, the causes for which range from the non-availability of members to that of transport.
- Communication logs are reviewed to determine prevalent sources of error. If no major lapses are found, additional factors, such as member workloads or transport are examined and appropriately addressed.

FINAL SPONSORSHIPS : DECISION

- **Metric-** Quality and number of sponsorships obtained after meeting company representatives.
- Sponsor meetings are easier to analyze, given the direct presence of team members, and undesirable outcomes after this stage often boil down to an ineffective or unrehearsed verbal pitch or not being able to negotiate impromptu conditions.
- The sponsorship presentation is reviewed, remade (when necessary), and rehearsed. Backup conditions are prepared to present from our side when otherwise unexpected terms are suggested by potential sponsors.

VIVAAN WADHWA (MANUFACTURING ENGINEER)

Vivaan, a part of the design team, developed specialization in materials research and design while preparing the components of the car. This helped expand his analytical and problem-solving skills and technical knowledge. He has assisted the team in event management, designing the uniforms and finalising the materials for the pit booth. Not only did he learn to focus on speed and precision, a priority in manufacturing, but also remained focused and detail-oriented throughout the competition.

JAISAL KOTHARI (GRAPHIC DESIGNER)

Jaisal, the team's third transitional member, brought our portfolios and proposals to life with the help of his past experiences in graphic designing. To communicate our story, brand and ideas, we required an individual not only skilled at designing but also equipped with strong communication skills in order to negotiate and present our work. Jaisal emerged as both and was integral to projecting our teams identity.

ROI ACTIVITIES

- Balancing out the return in proportion to cash or product sponsorship provided
- Carrying out different activities for different sponsors, as per the terms of the agreement
- Difficulty in updating each sponsor about the progress of the project.



- ROI table was drawn prior to the process of seeking sponsorship.

- Sponsors were categorised based on the activities decided, as per their demands and the terms of the association. Activities were carried out separately for each category.
- A segment called 'Mondays with the Matadors' was announced on social media to update all the sponsors simultaneously.

MARKETING

Social media was easier to analyze in comparison to more qualitative departments like team dynamics, primarily because of the availability of analytics and visualizations native to the respective social media apps. This provided a multitude of metrics to evaluate, which included:



- Follower growth
- Age range, gender, location identification
- Profile visits and discovery
- Website clicks
- Funnels, retention
- Journeys



IMPROVEMENT ACTIONS

Understanding our own individual strengths and weaknesses enabled us to delegate the work effectively. We also approached our advisors, collaborators and supporters to get a fair judgment on how the team was progressing from an outsiders point of view. Having a consensus was of utmost importance to us and each members ideas and opinions were heard and deliberated upon. Polls on our social media platforms further helped us streamline our options in selecting the merchandise, logo and team uniforms. SWOT analysis were conducted for various aspects of the working of the team ranging from team uniforms to designing the car.

Reviews and suggestions left on our web pages and social media platform were of great importance to us and they assisted us in delivering better content.

OVERALL EVALUATION

The competition did not only help us get closer as a team but helped us all grow individually in our own unique ways. Not only did the competition help us in polishing our existing skills but also encouraged us to push our limits and step out of our areas of expertise only to find new talents and abilities. The competition pushed us to do better, work harder and achieve our goals. The contacts we gained and interaction we had the fortune to have will definitely take us a long way, as they were directly related to industries we aspire to work with, in the future.