

ICPC Marketing Analysis and Report

International Collegiate Programming Competition

Michael Hemstreet

Executive Summary

The objective of this report is to analyze the current website and associated social media profiles for the International Collegiate Programming Competition (ICPC) and provide recommendations on how the organization can better meet its goals of highlighting the students, staff, and sponsors of the international competitions online. By using online tools such as SEO analysis software, sentiment analysis programs, social media data API's, and spreadsheets containing current social media metrics and data, I was able to recommend actions that are within the ability of the client based on their current capabilities.

The ICPC has a large staff during the World Finals period, and they receive compensation in the form of presence in ICPC's media. Much of this media is published onto social networking sites such as Facebook, Twitter, and YouTube. Currently, the ICPC primarily utilizes Facebook to reach the greatest number of followers and has allocated some of their budget to promote specific posts. These promoted posts received more impressions than organic posts, but had a lower engagement rate on average. The types of posts that received a higher average engagement rate across all platforms contained images, videos, and/or hashtags. The ICPC should utilize these elements with posts that include information about the competing teams, staff members, and current sponsors to ensure that their goals are being met. The promoted posts should also feature these elements, and should be created to fit the format of each individual platform rather than cross-posting between Facebook and Twitter.

After inputting the ICPC News' URL into a search engine optimization (SEO) simulator, I was able to pinpoint sections of the website that could be changed to improve the SEO of the main website. First, the ICPC should establish a list of keywords that will be used in webpage titles, header tags, meta descriptions, and alt text for images. Currently, the website includes some of these elements, but lacks consistent use across their webpages. By presenting the current webmaster and hosting service with these specific areas of interest, the organization will be more likely to appear higher on the search engine results page as a user searches for relevant topics.

Analyzing the SEO and social media presence allowed me to gain insight into the ICPC News' overall online reputation. I used the Twitter API to export the ICPC News' Twitter followers to investigate potential accounts to connect with online. These accounts are active on Twitter and have similar topics of interest. They also have a large number of followers that are likely to be influenced by the content that is shared. By interacting with these influencers, the ICPC will potentially increase their audience and positive reputation on social media. This positive reputation can be extended to a much larger audience when articles and links that feature the organization appear higher on search engine results pages. Currently, when entering "ICPC News" on Google's search engine, half of the first 30 results are not relevant to the organization. The links that are relevant to the ICPC typically have a positive sentiment, and need to implement more SEO link building tactics to ensure that these links appear higher on the search engine results page.

I strongly recommend implementing these feasible adjustments to the ICPC's online presence to better highlight the organization's events, associated sponsors, employees, and competing teams.

Social Media Analysis

ICPC Twitter analysis

The @ICPCNews Twitter account features some promising content and strategies for social media engagement. After carefully analyzing data gathered from the account's content and considering the organization's over-arching goals, it is clear to see what posts work better than others. Based on the data, the Meet the Team and Monday Motivation campaigns make up much of the account's activity on Twitter. Other than important announcements from the Director, these styles of tweets seem to garner more attention from the account's followers.

Much of the ICPC's Twitter account is dedicated to featuring the competing teams in this year's event. However, it seems that the tweets featuring the teams resulted in having fewer than the average number of impressions for the account's tweets. Additionally, tweets that featured hashtags seemed to perform better than tweets that excluded hashtags. One of the more popular and regularly-used hashtags was the #MondayMotivation campaign that is posted weekly. To capitalize on these impressions and engagements, simple adjustments to these campaigns can boost the success of the total account.

Many of the top performing tweets on the account include a hashtag. This can be seen when analyzing the popularity of the #MondayMotivation and #ICPCNAC2020 posts. The Meet the Team posts seem to be common, and simply making it a #MeetTheTeams2020 will encourage users to use the hashtag to share information on their own team. One aspect that the #MondayMotivation and Meet the Teams posts have in common is the use of pictures. The Meet the Teams posts had a higher average of users expanding the tweet to view more details, while #MondayMotivation tweets had fewer users expand the details. By cropping the picture that displays an inspiring quote so that the user is required to click on the picture to view the content in its entirety could increase the amount of engagement with these posts. With regard to posts that feature visuals, it is important to include high-quality photographs or videos that have a visible preview in the tweet. The Meet the Teams posts on Twitter seem to be posted from Instagram, resulting in a link to the Instagram post rather than the original picture displayed in the tweet. Users on Twitter will respond better to content that features high-quality pictures that are easy to open rather than links to posts on other platforms. With high-quality content, the amount of engagement with posts will increase, which will give you the opportunity to include staff, teams, and sponsors in these posts. Having staff, teams, and sponsoring organizations share their own words of wisdom or inspiration in a #MondayMotivation post would be an easy way for these individuals and organizations to gain media exposure while popularizing your own content.

ICPC Facebook Analysis

The ICPC Facebook account has much more activity and engagement than the Twitter account. Many of the same posts on Twitter can be found on Facebook, and some have similar success. Many of the posts that get the most impressions include hashtags and photos. Posts that have the least amount of engagement may have photos but fail to use hashtags that can increase impressions. The account posts content

consistently, but the timings of the post vary from the early hours of the morning to later evening hours. Particular posts that receive negative engagements like hiding the post include live video streams and regularly posted weekly content like Monday Motivation posts. Post types that receive the most engagement on average typically include photos and links. Although there are fewer Status update posts, these have been shared and like more than most other styles of posts.

Based on the analysis of the ICPC's Facebook account, it is clear that this is the primary method of reaching the most followers. The three promoted posts made more impressions on average than the organic posts, but only received a 3.865% engagement rate as opposed to a 5.924% engagement rate found with organic posts. This is perhaps due to the fact that the promoted content was used toward important announcements that may not have had a call-to-action. Two of the three promoted posts were created at odd hours of the day for many followers when many users may not see the content. Rather than spending money to promote potentially ill-timed posts, the ICPC should attempt to post these at times where most of their users are more active online. By doing this, the ICPC can allocate more of its budget to promoting content that users are more likely to engage with, like photos of the staff and teams, or announcing the acquisition of new sponsors. The Monday Motivation posts that received some success on Twitter received more negative feedback from users than most other posts on Facebook. This could be a result of users growing annoyed or disinterested in the monotony of the regular weekly content. By increasing the value of these posts and including teams and staff members with each motivational piece of content that is tailored to each platform, this campaign will remain fresh and relevant to many of the followers.

ICPC YouTube Analysis

Although the ICPCNews YouTube account has a good variety of content, the engagement rates for these videos are very low. In the period analyzed, the videos garnered a healthy 54,378 views and 692,847 impressions, but saw only a 2.93% click-through rate. This suggests that although users on YouTube may be seeing the thumbnails, they are not inclined to click on the video to watch. Of all the videos, the type with the highest click-through-rate were the videos of the reactions from team members. Additionally, the type of video that receives the highest average watch time are the Composite videos. This is beneficial to the teams involved with the competitions, but Staff and VIP/Sponsors do not receive the same amount of attention. Another issue surrounding the content is the lack of engagement on the videos. Composite and interview videos received the largest number of likes and new subscribers. This content proved to be the most engaging for comments as well, but with only 35 comments made in the entirety of the channel during this period, there is still much more room for improvement in that aspect.

In order to remedy the lack of engagement found in the channel, it is important to focus on the content of videos and how they are presented. The reaction videos have a higher click-through-rate because users may be interested in seeing raw emotion. By editing thumbnails with overlaying graphics and text, users may be more likely to click on the video. Once users have clicked on the video, the important part is to hold their attention. An engaging title sequence or graphic accompanied by music and sound effects is a great way to start a video and have it look professional and worthwhile. The


composite videos have the highest average watch time perhaps because all teams are featured and users will want to see themselves or somebody they know in a video, or simply because these videos are longer in length. By including staff members throughout the composite videos, they will likely receive more recognition. In order to increase the exposure to sponsors and VIP members, the more successful videos in terms of click-through-rate and watch time should also highlight one sponsor. After the motion graphic at the beginning of the video, a sponsor's logo can be shown with a short message describing the importance of the sponsor. Finally, it is imperative to encourage engagement on each video. Without a call-to-action that explains the benefit of liking, commenting, and subscribing, the viewer does not know how to receive more information and stay updated on the ICPC events.

Social Media Suggestions:

- Avoid cross-posting on Twitter through Instagram and Facebook. Instagram is compatible with Facebook and allow users to easily share content simultaneously, but this is not the case with Twitter. When posting to Twitter, be sure to post the photograph or video directly through a tweet.
- Social media platform algorithms favor posts that include hashtags. Find ways to incorporate more hashtags into your posts, then encourage event attendees and followers to post using the hashtag.
 - #MondayMotivation and #ICPCNAC2020 hashtags have been effective at reaching your audience. Practice this with more posts such as #MeetTheTeams, #MeetTheStaff, and #SponsorShoutout.
- In order to increase the exposure of your teams, staff, and sponsors, be sure to include them in creative ways. By revamping your #MondayMotivation campaign to include these important groups, they can receive more recognition while you create more engaging content. Winning teams in previous competitions can come back to impart their wisdom with the audience by sharing some motivation or tips they have learned.
- When posting content with photographs, albums, links, or other graphics, ensure that the post includes a preview of the visual content. By showing a teaser of the content you wish to share, users are more likely to click to engage with all of the content.
- Your audience responds more to posts that include photographs. Make sure that these are high-quality images that refrain from pixilation and maintain the correct aspect ratio. When highlighting staff, teams, and sponsors, it is in your best interest to make them look their best.
 - Having photographs that are engaging is critical. By sharing teams through candid photographs of them working, competing, or showing their personality rather than a traditional group photograph.


- Use Facebook to upload photo albums of the competition events rather than another platform like Flickr. These albums can act as a way to recap events and show off more teams, sponsors, and staff members, and having them directly where the audience is more likely to see them will make your content more user-friendly.
 - Staff members, competing teams, and sponsors can make appearances throughout these albums to increase recognition of these three vital groups.
- When creating YouTube videos, use simple editing software to design your own thumbnail images. Engaging and interesting thumbnails may make the user more likely to click on the link or the video.
- An engaging motion graphic or montage accompanied by music or sound effects at the beginning of each YouTube video is a good way to come across as more professional and consistent across all videos. This content will be more engaging for those watching, and could lead to them returning for more content.
- YouTube videos should be highlighting team members, staff, and sponsors whenever possible.
 - Meet the Team videos could be made that require team-generated content. Teams will send in their own introductory footage captured on phone cameras for the ICPC to create into a video.
 - Staff members that worked on the production of the video content and social media can be credited at the end of each video.
 - Sponsors can act as producers of this video content. For example, having a video start out with a message like “Brought to you by *Sponsor Name*” with a logo can give these important groups more exposure.
- All content can benefit by a call-to-action. Asking viewers and followers to share, comment, like, or subscribe is a simple way to encourage engagement and create community online.

Example Posts:



ICPC News


Sponsored





For today's #MeetTheTeam2020 shoutout, we recognize "Serendipity the Rebellion" from Amirkabir University of Technology, coached by Amir Gheibi.


Congratulations to team "Serendipity The Rebellion"! Welcome to the WF!


#ICPC2020





24

16 Comments 5 Shares


Like


Comment



Share

Figure 1: This example Facebook post of a #MeetTheTeam2020 picture includes a candid photo of the team in action. It also utilizes more hashtags and a more user-friendly text format.



ICPC News @@ICPCNews · 🕒

For today's #MeetTheTeam2020 shoutout, we recognize Serendipity the Rebellion from Amirkabir University of Technology, coached by Amir Gheibi. Congratulations to team "Serendipity The Rebellion"! Welcome to the WF! #ICPC2020



🔄 5 ❤️ 27 ⋮

📌 Promoted

Figure 2 This is an example of a tweet that mirrors the post in Figure 1. Instead of cross-posting to Twitter, making a direct post on Twitter will show the picture in its entirety rather than a link to the original Facebook post.

ICPC News
Sponsored

Like Page

Congratulations to all the women of ICPC community for #InternationalWomensDay!

See great video about girls at #ICPCNAC2020 which was held February 22 in Atlanta: https://youtu.be/_tGP2C2qc

Meet the WOMEN of ICPC!
#ICPCNAC2020

Women in ICPC NAC
Happy International Women's Day!

THE WOMEN OF ICPC Watch More

59 36 Comments 19 Shares

Like Comment Share

Figure 3 This is an example of a YouTube post that is shared to Facebook. In this rendition, the thumbnail includes basic text and graphics that are more likely to catch the eye of the user and encourage them to click.

Search Engine Optimization Audit

Search engines like Bing and Google routinely crawl through websites and analyze their features to determine where a website may appear on a search results page. By using a program that mimics how these search engines look at your website, I was able to pull out some useful information that can help improve the search engine optimization of the ICPC News website. First, search engines prioritize URLs that are descriptive and relevant to the content found on the page. Many of the URLs for the ICPC News site are descriptive, but lack other things that search engines value. Each webpage should also have a descriptive title tag that appears at the top of the browser tabs. The ICPC News site utilizes only 11 of these title tags, and many of them are repetitive and lack proper descriptions. Search engines also value header tags, which are typically filled with relevant keywords and used once on a webpage. The ICPC News sites feature these tags, but often times they are not descriptive and may occur more than once per page. Other features that search engines reward are high quality images that contain a description of the content found in the photograph. Search engines see the content of a photograph by analyzing “alt text” found in the HTML code of the webpage. This alt text should accurately describe what is shown in the image by using keywords. Additionally, photographs can be titled by changing the name of the file for the photograph. Currently, the ICPC News has many photo albums, and almost half of the photos lack alt text. Because of the number of photographs on the website, descriptive alt text is crucial to improving the search engine optimization of the site. Another aspect that is helpful in terms of SEO are meta descriptions. These descriptions are not displayed on the webpage, but are found in the snippet below the link on a search engine results page. Currently, the ICPC has a meta description that is minimally descriptive and could be re-written to include more information about each page. Lastly, one of the most important aspects of a website in the eyes of a search engine is concerned with usability, web design, and mobile compatibility. The ICPC News website should be updated to accommodate for the plethora of devices that can access the site. By doing this, search engines will reward the site with a higher likelihood of entering a user’s results page on a multitude of devices.

Recommendations

Below is a list of recommendations based on the analysis of ICPC News’ current SEO status. These recommendations are ordered by the ease in which these adjustments can be made:

- Establish a list of relevant keywords to use throughout the site.
 - These keywords will be used throughout the webpage, including meta tags, title tags, and header tags.
- During events and competitions, give photographers guidelines for the proper way to name their files.
 - Doing this will allow the photographs to be descriptive.
 - These descriptive titles can be used to develop well-written alt text.

- An image's alt text should be descriptive of what the photo is. Currently less than half of the images on the site contain alt text, and those that do are not properly titled or described. Examples of proper alt text could be "Team Southeast University of China participates in ICPC Challenge"
 - The length of the alt tag should not be long, and should refrain from an overuse of keywords that do not describe the image.
 - Alt tags are also used to describe the photo to a visually impaired user of the site.
- Images should also have titles. These can be named in the file name, and seen when the user hovers over an image in the browser or in the URL when clicked
 - Can improve user experience
- Photo size should remain small to ensure fast loading speeds.
 - Only two photos are over 100kb so this is good – you want users to be able to view images quickly and for their browser to load quickly.
- All webpages should have descriptive titles.
 - This name will appear at the top of the browser when someone navigates to your site.
 - Title tags should also be descriptive without being too wordy. Only 11 title tags are present on different URLs, and aren't very descriptive
 - The current titles include "Login", "ICPCNews" and "ICPC Gallery"
 - Titles can be rewritten like "ICPC News | Gallery" or "ICPC News | Log In"
- Rewrite header tags to ensure clear hierarchy on the webpages.
 - These header tags (h1 tags) often give a section of the webpage a title or description. Think of them as headings to an article or paragraph.
 - Currently there are 11 h1 tags present on different pages of the website. On the webpage that lists 2019 Press information (<http://icpcnews.com/2019/press>), there are two tags that have the same content, which is simply "ICPCNews". Others are simply "Menu".
 - It is best practice to have these header tags to be descriptive and filled with keywords that are relevant to your organization.
 - For example, a webpage that features a photo gallery of an event should describe the album. For example: "<h1> Photo Tour of Porto, Portugal</h1>".
 - Currently, three webpages contain header tags that are the same as the page title. Ideally, these tags will contain different information from the title while still utilizing keywords. These webpages can be found here:
 - <http://icpcnews.com/>
 - <http://icpcnews.com/2019/press>
 - <http://icpcnews.com/2019>
- Maintain clear and descriptive URLs

- URLs carry a lot of weight in terms of optimizing your search engine optimization
 - Descriptive URLs mean you are highly relevant and more likely to get hits through search
- Main URL is descriptive
- Many URLs have “/photo” which is also descriptive, however more information
- on about the content could be used to make it more relevant.
- Only 11 URLs have titles.
- 2 URLs have a 404 error, which could indicate a larger issue like a server malfunction.
 - <http://icpcnews.com/public/dashboard>
 - <http://icpcnews.com/public/2013-press>
- Add meta text to webpages that have the most sessions by users.
 - Main page has meta text that could get reworded, as it is not a complete sentence.
 - Adding more meta descriptions to the login page and the information page could be beneficial.
 - Webpages that have higher amounts of traffic from a search results page should include meta tags that contain accurate information about the content of that page.
- Redesign the website
 - The current website does not adhere to current web design trends.
 - Current websites thrive on clear navigation and a full-width layout.
 - The ICPC News home page is cluttered and lacks a clear hierarchy of information.
 - Ensure that the website is mobile-friendly.
 - Many internet users are accessing information on mobile phones and tablets. The current website is not responsive to these small screens and requires an update to accommodate these users.

Online Reputation Analysis

In order to assess the ICPC News’ reputation online, I utilized a searching technique that hides my location when searching so that I may simulate how a user without a relationship to the ICPC would view your online presence. I then placed all of the results on the first three search engine results pages into a spreadsheet in order to analyze the relevancy of the content, as well as the sentiments attached to the writing found in each link. Many of the top results were either owned or influenced by the ICPC News website or relevant social media platforms. This is beneficial because the content found through these links is likely to reflect positively on the organization and associated topics. However, as a searcher continues on to the bottom of the page and into the second page, they will see irrelevant content with a more neutral or negative sentiment. Of the first 30 links provided by the search engine, exactly half of them were unrelated to the ICPC. To ensure that more positive content is found at the top of a Google search, the ICPC should focus on link building to improve the search engine optimization of sites that speak highly of the organization. By communicating with publications and blogs that refer to the organization, you can encourage them to create links to the main website which would result in search engines seeing your site as trustworthy and authoritative in the world of competitive computer programming.

Online, users communicate about brands and organizations on social media platforms every day. As a result, these conversations carry a lot of weight when determining an online reputation. I used a tool available through Twitter to grab the information of the 3,000 most recent followers of the ICPC News Twitter account and sorted them based the size of their following. Accounts with more followers are likely to have more influence, and by encouraging engagement from these accounts, the ICPC can increase the exposure of their content. I analyzed the top 80 accounts with the most followers and focused on their follow-to-follower ratio, Twitter bio, topics of interest, and overall activity to determine the likelihood of a mutually beneficial relationship. The results can be found in the table below:

Account Name	Description	Followers	Topics of Interest
@MIT_SAIL	MIT's largest research lab, the Computer Science & Artificial Intelligence Lab	124,033	Innovation in Computer Science and other tech industries.
@IBMDeveloper	Open source, code patterns, tutorials, meet-ups, challenges, & a global coding community— #IBMDeveloper has it all in one place. #AI #Cloud #Blockchain	101,159	Coding languages, careers in web development, trends in computer science and development.

@TheOfficialACM	ACM is the world’s largest educational and scientific computing society with nearly 100,000 members. Be Creative. Stay Connected. Keep Inventing.	82,762	Human-Computer Interaction, Computer and Data science education, current events in the computer science industry.
@AlmasterKSA	[C EH - Penetration Testing - Developer - Tools - Metasploit - WiFi - web application - Linux]	46,662	Snippets and pictures of different coding languages and techniques.
@STEMConnector	Building a Diverse and Sustainable Workforce	42,889	Navigating the tech industry and reporting on the job climate.
@CodeChef	CodeChef was created to challenge and engage the developer community and provide a platform for practice, competition and improvement.	25,936	Weekly challenges and problems, competition preparation.
@gtcomputing	#GTComputing is a global leader in real-world computing breakthroughs that drive social & scientific progress. Student advising: @gtcocadvising	11,850	Sharing content that includes students, Computing events, engaging photos and links.

When reaching out to these accounts, I recommend you follow common best practices for Twitter. When posting to Twitter, your organization should ensure that the content being posted provides value to the followers. This is also true when communicating with these potential influencers. When these accounts post content that is relevant to the ICPC, you can retweet or like the tweet. If you have something relevant to add to the conversation, you could reply or retweet with an additional comment. Posts on Twitter that engage with the community will reflect well on the organization as a whole, which can result in a more positive online reputation.