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Reevaluating Social Media Marketing Communications

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Reevaluating Social Media Marketing Communications

by

Laxmi Vijigeesh Katragadda

A creative component report submitted to the graduate faculty in partial fulfillment of the requirements for the degree of

Master of Science

Major: Information Systems

Program of Study Committee:
Dr. Kevin Scheibe, Major Professor
Dr. Sree Nilakanta

The student author, whose presentation was approved by the program of the study committee, is solely responsible for the content of this report. The Graduate College will ensure this report is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University
Ames, Iowa
2019

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Also, I would also like to thank my friends, colleagues, the department faculty, and staff for making my time at Iowa State University a wonderful experience.
When looking for a college or university, apart from the world-class program, facility, and faculty, the students also look for a place to fit in and call home. Students can now connect with a school’s campus life 24/7 through the power of social media along with the traditional marketing of printed booklets, campus visits, and overnights.

We have many websites and services that rank the universities using metrics for research income and academic impact. However, there is no metric provided by these services to measure the quality of life; Social media pages provide a means to look at the campus life and the culture.

The goal of College of Business is to identify what students and their families are looking for and to use social media to share their campus culture with prospective students and their parents. College of business is sharing campus life as it happens, using Instagram photos, Facebook videos, Tweets, and more. The primary objectives of Assessments are to sample, measure, and report on strengths, identify gaps in the existing marketing strategies.

![Figure 1 Objectives of Social Media Marketing](image)
CHAPTER 1 – INTRODUCTION

History of the College Of Business:

Business education has been taught at Iowa State University since the early 1920s, well before the College of Business was officially established in 1984. The first courses were held in the Department of Economics, back when Iowa State University was called Iowa State College and students paid a nickel to ride the train to get from town to campus.

Throughout the decades, the business department continued to grow and adapt to meet the needs of our students, building our foundations on the commitment to educate the best business leaders and entrepreneurs of tomorrow. Accredited by The Association to Advance Collegiate Schools of Business (AACSB), the College of Business has a history of high-quality education through excellence in research, innovation in teaching, and diversity that broadens perspectives.

That’s why we serve more Iowa high school graduates than any other 4-year business program in the country. After three decades as the College of Business and over a hundred years of business education, the future of business has never been brighter.

With a rich history like quoted above and being a pioneer in innovation and adaptability, the College of business has expanded its marketing horizon into Social media platforms. Which has become the source of information for this generation, and we see students have grown up communicating and sharing experiences on social media sites like Facebook, Twitter, and Instagram. Using the power of different networks and engaging content, Iowa State University College of Business is endeavoring to attract students, stay connected with alumni, and interact with current students.

Research Questions

Research questions will address:

1) Student's interest and engagement level with the College of Business
2) Which experiences and relationships are most influential in strengthening students' interest in the College of Business?
3) The Influence Social Media has on Enrollment
The Correlation Between Social Media and Life & Culture of College

**Aim of the Project**

The primary objectives of Assessments are to *sample, measure, and report on strengths, identify gaps in the existing marketing strategies*. The bigger picture of the project is to develop and refine the Social Brand and improve the Web presence of Iowa State College of Business.

Universities are continuously trying to understand their audiences. To be successful, universities should define their social media goals and learn their audience through the data. Key to successful social media measurement is asking the right questions like:

- Awareness and Reputation
- Social reach across all platforms
- Effectiveness of Social campaigns
- Content analysis
- Audience profile
- Competitor benchmark

**Methodology**

To audit and analyze the social media data, we need to understand the available resources from different social platforms and come up with means to extract the available data. Data extraction plays the most significant role, with tons of information available. The right information at the right time and its accuracy help in the strategic decisions and to understand the opportunity. In the highly competitive world, information, including customer data and operational data, play a significant role in building strategic decisions which help us shape the goals of the College of Business.
The audience of the Research

Clients on this project would be the Social media marketing team of the Iowa State University’s College of Business (CoB). New social media networks come out every week, most of which will never gain any traction. It’s best to start with the platforms that the College of Business is already using; then once we have efficient systems running, we can look at allocating a percentage of your budget toward more experimental campaigns.

ISU College of Business uses the following major platforms:

- **Facebook**: With more than 2 billion monthly users, Facebook hosts over a quarter of the world’s population, providing marketers with an unparalleled opportunity to reach virtually anyone and everyone.

- **Instagram**: While Facebook has a mind-boggling number of users, which makes it the undisputed king of social media. Instagram, which is Facebook's hottest acquisition, is
beginning to look like the king of social marketing. Instagram now boasts more than 500 million monthly active users and holds one of the highest audience engagement rates on social media, which is 58% higher than Facebook and 2000% higher than Twitter.

- **Twitter**: Twitter has always revolutionized news and provided unparalleled access for users to connect with both mainstream and niche influencers. With 330 million monthly active users, it remains one of the most popular social media platforms. Unlike Facebook, Twitter is still a base for organic engagement. Brands don’t need to pay to reach their followers, which enhances the platform’s value even when running paid ads.

- **LinkedIn**: LinkedIn is another unique social media platform that revolves primarily around the Business-to-Business market. LinkedIn has an estimated 230 million monthly active users, evenly split between female and male users. 61% of users fall into the 30-64 age group.

### Stakeholders

Stakeholder for this project would be all the followers on the Social media pages of College of Business:

- Students
- Parents
- Recruiter
- Alumni
- Staff (Social media marketing team)
- Faculty (Iowa State University’s CoB faculty) etc.

Our project will be focusing on the majority stakeholders, i.e., *students*. The clients (ISU College of Business) are also little inclined to address a few other stakeholders, like *Alumni and Recruiters*.

<table>
<thead>
<tr>
<th>Social Media Platform:</th>
<th>Percentage of Students:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>40% +</td>
</tr>
<tr>
<td>Twitter</td>
<td>49%</td>
</tr>
<tr>
<td>Instagram</td>
<td>54%</td>
</tr>
</tbody>
</table>
CHAPTER 2 – LITERATURE REVIEW

Problem Diagnosis

Social media marketing’s fundamental objective should be growth automation. Growth automation focuses on improving key customer metrics. Growth automation teams need platforms like Facebook, Twitter, Instagram, and LinkedIn to implement these highly segmented campaigns. Marketers rely on data analysis, creative initiatives, and an ever-widening personal knowledge base to effectively engage customers.

- **Awareness**: Since our primary stakeholders are students and a typical university undergraduate recruit is a high school student of age between 15 and 19 who are called as “digital natives,” as they are born into technology or are exposed to technology at an early age (Liang 2010). The campaign goals are to generate new qualified visitors and leads through social traffic via content marketing on available social media platforms. And it can be done by different creative ad combinations, testing new audience targeting techniques, and producing diverse types of content.

- **Activation**: In this phase, the audience takes the first action of testing our service through the web or social media visits. In this fidgety world, people want things clear and straightforward. A study by Weinreich and Obendorf (2008) proves that 77 percent of the people who visit a webpage leave in less than 10 seconds. Social media links on the homepage are one of the effective ways to reach the users in the small-time frame of their visit, and the ease navigation is highly important for young adults (Poock and Lefond 2001). The single visit doesn’t mean that the visitor is active; at this point, the user is testing out and seeing if our services are useful. Metrics like repetitive visits, followers, and people who like our page back up the fact that onboarding and user-experience leaves a lasting impression and can influence later visits.

- **Retention**: Once users have started using our service, we work towards the goal of keeping it up. Now we can think of retargeting and re-engaging our best users. We all know that in recent years, the Web has transformed radically, changing from a platform for information to a more social environment where users are not only active harvesters or passive receivers of information, but also producers of content (Bruns, 2008). Our quality of service and spirit shouldn’t disappear after a customer convert. Relationship and messaging should
grow even better. We should provide different content to keep users active with our College of business and to add value to their experience and encourage repetitive visits.

- **Revenue**: It’s evident that users grasp the value of our service; now, it is crucial to ensure that feeling stays intact. Targeting prospective students is essential; it is equally important to retain the current students who are the source of revenue. Apart from all the amenities students get on campus, the social media platforms should be a place to express themselves and align with the college spirit.

- **Referral**: When our users bring in more traffic and especially more students who are willing to join the college of business, it is called a referral. Once users reach this phase, they’re loyal to us and want to share it with their friends. Metrics and features like tagging, reshares, comments of friends and family can be used to understand this. It is essential to facilitate the user with optimal options so that they can refer their friends via both direct and indirect means. If we considered CoB web presence as a Brand, we could improve on the user’s virtual experience which will lead to brand loyalty (Cheng, Chieng, & Chieng, 2014; Laroche, Habibi, Richard, & Sankaranarayanan, 2012).

---

*Figure 3 Social Media Marketing Objective*
CHAPTER 3 - RESEARCH DESIGN

The possible way to approach this project is to layout a Roadmap and follow it phase-wise. The roadmap is divided into the following phases:

ROADMAP FOR SOCIAL MEDIA MARKETING:

1. **Identifying marketing problems**

   The three major fields in understanding the marketing problems are:

   * **Brand Image**: It's the perception of our customers (in our case students, parents, recruiters, staff, and faculty) about the College of Business. It's critical to be aware of how customers view the College of Business as a brand. Determining the strategies, we want to use to positively influence our brand image can be done by researching our consumers’ current perceptions and what they want from your company.
Market characteristics: It's the attributes of our target market (Audience.) We need to consider all aspects that drive our different audience towards our social media platforms. Our audiences who are students are going to have different behaviors and requirements than those from the Alumni/Faculty. Recognizing all these differences between subcultures, and meeting the needs of those differences will help our College of business’ marketing strategies succeed.

Market Potential: It is an estimate of our potential profit. In the case of the College of business, it is the estimate of how many prospective students are we able to attract and the retaining of the current students. If we research how audiences might react to advertising about a new course or fee changes related to the course before we act, then we will be better prepared and market to our audiences more accurately.

2. Social media marketing objectives
   - Awareness
   - Activation
   - Retention
   - Revenue
   - Referral

3. Social media marketing channels
   - Facebook
   - Instagram
   - Twitter
   - LinkedIn

4. Social media audit and analysis
   - Data Extraction
   - Auditing internal (performance) and external (competitors) factors
   - Analysis of the historical data provided by different platforms
5. **Develop/Refine a social brand**
   - Knowing the customers
   - Identifying what college of Business stands for
   - Following a specific plan

6. **Content creation and curation**
   - Platform-specific content creation & curation tools and methods
   - Media-specific (Photos/Videos/Articles)

7. **Manage community and influence**
   - Platform-specific benchmarks to address the community
   - Platform-specific key metrics radar

8. **Measure and quantify**
   - Quantify few metrics which play a significant role
   - Measure the correlation of these metrics with other attributes

9. **Manage and execute the plan. (Value Proposition/ Results of the project should be)**
   - Activation: increase in Fans and Followers
   - Retention: through content Creation and Curation
   - Referral: building a Community and Influence

**Visualization and Analysis tools used:**

**Tableau:** It is the tool to see and understand the data; it is flexible to suit the different needs of the project. We have used Tableau for data discovery & visualization, creating reports & dashboards, and for simple statistical analytics like forecasting and trends. Tableau is compatible with web service as a source (Web Data Connector), we planned to use the social media API to extract data (Due to privacy restrictions, we could not get this data).
**RStudio**: The SocialMediaLab package of Rstudio was used. It is a suited tool for constructing networks and collecting high influence user from social media data. It is compatible with platforms like Instagram, Facebook, and Twitter. Different types of networks can be produced for analysis, such as Social Network Analysis (SNA) and Text analytics.

**Facebook insights tool, Twitter Analytics, LinkedIn Analytics, and Instagram insight analytics**: All these are the platform-tools provided by different social media sites for the business profile users. These tools produce few dashboards which can be customized to get the results we need. The primary use of these tools was to review basic insights and download insightful data to get further understanding.

**Python and its libraries such as Pandas, NumPy, Matplotlib, Seaborn, Time, Script.stats, Scikit-learn**: Python was used to try and compare the popular keywords with the number of views provided to each keyword. The median of the views is considered as a baseline, and the score is assigned to each Keyword (Tag) based on the number of views it holds. The 30 best and worse tags were found from the score associated by it. For the tags which had higher the view count than the median value was considered as best tags otherwise were considered as worst tags.
CHAPTER 4 - PROJECT TIMELINE

The project began in May 2017 and initial months involved researching similar projects and to understand the domain knowledge. Process planning was a very iterative part, but the initial planning of the project took about a month. To attain the objectives of measuring, reporting on strengths, and to identify the gaps of the existing system, we have to understand the following:

- Existing market, competitors, and how the systems fit into the market.
- Understand the existing social media platforms and attributes provided by them.
- Convert the project requirements into measurable goals (relation between requirements and measurable attributes provided by different social media platforms)
- Prioritizing project requirements and deciding which requirements align with the organization’s long-term goals.

The initial phase was to look through different platforms and come up with options for extra data. And to understand different metrics and measures after extraction- for example, Facebook and Twitter both use the attributes Engagement and Impression. However, the definition differs, and based on the underlining meaning; the approach has to be modified. Once the data was collected, it had to be cleaned and loaded for analysis.

By analyzing at the historical data, we had to document the benchmarks and best practices by find patterns or trends. While the data was being collected on all the platforms with a view of the analysis in mind, the documentation and deployment of best practices from the primary analysis were put into action. As the data had to be maintained privately in a secure location, I worked with the IT team to set up a remote server. Much brainstorming was done for choosing the right visualization tool and analysis tools, and also between desktop and server versions. Every social media platform had its restrictions in providing data, we had to request the access for the API, so data unification was a tedious task.

<table>
<thead>
<tr>
<th>Task</th>
<th>Start Date</th>
<th>Duration</th>
<th>End Date</th>
</tr>
</thead>
</table>


<table>
<thead>
<tr>
<th>Project Activity</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifying Marketing problems</td>
<td>5-Jun</td>
<td>12-Jun</td>
</tr>
<tr>
<td>Social Media Marketing Objective</td>
<td>13-Jun</td>
<td>20-Jun</td>
</tr>
<tr>
<td>Social Media Marketing Channels</td>
<td>21-Jun</td>
<td>28-Jun</td>
</tr>
<tr>
<td>Social Media Audit and Analysis</td>
<td>29-Jun</td>
<td>13-Jul</td>
</tr>
<tr>
<td>Develop/Refine Social Brand</td>
<td>14-Jul</td>
<td>28-Jul</td>
</tr>
<tr>
<td>Content Creation and Curation</td>
<td>29-Jul</td>
<td>12-Aug</td>
</tr>
<tr>
<td>Manage Community and Influence</td>
<td>13-Aug</td>
<td>27-Aug</td>
</tr>
<tr>
<td>Measure and Quantify</td>
<td>1-Sep</td>
<td>1-Oct</td>
</tr>
<tr>
<td>Manage and Execute Plan</td>
<td>2-Oct</td>
<td>15-Oct</td>
</tr>
</tbody>
</table>

*Table 1 Project Timeline*

*Figure 5 Gantt Chart of Timeline*
CHAPTER 5 - DATA DICTIONARY AND UNDERSTANDING

Understanding the data and metrics:

1. **Facebook:** The metrics provided by Facebook can be divided into six major groups:
   b. *Reach:* Post Reach, Likes, Comments & Shares, Hide, Report as Spam & Unlikes, and Total Reach
   c. *Visits:* Page & Tab Visits and External Referrers
   d. *Posts:* When Your Fans Are Online, Post Type and Top Posts from Pages you Watch - Competitors
   e. *Videos:* Video Views, 30-Second Views and Top Videos
   f. *People:* Your Fans, People Reached and People Engagement

To get much insight on the metrics used by Facebook, please use the link provided in reference one.

2. **Twitter:** Apart from the few common metrics Twitter has a whole new set of metrics like: Engagement, Follows, Hashtag Clicks, Impressions, Engagement Rate, Leads Submitted, Likes, Link Clicks, Permalink Clicks, Replies, Retweets, Shared Via Email, User Profile Clicks, App Install Attempts, App Open, Detail Expands, and Embedded Media Clicks. Please use the link in reference two to understand the definitions of each of these metrics.

3. **Instagram:** The metrics provided by Instagram can be divided into three types:
   a. *Posts:* Likes, Comments and Saved
   b. *Account:* Impressions, Reach, Website clicks, and Profile Views.

The link in reference four can give a detailed explanation of the metrics.

4. **LinkedIn:** LinkedIn also provides metrics which can evaluate the engagement of the user for individual posts, understand more about followers (demographics and backgrounds) and helps the page owner with page traffic and activity details. Here
are few metrics: Post Performance, Page Reach, Engagement Rate, Follower Demographics, How to Compare, Who’s Viewed Your Profile, Who View Your Updates, Network Growth, Long-Form Publications, and Followers Segmentation.

Focus and approach of Analysis were to investigate the following issues majorly:

**Know your Customers:** College of Business voice/spirit should profoundly reflect on the target audience. The better you know we the customers, the better we can reach them.

**Identify what College of Business stands for:** What is College of Business's values and motto, and how would you talk about them to the users? Social media platforms may be a place for fun, lighthearted social banter; however, it's not a perfect fit for everyone. Representing the College of Business's spirit and targeting the users should be done professionally and respectfully.

**Follow a specific plan:** Chances are there won’t be just one person handling your social media for the entire lifespan of the college of business. Because of this, it’s important to write down a clearly defined list of do’s and don’ts for how to talk to your fans. For example, are incomplete sentences, okay? How many exclamation marks are too many? Are there keywords or phrases that define the college of business values or cyclone spirit that you’d like to see used frequently? What should you not say, do, or highlight? By thinking critically about the details of your posts, you'll inevitably create a long-lasting voice that won’t change as your staffing evolves.

**The tools and processes used in extracting data for this project:**

1. Facebook: Most of the data was exported from the insights page of Facebook. The insights page gives us the portability to export data related to all the attributes in a single go, or we can customize and download data related to required fields. However, the restriction with the insights tool is that it only allows us to export data of 180 days at a time.

2. Twitter: We used Twitter’s inbuilt Analytical tool to extract data (https://analytics.twitter.com/user/ISU_CoB/tweets). Even Twitter has a few
restrictions on allowing only 90 days of historical data to be downloaded in a single attempt. And Twitter holds all the data of Tweets posted after October 2013.

3. Instagram: Instagram does not provide data in CSV format as the API is currently in the beta testing phase. However, it gives us the needed plots about the audience and sorts posts in descending order of impressions and reaches. We used these plots provided by the Instagram Analytical tool and additional third-party tools like Locowise and Simply Measured to come up with few findings.
   a. Locowise: The platform allows users to optimize posts, measure and analyze campaigns and produces reports on the important aspects of the performance. It also helps in comprehensive benchmarking by providing the basic metrics and content used by peers and competitors.
   b. Simply Measured: This is another tool which is used to generate actionable insights from Instagram. This tool is similar to that of Locowise, with few extra features such as extra insight on the users or fans.

4. LinkedIn: Same as Instagram LinkedIn also restricts the download or export of data in CSV format; we could only download the recent 60 days of data. However, we can use its inbuilt Analytical tool for visualizations and get an idea of the strengths and gaps on our page.
CHAPTER 6 - DATA ANALYSIS AND VISUALISATIONS

This chapter consists of the following phases from the Roadmap: Audit and Analysis, Develop/Refine Social Brand, and Content Creation and Curation. To audit and analyze the data, we need to understand the historical data and get a glimpse of what the brand stands for and how do we represent our brand value in the available, versatile platforms. We will be discussing the next phases first and then go back to the Audit and Analysis done in these phases.

Develop/Refine Social Brand:

To develop and refine the social brand, we need to identify the voice of the brand (College of Business). We have inspected numerous factors like the diversity in the audience, the type of content posted, how users react to distinct types of content posted, how do COB Social Media respond to the adversities on all the platforms, etc.

Know your Customers: College of Business voice/spirit should heavily reflect on the target audience. The better you know we the customers, the better we can reach them.

- How old are they?
- What’s their educational background?
- Where do they live?
- What are their interests?

These facts can help us bridge the gap and point to the customers where they are.

- Facebook:
  - Report on fans: The highest section of the audience is between age 18-24 and 25-34. Please refer to the Figures 1&2 in the appendix for the visualization related to Age, Sex, and Demographics.
  - Report on reach: Ideally, reach should be more than the no of fans and followers. We are reaching users more than who follow us in all age groups except for the 18-24 and 25-34. The highest gap is for male fans between 25-34. The details can be seen in figure 3&4.
  - Report on engagement: We have a good engagement of users more than who follow us in all age groups except for 25-34. The highest gap is for male fans between 25-34, followed by female fans of the same age group. Please refer to the visualizations in the figures 5&6.
– **Twitter:**

❖ The figures 7,8&9 in the appendix show the statistics related to the Age, Sex, and Demographics of followers on Twitter. Majority of the followers are from 18-24 Age, and 54% of the followers are female.

❖ Figures 10-13 provide information about the interests, educational background, and other personal interests related to the followers.

– **Instagram:**

❖ Since Instagram does not give out the data in CSV format, we were only able to use the analytical tool provided by them.

❖ From the appendix figures, 14-19 provide the details related to Age, Sex, and Demographics. And we can see that most of the users are from the 18-24 age group and 58% of the followers are women.

– **LinkedIn:**

❖ Apart from the details like Age, Sex, and Demographics, LinkedIn also provides information related to education and job backgrounds, which can be found in the figures 20-24. Tailoring content to address the above age groups, sex, and demographics would impact the reach and engagement as we have a sizable number of fans in this group. The personal information like educational, job backgrounds, and interest can be used to streamline the target audience.

### Content Creation and Curation

The process of creating content from scratch and marketing it to your followers or fans is called content creation. Whereas Content Curation is the process of collecting existing information like social media posts, blogs, or, ebooks and sharing it with your followers. It is recommended to create content than curate from other sources as it would generate leads, gives strong ownership, drives traffic, reflects the voice/motto, helps in becoming a thought leader. Curating content occasionally is good as it builds a relationship, saves time, and widens the knowledge.
Visualization related to the content posted on different platforms:

**Facebook:**

1. Posts:
   - The most important attribute to be considered is the content related to the posts, and we used the two years historical data and checked all the posts with good reach and engagements and extract features using TFIDF (Term Frequency Matrix and Inverse Document Frequency Matrix). We have used sklearn.feature_extraction Module to extract features in a format supported by machine learning algorithms from the text format dataset. Also, we have used TfidfVectorizer class to convert a collection of raw documents (transcripts) to a matrix of TF-IDF features and have used fit_transform() to learn vocabulary and IDF, and return term-document matrix.

The python code for the same is as follows:

```python
from sklearn.feature_extraction.text import TfidfVectorizer
vectorizer = TfidfVectorizer(stop_words="english",
                           use_idf=True,
                           ngram_range=(1,1),
                           min_df = 0.05,
                           max_df = 0.3)

t = time()
tfidfvector = vectorizer.fit_transform(transcripts_df['transcript'])
print("done in %.3fs." % (time() - t))
print(tfidfvector)
```

**Figure 6 Python Code**

- The output obtained after executing the same was as follows:

```python
done in 7.510s.
(0, 983) 0.9234338660959717834
(0, 723) 0.8435771553779468064
(0, 879) 0.961517216060674194
(0, 1299) 0.548426494342129676
(0, 219) 0.561849679913740821
(0, 1246) 0.9356085437979077
(0, 563) 0.31588929784229926
(0, 535) 0.0542939093955965465
(0, 362) 0.16603751931601518
(0, 1592) 0.93435708015064108
(0, 1214) 0.02931628390350915
(0, 1512) 0.046259316777913195
(0, 1125) 0.0412593615508902474
(0, 487) 0.5340664971136239
(0, 533) 0.061562676576848115
(0, 458) 0.6598512613461924
(0, 1082) 0.93016129837517571
(0, 1446) 0.2851190337855373
(0, 1385) 0.86510215925616829
(0, 370) 0.27685567690977473
(0, 1291) 0.04026896120275225
(0, 568) 0.39389467768537819
(0, 1045) 0.92182158111987542
(0, 691) 0.9739208513834542
(0, 1023) 0.834791544408461
```

**Figure 7 TFIDF Output**
Finding out Most Important Words: Our next step was to find out the most important words, for which we created a function to determine the top-ranked words in the vectorizer. This enabled us to determine the top-ranked words/terms in the vectorizer. The obtained output on the execution of the python code is as follows:

<table>
<thead>
<tr>
<th>term</th>
<th>rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>music</td>
<td>68.048454</td>
</tr>
<tr>
<td>women</td>
<td>64.483524</td>
</tr>
<tr>
<td>brain</td>
<td>59.787632</td>
</tr>
<tr>
<td>water</td>
<td>56.787625</td>
</tr>
<tr>
<td>data</td>
<td>55.732181</td>
</tr>
<tr>
<td>children</td>
<td>49.843905</td>
</tr>
<tr>
<td>kids</td>
<td>48.477749</td>
</tr>
<tr>
<td>city</td>
<td>45.796482</td>
</tr>
<tr>
<td>design</td>
<td>45.743707</td>
</tr>
<tr>
<td>information</td>
<td>45.729102</td>
</tr>
<tr>
<td>space</td>
<td>44.118302</td>
</tr>
<tr>
<td>body</td>
<td>41.620530</td>
</tr>
<tr>
<td>earth</td>
<td>41.098926</td>
</tr>
<tr>
<td>light</td>
<td>40.458203</td>
</tr>
<tr>
<td>video</td>
<td>39.883032</td>
</tr>
<tr>
<td>social</td>
<td>39.869247</td>
</tr>
<tr>
<td>energy</td>
<td>39.183741</td>
</tr>
<tr>
<td>food</td>
<td>39.048995</td>
</tr>
<tr>
<td>science</td>
<td>38.838536</td>
</tr>
<tr>
<td>men</td>
<td>38.258052</td>
</tr>
<tr>
<td>building</td>
<td>37.411208</td>
</tr>
<tr>
<td>health</td>
<td>37.215294</td>
</tr>
<tr>
<td>countries</td>
<td>36.969061</td>
</tr>
<tr>
<td>play</td>
<td>36.184333</td>
</tr>
<tr>
<td>dollars</td>
<td>35.574664</td>
</tr>
<tr>
<td>care</td>
<td>35.567550</td>
</tr>
<tr>
<td>community</td>
<td>35.321948</td>
</tr>
<tr>
<td>computer</td>
<td>35.320969</td>
</tr>
</tbody>
</table>

Then, we tried to visualize a word cloud with the frequencies obtained by the IDF transformation. From the word cloud, it can be seen that the most highly ranked words. We categorized the posts with highest reach and engagement (with highly ranked words) into the following: Personal Life of Professors, Events, Famous
Personalities, Alumni, Student Spotlights, Professor Spotlights, Candid pictures, Career Fair, Clubs, Giveaways, Graduation, Orientation, Prospectus, Sports, Staff spotlights.

- No of posts vs. reach and engagement: To check if the no of posts posted in a single day affect the reach of all the post for that day. If we consider the total reach (organic plus paid reach, figure 25), it seems like the total reach is not dependent on the no of post posted per day. However, if we just consider the Organic reach (figure 26), there seems to be 64% dependency on the no of post posted in a day.

  We have an average of 1.47 post per day since 2015 if we consider even holidays and non-working days. This report helped in identifying that three posts per day are the optimal number to get a good organic reach.

- Best time to post: There are many factors to be considered to decide on the best time or best day to post content. Factors considered are the time when most of our fans are online and based on the historical data, we can check at what time do our posts get more interaction (comments, likes, and reshares). Based on figure 27, we see that most of the post got good reach and engagement during 12 PM - 3 PM. However, 6 PM-9 PM is the time when most of our Fans are online. Similarly, from figure 28 we can see that Thursdays we have good reach and engagement followed by Saturday. Posting on these times and days would affect the reach and engagement.

2. Photo Album:

- Facebook does not provide a metric to measure the total album rating. However, we can consider the album data and check manually. As per the manual checking, I see that the likes total album reach and engagement is high than the individual photos.

- There is no trend, however, for few albums only first few photos have been viewed much time compared to the other photos in the album. The trend mentioned above is disrupted if there are any photos tagging people in the album or photos of famous personalities. Tagging people attract a new set of audience.

- Data was not sufficient to decide on an optimal number of Photos to be uploaded per album as the reach and engagement are skewed for few photos based on tags.
• Cover pictures and photos from posts have a different trend. Photos from the posts follow the trends of categories derived based on reach and engagement.

*Twitter*: Twitter provides generalized data about followers and data related to the tweets. And because of that, our analysis is limited mostly to measuring metrics related to tweets.

1. Tweets:
   • The average no of tweets per day is 2.5723 including weekends and holidays (calculated for data from 2013-2017)
   • The no of tweets posted per day does not affect the engagement. Engagement is purely depended on the content, which can be seen in figure 29.
   • No of tweets posted per day impact the Impression by 44%, which can be seen in figure 30. Based on the historical data, 4-5 Tweets per days is the optimal number. However, Twitter feeds appear on every user’s feeds, unlike Facebook, where the feeds are filtered based on EdgeRank. And because of this, the impression and reach of tweets are strong, but the Click rate and engagement depend on the content.
   • Categorization of Tweets based on High Engagement and Impressions (Psychometric analysis), to find a pattern or genre of tweets with good no of engagements. (Categories: Personal Life of Professors, Events, Famous Personalities, Alumni, Student Spotlights, Professor Spotlights, Candid pictures, Career Fair, Clubs, Giveaways, Graduation, Orientation, Prospectus, Sports, Staff spotlights, Student replies, Updates and Pictures of Young women).
   • Tailoring and customization of content can be done based on categories mentioned above to increase engagement and impressions.
   • Scheduling of tweets based on the audience location can impact the impressions. Tweeting around events helps in gaining proper engagement.
   • Use of popular hashtags can help in reaching a wider audience. Twitter does not need a two-way trust relation, and we can address the audience who do not follow us, and this helps to target a potential audience (prospective students).
Twitter has this feature to organize people to a list which helps in organizing conversation (can use this to find people with similar interests and concentrate of posting more tweets of that category).

Following our popular audience or the audience who are active on Twitter helps increase the interaction and reach.

Sending out messages to everyone who follows us and replying to their messages builds up a positive relationship as well as reach and impressions.

Twitter can be used to drive traffic to our website by writing messages that compel people to click on to learn more.

With an advanced search option, we can target the local audience (Gerdin or College of business as a location.

**Instagram:** Instagram does not provide data in CSV format as the API is currently in the beta testing phase. However, it gives us the basic plots about the audience and sorts posts in descending order of impressions and reach.

1. Instagram feeds:
   - We have 471 followers and have posted 149 posts till Aug 22nd, 2017.
   - 33% of our followers are male and 67% female, out of which most followers belong to 18-24 (54%) age group (refer figure 14&15).
   - In male followers, we have 48% belonging to 18-24 age and 30% belonging to 25-34 (figure 16).
   - In female followers, we have 58% belonging to 18-24 age and 22% belonging to 25-34 (figure 17).
   - As per the historical data, the followers are active and live mostly on Tuesday and Saturday. However, there is not much variation for the remaining days, except for Sunday (figure 31).
   - From figures 32-38 we can see the time when most of our followers are online. The no of followers who are online remains almost flat for the whole week from 9 Am-9 PM with little fluctuations.

**Manage Community and Influence**
Social media marketing influence is a marketing term that describes the organization's ability to affect other people's thinking in an online community. The more influence the organization has, the more appeal that organization has on other firms or other individuals who want to connect with them.

In basic terms, influence can be estimated by examining an organization's LinkedIn connections or Twitter followers or Facebook fans. However, a more thorough analysis is required, to determine who those connections are, how the firm makes social connections, and the level of trust between the organization and their connections. It’s advisable to use social influence measurement tools and to do so; we need to establish credibility with our followers by maintaining consistency and transparency. This phase "Manage Community and Influence" use the previous two phases "Content Creation and Curation" and "Develop/Refine Social Brand" as the pillars. We use the data from the previous phases and associate them together to get favorable results.

Facebook:

- Page Likes: In this section, we can look at Net Likes- which gives us the breakdown of likes, unlikes, paid, and organic likes (figure 39). It also helps us in identifying “Where Your Page Likes Happened”- on the page, page suggestions, ads, and others (Figure 42).

- Average Net likes from the 24 months are 1. However, there are certain quarters per years, which are further analyzed to get a better insight. The highest number of Net likes are 14 during the September month of 2015.

- As we can see, the number of Unlikes have increased over the years and 2017 has a greater number of Unlikes. Further analysis is done on the Unlikes Data of 2017.

- Page New Likes vs. Unlikes: Graph to check the seriousness of the Unlikes for the current year over previous years (Figures 40&41). In 2017, we had 25.16% of Unlikes in comparison with New likes. Table 1 gives a breakdown of each month’s no of likes and unlikes.

- In 2016, we had a total of 486 New likes and 109 Unlikes, which brings up to 22.42% of Unlikes against the New likes. This percentage was 10-15 for years 2012-2015.

- Where the Likes happened (Figure 42):
o On Your Page: Users who liked your page by visiting it directly.

o Search: Users who searched Facebook for your page specifically, and then started following you.

o Uncategorized Desktop: Likes from a desktop device that cannot be categorized.

o Most of the Likes happened “On Your Page and Uncategorized Desktop

• Post Reach: applies to the no of users — both followers of your page and non-followers — who have seen your posts. The two sets of data shown here represent organic and paid reach, also known as boosted or promoted posts (Figure 43).

• Benchmarks for boosting posts: Organic reach 1500 and Engagement 100. Benchmarks are set a bit above the avg scores. Overall, avg organic reach of posts since 2015 is 1057, and avg of engagement is 89.

• Total Reach: applies to any method your page or its content has reached others on Facebook, including posts on your page, check-ins, or page like ads. Figure 44 segments data into paid and organic reach.

• The avg Total reach of posts is 1245, the avg organic reach is 706, and avg Paid reach is 3220.

• Here organic and paid reach is the measures to be concentrated, as certain posts without Boosting (Paying for additional reach) have been viewed by more than 3000 users, and few paid posts have not been viewed by more than 100 users. Trends or similarities in such posts help in the optimizing and making better use of the “Boost” tool.

• There are some spikes which are further analyzed so that we can recreate for future posts.

• Reactions, Comments, Shares, and more: reports exactly what it states, and is directly tied to your page’s engagement. Increasing these will help you gain additional reach through the page suggestions.

• As seen in post reach here in Figure 45 also only certain posts have a high reaction rate. Analysis of content was done to identify patterns of posts which get more reactions and reach so that we can post similar data in the future.
And based on these analysis results, the categories mentioned under posts have been modified.

- **Reactions**: If we are looking to calculate the sentiment in a field or subject, we can post content related to that and then analyze the reactions.
- **Hide, Report as Spam and Unlikes**: reports the number of users who do not want to see your content in some form or another.
- **It can be a much larger issue when users hide all your posts or report something as spam regularly.**
- **The posts should rarely be reported as spam, and you should consider a serious reassessment to your posting strategy if this happens with even a degree of regularity.**
- **We have some data on hiding All Post, which was analyzed to check the cause. And we found that posts with high engagement are the once which were opted to Hide by many users as they do not wish to get any notification related to this.**

**Twitter:**

- **Figure 48 gives the statistics on the Engagement rate, Link clicks, and No of Retweets.** With the increase in the rate of the measures mentioned above, the overall Engagement on the page increases.
- **Figure 49 visualizes the Likes and Replies we got since 2015.** These metrics play a significant role as they represent direct interaction with followers.
- **Table 2 shows the sum of Engagement rate, Engagement, and Impressions for all the years.**
- **Table 3 shows the average of Engagement rate, Engagement, and Impressions for all the years.** Tables 4&5 show the same date quarter wise. Figure 50 shows the representation of the above mentioned tabled data.
- **The avg engagement rate since 2013 is 0.04436 (0.44%),** Twitter statistics consider 1% and above as a healthy account or page.
- **The avg engagement is 47.42; we have considered the benchmark as 100.** The avg Impressions since 2013 are 1,100, and the benchmark was set in 2000.
- **Using the benchmarks, we have manually analyzed the content of tweets which crossed the benchmarks and categorized them.**
• No of Tweets per day and Engagement (Figure 51): The average no of tweets per
day are 2.5723. The no of tweets posted per day does not affect the engagement.
Engagement is purely depended on the content.
• The highest number of impression received on a single day was 10,002.

Instagram:
• Twenty-seven posts have impressions more than 400, the strongest impression we
have received till Aug 2017 was 666. (Figure 52-54)
• Carousel posts also have a sizable number of impressions. (Figure 55). We have
three posts that have been saved by other users into their profiles. (Figure 57)
• Figure 56 gives the basic explanation of the metrics used in Figures 52-57.
• Figure 58 gives the consolidated stats of Instagram from Aug 2015. Figure 59
shows the audience growth.
• Figures 60 and 61 provide the visualization about engagement and no of posts.
• Figure 62 gives out the vital information on engagements breakdown related to the
hashtags we used. Hashtags play a significate role in diverting new traffic to the
page, and use of unique hashtags help uses locate our account easily.
• Based on the historical data, we can say that Wednesday has the best engagement
followed by Thursday (figure 63).
• Figure 64 and 64 provide the information about top posts and the engagement rates,
avg likes, avg comments, etc.
• Based on the historical data, figure 66 visualizes the prediction of the increase in
audience or followers of our Instagram page.
• We analyzed two years of data we had from Instagram and checked that
engagement per post was better than the slab set by Instagram. However, we see
that the engagement per post could be increased when we upload one per day.
Historically data shows that we did three posts per week and the avg engagement
was 39, and when we did one post per day, the engagement was 39.2. (figure 67)
• We have also looked at the engagements timewise to come up with optimal time to
post. Based on the historical data, lunchtime seems to the peak for engagement.
Monday – Saturday 14:30- 15:00 is the best time and for Sundays 09:30-10:00. (Figure 68).

- It’s important to keep track of what type of posts the users approve off; figure 69 shows that Images are the optimal type.
- We have also checked on the users who are our top commenters. As the number of comments, we got are way less, and they are starting to increase since this quarter. Figure 70 provides the list of users who commented and figure 71 provides the sample of comments.
- We used text analysis to check if there are any word clouds (frequent words which attract users). Figure 72 provides this information.

LinkedIn:

- With the limited amount of data provided by LinkedIn, we were able to get the basic information about the followers and were able to focus our content more toward the followers.
- Figure 83 shows the increase in traffic over the year in both desktop and mobile pages.
- Figures 84-89 provides the visualizations related to the different metrics related to engagement: Impressions, Likes, Comments, Shares, and Social Engagement percentage. As we can see, there is a raise, and a drop in between as most of the users do not indulge in LinkedIn during holiday seasons.
- Figure 90 and 91 shows the data related to the follower’s gain. And figure 92- 97 show the demographics, job functionality, job level, industry, and employment status.
- Every platform has a distinct set of users or followers, and the needs differ. It is crucial to understand these gaps to tailor and target our content more specifically toward the users specific to that platform.

**Measure and Quantify**

Quantification is a way to have more meaningful discussions, less obscured by subjective language. Whereas, Measurement is about seeing more objectively what’s happening in your
world. From the observation of previous phases, we quantified a few metrics which played a significant role in attaining our goals and measured the correlation with other attributes.

*Testing the findings, benchmarks, and best practices:* As mentioned, created a to-do list based on best practices and findings from historical data specific for each platform and tested them over one month (Sep-Oct 2017). We followed the to-do list to check the credibility of the best practices and to see their impact on the engagement, retention of users, and improvement in the number of followers.

*Instagram:*

- To compare the improvement, we have analyzed the data from the test month, including the previous two months. Figure 73 gives an overview of the three months report.
- In figure 74, we see the visualization of engagement breakdown (likes and comments) based on the type of the post (photo or video). The engagement per photo is 39.5 (likes plus comments), which is a little above our previous best record.
- To better understand the engagement rates per post and its comparison with the existing benchmark, we used the benchmark as a scale and created a new metric called a brand average. And in figures 75-77 we presented few posts and their engagements in compared to the brand average.
- Understanding our users is one of the goals of this project, so we have used the comments data and analyzed them to check who our active commenter was and what were the frequently used words or hashtags. (Figure 78&79).
- Based on the historical data analysis, we know that Tuesdays and Saturdays are when most of our users are online (Figure 31). We tried to check if we get most of the responses during the same days. In figure 80, we can see that most of the comments we got were on Thursday followed by Friday and the top hours for engagement was 11 AM.
- To check if visually appealing photos attract more engagement, we have analyzed the data related to the filters used. Figure 81 suggests that the content and message behind the image is more important than visual effects.
• Figure 82 is a breakdown of the engagement we got location-wise, which helps in targeting the audience more in the future.

Facebook:
• Facebook provides many metrics, and we have selected few metrics which align with our goal of the project like Fans or followers (new followers and lost fans), Engagement (impressions, likes, shares, comments, reactions, and interaction rate). Figures 98 and 99 provide the stats of these metrics for Aug-Oct 2017.
• Figures 100, 101, and 104 provide the visualization on the Fan growth and lost fans. As we can see the number of fans lost is way less compared to previous months, which are skewed as we tend to lose fans once the semester ends due to graduation or other reasons?
• Figure 102 gives an idea of the breakdown of engagement we had for the month of Aug-Oct. Figure 103 is used to assess our improvement, and we can see that the interaction rate improved to 1.2236%, which is a good range as Facebook suggests the optimal range to be 1-2%.
• Awareness is the metric used to check if our existing users think of us in their posts (mentions) and it is collaborated with “shares” to check how much new traffic are we getting. Figure 105 gives a breakdown on both mentions and shares related to COB page.
• We need to be vigilant in deciding optimal posts to boost, and figure 106 gives the stats on impression (paid, organic, and viral). Here Viral impressions are calculated based on the views we got with the first few hours of posting.
• Clicks count is also a way to check our reach, engagement, and awareness. Figure 107 shows how many clicks we got for photos, videos, and links. Figure 108 shows that we have much interaction on links and photos compared to videos, status, and MISC.
• Interaction Rate is a prime metric which can be used in many forms, and one of it is shown in figure 109 to decide which days of the week we have a good interaction.
• We have concentrated much of our resources on the content we post as it is the drives the increment in new fans and engagement from existing fans. We have interlinked few metrics and came up with few special metrics which add meaning
to our requirements like Fan penetration, Viral amplification, CTR Average, and Spam source. (Figure 110)

- Figures 111- 114 show the tables of the content we posted and their respective metric measurement. It is evident that we have few posts with good fan penetration and few posts with good viral amplification etc. Ideally, we look for content which has a good amount of fan penetration, viral amplification, and CTR avg with less spamming.

- Fan penetration is the reach calculated, just considering fans. Viral amplification is the reach and engagement we get on posts with the first few hours of the post. CTR avg is the average number of clicks on the post. Spam source is to check which of the posts the fans are unfollowing or hiding.

- After analyzing all the data, the correlation between the metric and our performance, the following metrics seems to be the key to attain the goals of the project: Fan Change Rate, Own Posts, Interaction Rate, Interaction Tools. Figure 115 shows their effect in the increase of our fans. These metrics are specific to the Facebook platform.

- We leverage our existing fans to drive new traffic to the page, and it’s crucial to keep track of our key influencers. Figures 116-119 show the tabulated data related to our influencers and their contributions.

**Twitter:**

- Twitter has its own set of metrics out of which we used the metrics: Own tweets, Retweeted tweets, Replies to users, Retweets on Own tweets, Likes on Own tweets, and Mentions. (Figure 120).

- Figures 121-125 tabulate the tweets and shows which of those are our tweets or retweeted tweets, number of likes, and number of comments. Using this information, we can see the categories we decided on primary test have succeeded in attaining the benchmark or not.

- From our primary research, we have decided to use famous hashtags and unique hashtags to drive new traffics to our page and create a brand value of our own.
Figures 126-128 tabulate all the hashtags we used during the test period and their respective metrics.

- Figures 129 and 130 shows the number of tweets we posted week wise. We have visualized this as we wanted to increase the number of tweets tweeted.

- Combining the results of the primary analysis and test analysis, we see that for twitter: Own tweets, Retweets of our tweets by fans and Mentions play a vital role in achieving our goal.
CHAPTER 7 – CHALLENGES

The blueprint of the project should be dynamic and should be assessed & adjusted for successful completion. The planning of the project should not be restricted just for scheduling and meeting deadline; the fundamentals should be defined clearly:

• What is the problem/goal?
• Who are all involved?
• How do we attain the goal?
• Where to start?

If the fundamentals are defined precisely, then the means of attaining them can be altered, and it has to be altered to keep up with the dynamic and volatile nature of the Social media world. Social media is a trend which is spreading beyond traditional newsrooms or customer service channels. Lives of people are moving towards the digital world more and more every day, and the dynamics of the market also change like the human mind. We have to keep up with these changes and modify our plans frequently to reach the primary goal.

Few of such challenges that we faced during this project are:

• **Facebook algorithm:** Facebook keeps on updating its algorithm to make sure the users are engaged in their platform. In the past, when a user logs in to his page, the hundreds of updates waiting to be populated were presented in chronological order. However, later, they started using the stack ranking algorithm to present the new feeds that interests the user, and this algorithm are modified at least twice every year. During our project, a few modifications were done, and we had to update our best practices.

• One example of the modification included demoting engagement baiting techniques like vote baiting, comments baiting, tag baiting, etc. Many of the social media pages assess their campaigns based on the engagement rate (likes, comments, shares, reactions) and to increase the engagement good practices should be followed but not baiting techniques. Whenever the page admins or owners get smart and find new techniques to improve their engagement or number of fans, Facebook keeps a check if the technique is genuine or not and improves its algorithm accordingly.
• **Career fair week:** We created a to-do list based on best practices and findings from historical data specific to each platform and tested them over one month (Sep-Oct). We followed the to-do list to check the credibility of the best practices and to see their impact on the engagement, retention of users, and improvement in the number of followers. During this testing phase, our results were a bit skewed due to the overlapping of the Career fair, and we had to remove the one-week data to make sure we calculate the genuine credibility. Also, because of events like the career fair and business week, the to-do list tasks were not followed by the content writer, and we worked around that data.

• **Seasonality:** We started the project during summer and had to wait for the semester to start to test our findings as the College of business has seasonality effect based on many factors like holidays, new student’s enrollment, students graduating, mid-sem holidays, etc. Our plan and benchmarks were modified multiple time after identifying these patterns in the time series. We decomposed the time series into multiple series to make sure we address all the patterns.
CHAPTER 8 - CONCLUSION AND FUTURE RESEARCH

Manage and Execute Plan

![Manage and Execute plan Figure](image)

*Figure 10 Manage and Execute plan*

*Insights from the descriptive analysis of the data*: We analyzed the data from different platforms and could discover a range of correlations and insights. Below mentioned are few self-defined metrics which align with the project goals:

1. Awareness and reputation: Calculated using the measure “Mentions” divided by industry conversations and sentiment analysis.
2. Social reach across all platforms: engagement, likes, shares, retweets ETC.
3. Effectiveness of Social campaigns: an increase in fans or followers after a campaign.
4. Content analysis: Analyze content metrics to see what works.

*Reports for individual platforms*: Below figures depict the key findings and best practices for three different social media platforms.
**FACEBOOK**

Key findings and best practices from the analysis:

- **INTERACTION RATE**
  Clicks/Views divided by Impression

- **LINK SHARES**
  Facebook’s algorithm favors links

- **NEWS FEED FAVORED**
  Posts with good engagement, relevant content, live videos, share-ability, original content are favored by the news feed algorithm.

- **PINNING CONTENT**
  We can pin important content to our page and it will stay on top of our page for 7 days.

- **OPTIMAL TIME TO POST**
  With the available metrics we can see when most of our users are online and at what time do the posts get good reach and engagement.

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**TWITTER**

- **USE OF HASTAGS**
  Twitter does not follow Edgeranking and Two-trust use popular Hashtags to divert new traffic.

- **OPTIMAL NUMBER OF TWEETS PER DAY**
  Engage your fans by replying to their questions and comments. Plan your tweets often around 3-5 times a day.

- **PIN TWEETS**
  Pin an important/informative tweet to the top of your page (Events or Admissions info)

- **RETWEET**
  Twitter now gives you the option to retweet and quote your previous tweets.

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*Figure 11 Facebook Key Findings*

*Figure 12 Twitter Key Findings*
**Guidance document:** This document contains the best practices or benchmarks, which are to be followed practically by the content writer or social media admin. It has the steps to be followed or the methods, below mentioned are a few key points from the guidance document:

1. Step to view or create reports/dashboards for different platforms.
2. Guidelines like best time or best day to post based on the analysis of metrics which capture when most of our followers or online and metrics which capture the time when our post got the highest interaction and engagement.
3. Types of content or genre of content to be posted, based on content analysis.
4. Benchmarks on when to boost (pay for ads) a post or how to choose which post to boost.
5. Priority is given to different types of by Facebook and Twitter algorithm.
6. The optimal number of post to be posted per day.
7. The dos and don’ts for different platforms.

**Audience profile:** Profiling of audience/followers is important to determine the ideal target. One
of the goals of the project to identify the major audience and their interests to make sure of their retention. Followers profiling can help in the determination of marketing strategies and designing successful social campaigns. We can also build a fan network and check which of the fans bring high volumes of traffic to our page. Even the demographics of the fans can help us determine the time or content to be posted. Universities are continuously trying to understand their audiences. To be successful, universities should define their social media goals and learn their audience through the data. Key to successful social media measurement is asking the right questions.

**Competitor benchmarks:** In the social media world, every University has its own set of followers with their requirements from the Social media pages. And if we try to replicate exactly what our competitors do or follow, it may or may not result in the same for us. However, it is important to keep an eye on what the competitors are doing and how they are doing it. The purpose is to gain knowledge and insights to work toward the evolved digital marketing strategy. After the testing phase, we made a list of things that can go wrong when it comes to competitors benchmarking:

1. We must be clear about what the competitor benchmarks are and how they are different from our page benchmarks.
2. Benching should be an ongoing process and should be done for every month or quarterly.
3. We must identify indirect competitors as well, in our case, ISU College of Engineering and Iowa State Enrollment services.
4. Making sure that the right weight is given to measures when creating a table comparing the competitor’s metrics with ours.

**Best practices from the analysis and findings:**

**Facebook:**

- There are many factors to be considered to decide on the best time or best day to post content. Factors considered are the time when most of our fans are online and based on the historical data, we can check at what time do our posts get more interaction (comments, likes, and reshares). We see that most of the post got good reach and engagement during
12 PM- 3 PM. However, 6 PM-9 PM is the time when most of our Fans are online. Similarly, we can see that Thursdays we have good reach and engagement followed by Saturday. Posting on these times and days would affect the reach and engagement.

- Interaction Rate is also a prime metric which can be used in many forms, and one of them is to decide which are the days of the week we have a good interaction. Saturday has the highest interaction rate, followed by Friday and Monday.

- Use link-shares. Facebook’s focus on making the feed a better news source for users means their algorithm favors links.

- Facebook news feed favor: Posts receiving a lot of engagement, Posts most relevant to each user, Trending conversations, Facebook Live, Share-ability, Informative posts, Entertainment posts, and Videos posted natively (Original content).

- While boosting the post, please follow the benchmarks of Organic Reach 1500 and Engagement 100.

- Pinning content on the page helps posts get noticed and stay noticed. It will keep your post at the top of your page for up to 7 days making it the first post fans will see.

- The optimal number of post per day is *Three*.

- While posting photo albums, please upload photo up to 10-15 maximum. Also, try to tag as many people as possible. Albums with at least four photos tagging people (repetition of the same person in the tags is also good) would get a good set of audience.

- Upload post which falls under the following category: Personal Life of Professors, Events, Famous Personalities, Alumni, Student Spotlights, Professor Spotlights, Candid pictures, Career Fair, Clubs, Giveaways, Graduation, Orientation, Prospectus, Sports, Staff spotlights.
• Interaction through comments on “on-page posts and on shared posts” is recommended.

• Prioritizing the types of content and fan interactions, the current algorithm favors will help increase feed impressions.

• Use of features like Facebook Live, Native video content, Using link-shares, Facebook Reactions, Posting news, Tagging other relevant pages, Creating event pages and Gif Sharing.

• Include new/recent release info in a cover photo (like Prospectus or events poster).

• Tag other pages mentioned in your posts. If the content is relevant to fans of the other pages, Facebook will show the post in those fan’s feeds.

• Share important news across multiple platforms. Some people like Twitter, while some are always checking Instagram. Having info on every platform extends your reach and keeps you from missing fans.

• Join or create conversations by tracking trending topics and using relevant hashtags.

• Interact with fans as much as possible. Use the “reply” option to answer fans within 24 hours. Ignoring comments can create possible anger or disappointment.

• Use Facebook’s new feature for cross-posting video to reach new, relevant audiences. This makes it possible to use the same video in a new post and see aggregated insights for posts across all pages.

• Share images that are HD and use text. This has been shown to grab Facebook user’s attention and encourage engagement. Use the short link format when premiering with media partners.
• Create Facebook event pages for major events. Fans will be alerted through notification when there is an event near them and a reminder when the date gets closer. Followers can also see which of their friends are going as well as invite friends that may be interested.

• Bring your fans into an interactive full-screen mobile experience through a Facebook Canvas. Create your canvas through Publishing Tools. Add photos, videos, links and information for your fans to discover while they swipe up, down, left and right through the canvas.

Twitter:

• Mix up your feeds with an array of tweets. Engage your fans by replying to their questions and comments. Plan your tweets often around 3-5 times a day.

• Since Twitter does not follow EdgeRanking and Two-trust use popular Hashtags to divert new traffic. Use relevant hashtags in posts which allows users tracking a hashtag to see your posts even if they do not follow you.

• Pin an important/informative tweet to the top of your page (Events or Admissions info)

• Twitter now gives you the option to retweet and quote your previous tweets. Keep in mind you can only retweet each tweet once keeping user’s newsfeeds from being full of tweets they have already seen. Do this to reflect on a previous tweet you think may have gone unnoticed or a tweet that is relevant again.

• 4-5 Tweets per days seems like an optimal number.

• The content of the tweets: please follow the same type of categories, as mentioned above for Facebook. Keep tweets short and sweet.

• Use Twitter to drive traffic to our website (most suitable during events or admissions).
• Use the Twitter search option and keywords like “Iowa State Gerdin” or “Gerdin building” to find tweets relevant which you can reshare or reply to increase interaction.

• New and Key Features: iOS and web now have muted auto-play for native videos, GIFs, and Vines. Clicking/tapping causes full-screen video with sound to pop up. Videos now appear larger in your timeline.

• Use the Go live via Periscope option by composing a tweet and pressing the “live.” Take fans on a tour of the college or an event.

• Polls: iOS, Android, and desktop now could create two-choice polls. Voting will be anonymous and remains open for 24 hours. Just select the poll option within the compose box to get the public’s opinion on anything.

• The Explore tab showcases the top happening, current stories on Twitter. This allows users to discover popular and relevant news in an instant.

• Twitter now gives you the ability to add stickers to your photos. Add these stickers to make your photo pop in fan feeds.

*Instagram:*

• We looked at the engagements timewise to come up with optimal time to post. Based on the historical data, lunchtime seems to the peak for engagement. Monday – Saturday 14:30-15:00 is the best time and for Sundays 09:30-10:00.

• Tagging accounts on photos will add the photo to their tagged section, which is a fantastic way for expanding the reach? Tagging accounts in our captions, and comments will just notify the person we tagged. This should always be done when responding to comments.
• We know that Instagram can be used to post promotional videos and photos; this content doesn’t always make for the best fan experience. Aim for at least 70% authentic, non-promotional photo and video posts. Fans get excited by candid insight into the lives of their favorite professors.

• Be sure to take well-composed, well-lit photos that catch the user's attention. Consider adding a theme to your photos through filter choice and color to catch the user's eye and distinguish the posts in their feed.

• It’s best practice to upload video and photos natively to each social platform. Even though at times, sharing content from your Instagram to Tumblr and Facebook can be an excellent way to cross promote the platforms. We know that both services have great Instagram integrations, and by sharing may let your fans know where to find you.

• Posts using features like hashtags and location tagging tend to over-index in engagement. Hashtags help viewers from different communities find the content they would be interested in. Tagging the location on posts adds them to the feed for that spot, which helps in boosting discovery and reach.
REFERENCES:


Description of metrics used by Facebook:
https://www.facebook.com/business/a/page/page-insights#u_0_0

Description of metrics used by Twitter:
https://support.twitter.com/articles/20171990

Description of the built-in analytical tool of LinkedIn:


<table>
<thead>
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<th>Country</th>
<th>People Reached</th>
<th>Language</th>
<th>People Reached</th>
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<td>English (US)</td>
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<td>1,868</td>
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<td>969</td>
<td>Spanish</td>
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<td>West Des Moines, IA</td>
<td>773</td>
<td>Korean</td>
<td>39</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>64</td>
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<td>506</td>
<td>French (France)</td>
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<td>Omaha, NE</td>
<td>482</td>
<td>Spanish (Spain)</td>
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</tr>
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<td>44</td>
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<td>German</td>
<td>24</td>
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<td>Chicago, IL</td>
<td>363</td>
<td>Italian</td>
<td>23</td>
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<td>Germany</td>
<td>34</td>
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<td>301</td>
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<td>23</td>
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<tr>
<td>Vietnam</td>
<td>34</td>
<td>Minneapolis, MN</td>
<td>348</td>
<td>Traditional Chinese (Tai)</td>
<td>23</td>
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**Figure 4**

<table>
<thead>
<tr>
<th>Gender</th>
<th>63% People Engaged</th>
<th>53% Your Fans</th>
<th>22% 13-17</th>
<th>10% 18-24</th>
<th>9% 25-34</th>
<th>12% 35-44</th>
<th>6% 45-54</th>
<th>8% 55-64</th>
<th>3% 66+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>63% People Engaged</td>
<td>53% Your Fans</td>
<td>22% 13-17</td>
<td>10% 18-24</td>
<td>9% 25-34</td>
<td>12% 35-44</td>
<td>6% 45-54</td>
<td>8% 55-64</td>
<td>3% 66+</td>
</tr>
<tr>
<td>Men</td>
<td>37% People Engaged</td>
<td>46% Your Fans</td>
<td>14% 13-17</td>
<td>10% 18-24</td>
<td>9% 25-34</td>
<td>12% 35-44</td>
<td>6% 45-54</td>
<td>8% 55-64</td>
<td>1% 66+</td>
</tr>
</tbody>
</table>

**Figure 5**

<table>
<thead>
<tr>
<th>Country</th>
<th>People Engaged</th>
<th>Country</th>
<th>People Engaged</th>
<th>Language</th>
<th>People Engaged</th>
</tr>
</thead>
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<td>873</td>
<td>Ames, IA</td>
<td>205</td>
<td>English (US)</td>
<td>872</td>
</tr>
<tr>
<td>India</td>
<td>0</td>
<td>Des Moines, IA</td>
<td>54</td>
<td>English (UK)</td>
<td>16</td>
</tr>
<tr>
<td>Italy</td>
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<td>Ankeny, IA</td>
<td>39</td>
<td>Spanish</td>
<td>3</td>
</tr>
<tr>
<td>Finland</td>
<td>1</td>
<td>Council Bluffs, IA</td>
<td>37</td>
<td>French (France)</td>
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</tr>
<tr>
<td>United Kingdom</td>
<td>1</td>
<td>West Des Moines, IA</td>
<td>31</td>
<td>Arabic</td>
<td>1</td>
</tr>
<tr>
<td>Croatia</td>
<td>1</td>
<td>Carroll, IA</td>
<td>29</td>
<td>Finnish</td>
<td>1</td>
</tr>
<tr>
<td>Israel</td>
<td>1</td>
<td>Johnston, IA</td>
<td>23</td>
<td>Traditional Chinese (Ch)</td>
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</tr>
<tr>
<td>China</td>
<td>1</td>
<td>Omaha, NE</td>
<td>15</td>
<td>Traditional Chinese (Tai)</td>
<td>1</td>
</tr>
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<td>Dominican Republic</td>
<td>1</td>
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<td></td>
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**Figure 6**
Figure 7

<table>
<thead>
<tr>
<th>Age category</th>
<th>% of audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 to 17</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td>18 to 24</td>
<td>49%</td>
</tr>
<tr>
<td>25 to 34</td>
<td>27%</td>
</tr>
<tr>
<td>35 to 44</td>
<td>10%</td>
</tr>
<tr>
<td>45 to 54</td>
<td>10%</td>
</tr>
<tr>
<td>55 to 64</td>
<td>1%</td>
</tr>
<tr>
<td>over 65</td>
<td>3%</td>
</tr>
</tbody>
</table>

Figure 8
Figure 9

<table>
<thead>
<tr>
<th>State or region</th>
<th>% of audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa, US</td>
<td>50%</td>
</tr>
<tr>
<td>Minnesota, US</td>
<td>9%</td>
</tr>
<tr>
<td>Illinois, US</td>
<td>7%</td>
</tr>
<tr>
<td>Nebraska, US</td>
<td>3%</td>
</tr>
<tr>
<td>Texas, US</td>
<td>2%</td>
</tr>
<tr>
<td>Colorado, US</td>
<td>2%</td>
</tr>
<tr>
<td>California, US</td>
<td>2%</td>
</tr>
<tr>
<td>Wisconsin, US</td>
<td>2%</td>
</tr>
<tr>
<td>Georgia, US</td>
<td>2%</td>
</tr>
<tr>
<td>Florida, US</td>
<td>2%</td>
</tr>
</tbody>
</table>

Figure 10

Education (highest level completed)

- Completed high school: 46%
- Completed college: 40%
- Completed graduate school: 13%
TV Genres

<table>
<thead>
<tr>
<th>Genre name</th>
<th>% of audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports</td>
<td>71%</td>
</tr>
<tr>
<td>Drama</td>
<td>40%</td>
</tr>
<tr>
<td>Movies</td>
<td>28%</td>
</tr>
<tr>
<td>Comedy</td>
<td>27%</td>
</tr>
<tr>
<td>Reality</td>
<td>26%</td>
</tr>
<tr>
<td>Children &amp; Family</td>
<td>19%</td>
</tr>
<tr>
<td>Sci-fi</td>
<td>18%</td>
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<tr>
<td>Talk</td>
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<tr>
<td>Sports Talk</td>
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<tr>
<td>Game Show</td>
<td>11%</td>
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</table>

Figure 13

Gender

- Men: 33%
- Women: 67%

Figure 14
Figure 17

Top Locations

<table>
<thead>
<tr>
<th>Cities</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ames</td>
<td>46%</td>
</tr>
<tr>
<td>Des Moines</td>
<td>11%</td>
</tr>
<tr>
<td>Ankeny</td>
<td>6%</td>
</tr>
<tr>
<td>Cedar Rapids</td>
<td>2%</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>2%</td>
</tr>
</tbody>
</table>

Figure 18

Top Locations

<table>
<thead>
<tr>
<th>Cities</th>
<th>Countries</th>
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<tbody>
<tr>
<td>United States</td>
<td>95%</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>1%</td>
</tr>
<tr>
<td>China</td>
<td>1%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1%</td>
</tr>
<tr>
<td>South Korea</td>
<td>1%</td>
</tr>
</tbody>
</table>

Figure 19
Best time to post
Best time to post based on previous posts' performance (reach and engagement).

![Graph showing best time to post](image)

Figure 27

Best day to post
Best day to post based on previous posts' performance (reach and engagement).

![Graph showing best day to post](image)

Figure 28
Figure 34

Figure 35

Figure 36

Figure 37
<table>
<thead>
<tr>
<th>MONTH</th>
<th>Sum of New Likes</th>
<th>Sum of Unlikes</th>
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<tr>
<td>January</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>February</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>March</td>
<td>29</td>
<td>13</td>
</tr>
<tr>
<td>April</td>
<td>64</td>
<td>7</td>
</tr>
<tr>
<td>May</td>
<td>47</td>
<td>17</td>
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<td>June</td>
<td>59</td>
<td>11</td>
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<td>July</td>
<td>48</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>298</td>
<td>75</td>
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</table>

Table 1

Figure 41

Figure 42
Engagement rate
1.2%

Link clicks
316

On average, you earned 3 link clicks per day

Retweets
102

On average, you earned 1 Retweets per day

Figure 48

Likes
508

On average, you earned 6 likes per day

Replies
17

On average, you earned 0 replies per day

Figure 49
### Table 1

Table for Engagement and Impressions year wise:

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<thead>
<tr>
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<th>2015</th>
<th>2016</th>
<th>2017</th>
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<td>12</td>
<td>17</td>
<td>36</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Engagements</td>
<td>1,355</td>
<td>12,080</td>
<td>41,221</td>
<td>24,974</td>
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<td>44,110</td>
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### Table 2

Table 2

<table>
<thead>
<tr>
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<th>2015</th>
<th>2016</th>
<th>2017</th>
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<tbody>
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<td>Avg. Engagement Rate</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Avg. Engagements</td>
<td>13</td>
<td>18</td>
<td>74</td>
<td>54</td>
<td>49</td>
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<tr>
<td>Avg. Impressions</td>
<td>432</td>
<td>631</td>
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### Table 3

Quarterly report:

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<th>Q2</th>
<th>Q3</th>
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<th>Q2</th>
<th>Q3</th>
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<tbody>
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<td>4</td>
<td>7</td>
<td>2</td>
<td>7</td>
<td>8</td>
<td>14</td>
<td>7</td>
<td>4</td>
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### Table 4

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<th>Q4</th>
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<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
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<tbody>
<tr>
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<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Avg. Engagements</td>
<td>13</td>
<td>15</td>
<td>27</td>
<td>14</td>
<td>12</td>
<td>88</td>
<td>70</td>
<td>80</td>
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<tr>
<td>Avg. Impressions</td>
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<td>639</td>
<td>561</td>
<td>1,025</td>
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<td>1,490</td>
<td>1,707</td>
<td>1,699</td>
<td>1,384</td>
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### Table 5
Figure 54

Figure 55

Impressions
The total number of times your post has been seen.

Reach
The number of unique accounts that have seen your post.

Engagement
The number of likes and comments on your post.

Saved
The number of unique accounts that saved your post.
### Instagram Analysis report for 2 years (Aug 2015 – Sep 2017):

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
<th>Increase</th>
<th>Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Audience</strong></td>
<td>490</td>
<td>2962.1%</td>
<td></td>
</tr>
<tr>
<td><strong>Posts</strong></td>
<td>134</td>
<td>308.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Engagement</strong></td>
<td>3,417</td>
<td>2811.9%</td>
<td></td>
</tr>
<tr>
<td><strong>Daily Post ER</strong></td>
<td>15.56%</td>
<td>74529%</td>
<td></td>
</tr>
<tr>
<td><strong>Likes</strong></td>
<td>3,382</td>
<td>2766.1%</td>
<td></td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>35</td>
<td>337.5%</td>
<td></td>
</tr>
</tbody>
</table>

---

Figure 57

[Figure 57 image]

Figure 58

[Figure 58 image]
The profile added 474 followers, which is a 28.02% increase compared to the previous period.

Figure 59

The profile saw an increase in engagement of 2011.9% with an increase of 3,382 likes and comments.

Figure 60
Figure 6a

<table>
<thead>
<tr>
<th>HashTag</th>
<th>Likes</th>
<th>Comments</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>#howIspentmysummervacations</td>
<td>276</td>
<td>3</td>
<td>279</td>
</tr>
<tr>
<td>#entrepreneur</td>
<td>66</td>
<td>3</td>
<td>69</td>
</tr>
<tr>
<td>#bbt</td>
<td>144</td>
<td>2</td>
<td>146</td>
</tr>
<tr>
<td>#scib</td>
<td>120</td>
<td>1</td>
<td>121</td>
</tr>
<tr>
<td>#gardin</td>
<td>125</td>
<td>1</td>
<td>126</td>
</tr>
<tr>
<td>#nationalbestfriendday</td>
<td>76</td>
<td>1</td>
<td>77</td>
</tr>
<tr>
<td>#shademonstory</td>
<td>76</td>
<td>1</td>
<td>77</td>
</tr>
</tbody>
</table>
**Optimal Posts**

- **1 post per day (Optimal Frequency)**: 39.2 - 1.02%
- **2 posts per day**: 39.0 - 0.57%
- **4 posts per week**: 38.5 - 0.80%
- **3 posts per week (≈ Your historical post frequency)**: 39 (for all post types)

*Data analyzed over the last 6 weeks.*

**Figure 67**

<table>
<thead>
<tr>
<th>Day</th>
<th>Best Time to Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>14:30-15:00</td>
</tr>
<tr>
<td>Tuesday</td>
<td>14:30-15:00</td>
</tr>
<tr>
<td>Wednesday</td>
<td>14:30-15:00</td>
</tr>
<tr>
<td>Thursday</td>
<td>14:30-15:00</td>
</tr>
<tr>
<td>Friday</td>
<td>14:30-15:00</td>
</tr>
<tr>
<td>Saturday</td>
<td>14:30-15:00</td>
</tr>
<tr>
<td>Sunday</td>
<td>09:30-10:00</td>
</tr>
</tbody>
</table>

*Data analyzed over the last 6 weeks.*

**Figure 68**
Optimal Post Format

- **Photo**

<table>
<thead>
<tr>
<th>Type</th>
<th>Engagements Per Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image (Optimal Type)</td>
<td>39.4</td>
</tr>
<tr>
<td>Good work! You are already using the optimal post format</td>
<td>1.56x</td>
</tr>
<tr>
<td>Video</td>
<td>33.5</td>
</tr>
<tr>
<td></td>
<td>-1.53x</td>
</tr>
</tbody>
</table>

*Data analyzed over the last 6 weeks.*

Figure 69

Figure 70
Instagram Analysis report for this quarter (July 2017 – Sep 2017):

<table>
<thead>
<tr>
<th>MOST ENGAGING POST</th>
<th>INSTAGRAM POSTS</th>
<th>ENGAGEMENTS</th>
<th>ENGAGEMENTS PER POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Posts</td>
<td>23</td>
<td>1,125</td>
<td>48.9</td>
</tr>
<tr>
<td>Photo Posts</td>
<td>22</td>
<td>869</td>
<td>39.5</td>
</tr>
<tr>
<td>Video Posts</td>
<td>1</td>
<td>24</td>
<td>24.0</td>
</tr>
</tbody>
</table>

MOST ENGAGING FILTER: Valenica
MOST ENGAGING LOCATION: Podere Conti

Figure 73

Total Engagement:

1,125

Engagement as a % of Followers: 229.6%

INSTAGRAM LIKES:
- per photo: 39.1
- per video: 26.0

INSTAGRAM COMMENTS:
- per photo: 0.4
- per video: 0.0

Figure 74

Figure 75

Figure 76
Figure 77

Figure 78

Figure 79

Figure 80
FOLLOWERS DATA:

**Follower highlights**

- **28,244** total followers of all time
- **148** organic follower gains in the last 30 days
  - 10.56% from previous 30 days

**Top 5 countries**

- United States: 26,365
- India: 174
- China: 170
- Canada: 94
- Brazil: 82
Follower Demographics ©  |  Region

Top 5 regions
- Des Moines, Iowa Area: 13,252
- Greater Minneapolis-St. Paul Area: 1,809
- Greater Chicago Area: 1,252
- Greater Omaha Area: 551
- Kansas City, Missouri Area: 522

Figure 93

Follower Demographics ©  |  Job Function

Top 5 job functions
- Education: 3,954
- Business Development: 2,867
- Operations: 2,723
- Sales: 2,644
- Research: 2,269

Figure 94

Follower Demographics ©  |  Employment Status

Employees who follow your page
- Non-employee: 28,529
- Employee: 76

Figure 97

Key Metrics

<table>
<thead>
<tr>
<th>TOTAL FANS</th>
<th>TOTAL ENGAGEMENT</th>
<th>REPLIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,834</td>
<td>2,388</td>
<td>4</td>
</tr>
</tbody>
</table>

Figure 98
Fan growth
Number of new fans or fans lost during the selected period.

New organic fans
New paid fans
Unlikes
New fans (net)

Facebook Fans Total

08/27/2017 - 10/24/2017
### Facebook Interaction Rate

08/27/2017 - 10/24/2017

![Facebook Interaction Rate Chart]

Figure 103
Facebook Fans Change Rate

08/27/2017 - 10/24/2017

Figure 104

Awareness

Number of mentions and shares on your posts.

Mentions: 42
Shares: 31
Awareness: 11

Figure 105

Page impressions

Number of paid, organic, and viral impressions during the concerned period.

Page impressions: 278,688

Paid page impressions: 75,421
Organic page impressions: 141,939
Viral page impressions: 60,500

Figure 106
<table>
<thead>
<tr>
<th>Date</th>
<th>Post</th>
<th>Fan Prtr</th>
<th>Viral Amp</th>
<th>CTR</th>
<th>Spam Sc</th>
<th>Stories</th>
<th>Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 Oct 17</td>
<td>Did you know? Our student bios don't always stay on campus!</td>
<td>15.84%</td>
<td>0.56 x</td>
<td>7.66%</td>
<td>0.00 %</td>
<td>20</td>
<td>797</td>
</tr>
<tr>
<td>24 Oct 17</td>
<td>ENGAGING Yesterday we hosted a high school woman from our city.</td>
<td>4.17%</td>
<td>0.53 x</td>
<td>22.33%</td>
<td>0.00 %</td>
<td>15</td>
<td>215</td>
</tr>
<tr>
<td>24 Oct 17</td>
<td>ENGAGING It's Homecoming! We kicked off the week with a parade.</td>
<td>32.66%</td>
<td>0.32 x</td>
<td>11.88%</td>
<td>0.00 %</td>
<td>37</td>
<td>1,298</td>
</tr>
<tr>
<td>24 Oct 17</td>
<td>Thank you to WHO TV Channel 13 News for visiting our Young Women.</td>
<td>30.59%</td>
<td>0.04 x</td>
<td>2.71%</td>
<td>0.00 %</td>
<td>11</td>
<td>1,029</td>
</tr>
<tr>
<td>23 Oct 17</td>
<td>Link Post</td>
<td>49.05%</td>
<td>0.27 x</td>
<td>8.87%</td>
<td>0.00 %</td>
<td>24</td>
<td>1,630</td>
</tr>
<tr>
<td>23 Oct 17</td>
<td>Link Post</td>
<td>21.35%</td>
<td>0.13 x</td>
<td>1.69%</td>
<td>0.00 %</td>
<td>11</td>
<td>635</td>
</tr>
<tr>
<td>23 Oct 17</td>
<td>Our Young Women in Business: Visitors participated in a new event</td>
<td>28.5%</td>
<td>0.09 x</td>
<td>8.37%</td>
<td>0.00 %</td>
<td>20</td>
<td>1,141</td>
</tr>
<tr>
<td>23 Oct 17</td>
<td>Our Young Women in Business: Conference is underway! This is it!</td>
<td>34.33%</td>
<td>0.06 x</td>
<td>4.66%</td>
<td>0.00 %</td>
<td>22</td>
<td>1,254</td>
</tr>
<tr>
<td>20 Oct 17</td>
<td>ENGAGING A sneak peek photo for two, or three, of J from today's show</td>
<td>37.37%</td>
<td>0.36 x</td>
<td>12.07%</td>
<td>0.00 %</td>
<td>29</td>
<td>1,472</td>
</tr>
<tr>
<td>20 Oct 17</td>
<td>Link Post</td>
<td>39.41%</td>
<td>0.01 x</td>
<td>3.02%</td>
<td>0.00 %</td>
<td>8</td>
<td>1,288</td>
</tr>
<tr>
<td>20 Oct 17</td>
<td>More than 700 students, faculty, and staff joined us on campus!</td>
<td>36.73%</td>
<td>0.03 x</td>
<td>8.90%</td>
<td>0.00 %</td>
<td>19</td>
<td>1,214</td>
</tr>
<tr>
<td>20 Oct 17</td>
<td>Business on a ready to celebrate Debbie and her AV College students!</td>
<td>48.31%</td>
<td>0.18 x</td>
<td>2.89%</td>
<td>0.00 %</td>
<td>43</td>
<td>1,730</td>
</tr>
<tr>
<td>19 Oct 17</td>
<td>VIRAL PENETRATION IT'S OFFICIAL! On Thursday, the Boise City Council</td>
<td>61.71%</td>
<td>1.81 x</td>
<td>5.09%</td>
<td>0.00 %</td>
<td>229</td>
<td>7,073</td>
</tr>
<tr>
<td>19 Oct 17</td>
<td>Have family coming to town for October Family Weekend? The</td>
<td>29.65%</td>
<td>0.07 x</td>
<td>0.01%</td>
<td>0.00 %</td>
<td>3</td>
<td>831</td>
</tr>
<tr>
<td>19 Oct 17</td>
<td>Realtime for spring 2018! We're offering the following new</td>
<td>32.50%</td>
<td>0.00 x</td>
<td>0.94%</td>
<td>0.00 %</td>
<td>4</td>
<td>1,021</td>
</tr>
<tr>
<td>18 Oct 17</td>
<td>This year's Greater Iowa Credit Union lecture will feature Patti</td>
<td>22.83%</td>
<td>0.00 x</td>
<td>0.02%</td>
<td>0.00 %</td>
<td>2</td>
<td>589</td>
</tr>
<tr>
<td>18 Oct 17</td>
<td>Voting for our October Teacher and staff member of the month</td>
<td>34.47%</td>
<td>0.03 x</td>
<td>2.76%</td>
<td>0.00 %</td>
<td>9</td>
<td>1,066</td>
</tr>
</tbody>
</table>

Figure 11
Facebook Key Metrics Radar

08/27/2017 - 10/24/2017

![Facebook Key Metrics Radar](image)

**Figure 11.5**

<table>
<thead>
<tr>
<th>Name</th>
<th>On Pages</th>
<th>Posts</th>
<th>Comments</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Myers</td>
<td>View Interactions iowa State University College of Business (4)</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Janette Larkin</td>
<td>View Interactions iowa State University College of Business (2)</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Tara Fisher</td>
<td>View Interactions iowa State University College of Business (2)</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Julis Magee</td>
<td>View Interactions iowa State University College of Business (2)</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Tessekkay Davis</td>
<td>View Interactions iowa State University College of Business (2)</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sheryl Montabon</td>
<td>View Interactions iowa State University College of Business (1)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Xena Jolly</td>
<td>View Interactions iowa State University College of Business (1)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Jen Haxterland Snyder</td>
<td>View Interactions iowa State University College of Business (1)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Bailey Pease</td>
<td>View Interactions iowa State University College of Business (1)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Kristine Krausman Snyder</td>
<td>View Interactions iowa State University College of Business (1)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Figure 11.6**
### Twitter Key Metrics Table

**08/27/2017 - 10/24/2017**

<table>
<thead>
<tr>
<th>Name</th>
<th>On Pages</th>
<th>Posts</th>
<th>Comments</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lisa Shinkat</td>
<td>Iowa State University</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mary-Kate Lange</td>
<td>Iowa State University</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dan Zabier</td>
<td>Iowa State University</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Deborah Martinez</td>
<td>Iowa State University</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Benjamin Jeffrey Jones</td>
<td>Iowa State University</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>LaRae Pedersen</td>
<td>Iowa State University</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Twitter Own and Retweeted Tweets Table - 1 of 5

**08/27/2017 - 10/24/2017**

<table>
<thead>
<tr>
<th>Tweet</th>
<th>Retweeted Tweet?</th>
<th>Retweets</th>
<th>Likes</th>
<th>Replies</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ISU_CoB - 2017-10-24 11:10:05 ICYMI: Dean Spalding and members of @ISU_CoB student orgs handed out lots of free candy &amp; Cyclone spirit in Sunday’s @ISUHomecoming parade! <a href="https://t.co/2Z9y5j8bOH">https://t.co/2Z9y5j8bOH</a></td>
<td>No</td>
<td>3</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>@ISU_CoB - 2017-10-24 09:30:21 Thank you to @WkOHi for visiting our Young Women in Business Conference yesterday! Check out their video coverage below. @isu_cwib #ISUWiIB <a href="https://t.co/1D3qSaENLd">https://t.co/1D3qSaENLd</a></td>
<td>No</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>@ISU_CoB - 2017-10-23 17:49:52 RT @IowaStateUNews: FULL STORY: Wendy Wintersteine named Iowa State University president <a href="https://t.co/DW5SOVjGd4">https://t.co/DW5SOVjGd4</a> <a href="https://t.co/yKfmyjFOG6">https://t.co/yKfmyjFOG6</a></td>
<td>Yes</td>
<td>36</td>
<td>94</td>
<td>0</td>
</tr>
<tr>
<td>@ISU_CoB - 2017-10-23 17:31:56 RT @IowaRegents: It's official. Wendy Wintersteine is the #NextISUPres <a href="https://t.co/MUQoDtyvPz">https://t.co/MUQoDtyvPz</a></td>
<td>Yes</td>
<td>254</td>
<td>527</td>
<td>0</td>
</tr>
<tr>
<td>@ISU_CoB - 2017-10-23 14:37:29 Check out the Levee Your LegsCy group project our YWiB visitors participated in during lunch. Great work, ladies! #ISUWiB <a href="https://t.co/vyIm5BolyQ">https://t.co/vyIm5BolyQ</a></td>
<td>No</td>
<td>3</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>@ISU_CoB - 2017-10-23 12:15:28 The @IowaRegents are expected to select the #NextISUPres later today. Who do you think will become @IowaStateU's 16th president?</td>
<td>No</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Date</td>
<td>Tweet</td>
<td>Retweeted Tweet?</td>
<td>Retweets</td>
<td>Likes</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>08/27/2017</td>
<td>@ISU_CoB - 2017-10-23 12:13:44 RT @ISU_IPEC: Spots are limited, be sure to register today for the FREE Smart Start Workshop on Nov 4: <a href="https://t.co/JHD9ZoRynN">https://t.co/JHD9ZoRynN</a> <a href="https://t.co/">https://t.co/</a>...</td>
<td>Yes</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>@ISU_CoB - 2017-10-23 11:35:59 Our YWIB Conference is underway! The day started with a keynote from @ISU_CoB alumna, Sarah Lucke, who co-founded @isucwib as a student! <a href="https://t.co/AP52sHd2II">https://t.co/AP52sHd2II</a></td>
<td>No</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
|            | @ISU_CoB - 2017-10-23 11:05:59 More than 700 people joined us on Friday for food, music, and perfect weather to celebrate our new name!  
risk: https://t.co/R2wcwNYt6 https://t.co/kSMkL7Dzg | No               | 0        | 0     | 0       |
|            | @ISU_CoB - 2017-10-23 09:46:27 Happy Homecoming Week, Cyclones! Did you purchase a Food on Campus button? We're today's sponsors! Free @Fazolis anyone? #SOUNDtheCYPREN https://t.co/PhJe9YKooP | No               | 1        | 2     | 0       |
|            | @ISU_CoB - 2017-10-20 16:52:25 A teaser photo (or two, or three...) from today's big celebration!  
FridayFeeling #CoBcelebration #IvyCollegeofBusiness https://t.co/9gG5S5Uflv | No               | 2        | 6     | 0       |

<table>
<thead>
<tr>
<th>Date</th>
<th>Tweet</th>
<th>Retweeted Tweet?</th>
<th>Retweets</th>
<th>Likes</th>
<th>Replies</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/27/2017</td>
<td>@ISU_CoB - 2017-10-20 16:05:44 Sliding into the weekend like... @TheMascotCy #CoBcelebration <a href="https://t.co/KgvdG3J14">https://t.co/KgvdG3J14</a></td>
<td>No</td>
<td>1</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>@ISU_CoB - 2017-10-20 15:58:13 RT @rocketCurds: Hammocking: the official pastime of #CycloneNation <a href="https://t.co/T0yeZyiWMM">https://t.co/T0yeZyiWMM</a></td>
<td>Yes</td>
<td>2</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>@ISU_CoB - 2017-10-20 13:02:18 RT @TylerRoyMorgan: Guess the first three people to use the photo booth? @ISU_CoB Ivy College of Business Celebration <a href="https://t.co/C3o5sEgMG">https://t.co/C3o5sEgMG</a>...</td>
<td>Yes</td>
<td>1</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>@ISU_CoB - 2017-10-20 12:58:09 The celebration is on, and we're loving the music from @ISUDrumline! <a href="https://t.co/0aq9Tsn99s">https://t.co/0aq9Tsn99s</a></td>
<td>No</td>
<td>2</td>
<td>16</td>
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### Hashtag Detection | All Profiles

06/27/2017 - 10/24/2017 (daily)

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Figure 128

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Figure 129

![Own Tweets By Weekday | All Profiles](image)
Figure 130

Tweets Change | All Profiles
08/27/2017 - 10/24/2017 (daily)