Improve our social media strategy

Specification document

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Introduction

This document serves as the specifications gathered during your interviews with the community manager.

Please fill in the results of your SQL queries, together with screen shots of the SQL statements.

If insufficient room is provided in the slide, please add as your see fit.

If you feel the number of columns indicated on the slide is insufficient to answer the question, please add the columns that you think would be helpful.

Page Statistics - Global

Please write SQL statements to answer the following questions and put the results in the table below:

- How many new subscribers for the page over the time period?
- What is the daily average reach of the posts on the page over the period?
- What is the daily average engagement rate on the page over the period ?

SQL Statements (3)

```
SELECT  last - first FROM (SELECT SUM(NumberOfFans) first FROM
FansPerCountry WHERE Date = '2018-09-19'
)
 LEFT JOIN
    (SELECT SUM(NumberOfFans) last FROM FansPerCountry WHERE Date =
'2018-10-16'
);
```

```
SELECT round(avg(sumDaily), 2)
FROM GlobalPage, (SELECT Date, sum(DailyPostsReach) as sumDaily  FROM
GlobalPage GROUP BY Date);
```

```
SELECT round( AVG(likes)) FROM (SELECT round(sum(NewLikes)) as likes FROM
GlobalPage group by Date);
```

Number of new subscribers for the page over the period?
= 41571

Daily average reach of the posts on the page over the period?
= 83826721.36

Daily average NewLikes rate on the page over the period?
= 402415

Page Statistics - Top 10 countries (# fans)

What are the top 10 countries (considering the number of fans)?

SQL Statement

```
SELECT CountryCode, max(NumberOfFans)

FROM FanPerCountry

GROUP BY CountryCode

ORDER BY NumberOfFans DESC LIMIT 10;
```

Expected table (results)

Country code	Country name	Number of Fans
CI	Ivory Coast	112160
CM	Cameroon	102211
SN	Senegal	83561
FR	France	73252
MG	Madagascar	72956
CD	Democratic Republic of the Congo	50705
BF	Burkino Faso	43500
ML	Mali	40578
DZ	Algeria	39093
GN	Guinea	36821

Page Statistics - Top 10 countries (penetration ratio)

What are the top 10 countries (considering the penetration ratio: % of the country population that are fans)?

SQL Statement

```
SELECT CountryName,
round(Max(NumberOfFans) * 100.00 / Population,
2)

AS penetrationRatio, NumberOfFans, Population
FROM FansPerCountry

JOIN PopStats PS on
FansPerCountry.CountryCode = PS.CountryCode

WHERE FansPerCountry.Date = (SELECT
max(Date)

FROM FansPerCountry) GROUP BY
CountryName

ORDER BY penetrationRatio DESC  LIMIT  10;
```

Expected table (results)

Country	Penetration Ratio	Number of fans	Population
Reunion	2.41	20885	866506
French Polynesia	1.82	5148	283007
New Caledonia	1.79	5032	280460
Mauritius	1.77	24210	1364283
Martinique	1.44	5427	376480
Guadeloupe	1.36	5379	395700
Gabon	1.13	23954	2119036
Mayotte	0.73	1983	270372
Comoros	0.6	4925	821164
French Guiana	0.57	1687	296711

Page Statistics - Bottom 10 cities (# fans)

What are the bottom 10 cities (considering the number of fans) **among countries with a population over 20 million?**
This could be considered our growth potential

SQL Statement

```
SELECT CountryName, City, NumberOfFans,
Population

FROM FansPerCity JOIN PopStats PS on
FansPerCity.CountryCode = PS.CountryCode

WHERE PS.Population > 20000000 AND
FansPerCity.Date = (SELECT  max(Date)

FROM FansPerCity) GROUP BY
FansPerCity.City ORDER BY
FansPerCity.NumberOfFans ASC LIMIT 10;
```

Expected table (results)

Country	City	Number of fans	Population
Algeria	Bejaia	2301	41657488
Cameroon	Ngaoundere	2318	25640965
Madagascar	Fianarantsoa	2366	25683610
Algeria	Tizi Ouzou	2524	41657488
Canada	Montreal	2887	35881659
Algeria	Oran	2920	41657488
Ivory Coast	Bouake	3376	24290000
Ivory Coast	Cocody	3647	24290000
Morocco	Casablanca	3951	34314130
Angola	Luanda	4614	30355880

Page Statistics - Analysis by age group (split of fans)

What is the split of page fans across age groups (in %)**?**

SQL Statement

```
WITH FPGA AS (
SELECT * FROM FansPerGenderAge

WHERE Date = (SELECT MAX(Date) FROM
FansPerGenderAge ))

SELECT AgeGroup,

ROUND(SUM(NumberOfFans)*1.0/
(SELECT SUM(NumberOfFans)

FROM FPGA)*100.0,2)||'%'Percentage

FROM FPGA
GROUP BY AgeGroup;
```

Expected table (results)

AgeGroup	Percentage of fans
13-17	2.09%
18-24	21.3%
25-34	35.8%
35-44	19.4%
45-54	9.45%
55-64	5.02%
65+	6.94%

Page Statistics - Analysis by gender (split of fans)

What is the split of page fans by gender (in %)**?**

SQL Statement

```
WITH FPGA AS (SELECT * FROM
FansPerGenderAge

WHERE Date = (SELECT MAX(Date) FROM
FansPerGenderAge ))

SELECT Gender,
round(SUM(NumberOfFans)*1.0/
(SELECT SUM(NumberOfFans) FROM FPGA

WHERE  (SELECT  max(Date) FROM
FansPerGenderAge)) *100.0,2) ||'%' Percentage

FROM FPGA
GROUP BY Gender;
```

Expected table (results)

Gender	Number of fans
Male	43.5%
Female	56.41%
Undisclosed	0.09%

Page Statistics - Analysis by language

- What is the number and percentage of the fans that have declared English as their primary language (in %)**?**
- Based on the number of fans who have declared English as their primary language and living in the US, what is the potential buying power that can be accessed ? (Please use the average income data per country for this question. It is estimated that on average, 0.01% of the annual income is dedicated to online magazine subscriptions in the US)

SQL Statements (3)

```
SELECT CountryCode, SUM(NumberOfFans)
FROM FansPerLanguage WHERE Language = 'en'
```

```
SELECT CountryCode,
round(SUM(NumberOfFans) * 100.0 / (SELECT
SUM(NumberOfFans)
FROM FansPerLanguage), 3) as
english_percentage FROM FansPerLanguage
WHERE Language = 'en';
```

```
SELECT  PopStats.AverageIncome,
PopStats.CountryCode, (.0001 * NumberOfFans *
PopStats.AverageIncome)
AS Buying_Power
FROM PopStats JOIN  FansPerLanguage FPL on
PopStats.CountryCode = FPL.CountryCode
WHERE Language = 'en' AND Date = (SELECT
max(Date)
FROM FansPerLanguage) GROUP BY
PopStats.AverageIncome;
```

Number of English speaking fans?

= 1347752

% of English speaking fans?

= 5.081 %

Potential market in US (in dollars)?

= 200322.75304600003

Posts Statistics - Engagement per day of the week

- What is the split of the EngagedFans ratio per day of the week (monday, tuesday,...)**?**
- What is the best day of the week to publish posts?

SQL Statement

```
SELECT strftime('%w', CreatedTime) as week,
round(SUM(EngagedFans) * 100.0 / (SELECT

SUM(EngagedFans)

FROM PostInsights ), 2) AS SplitEngangement

FROM PostInsights GROUP BY week;
```

Expected table (results)

Day of the week	Engagement ratio (%)
Monday	19.2
Tuesday	18.7
Wednesday	15.4
Thursday	6.3
Friday	8.6
Saturday	19.7
Sunday	12.1

Best day of the week to publish posts?

Post Statistics - Engagement per time of day

- What is the split of the EngagedFans ratio per time of the day **?**
- What is the best time of the day to publish posts?

SQL Statement

```
SELECT ROUND(sum(EngagedFans) * 1.0 /

(SELECT SUM(EngagedFans)

 FROM PostInsights)*100.0,2)||'%'Percentage,
      case when cast(strftime('%H',CreatedTime) as integer) >= 5 and
      cast(strftime('%H',CreatedTime) as integer) <= 8 then 5 when
      cast(strftime('%H',CreatedTime) as integer) >= 9 and
      cast(strftime('%H',CreatedTime) as integer) <= 11 then 9 when
      cast(strftime('%H',CreatedTime) as integer) >= 12 and
      cast(strftime('%H',CreatedTime) as integer) <= 14 then 12 when
      cast(strftime('%H',CreatedTime) as integer) >= 15 and
      cast(strftime('%H',CreatedTime) as integer) <= 18 then 15 when
      cast(strftime('%H',CreatedTime) as integer) >= 19 and
      cast(strftime('%H',CreatedTime) as integer) <= 21 then 19 else 22
         end as timecat
            from PostInsights
               group by timecat;
```

Expected table (results)

Time of day (range)	Engagement ratio (%)
05:00 - 08:59	33.96
09:00 -11:59	15.34
12:00 - 14:59	12.7
15:00 - 18:59	17.4
19:00 - 21:59	13.12
22:00 or later	7.48

Best time of the day to publish posts?
Around 5-9 am!

Recommendations

First recommendation	Post on Saturdays and Mondays during morning especially between 5:00 am and 09:00 am which would help engage more users.
Second recommendation	Post topics which might interest young generations as we can see that most of the fans belong to the 25-34 age group.
Additional recommendation (optional)	Launch an English version magazine because we have high potential market in English speaking countries like US.