St. Petersburg University
Graduate School of Management

Business Intelligence and Data Visualization Final Task

Video Games Analytics

Prepared by:
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   (Full name)   (signature)

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Content

Product objectives

Being an analyst of a game developer startup and having the data till 2016, we are planning 2017. The task was to determine the genre and target audience of the future game to get the most distribution. Another important task was to identify games that should be targeted as the "ideal" of games of this genre.

To solve this task, it was important to analyze the sales of video games since 1980, identify the strongest players and the best games. Analysis of the competition was another important point.

To give proper analytics to solve the task given above, a dashboard had to be created. The dashboard should have answered the following questions:

1. Which market is the most active in sales (North America, European Union, Japan, and others)?
2. Which platform is better to enter the market?
3. Which genres are the most popular?
4. Which games take first place in sales?
5. Who will be the main competitors (developers) in the chosen genre and consol?
6. Guess if you need the whole data since 1980 till 2016, if not, filter in an appropriate way (and explain why decided to do it during your presentation)

So, the overall goal of the project is to develop a comprehensive video game analytics dashboard that provides actionable insights for the development and market strategy of a new game.

The dashboard will provide a powerful tool for decision-making, enabling the game development startup to:

- Identify the most promising market for their game.
- Choose the optimal platform for release.
- Select the most successful genre for their target audience.
- Benchmark their game against successful competitors.
- Gain a deep understanding of the competitive landscape.
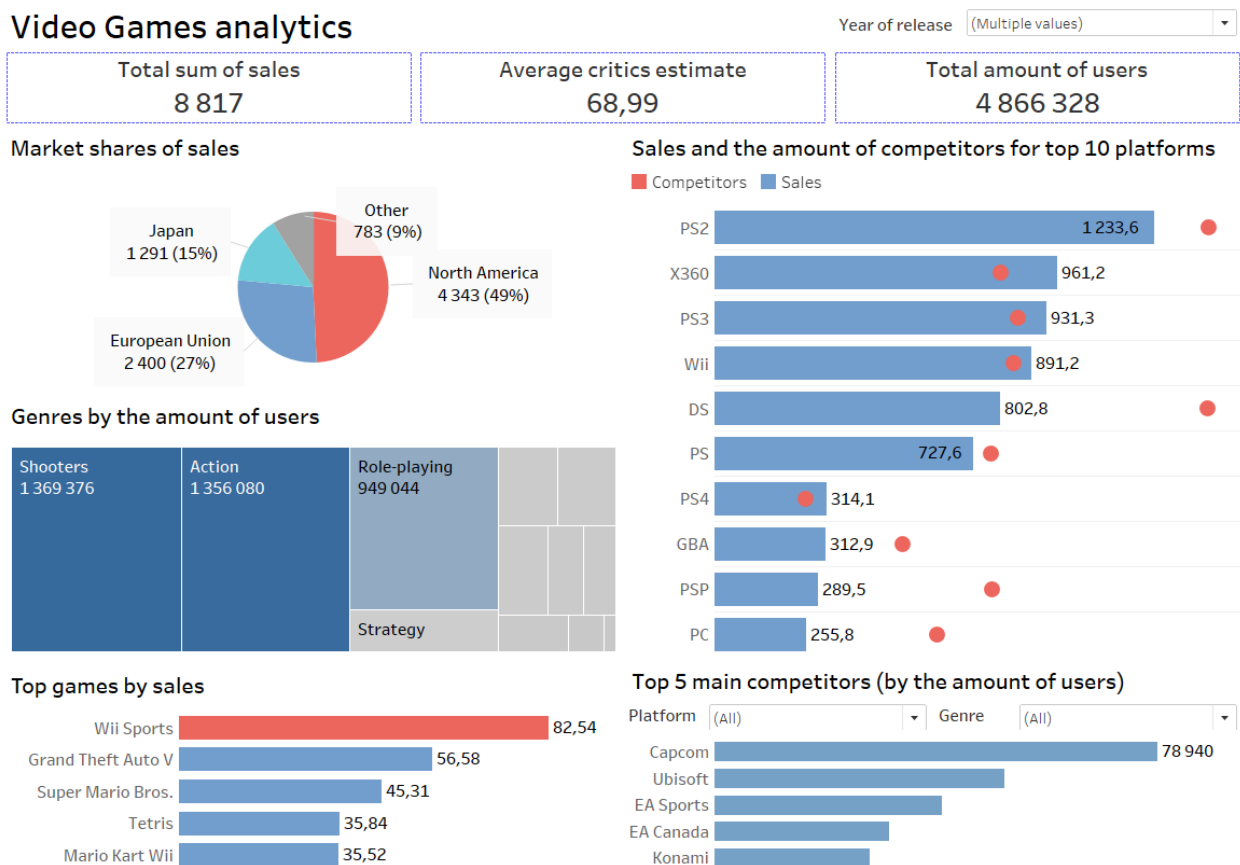- Make informed decisions regarding development and marketing strategies.

Description of the product and all its elements and functionality

Overall description and link to the interactive product

Link to the interactive product:

https://public.tableau.com/views/BIDataVisualizationFinaltask/Dashboard15?:language=en-US&publish=yes&:sid=&:display_count=n&:origin=viz_share_link

Video Games analytics

Total sum of sales	Average critics estimate	Total amount of users
8 817	68,99	4 866 328

Market shares of sales

- Japan 1 291 (15%)
- Other 783 (9%)
- North America 4 343 (49%)
- European Union 2 400 (27%)

Sales and the amount of competitors for top 10 platforms

Competitors ■ Sales

Platform	Value
PS2	1 233,6
X360	961,2
PS3	931,3
Wii	891,2
DS	802,8
PS	727,6
PS4	314,1
GBA	312,9
PSP	289,5
PC	255,8

Genres by the amount of users

| Shooters 1 369 376 | Action 1 356 080 | Role-playing 949 044 |
| | | Strategy |

Top games by sales

Wii Sports	82,54
Grand Theft Auto V	56,58
Super Mario Bros.	45,31
Tetris	35,84
Mario Kart Wii	35,52

Top 5 main competitors (by the amount of users)

Platform (All)   Genre (All)

Capcom	78 940
Ubisoft	
EA Sports	
EA Canada	
Konami	

The interactive dashboard represents the main information that is useful for the decision-making process. On the top of it there is a title and a filter for year, where the user can choose specific periods for focused analysis.

Below the title there are three KPI cards that show total sum of sales, average critics estimate and total amount of users. These metrics provide a high-level overview of the gaming landscape.

Other elements of visualization, such as market shares of sales, genres by the amount of users, sales and the amount of competitors for top 10 platforms, top games by sales and top 5 main competitors (by the amount of users), will be described below. But it is important to mention that

all of the elements within the dashboard are interconnected through cross-filtration, they change depending on the filters the user applies, including the KPI cards. As the user adjusts the year filter or applies other criteria, the visualizations dynamically adapt, offering a nuanced understanding of the evolving gaming landscape.
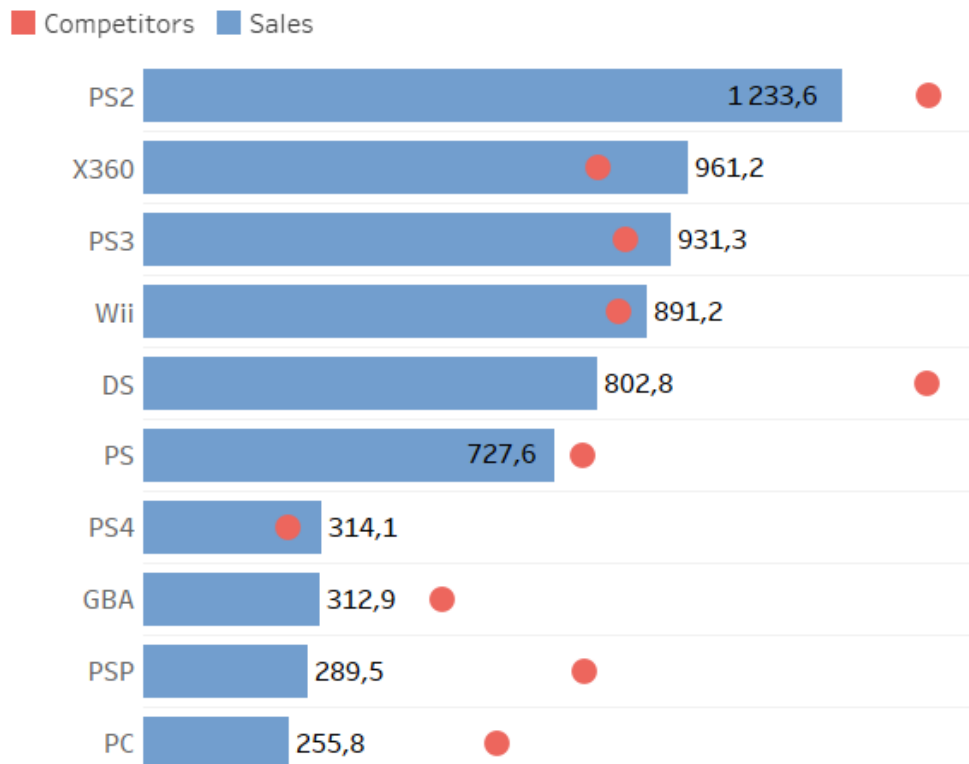
Market shares of sales

Market shares of sales
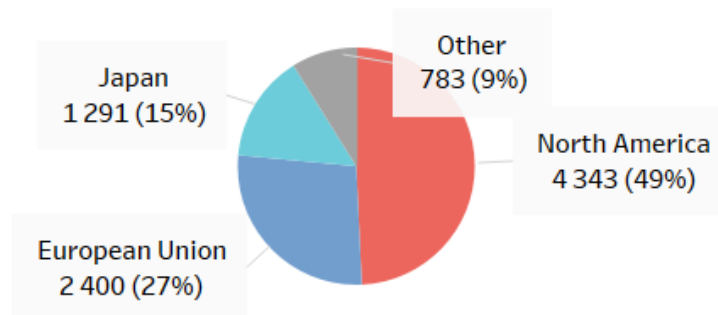
This data visualization has a type of a pie chart. It represents the sales (quantity in million items) and their share for the main regions. Using this chart the user can answer the question "Which market is the most active in sales (North America, European Union, Japan, or others)?" and use it as a filter for further analysis by focusing on the specific region of interest, uncovering hidden patterns and opportunities within this key market.

Sales and the amount of competitors for top 10 platforms

Sales and the amount of competitors for top 10 platforms

■ Competitors ■ Sales

Platform	Sales
PS2	1 233,6
X360	961,2
PS3	931,3
Wii	891,2
DS	802,8
PS	727,6
PS4	314,1
GBA	312,9
PSP	289,5
PC	255,8

This data visualization has a type of a bar chart. It shows the information about 10 most popular platforms for video games. The bars represent the sales (quantity in million items), which are also shown with numbers, and the red dots show the user the amount of the competitors, which is in fact the amount of game names for each of the platforms. This chart helps to answer the question "Which platform is better to enter the market?", because it gives full information for the analysis of different platforms. Analyzing the market, it is necessary to look at it from different perspectives, sales are important but there are also a lot of features that the company has to take into consideration and the amount of the competitors, that they will have to deal with, is one of such factors.
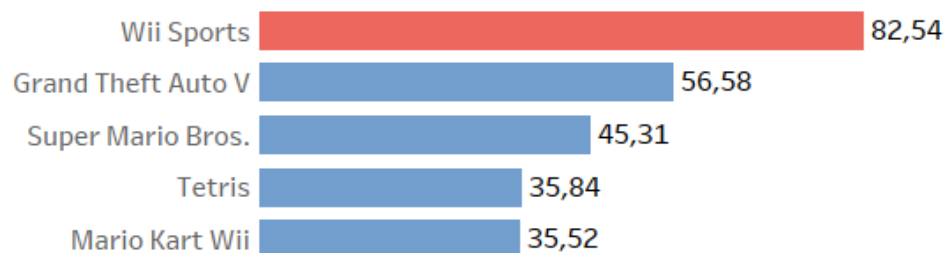
Genres by the amount of users

Genres by the amount of users

| Shooters 1 369 376 | Action 1 356 080 | Role-playing 949 044 | | |
| Strategy | | | | |
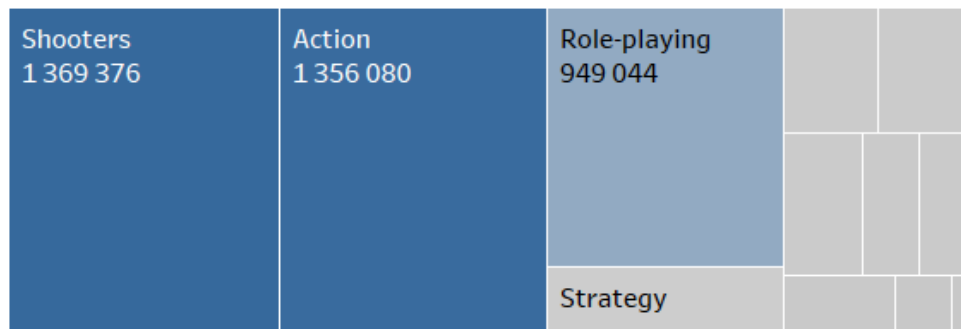
This data visualization has a type of a treemap chart. It represents genres by the amount of users. Each block within the map represents a different genre, with its size proportional to the number of users drawn to that genre. It helps to understand which genres are the most popular. On the chart the user can see the name of the genre and the number which stands for the quantity of users. The user of the dashboard can see clearly three of the most popular genres, but also look closely to the rest of them and see detailed information too.

Top games by sales

Top games by sales

Game	Sales
Wii Sports	82,54
Grand Theft Auto V	56,58
Super Mario Bros.	45,31
Tetris	35,84
Mario Kart Wii	35,52

This data visualization has a type of a bar chart. It shows five of the most popular games by sales (quantity in million items) and highlights the most popular one. The numbers in the chart stand for the sales. This visualization provides a benchmark for aspiring games, offering a clear understanding of the current industry leaders and their market dominance.

Top 5 main competitors (by the amount of users)

Top 5 main competitors (by the amount of users)

Platform [(All) ▾] Genre [(All) ▾]

Capcom   78 940
Ubisoft
EA Sports
EA Canada
Konami
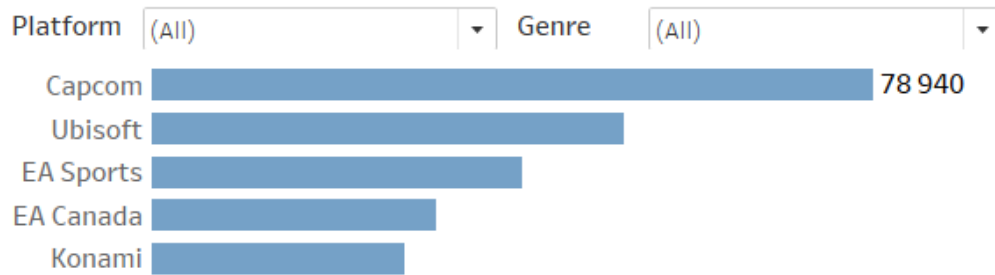
This data visualization has a type of a bar chart. It shows top 5 competitors by the amount of users, the number stand for the amount of users to the main competitor. This chart has separate filters that the user of the dashboard can use, and they will work only for this chart (but cross filtration is also available for this chart). It is also worth mentioning that here in filters for platform the user can choose among all of the possible platforms, not only among the top 10, that are presented in the dashboard. This bar chart helps to understand who will be the main competitors (developers) in the chosen genre and consol. By identifying these key competitors, the dashboard enables strategic decision-making, allowing developers to understand their rivals and develop unique strategies to carve out a successful niche in the market.

Description of user paths that may be useful when working with the dashboard

Useful user path №1

Given the fact that the dashboard is available for cross filtration there are many variants of how to use it and many insights that the user of the dashboard can get from it. Two of the user paths will be described below, but more are available. It is recommended to analyze the dashboard from the top of it to the bottom.

First, let's choose the range of years that we want to see analytics for. For example, the most interesting period for the user is 2000-2016:
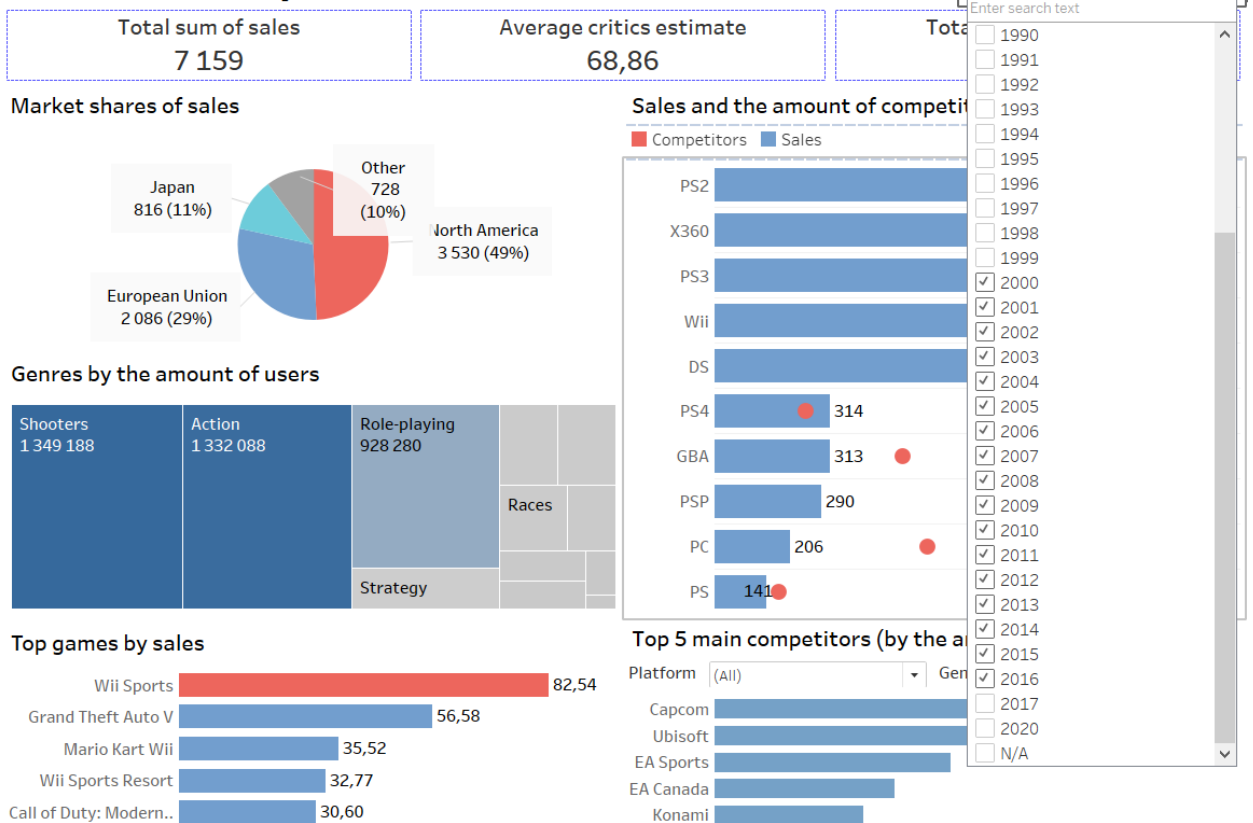
Then the user decides to choose North America as a region for future distribution:

Video Games analytics

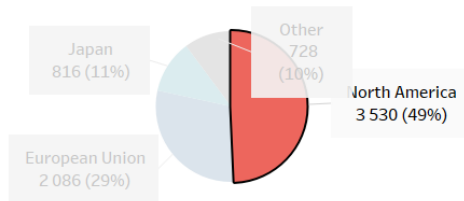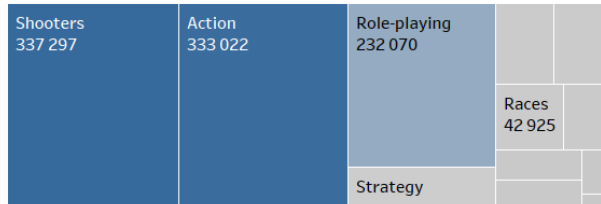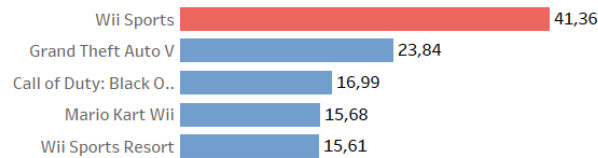| Total sum of sales	Average critics estimate	Total amount of users
3 530	68,86	1 190 155

Market shares of sales

Other
728
(10%)

Japan
816 (11%)

North America
3 530 (49%)

European Union
2 086 (29%)

Sales and the amount of competitors for top 10 platforms

■ Competitors ■ Sales

Platform	Sales
X360	595,7
PS2	572,9
Wii	486,9
PS3	390,1
DS	380,3
GBA	184,1
PS4	108,7
PSP	107,3
PS	65,7
PC	63,9

Genres by the amount of users

Shooters 337 297	Action 333 022	Role-playing 232 070	
			Races 42 925
		Strategy	

Top games by sales

Game	Sales
Wii Sports	41,36
Grand Theft Auto V	23,84
Call of Duty: Black O..	16,99
Mario Kart Wii	15,68
Wii Sports Resort	15,61

Top 5 main competitors (by the amount of users)

Platform (All) ▾ Genre (All) ▾

Company	Users
Capcom	19 054
Ubisoft	
EA Sports	
EA Canada	
Konami	
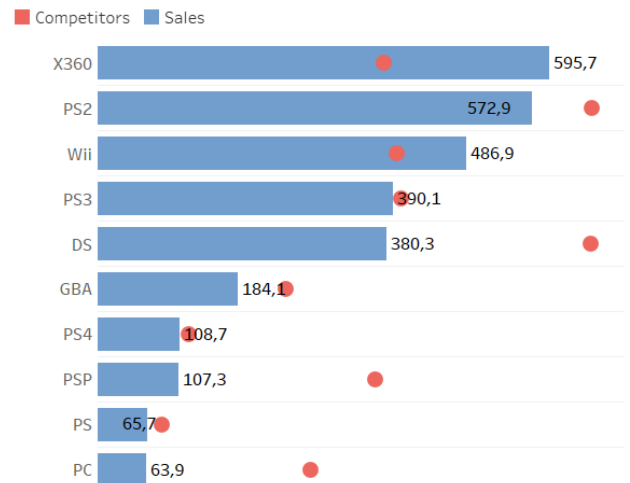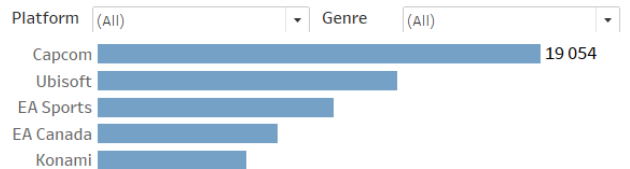
Here the user can already get some of the main insights. The KPI cards changed, and now they show precise information for the chosen market and years. Then the user chooses the platform, for example the first one X360, because the sales are high for this platform, but the amount of the competitors is not the biggest:
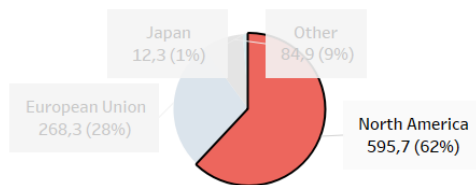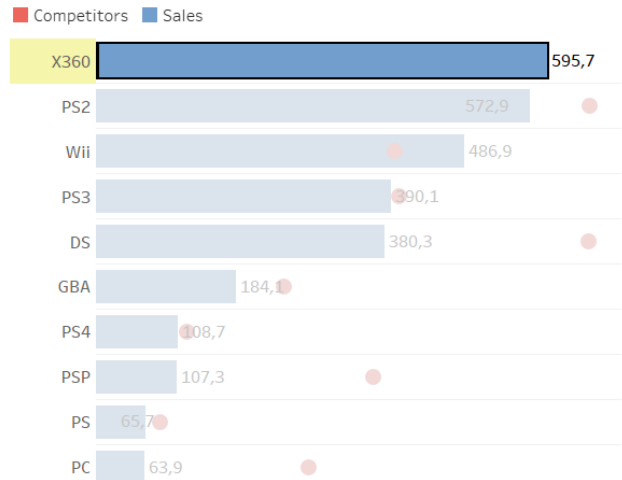
Video Games analytics

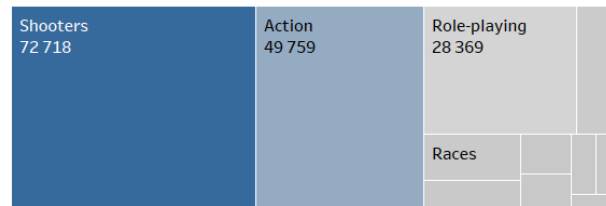| Total sum of sales	Average critics estimate	Total amount of users
595,7	68,69	179 416

Market shares of sales

Japan
12,3 (1%)

Other
84,9 (9%)

European Union
268,3 (28%)

North America
595,7 (62%)

Sales and the amount of competitors for top 10 platforms

■ Competitors ■ Sales

X360	595,7
PS2	572,9
Wii	486,9
PS3	390,1
DS	380,3
GBA	184,1
PS4	108,7
PSP	107,3
PS	65,7
PC	63,9

Genres by the amount of users

Shooters 72 718	Action 49 759	Role-playing 28 369
		Races

Top games by sales

Kinect Adventures!	15,000
Call of Duty: Black O..	9,700
Grand Theft Auto V	9,660
Call of Duty: Modern..	9,040
Call of Duty: Modern..	8,520

Top 5 main competitors (by the amount of users)

Platform (All) ▼   Genre (All) ▼

Ubisoft Montreal	6 675
Ubisoft	
EA Canada	
EA Tiburon	
Konami	
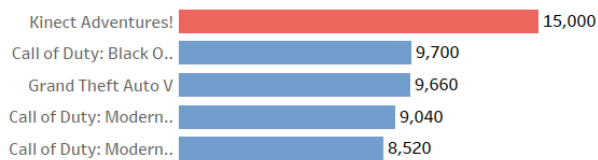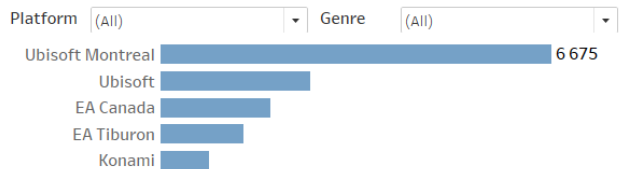
Now the user sees that shooters is the most popular genre for the chosen market, years and platform and decides to analyze it:
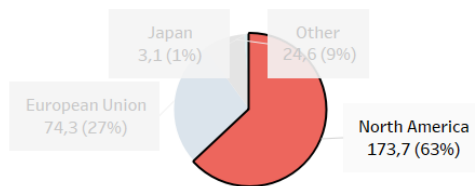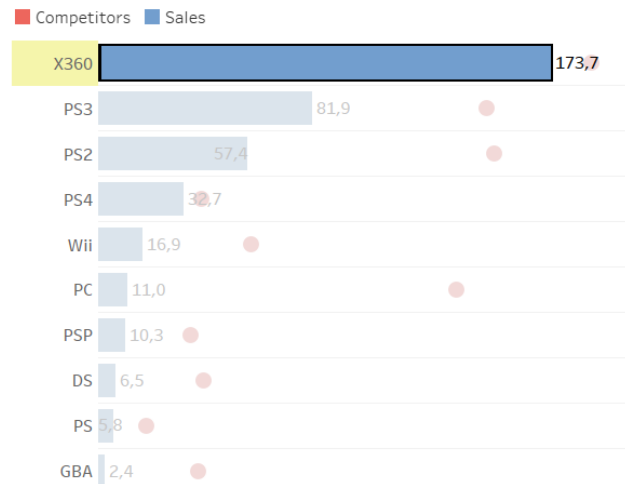
11

Video Games analytics

Total sum of sales	Average critics estimate	Total amount of users
173,7	69,73	72 718

Market shares of sales

Japan 3,1 (1%)
Other 24,6 (9%)
European Union 74,3 (27%)
North America 173,7 (63%)

Genres by the amount of users

Shooters 72 718
Action 49 759
Role-playing 28 369
Races

Top games by sales

Call of Duty: Black O..	9,700
Call of Duty: Modern..	9,040
Call of Duty: Modern..	8,520
Call of Duty: Black O..	8,250
Halo 3	7,970

Sales and the amount of competitors for top 10 platforms

■ Competitors ■ Sales

Platform	Value
X360	173,7
PS3	81,9
PS2	57,4
PS4	32,7
Wii	16,9
PC	11,0
PSP	10,3
DS	6,5
PS	5,8
GBA	2,4

Top 5 main competitors (by the amount of users)

Platform (All) ▼   Genre (All) ▼

Epic Games	7 412
Infinity Ward	
Gearbox Software	
Ubisoft Montreal	
Rebellion	
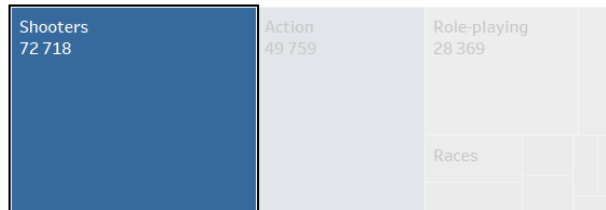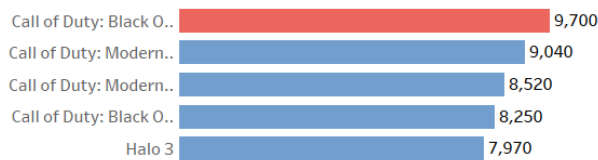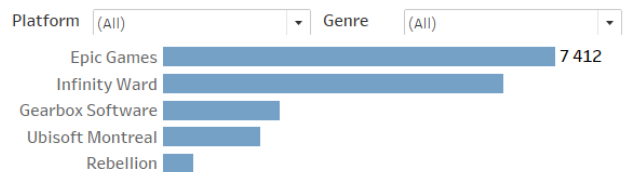
Finally, the user can see top games and top competitors, get useful insights and make final decision about targeted games. In the analyzed case the user decides that the target audience of the future game will be lovers of shooters in North America who use X360 platform. And games that should be targeted as "ideal" for this audience is "Call of Duty" series.

Sometimes game developers like to go to many markets and in this case, it can be useful to see what will change in the analytics if they choose another region. The user of the dashboard can always go back and analyze another region, for example European Union:
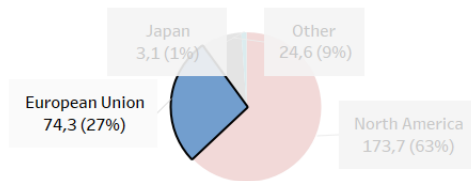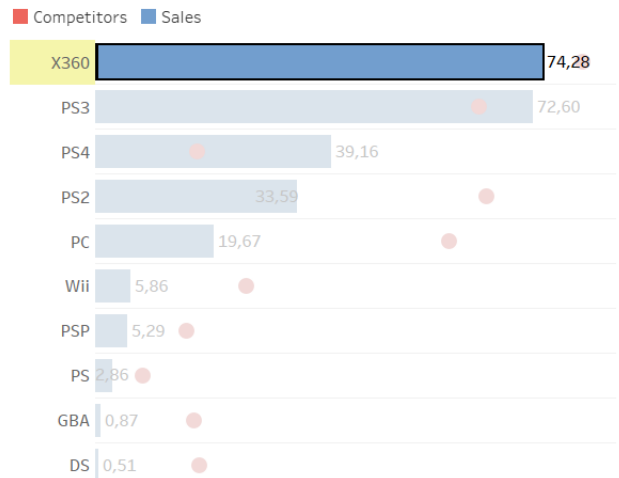
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Video Games analytics

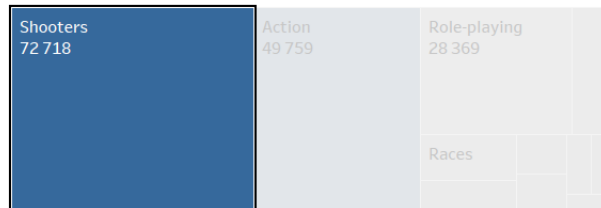| Total sum of sales	Average critics estimate	Total amount of users
74,28	69,73	72 718

Market shares of sales

Japan 3,1 (1%)
Other 24,6 (9%)
European Union 74,3 (27%)
North America 173,7 (63%)

Sales and the amount of competitors for top 10 platforms

■ Competitors ■ Sales

X360	74,28
PS3	72,60
PS4	39,16
PS2	33,59
PC	19,67
Wii	5,86
PSP	5,29
PS	2,86
GBA	0,87
DS	0,51

Genres by the amount of users

Shooters 72 718
Action 49 759
Role-playing 28 369
Races

Top games by sales

Call of Duty: Black O..	4,240
Call of Duty: Modern..	4,240
Call of Duty: Black O..	3,680
Call of Duty: Modern..	3,590
Halo 3	2,810

Top 5 main competitors (by the amount of users)

Platform (All)   Genre (All)

Epic Games	7 412
Infinity Ward	
Gearbox Software	
Ubisoft Montreal	
Rebellion	
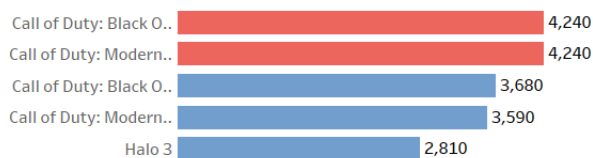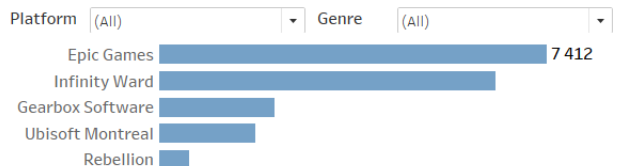
In this case, the user can see that the genre and top games didn't change but the amount of the competitors for X360 platform now is the biggest. But probably the user can decide to enter at least these two markets at once.

Useful user path №2

For the second path let's choose the same range of years, and the region for example Japan:
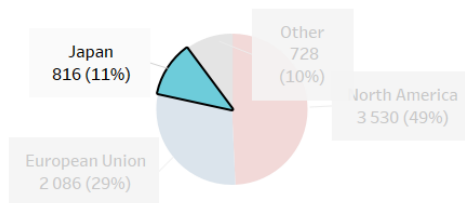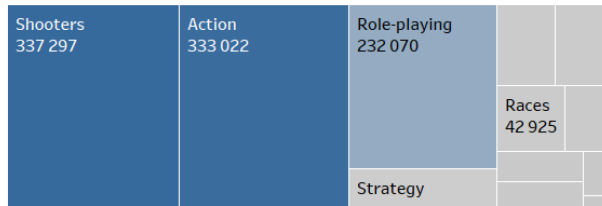
Video Games analytics

Year of release (Multiple values) ▼

Total sum of sales	Average critics estimate	Total amount of users
815,8	68,86	1 190 155

Market shares of sales

Other
728
(10%)

Japan
816 (11%)

North America
3 530 (49%)

European Union
2 086 (29%)

Genres by the amount of users

Shooters 337 297	Action 333 022	Role-playing 232 070
		Races 42 925
		Strategy

Top games by sales

New Super Mario Br..	6,500
Pokemon Diamond/P..	6,040
Pokemon Black/Poke..	5,650
Dragon Quest VII: W..	5,400
Pokemon Ruby/Poke..	5,380

Sales and the amount of competitors for top 10 platforms

■ Competitors ■ Sales

Platform	Value
DS	175,0
PS2	137,5
PS3	79,4
PSP	75,9
Wii	68,3
GBA	46,6
PS	20,1
PS4	16,0
X360	12,3
PC	0,1

Top 5 main competitors (by the amount of users)

Platform (All) ▼   Genre (All) ▼

Capcom	19 054
Ubisoft	
EA Sports	
EA Canada	
Konami	
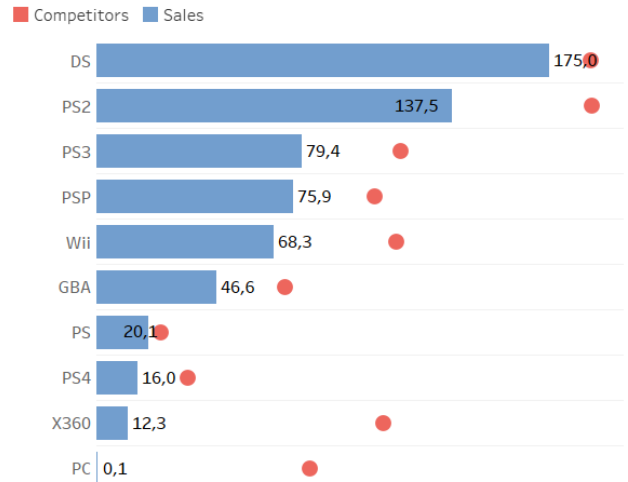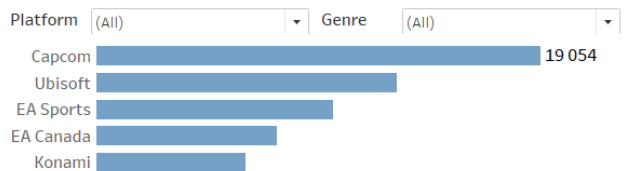
Then let's imagine that the user of the dashboard already knows the genre of the future game, for example role-playing and chooses it:

Video Games analytics

Year of release (Multiple values)

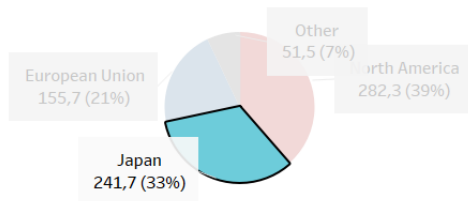| Total sum of sales	Average critics estimate	Total amount of users
241,7	72,37	232 070

Market shares of sales
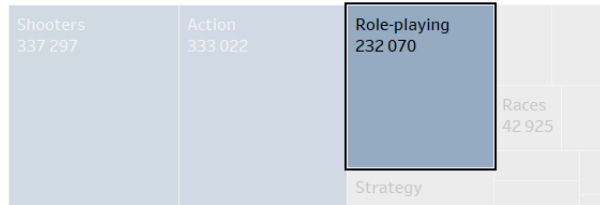
Other
51,5 (7%)

North America
282,3 (39%)

European Union
155,7 (21%)

Japan
241,7 (33%)

Genres by the amount of users

Shooters
337 297

Action
333 022

Role-playing
232 070

Races
42 925

Strategy

Sales and the amount of competitors for top 10 platforms

■ Competitors ■ Sales

DS — 54,29
PS2 — 32,85
PSP — 30,78
GBA — 21,21
PS3 — 16,79
PS — 11,12
Wii — 5,63
PS4 — 3,55
X360 — 2,61
PC — 0,00

Top games by sales

Pokemon Diamond/P..	6,040
Pokemon Black/Poke..	5,650
Dragon Quest VII: W..	5,400
Pokemon Ruby/Poke..	5,380
Monster Hunter Fre..	4,870

Top 5 main competitors (by the amount of users)

Platform (All)   Genre (All)

BioWare — 35 438
From Software
Obsidian Entertainm..
Square Enix
Nippon Ichi Software
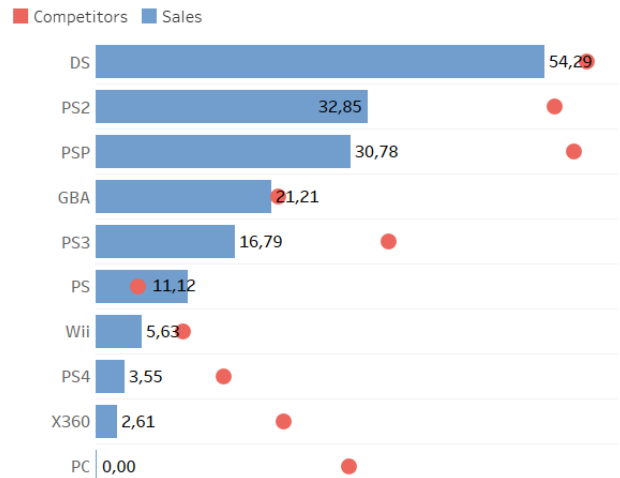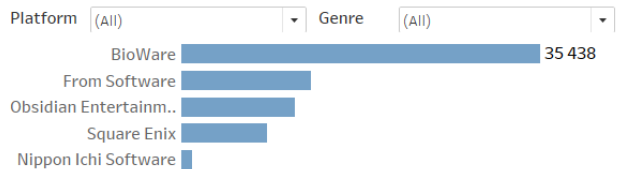
And now the user can already see the main competitor and how huge is the difference between the amount of users. The user of the dashboard can also understand that role-playing is more popular in Japan, than shooters for example. Let's imagine our user chooses the GBA platform:

Video Games analytics

Year of release (Multiple values) ▾

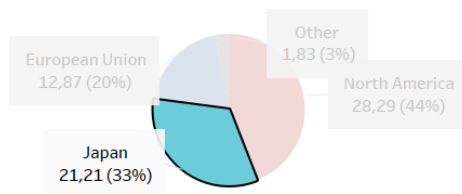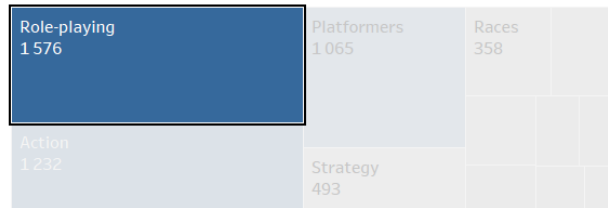| Total sum of sales	Average critics estimate	Total amount of users
21,21	75,81	1 576

Market shares of sales
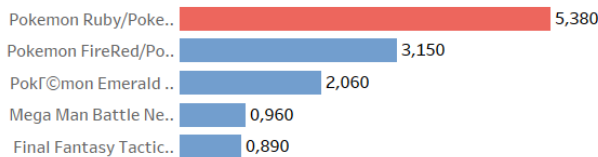
- Other 1,83 (3%)
- European Union 12,87 (20%)
- North America 28,29 (44%)
- Japan 21,21 (33%)

Genres by the amount of users

- Role-playing 1 576
- Platformers 1 065
- Races 358
- Action 1 232
- Strategy 493

Top games by sales

Pokemon Ruby/Poke..	5,380
Pokemon FireRed/Po..	3,150
PokГ©mon Emerald ..	2,060
Mega Man Battle Ne..	0,960
Final Fantasy Tactic..	0,890

Sales and the amount of competitors for top 10 platforms

■ Competitors ■ Sales

DS	54,2?
PS2	32,85
PSP	30,78
GBA	21,21
PS3	16,79
PS	11,12
Wii	5,63
PS4	3,55
X360	2,61
PC	0,00

Top 5 main competitors (by the amount of users)

Platform (All) ▾   Genre (All) ▾

Camelot Software Pl..	348
TOSE	
Webfoot Technologi..	
Capcom	
KCEJ	
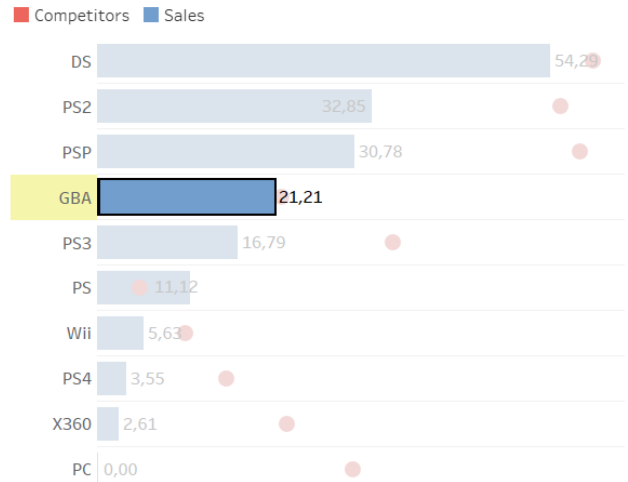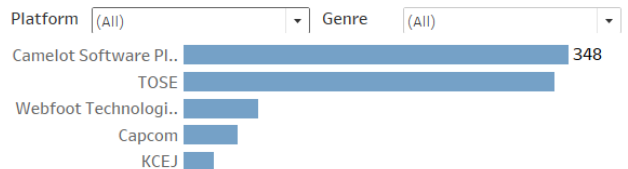
And again, the user can get some useful insights. In the second case the user decides that the target audience of the future game will be lovers of role-playing in Japan who use GBA platform. And the game that should be targeted as "ideal" for this audience is "Pokemon Ruby/Pokemon Sapphire".

Working with such representation of the data as dashboard is convenient for the decision-making process. The paths that were shown are just examples, the user of the dashboard can work with cross filtration in any order that is more appropriate for the purposes of the analysis.

Conclusion

This video game analytics dashboard provides a comprehensive and actionable resource for the game development startup. By leveraging historical data and analyzing various market trends, the dashboard helps navigate the complex landscape of the gaming industry and make strategic decisions for future game development.

The ability to identify the most active markets, popular platforms, leading genres, and top-performing games offers a clear understanding of the current gaming landscape. The dashboard facilitates informed decisions on target market selection, platform choice, genre selection, and competitive analysis.

Here are some recommendations for the future development:

- Data integration: integrating real-time data feeds from relevant platforms and market research companies will provide a more dynamic and up-to-date view of the industry.
- Advanced analytics: incorporating advanced analytical tools like predictive modeling can help forecast future trends and identify emerging markets or genres.
- User-specific features: implementing personalized dashboards and user-specific data filtering options will enhance the user experience and tailor insights to individual needs.

The dashboard has the following need for support:

- Data management: regular data updates and quality assurance are crucial for maintaining the dashboard's accuracy and reliability.
- Technical support: ongoing technical support is essential for ensuring the dashboard's functionality and addressing any user issues.
- User training: providing adequate training and user documentation will enable the startup to maximize the dashboard's potential and leverage its insights effectively.

By implementing these recommendations and ensuring ongoing support, the video games analytics dashboard will continue to be a valuable asset, empowering the game development startup to make informed decisions and achieve success in the competitive gaming market.

Appendixes

Appendix 1 Description of data fields

Field name	Description
Year of release	Year, when the game was launched for the first time
Region	Region, where games were sold
Sales	Sales qty, million items
Platform	Game consol
Genre	Game genre
Developer	Game developer
Game name	Name of the game
Publisher	Game publisher
Users estimate	Average estimate by users
Users qty	Users' quantity (based on them average user estimate was counted)
Critics Estimate	Average estimate by critics
Critics qty	Critics quantity (based on them average critics estimate was counted)
Rating	Game rating (The ESRB ratings (E.g. Everyone, Teen, Adults Only, etc))

Appendix 2 Descriptions and calculation formulas of indicators

Indicator	Description	Calculation formula
max1	Special indicator which was used to highlight with color the most popular game on the "Top games by sales" visualization	IF WINDOW_MAX(SUM ([Sales]))=SUM([Sales]) THEN 'Max' END