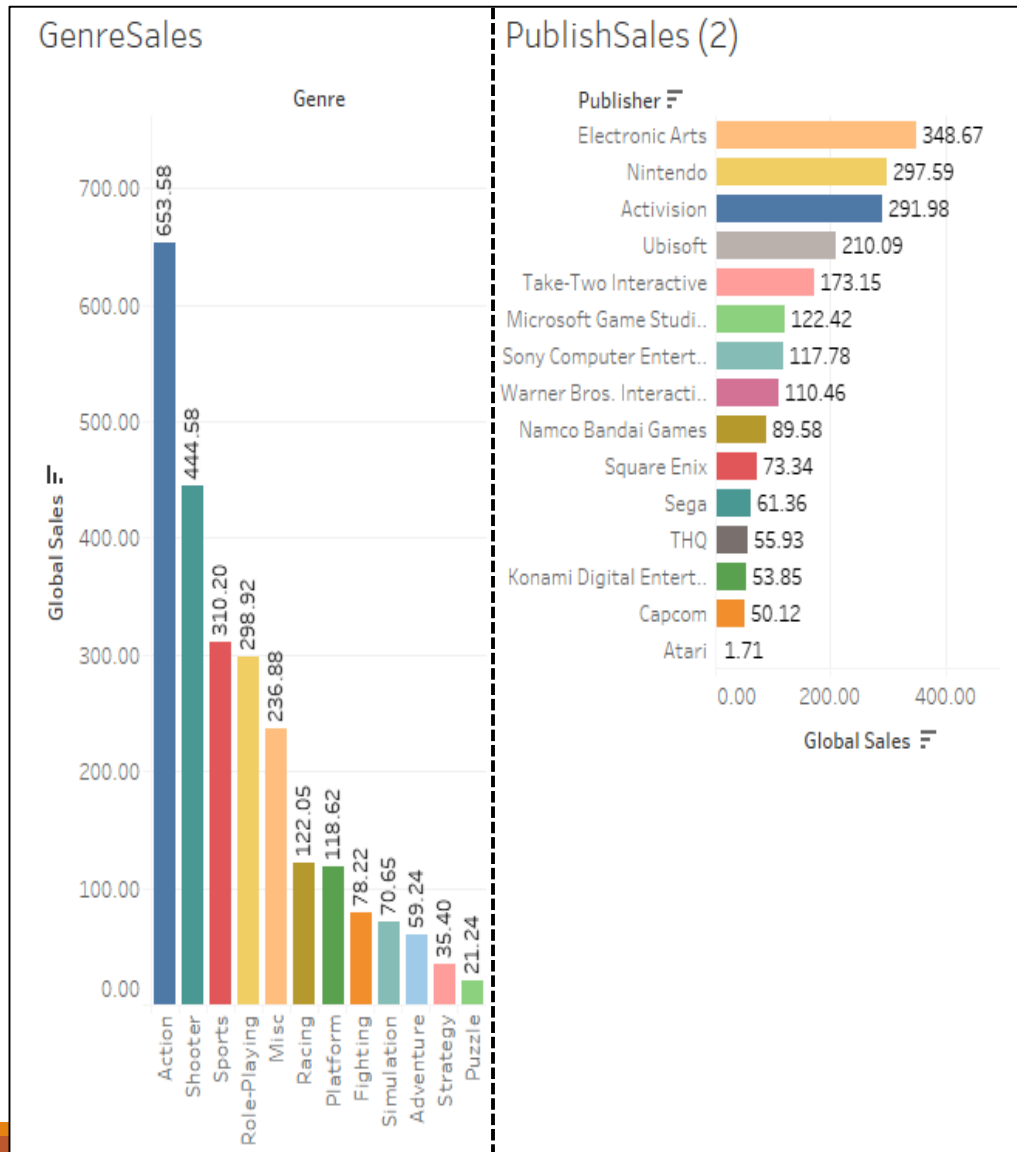


# CLAYON BRODERICK CAPSTONE PROJECT

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**TO HAVE A 25% INCREASE IN ANNUAL REVENUE BY THE END OF 2021, ZYNGA WOULD LIKE TO IDENTIFY WHICH GENRE OF GAME TO CREATE AND WHICH PUBLISHER WOULD BE IDEAL FOR PARTNERSHIP BASE ON OVERALL AVERAGE SALE PER GAME AND ANNUAL AVERAGE GROWTH TREND FOR EACH METRICS.**

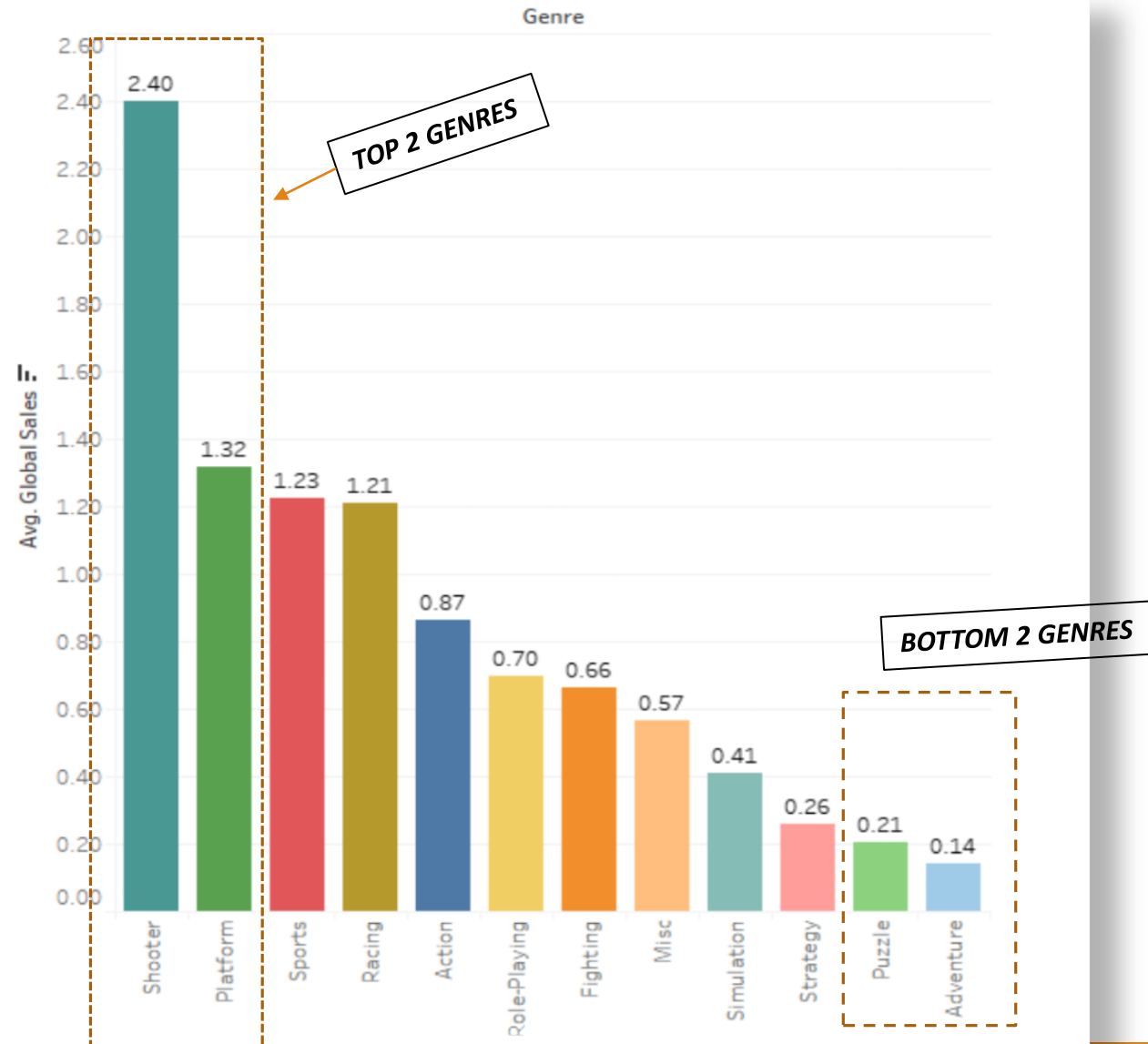
## Overall Sale Rank for All Genre and Top 15 Publishers from 2010-2015



Overall sales show Action games as the top genre(653m), followed by shooter(310m). While strategy and puzzle generated the lowest Sales at 35m and 21m, respectively.

Electronic Arts generated 348m sales; Nintendo (297m) and Activision(291m) as the top 3 publishers. Here are the top overall top 15 publishers out of 253 total publishers.

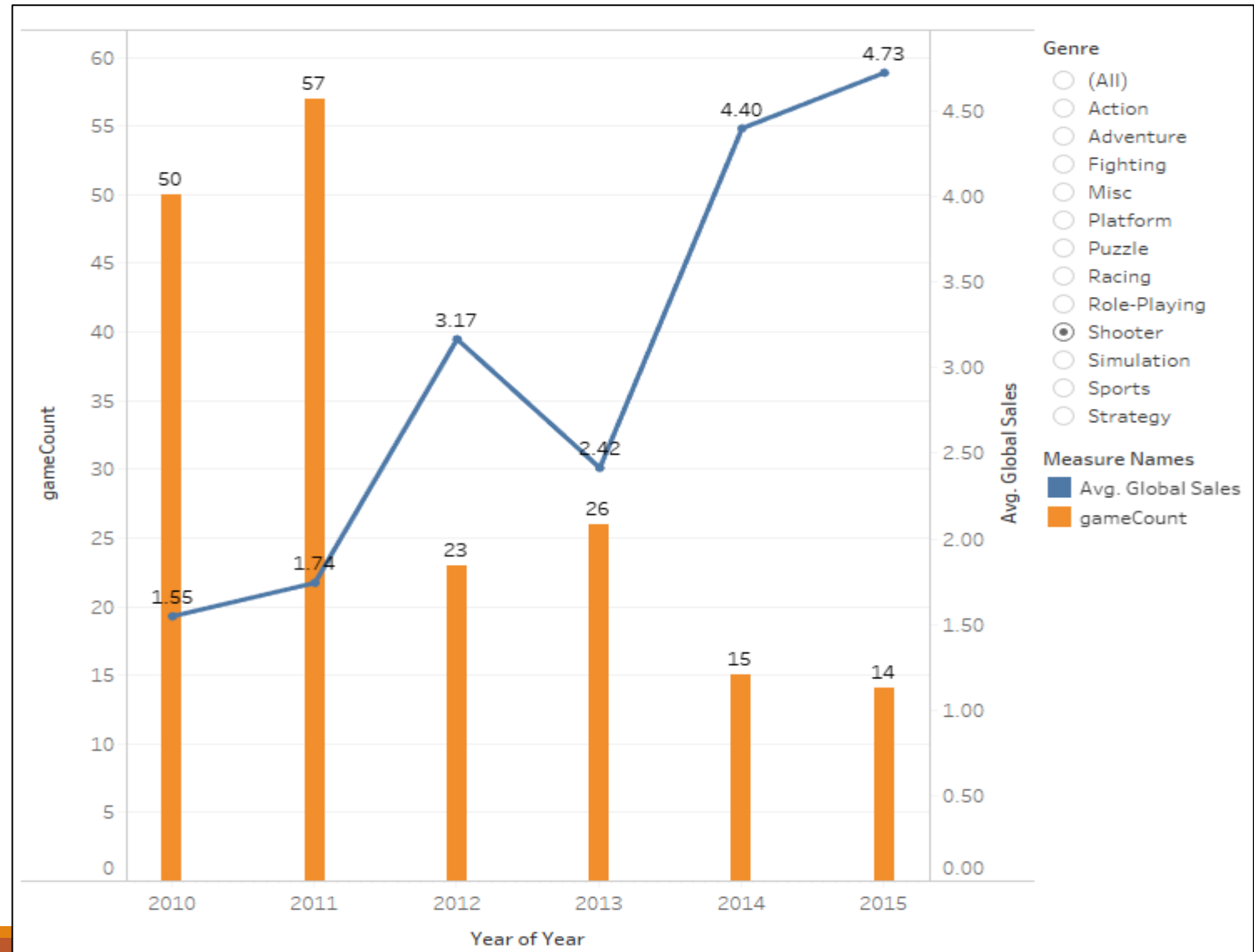
## Average Sales per game for Genre Between 2010-2015



Shooter has the highest average sale(2.4m) per game Between 2010-2015, followed by platform(1.32m). While on the low end the average sales per game are (0.21M) and (0.14) for Puzzle and Adventure.

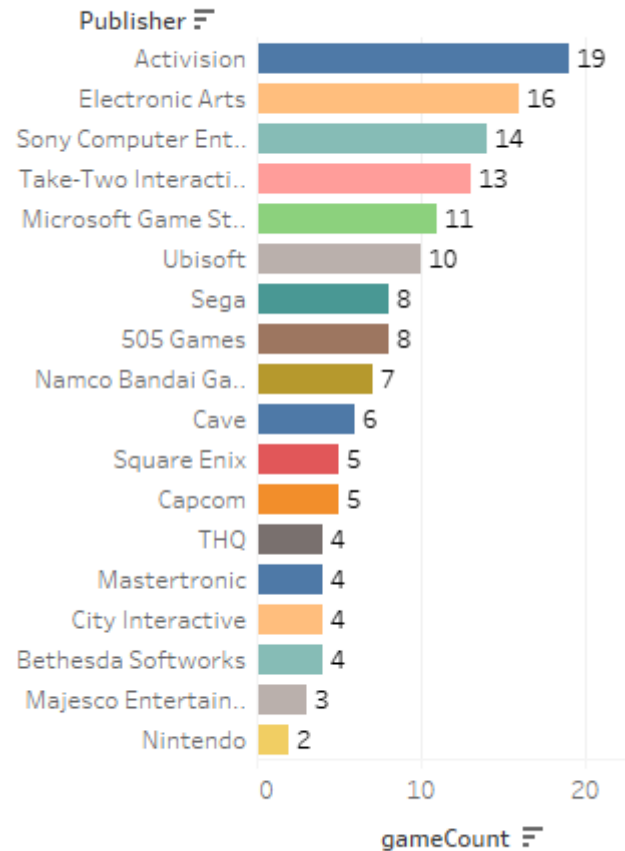
## Year to Year (2010-15) Average Sales and Game Count for Shooter Genre

The year to year average sales per shooter game shows a steady increase from 2010-2015 with exception to 2013. The number of shooter games released has fall significantly since 2012. Overall there has been a drastic reduction in the amount games released over the 6 years period.

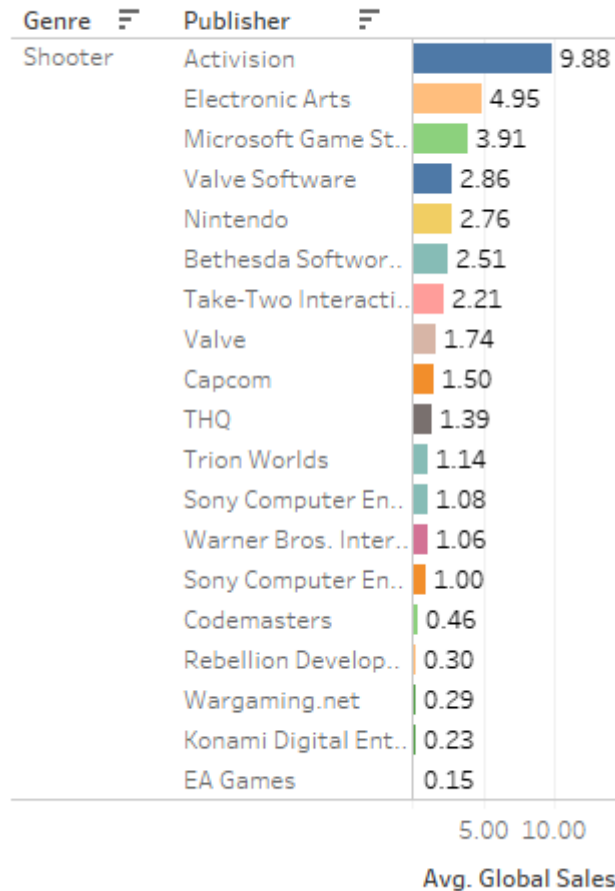


## Shooter Games released count and average sales by Publishers 2010-2015

ActivePublisher (8)

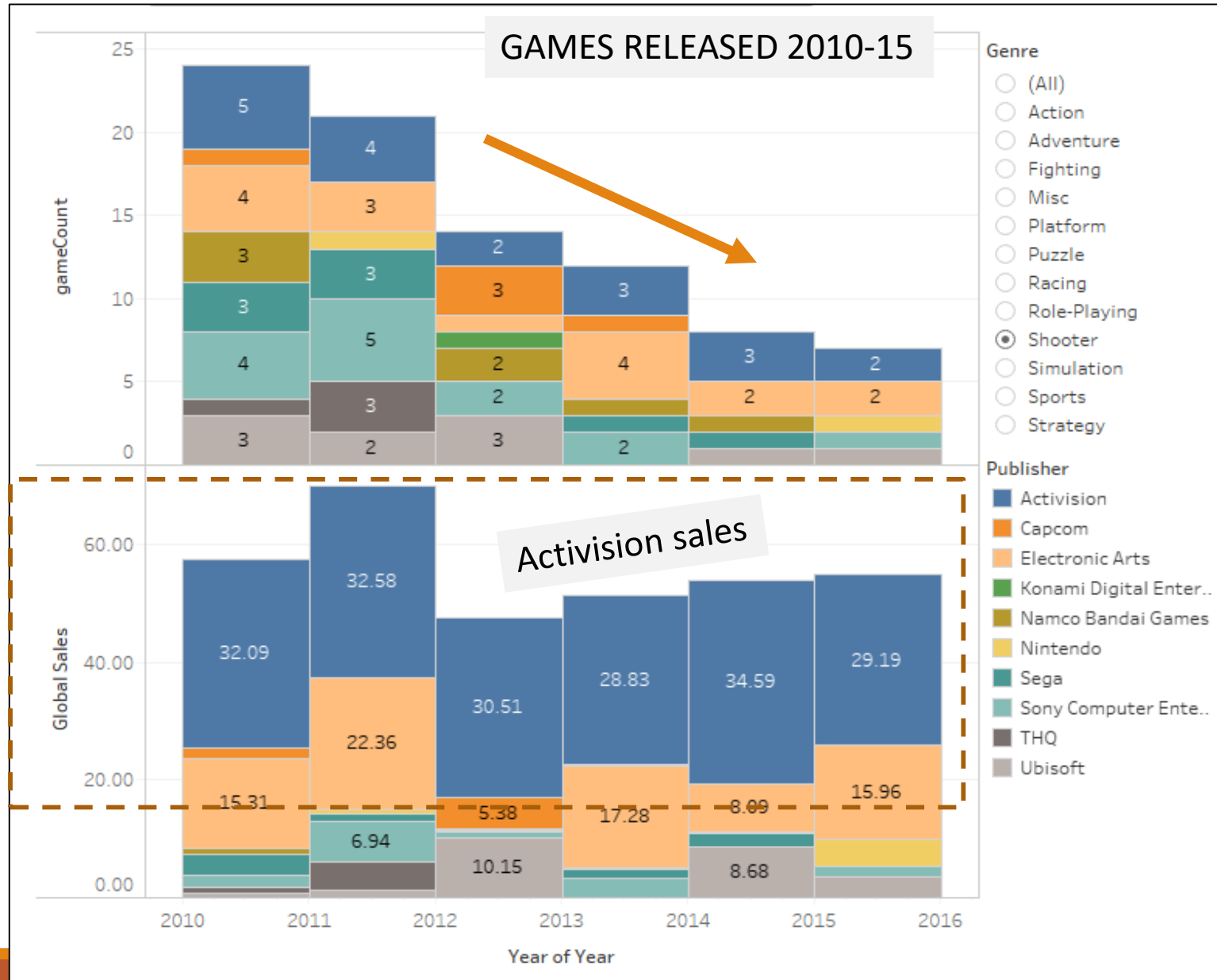


GenrePubAvgSales (7)



Activision is the most active publisher(19) and generated the highest sale per shooter games(9.88m). Electronic Arts published 2nd highest Shooter games(16) and 4.95m average sales per games.

## Shooter games publishing and total sales trend 2010 - 2015



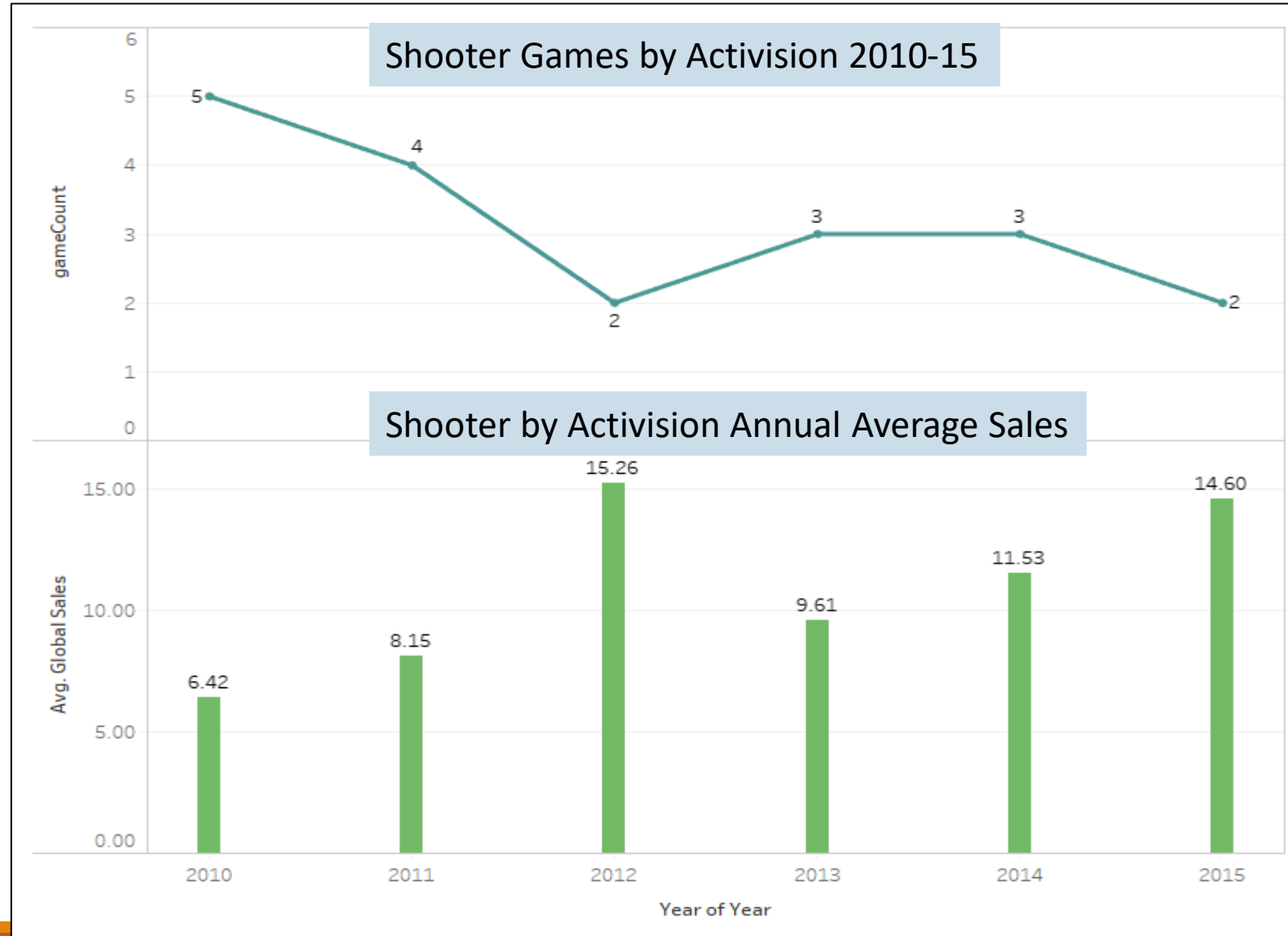
Overall there was a steady decrease in the number of Shooter games released (2010-15).

However, sales remained consistent for Shooter games. Ideally, Activision maintained average year to year sale(31m)

## Shooter Games Published by Activision and the Average Sales 2010-2015

The number of Games published has been falling steady Since 2010 with overall 3 games Average. However, there has been A steady increase in the annual Average sales.  
Strong negative correlation (-0.96)

**Constraint:** The amount games released will most likely affect the Average sales. Therefore, it is ideal for Zynga to release a shooter game with Activision when there is not more 3 games to be released in a given year.



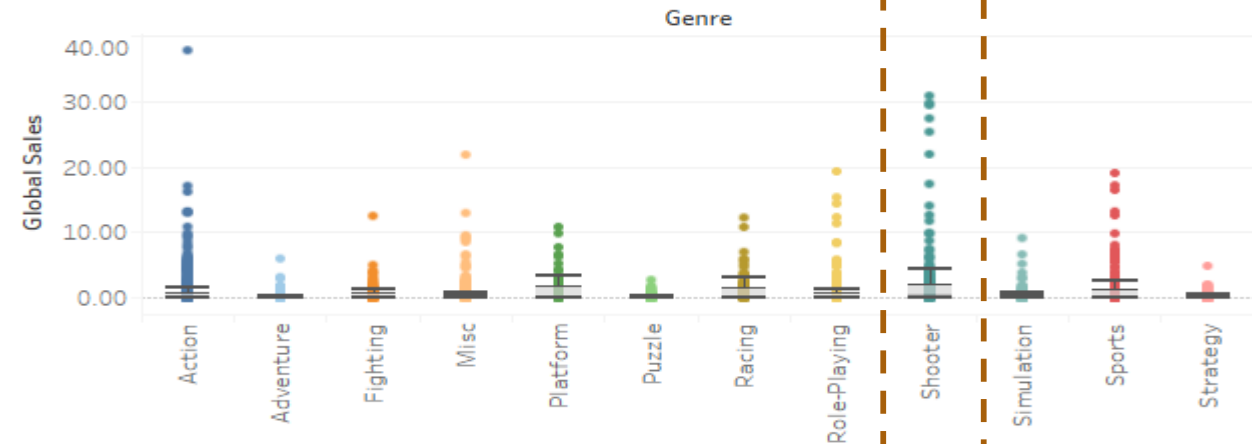
## Boxplot of Shooter games Sales

### Risk Factors:

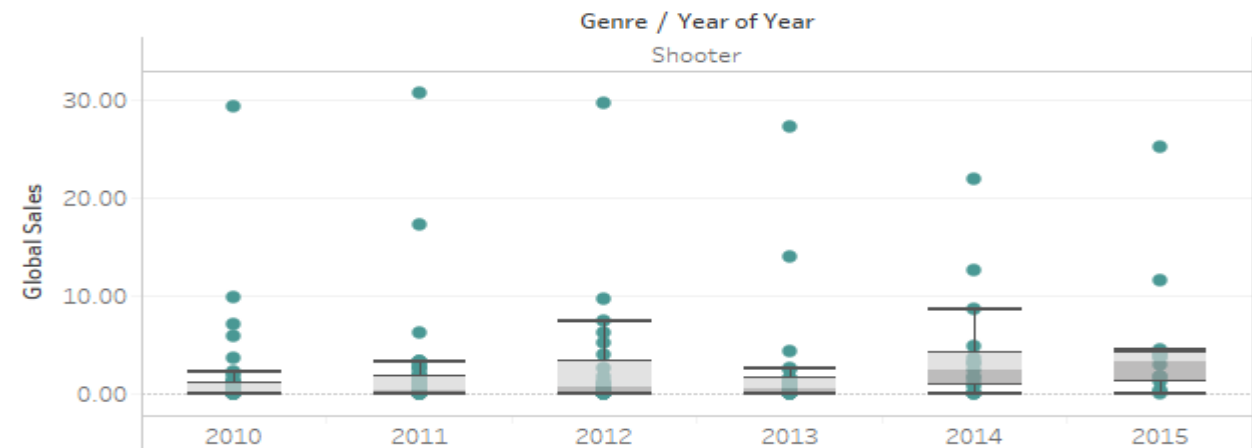
Shooter game have a high sale variance. It is not guarantee that Zynga will make the maximum sale if a shooter game should be published.

Also, there is some degree of variance of sales for shooter games published by Activision. However, it is consistent for each year.

Boxplot of Genre

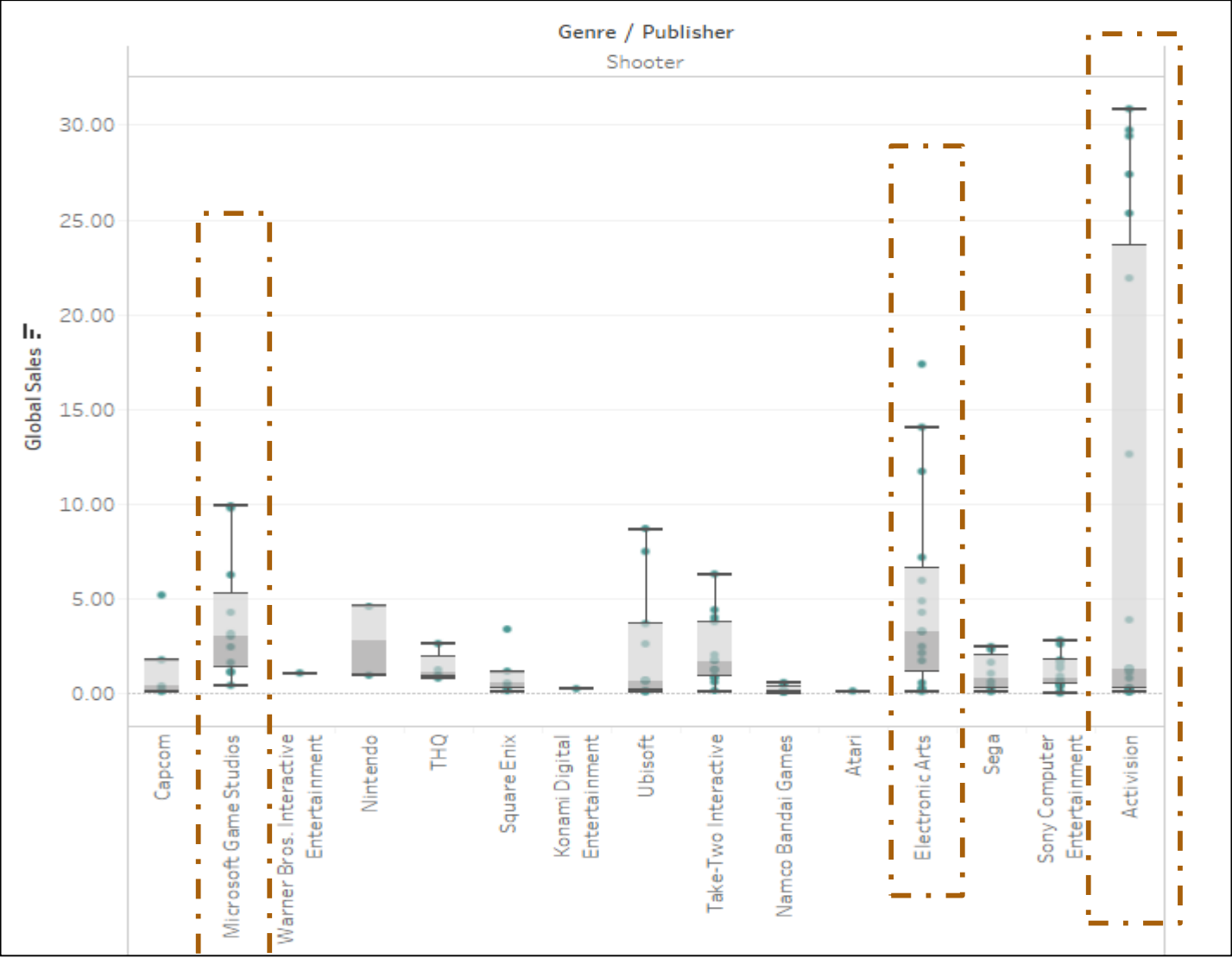


boxplot of shooter





# Boxplot for Publishers game Sales



Activision has the high variance in sales for shooter.

There is a lot of uncertainty about how much sales will be generated if Zynga should partner with Activision to release a Shooter game.

Other option possible options are Electronic Arts and Microsoft Game Studios

# Data Preparation

*Original dataset: total of 16599 rows,  
4085 duplicate rows and no unique ID*

	A	B	C	D	E	F	G	H	I	J	K
1	Rank	Name	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	JP_Sales	Other_Sales	Global_Sales
2	1	Wii Sports	Wii	2006	Sports	Nintendo	41.49	29.02	3.77	8.46	82.74
3	2	Super Mario Bros.	NES	1985	Platform	Nintendo	29.08	3.58	6.81	0.77	40.24
4	3	Mario Kart Wii	Wii	2008	Racing	Nintendo	15.85	12.88	3.79	3.31	35.82
5	4	Wii Sports Resort	Wii	2009	Sports	Nintendo	15.75	11.01	3.28	2.96	33
6	5	Pokemon Red/Pol	GB	1996	Role-Playing	Nintendo	11.27	8.89	10.22	1	31.37
7	6	Tetris	GB	1989	Puzzle	Nintendo	23.2	2.26	4.22	0.58	30.26
8	7	New Super Mario	DS	2006	Platform	Nintendo	11.38	9.23	6.5	2.9	30.01
9	8	Wii Play	Wii	2006	Misc	Nintendo	14.03	9.2	2.93	2.85	29.02
10	9	New Super Mario	Wii	2009	Platform	Nintendo	14.59	7.06	4.7	2.26	28.62

*Clean Dataset: 12514 of unique rows with a unique ID*

	A	B	C	D	E	F	G	H	I	J
1	Genre	Publisher	Name	UniqueID	Year	Sum of NA_Sales	Sum of EU_Sales	Sum of JP_Sales	Sum of Other_Sales	Sum of Global_Sales
2	Action	20th Century	Alien	20th Century Fox Vide	1981	0.74	0.04	0	0.01	0.79
3	Action	20th Century	Bank Heist	20th Century Fox Vide	1982	0.32	0.02	0	0	0.34
4	Action	20th Century	Fantastic Voyage	20th Century Fox Vide	1981	0.32	0.02	0	0	0.34
5	Action	20th Century	Porky's	20th Century Fox Vide	1982	0.23	0.01	0	0	0.25
6	Action	3DO	Army Men 3D	3DO-Army Men 3D	1999	1.1	0.14	0	0.04	1.28
7	Action	3DO	Army Men World War: Final	3DO-Army Men World	2001	0.24	0.17	0	0.03	0.44
8	Action	3DO	Army Men World War: Land	3DO-Army Men World	2000	0.17	0.12	0	0.02	0.3
9	Action	3DO	Army Men World War: Team	3DO-Army Men World	2001	0.06	0.04	0	0.01	0.1
10	Action	3DO	Army Men: Air Attack	3DO-Army Men: Air At	1999	0.47	0.32	0	0.06	0.85
11	Action	3DO	Army Men: Air Attack 2	3DO-Army Men: Air At	2000	0.17	0.11	0	0.02	0.3

There were many duplicates  
in original data.

Data did not contain a  
unique id.

Publisher and name of game  
were combined to create a  
unique ID.