MGT153 Final Project Report.

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Contents

1 Brief Introduction of ER Games

- **Genre:** Mainly Puzzle Games. Expanding their new game to **a combination of a puzzle and role-playing**.
- **Developer Type:** A third-party Developer and games made by small teams.
- **Marketing Choice:** Outside US(Mainly Asia) or Internationally.

2 Trend of Console Gaming Industry

2.1 Market Overview

Number of Games
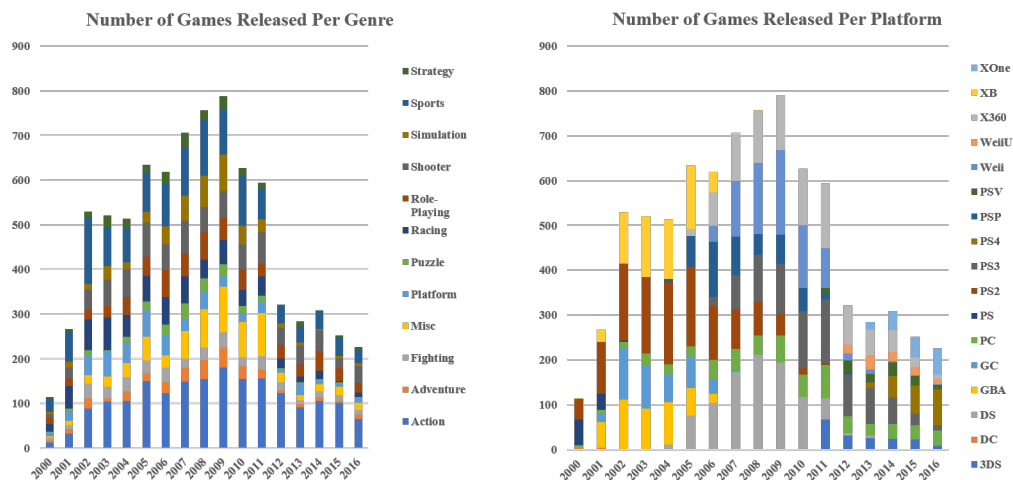
- **Total Number of Games Released:** The total number of games released on console has been continuously decreasing since 2009, indicating that the market condition of console gaming industry is in worrisome depression. Game companies are increasingly conservative on developing and marketing games.
- **Number of Games in Each Genre:** Action games is always the most popular game to be released, but the number of them decreases since 2009 with the overall trend as well. Sports, Misc and Shooter games are relatively popular.
- **Number of Games in Each Platform:**
    - **Console:** As the whole gaming industry prospered rapidly till 2009, the platforms emerged a lot during 2006 and 2009. However, because of the fierce competition during prosperity or the market depression after 2009, some platform stop releasing new games

including DS, GBA, GC, PS2, XB, etc. The remaining popular console platforms are 3DS, PS3, PS4, PSC, Weii, WeiiU, X360 and Xone.

- **PC:** The number of games released through PC platforms does not fluctuate a lot recent years, but the percentage value of market share occupied of PC games are increasing greatly. Therefore, PC and unmentioned mobile, independent platforms such as Steam do put great pressure on the number of products of console gaming market.

Average Sales of Games
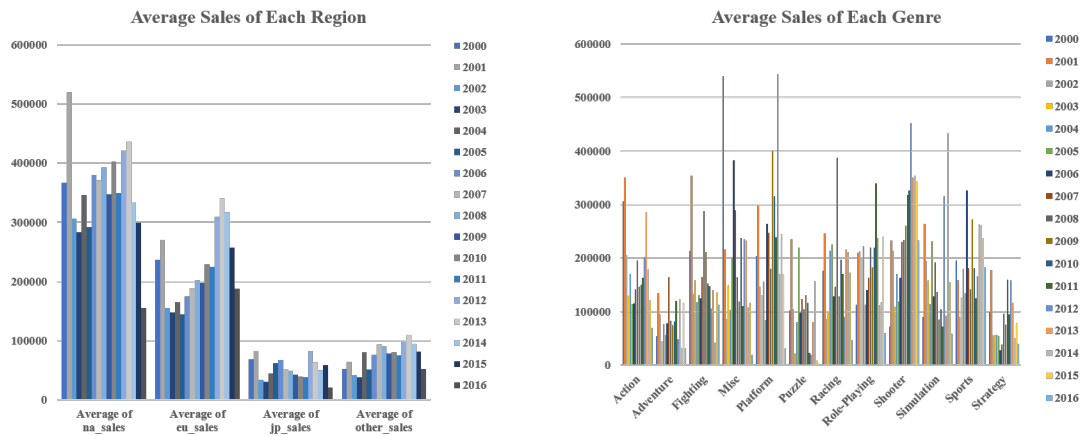
- **Average Sales of Each Region:** Overall Market Share Ranking: $NorthAmerica \geq Europe \geq Other \geq Japan$
- **Average of Each Genre:** The sales data per genre is in high volatility.
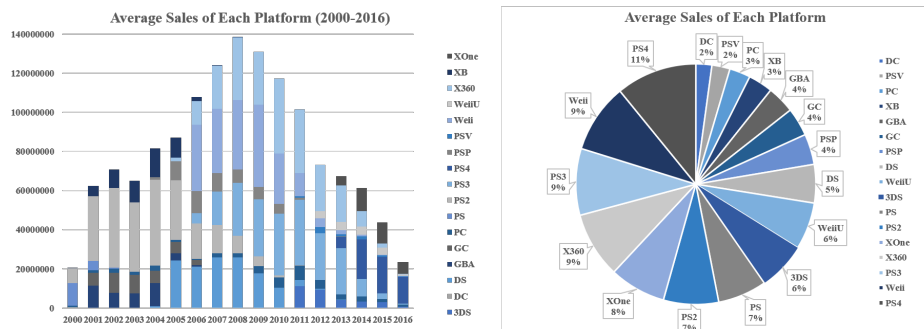
The platform dominated changing as gaming industry developing. In recent year, PS4 and Xone occupy majority of market share. Over the 16 years, PS4, Weii, PS3, X360, Xone are top-sales firm in console gaming industry. However, compared to results according to the number of gaming, PC gaming does not put much pressure on the sales of console gaming.

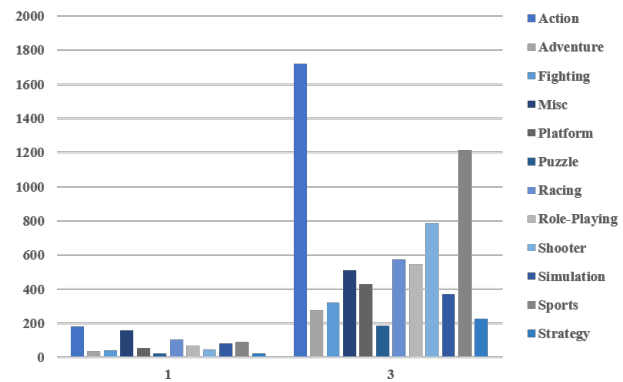**Average Score of Games**
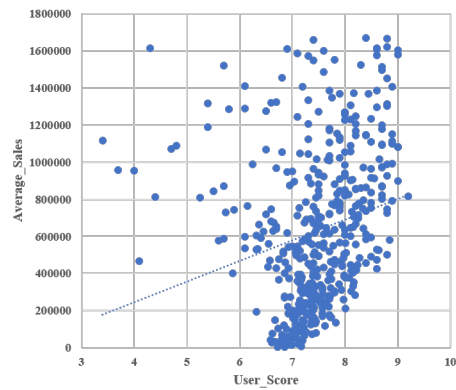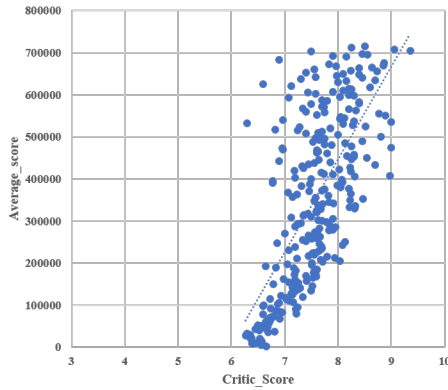
We can find from the scatter-point plots of sales and score (critic, user) that there is a clear and obvious linear, upward-sloping regression line between critic score and sales, but the relationship between user score and sales is not so clear, which might because users are mostly subjective and emotional. The results indicate that companies should focus more on critic's score to promote sales.
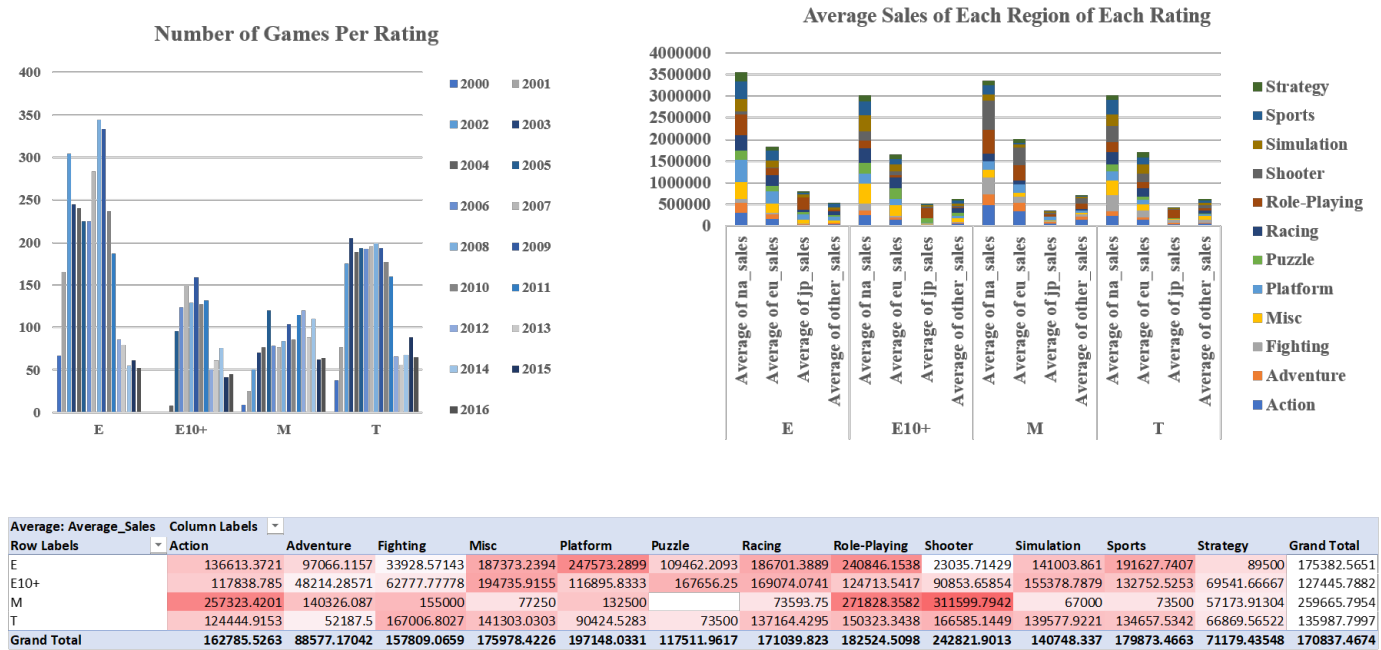
2.2 Market Segmentation

Row Labels	Average of na_sales	Average of eu_sales	Average of jp_sales	Average of other_sales
⊟1	502943.7707	329250.2756	146846.7475	100132.3043
Action	426408.8398	289005.5249	79944.75138	96298.34254
Adventure	208108.1081	95945.94595	92432.43243	27837.83784
Fighting	330952.381	183571.4286	80238.09524	78333.33333
Misc	492375	317250	84937.5	92187.5
Platform	1157924.528	679811.3208	465660.3774	184905.6604
Puzzle	375217.3913	315652.1739	325217.3913	76086.95652
Racing	409320.3883	381941.7476	97475.72816	98252.42718
Role-Playing	293529.4118	132058.8235	337352.9412	87794.11765
Shooter	374444.4444	218888.8889	92000	70444.44444
Simulation	291084.3373	169879.5181	162289.1566	47951.80723
Sports	1125274.725	734945.0549	151648.3516	210109.8901
Strategy	146666.6667	88571.42857	85238.09524	19523.80952
⊟3	334986.0257	190396.8698	37114.30967	70683.34265
Action	316794.6481	198557.3008	31751.01803	78714.36882
Adventure	184708.0292	107481.7518	18430.65693	34233.57664
Fighting	355621.118	147267.0807	55745.34161	67142.85714
Misc	349062.5	166542.9688	35664.0625	64257.8125
Platform	321325.5814	167488.3721	37116.27907	53162.7907
Puzzle	197043.0108	120860.2151	43172.04301	32043.01075
Racing	320034.7826	202521.7391	22747.82609	84608.69565
Role-Playing	327095.5882	179816.1765	150422.7941	57683.82353
Shooter	540801.5267	316513.9949	18613.23155	107697.201
Simulation	278260.8696	181304.3478	29565.21739	49456.52174
Sports	341591.0965	173470.7337	18771.64056	72943.11624
Strategy	132819.3833	107180.6167	11321.5859	28281.93833
Grand Total	353879.4493	206016.3711	49458.01811	73996.03125

Developer Type   The pivot table with conditional formatting suggests that games made by first-party developers have better average sales on all region compared to games made by third-party developers. Both type of developers mainly target North America market. First-party developers also pay attention to Japan and other region but third-party developers do not care much about these region.

However, third-party developers made much more games during 2000 to 2016 according to the plot on the right. The contradict results indicate that first-party developers might focus on the quality of games and usually can spend more time and efforts to market their games. On the other hand, third-party developers focus on the quantity of games and run their business according to economies of scope.. They made many games in each genre so that getting larger market shares.

Number of Games Per Rating

Average Sales of Each Region of Each Rating

Average: Average_Sales	Column Labels												
Row Labels	Action	Adventure	Fighting	Misc	Platform	Puzzle	Racing	Role-Playing	Shooter	Simulation	Sports	Strategy	Grand Total
E	136613.3721	97066.1157	33928.57143	187373.2394	247573.2899	109462.2093	186701.3889	240846.1538	23035.71429	141003.861	191627.7407	89500	175382.5651
E10+	117838.785	48214.28571	62777.77778	194735.9155	116895.8333	167656.25	169074.0741	124713.5417	90853.65854	155378.7879	132752.5253	69541.66667	127445.7882
M	257323.4201	140326.087	155000	77250	132500		73593.75	271828.3582	311599.7942	67000	73500	57173.91304	259665.7954
T	124444.9153	52187.5	167006.8027	141303.0303	90424.5283	73500	137164.4295	150323.3438	166585.1449	139577.9221	134657.5342	66869.56522	135987.7997
Grand Total	162785.5263	88577.17042	157809.0659	175978.4226	197148.0331	117511.9617	171039.823	182524.5098	242821.9013	140748.337	179873.4663	71179.43548	170837.4674

Rating   The number of games in each rating suggest the games appropriating for everyone is the most-released games. However, it decreases in recent years and the games appropriating for mature have trend of increasing.

The second plot shows that the detailed sale in every region of each rating with different genres. North America has the largest market share and Japan performs not good.

As for games appropriating for everyone, role-playing is the most-sold game genre. As for games for everyone above 10, music games sells better. Matures love shooter games and teenagers do not have specific preference on game genres but they do no like puzzle and adventure games.

Game Genre   According to the previous plot that number of games and sales of games in each genre, the action game is the best game genre for developers to make profit.

Geography   According to the previous plot that the average sales of each region, North America is obviously dominant the global games market.

3 First-Releasing Recommendation to ER Games

3.1 Is ER Games in Line with the Trend?

Values	Total Sales			Puzzle vs **Role-playing**	
	Puzzle	Role-Playing		z-score	3.712125723
Average of Total_sales	470047.85	730098.04		p-value	0.0103%
Var of Total_sales	1579126440007.36	1454979041109.08			
Count of Total_sales	209.00	612.00			
				Puzzle vs **Role-playing**	
Values	Critic Score			z-score	1.999607919
	Puzzle	Role-Playing		p-value	2.2771%
Average of critic_score	6.76	7.31			
Var of critic_score	1.77	1.41			

The AB-tesing made on total sales and critic score (focusing on critic score is our previous conclusion in section1.1)shows that role-playing is a better choice for ER Games.

Value	Column Labels				Puzzle vs **Role-playing**	
	Puzzle	Role-Playing				
Average of na_sales	216650.72	323366.01		z-score	3.00126869	
Var of na_sales	153168536069.19	325227276617.14		p-value	0.1344%	
Count of na_sales	209.00	612.00				
				Puzzle vs Role-playing		
Average of eu_sales	142296.65	174509.80		z-score	0.870852	
Var of eu_sales	224603353882.96	179702050640.22		p-value	19.1917%	
Count of eu_sales	209.00	612.00				
				Puzzle vs **Role-playing**		
Average of jp_sales	74210.53	171192.81		z-score	2.970112	
Var of jp_sales	160685070850.20	181992191895.85		p-value	0.1488%	
Count of jp_sales	209.00	612.00				
				Puzzle vs **Role-playing**		
Average of other_sales	36889.95	61029.41		z-score	2.662810	
Var of other_sales	10725377254.32	18888791277.56		p-value	0.3875%	
Count of other_sales	209.00	612.00				

The AB-testing made on average sales of each region shows that role-playing is good choice generally but not in Europe. The result suggest that region is a confounding variable.

To sum up, developing new game which is a combination of role-playing and puzzle is a right choice for ER Games. It is because role-playing games has much better performance on popularity and sales compared the puzzle games. However, role-playing games and puzzle games are not so popular and sales good in all game genres. The changing of game genre would improve the market performance of ER games but would not be the top of the industry.

3.2   Analysis of Preference and Demographics of Typical Customers

Factor 1: Releasing Platforms   There are four type of games: Console, PC, mobile, online. Cause we know that puzzle and role-playing games are not so popular in console gaming industry, we suggest ER games to publish their game on both console and PC platforms such as steam. Actually, I get data from the Internet that the PC games have almost same market share with console games.

Worldwide Distribution of Games Market Revenue from 2015 to 2019 (by segment and screen)

Source: Newzoo   Created by WePC.com
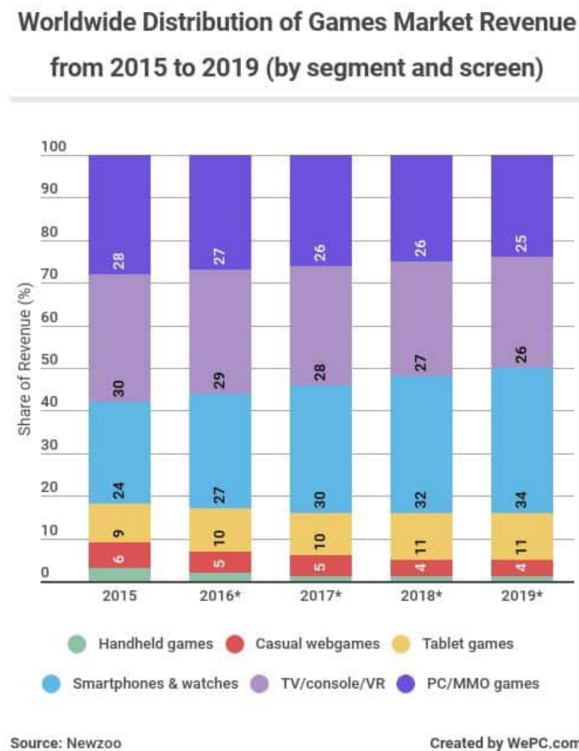
Taking long-term viability into account, ER game should shift their releasing platform totally to individual PC platforms.

Factor 2: Region

According to the result of AB testing between Japan and other three regions for both puzzle games and Role-playing games, it is highly possible to be a wrong choice that switching marketing target region to Europe and other region from Japan. But it is rarely wrong that switching to North America market.

Therefore, ER Games should release their new games in North America and Japan as for the sales data.

Puzzle				
	jp	**na**	**eu**	**other**
Average	74211	216651	142297	36890
Var	160685070850	153168536069	224603353883	10725377254
Count	209	209	209	209
		jp vs. **na**	**jp** vs. eu	**jp** vs. other
	z-score	3.6757	1.5858	-1.3032
	p-value	0.0119%	5.6396%	90.3743%
Role-Playing				
	jp	**na**	**eu**	**other**
Average	171193	323366	174510	61029
Var	181992191896	325227276617	179702050640	18888791278
Count	612	612	612	612
		jp vs. **na**	**jp** vs. eu	**jp** vs. other
	z-score	5.2859	0.1364	-6.0806
	p-value	0.0000%	44.5736%	100.0000%

The population plot show that China and India which are included in other region have largest number of population of the world. Asia Pacific also have the largest market revenue. So, Asia market has great potential than North America and Japan market.

Average Revenue (By 2019)
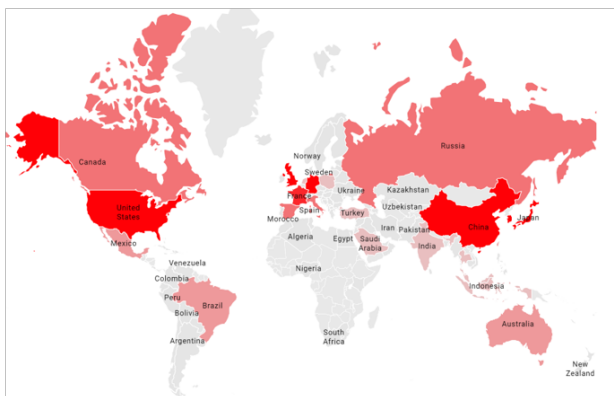
Source: WePc.com

Average Population （2000-2016）
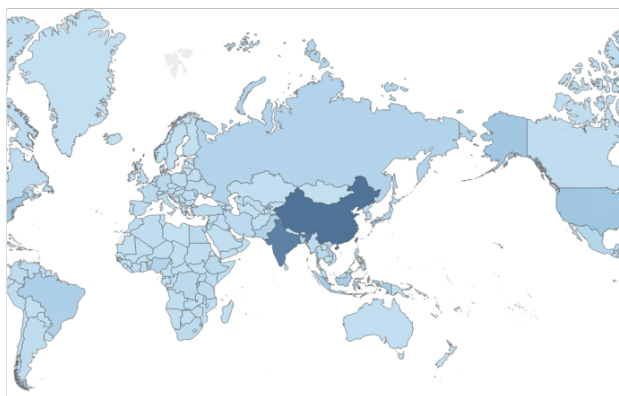
Source: Tableau

To sum up, ER Games should release their brand-new game internationally.

Factor 3: Developer Type According to previous analysis of developer type, we can find that first-type developer have better sales in all four regions compared to third-type developer. As we recommend to release internationally, we also recommend ER Games to be a first-type developer that release and publish their games to get more sales.

4 Conclusion

This report aiming at analysing the optimal decision of the first-releasing of the new game of ER Games, using AB-testing and KPI plots.

As for the overall trend of console gaming industry, it is worrisome that the industry might in recession because the number of games and average sales of games are declining since 2009. Although EG Games made right decision to make a games which is combination of puzzle and role-playing games.There are not so much opportunity for puzzle games or role-playing games to gain much profit.

Through analysis of platforms, regions and developer types, we recommend ER Games release on a independent platform such as Steam and release it internationally.

A Appendix

计数项:name — Column Labels / Row Labels: Action

Row Labels	Action	Adventure	Fighting	Misc	Platform	Puzzle	Racing	Role-Playing	Shooter	Simulation	Sports	Strategy	Grand Total
2000	12	4	8	3	8	2	17	15	7	6	27	5	114
2001	33	10	8	10	21	7	50	17	24	13	70	4	267
2002	89	23	32	19	45	12	68	22	45	12	150	12	529
2003	104	7	27	23	56	3	73	26	58	30	88	26	521
2004	106	21	32	32	45	14	48	40	63	15	77	21	514
2005	150	18	28	53	59	21	57	43	76	24	89	16	634
2006	123	25	32	28	46	23	62	60	57	40	95	28	619
2007	149	31	21	61	28	34	60	51	74	57	107	33	706
2008	155	43	27	86	41	28	42	61	57	70	126	20	756
2009	181	44	35	101	24	27	54	49	60	82	103	29	789
2010	154	29	21	78	20	16	36	47	55	42	113	16	627
2011	156	20	31	95	27	12	43	29	70	29	70	12	594
2012	123	6	19	21	8	2	21	31	39	10	39	3	322
2013	91	7	9	12	25	3	14	27	41	7	36	12	284
2014	106	9	12	16	9	2	19	45	46	2	41	2	309
2015	102	4	13	18	8	2	4	28	21	6	42	4	252
2016	66	10	9	16	13	1	10	21	38	6	31	5	226
Grand Total	1900	311	364	672	483	209	678	612	831	451	1304	248	8063

计数项:name — Column Labels / Row Labels (by platform)

Row Labels	Action	Adventure	Fighting	Misc	Platform	Puzzle	Racing	Role-Playing	Shooter	Simulation	Sports	Strategy
3DS	67	10	5	15	19	7	8	21	4	12	10	4
DC		1			1		2	4	1		1	
DS	161	83	15	124	58	101	40	84	24	155	67	35
GBA	107	16	14	36	77	23	41	26	25	9	54	8
GC	79	13	25	20	54	7	43	22	33	9	92	6
PC	124	18	3	5	9	5	38	57	111	79	35	90
PS	17	6	8	3	9		15	6	6	2	24	
PS2	253	41	74	76	71	8	140	102	107	47	258	36
PS3	257	19	52	60	25	1	63	75	129	18	145	7
PS4	70	7	10	10	8		9	21	31	1	33	3
PSP	95	14	29	25	27	20	49	63	31	13	87	14
PSV	41	4	8	8	6	2	6	28	4		9	1
Weii	160	41	25	155	42	24	48	24	37	57	144	10
WeiiU	44	1	3	13	15	3	1	2	8	1	7	2
X360	254	17	55	84	23	5	75	56	153	26	165	16
XB	119	17	33	23	34	3	89	13	96	21	142	14
XOne	52	3	5	15	5		11	8	31	1	31	2
Grand Total	1900	311	364	672	483	209	678	612	831	451	1304	248

计数项:name — Column Labels / Row Labels (by year)

Row Labels	3DS	DC	DS	GBA	GC	PC	PS	PS2	PS3	PS4	PSP	PSV	Weii	WeiiU	X360	XB	XOne	Grand Total
2000		6				4	58	45								1		114
2001		4		57	21	7	35	116							27			267
2002				112	114	14	3	172								114		529
2003				91	98	26		170								136		521
2004			11	95	62	22		183			7					134		514
2005			76	61	70	23		177			69				16	142		634
2006			105	19	34	43		120	20		123	35	74		46			619
2007			171	1	4	48		89	76		86		124		104	3		706
2008			212			42		75	106		45		159		116	1		756
2009			195			60		47	113		64		189		121			789
2010			117			50		15	127		52		139		127			627
2011	68		47			74		4	142		14	11	89		145			594
2012	31		7			37			92		3	16	28	20	88			322
2013	26		6			26			79	13	3	16	2	19	77		17	284
2014	25					33			58	48	30	4		19	49		43	309
2015	23					31			26	63	21	2		19	21		46	252
2016	9					34			12	79	11	1		11	11		58	226
Grand Total	182	10	947	436	403	574	96	1213	851	203	467	117	767	100	929	604	164	8063

计数项:name — Column Labels

Row Labels	1	3	Grand Total
2000	6	108	114
2001	21	246	267
2002	40	489	529
2003	48	473	521
2004	41	473	514
2005	40	594	634
2006	51	568	619
2007	55	651	706
2008	82	674	756
2009	130	659	789
2010	101	526	627
2011	126	468	594
2012	57	265	322
2013	38	246	284
2014	22	287	309
2015	33	219	252
2016	16	210	226
Grand Total	907	7156	8063

计数项:name — Column Labels (by year)

Row Labels	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Grand Total
E	67	165	304	245	240	225	225	284	344	333	237	187	86	79	55	61	52	3189
E10+				1	8	96	124	150	129	159	127	132	50	61	76	41	45	1199
M	9	25	50	70	77	120	78	77	84	104	86	115	120	88	110	62	64	1339
T	38	77	175	205	189	193	192	195	199	193	177	160	66	56	68	88	65	2336
Grand Total	114	267	529	521	514	634	619	706	756	789	627	594	322	284	309	252	226	8063

计数项:name — Column Labels

Row Labels	Action	Adventure	Fighting	Misc	Platform	Puzzle	Racing	Role...
1	181	37	42	160	53	23	103	
3	1719	274	322	512	430	186	575	
Grand Total	1900	311	364	672	483	209	678	

値

値	Column Labels																
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Average of na_sales	366666.6667	520074.9064	306238.1853	283454.8944	345992.2179	292160.8833	379612.2779	370609.0652	393187.8307	346615.9696	402057.4163	349410.7744	421335.4037	435774.6479	333236.246	299761.9048	154778.761
Average of eu_sales	236666.6667	269925.0936	155103.9698	147082.5336	164357.9767	144116.7192	174329.5638	189121.813	201653.4392	197655.2598	228819.7767	223939.3939	308726.7081	340739.4366	316731.3916	256865.0794	187743.362
Average of jp_sales	67807.01754	82172.28464	33837.42911	30575.81574	44241.24514	61892.74448	67495.96123	50849.85836	48835.97884	42053.23194	38867.6236	37407.40741	82577.63975	62288.73239	49482.20065	58373.01587	20575.2212
Average of other_sales	51491.22807	64119.85019	40453.6862	37696.73704	79747.08171	51104.10095	75557.35057	92577.90368	89298.9418	77579.2142	79920.25518	74309.76431	98509.31677	109859.1549	93818.77023	81269.84127	51858.4070

平均值项:Average_Sales Column Labels

Row Labels	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
3DS												163750	300241.9355	155769.2308	134000	129239.1304	61388.8888
DC	73333.33333	33125															
DS					76818.18182	321578.9474	200714.2857	151461.9883	121580.1887	90564.10256	88162.39316	69308.51064	85000	39583.33333			
GBA		196929.8246	69308.03571	83763.73626	124815.7895	59549.18033	45131.57895	47500									
GC		312380.9524	89407.89474	95510.20408	101975.8065	81178.57143	78014.70588	16875									
PC	198750	185714.2857	151785.7143	60576.92308	116022.7273	42500	15058.13953	40364.58333	55059.52381	61750	104200	100236.4865	120878.3784	99903.84615	79924.24242	55725.80645	33970.5882
PS	197844.8276	137785.7143	175833.3333														
PS2		169722.2222	286357.7586	236497.093	208294.1176	241010.929	172980.226	151166.6667	162893.2584	119733.3333	110159.5745	77000	21250				
PS3							251500	225000	254080.1887	257765.4867	249389.7638	234859.1549	258451.087	301170.8861	151163.7931	102884.6154	40833.3333
PS4														445769.2308	424270.8333	299285.7143	174841.772
PSP					160357.1429	139601.4493	92987.80488	110436.0465	151000	96523.4375	94134.61538	78928.57143	51250	41666.66667			
PSV												85454.54545	111160.7143	64062.5	52166.66667	32976.19048	23863.6363
Weii						971214.2857	264536.2903	224088.0503	223161.3757	184640.2878	132443.8202						4500
WeiiU													185625	142661.2903	209605.2632	201710.5263	81363.6363
X360						119375	163547.2973	212692.3077	276400.8621	222561.9835	303917.3228	225206.8966	269687.5	325614.0351	162806.1224	92738.09524	33409.0909
XB	247500	194074.0741	83793.85965	80900.73529	109757.4627	71602.11268	41847.82609	45833.33333	45000								
XOne														272352.9412	273313.9535	237336.9565	101120.689
Grand Total	180657.8947	234073.0337	133908.3176	124702.4952	158584.6304	137318.612	174248.7884	175789.6601	183244.0476	165975.9189	187416.2679	171266.835	227787.2671	237165.493	198317.1521	174067.4603	103738.938

Row Labels	Average of na_sales	Average of eu_sales	Average of jp_sales	Average of other_sales
1	502943.7707	329250.2756	146846.7475	100132.3043
Action	426408.8398	289005.5249	79944.75138	96298.34254
Adventure	208108.1081	95945.94595	92432.43243	27837.83784
Fighting	330952.381	183571.4286	80238.09524	78333.33333
Misc	492375	317250	84937.5	92187.5
Platform	1157924.528	679811.3208	465660.3774	184905.6604
Puzzle	375217.3913	315652.1739	325217.3913	76086.95652
Racing	409320.3883	381941.7476	97475.72816	89252.42718
Role-Playing	293529.4118	132058.8235	337352.9412	87794.11765
Shooter	374444.4444	218888.8889	92000	70444.44444
Simulation	291084.3373	169879.5181	162289.1566	47951.80723
Sports	1125274.725	734945.0549	151648.3516	210109.8901
Strategy	146666.6667	88571.42857	85238.09524	19523.80952
3	334986.0257	190396.8698	37114.30967	70683.34265
Action	316794.6481	198557.3008	31751.01803	78714.36882
Adventure	184708.0292	107481.7518	18430.65693	34233.57664
Fighting	355621.118	147267.0807	55745.34161	67142.85714
Misc	349062.5	166542.9688	35664.0625	64257.8125
Platform	321325.5814	167488.3721	37116.27907	53162.7907
Puzzle	197043.0108	120860.2151	43172.04301	32043.01075

Average of Total_sales Column Labels

Row Labels	Action	Adventure	Fighting	Misc	Platform	Puzzle	Racing	Role-Playing	Shooter	Simulation	Sports
3DS	480000	214000	414000	351333.3333	1452631.579	212857.1429	1795000	874761.9048	282500	1374166.667	31100
DC		150000			120000		100000	170000	50000		109000
DS	433167.7019	368554.2169	206666.6667	687580.6452	1052931.034	603069.3069	846500	707976.1905	253333.3333	560000	212985.074
GBA	376915.8879	485625	210000	320555.5556	632467.5325	410434.7826	368292.6829	648846.1538	87200	253333.3333	210370.370
GC	397594.9367	363846.1538	612800	600500	470555.5556	471428.5714	276279.0698	563181.8182	369696.9697	918888.8889	250217.391
PC	173467.7419	65555.55556	40000	608000	45555.55556	78000	78684.21053	723859.6491	265225.2252	526202.5316	160285.714
PS	1168823.529	488333.3333		306250	1196666.667	781111.1111	446000	640000	343333.3333	155000	772083.333
PS2	938695.6522	291219.5122	879324.3243	607631.5789	687183.0986	617500	902000	710196.0784	851682.243	678723.4043	832364.341
PS3	1031945.525	865263.1579	896923.0769		450166.6667	853200	400000	854400	1404573.643	443333.3333	792758.620
PS4	1067285.714	151428.5714	676000	241000	523750		827777.7778	960000	2053870.968	420000	1638787.87
PSP	526842.1053	209285.7143	465517.2414	207200	457777.7778	128000	598367.3469	471746.0317	599677.4194	410769.2308	355172.413
PSV	254878.0488	85000	222500	226250	375000		65000	170000	238214.2857		308888.888
Weii	539687.5	306829.2683	842000	1165419.355	1949523.81	514583.3333	1120000	457500	539189.1892	570175.4386	1698819.44
WeiiU	328181.8182	70000	406666.6667	847692.3077	1426666.667	433333.3333	7090000	630000	722500	200000	109000
X360	852204.7244	705882.3529	628727.2727	817380.9524	453478.2609	138000	764800	1218750	1727843.137	490769.2308	744727.272
XB	290336.1345	105294.1176	330303.0303	244782.6087	205588.2353	113333.3333	285280.8989	937692.3077	604791.6667	331904.7619	333661.971
XOne	623846.1538	516666.6667		454000	252000	186000	770909.0909	1023750	1554516.129	120000	854838.709
Grand Total	651142.1053	354308.6817	631236.2637	703913.6905	788592.1325	470047.8469	684159.292	730098.0392	971287.6053	562993.3481	719493.86

Table (Sum by Genre — top)

Row Labels	na_sales	eu_sales	jp_sales	other_sales
Racing	320034.7826	202521.7391	22747.82609	84608.69565
Role-Playing	327095.5882	179816.1765	150422.7941	57683.82353
Shooter	540801.5267	316513.9949	18613.23155	107697.201
Simulation	278260.8696	181304.3478	29565.21739	49456.52174
Sports	341591.0965	173470.7337	18771.64056	72943.11624
Strategy	132819.3833	107180.6167	11321.5859	28281.93833
Grand Total	353879.4493	206016.3711	49458.01811	73996.03125

Average: Average_Sales — Column Labels

Row Labels	Action	Adventure	Fighting	Misc	Platform	Puzzle	Racing	Role-Playing	Shooter	Simulation	Sports	Strategy	Grand Total
E	136613.3721	97066.1157	33928.57143	187373.2394	247573.2899	109462.2093	186701.3889	240846.1538	23035.71429	141003.861	191627.7407	89500	175382.5651
E10+	117838.785	48214.28571	62777.77778	194735.9155	116895.8333	167656.25	169074.0741	124713.5417	90853.65854	155378.7879	132752.5253	69541.66667	127445.7882
M	257323.4201	140326.087	155000	77250	132500		73593.75	271828.3582	311599.7942	67000	73500	57173.91304	259665.7954
T	124444.9153	52187.5	167006.8027	141303.0303	90424.5283	73500	137164.4295	150323.3438	166585.1449	139577.9221	134657.5342	66869.56522	135987.7997
Grand Total	162785.5263	88577.17042	157809.0659	175978.4226	197148.0331	117511.9617	171039.823	182524.5098	242821.9013	140748.337	179873.4663	71179.43548	170837.4674

Pivot by Platform (grouped 1 / 3)

Row Labels	Average of na_sales	Average of eu_sales	Average of jp_sales	Average of other_sales
1	502943.7707	329250.2756	146846.7475	100132.3043
3DS	523142.8571	385142.8571	372571.4286	84571.42857
DS	423773.5849	316540.8805	227232.7044	89308.1761
GBA	348709.6774	139032.2581	149677.4194	17419.35484
GC	533684.2105	160263.1579	133947.3684	22894.73684
PC	16666.66667	81960.78431	0	13921.56863
PS	125000	220000	136666.6667	36666.66667
PS2	316300	191000	112300	91200
PS3	344062.5	335625	117708.3333	139166.6667
PS4	161875	210000	31250	69375
PSP	184750	90500	264250	63500
PSV	104117.6471	105294.1176	70000	48823.52941
Weii	1396861.314	881021.8978	221970.8029	251605.8394
WeiiU	924444.4444	581666.6667	382777.7778	141666.6667
X360	391142.8571	215142.8571	12190.47619	60952.38095
XB	209302.3256	83953.48837	1860.465116	10697.67442
XOne	220000	97333.33333	1333.333333	32000
3	334986.0257	190396.8698	37114.30967	70683.34265
3DS	214557.8231	145850.3401	134761.9048	33265.30612
DC	102000	5000	120000	2000
DS	248362.9442	100761.4213	62982.2335	35050.76142
GBA	237753.0864	99814.81481	28592.59259	9456.790123
GC	249315.0685	70027.39726	30082.19178	9534.246575
PC	106711.2811	180497.1319	152.9636771	31644.35946
PS	373444.4444	273444.4444	25111.11111	41222.22222
PS2	396145.5526	215947.8886	55705.30099	129793.3513
PS3	420662.2517	335748.3444	58741.72185	139748.3444
PS4	421283.4225	562673.7968	44224.59893	189732.6203
PSP	197025.7611	117189.6956	32014.05152	74964.87119
PSV	73500	74100	64800	35700
Weii	353650.7937	165079.3651	35190.47619	52698.4127
WeiiU	178658.5366	128536.5854	40000	28780.4878

Pivot — Column Labels (by Genre and Rating)

Row Labels	Action	Adventure	Fighting	Misc	Platform	Puzzle	Racing	Role-Playing	Shooter	Simulation	Sports
E											
Average of na_sale	305901.1628	235041.3223	85714.28571	383633.8028	514332.2476	213197.6744	359837.963	475846.1538	72142.85714	280347.4903	414327.931
Average of eu_sale	164273.2558	105454.5455	37142.85714	221830.9859	277068.4039	122674.4186	245578.7037	168769.2308	14285.71429	164092.6641	229752.144
Average of jp_sale	29476.74419	18925.61983	11428.57143	81014.08451	123973.9414	69534.88372	50277.77778	276923.0769	1785.714286	73281.85328	33336.5109
Average of other_s	46802.32558	28842.97521	1428.571429	63014.08451	74918.56678	32441.86047	91111.11111	41846.15385	3928.571429	46293.43629	89094.375
E10+											
Average of na_sale	257780.3738	104081.6327	157777.7778	454507.0423	245333.3333	242812.5	329259.2593	192916.6667	197560.9756	371212.1212	334848.484
Average of eu_sale	146915.8879	61224.4898	38333.33333	236619.7183	141833.3333	257500	235925.9259	55937.5	93170.73171	152727.2727	123030.30
Average of jp_sale	9228.971963	7551.020408	33888.88889	10633.80282	16333.33333	107812.5	6666.666667	222916.6667	43414.63415	31818.18182	12020.2020
Average of other_s	57429.90654	20000	21111.11111	77183.09859	64083.33333	62500	104444.4444	27083.33333	29268.29268	65757.57576	61111.1111
M											
Average of na_sale	486263.9405	252753.6232	390	173000	200000		175000	544253.7313	677222.2222	134000	21700
Average of eu_sale	344386.6171	197246.3768	147555.5556	82000	190000		91250	363134.3284	408827.1605	64000	3400
Average of jp_sale	52936.80297	42898.55072	18222.22222	22000	80000		1875	60447.76119	24670.78189	42000	2000
Average of other_s	145706.3197	68405.7971	64222.22222	32000	60000		26250	119477.6119	135679.0123	28000	2300
T											
Average of na_sale	245050.8475	101805.5556	365374.1497	333575.7576	218867.9245	168000	276912.7517	238233.4385	371992.7536	266428.5714	320547.945
Average of eu_sale	150779.661	50416.66667	161700.6803	138545.4545	101886.7925	80000	195503.3557	131861.1987	201884.058	214025.974	162808.219
Average of jp_sale	44881.35593	39583.33333	8242.424242	7169.811321	20000		5570.469799	50536.2776	74528.98551	51168.83117	53835.6164
Average of other_s	57067.79661	16944.44444	73571.42857	84848.48485	33773.58491	26000	70671.14094	50536.2776	74528.98551	51168.83117	53835.6164
Total Average of na_sa	327236.8421	187491.9614	352774.7253	383184.5238	413126.294	216650.7177	333598.8201	323366.0131	531793.0205	280620.8426	396280.674
Total Average of eu_sa	207173.6842	106109.3248	151456.044	202425.5952	223706.0041	142296.6507	229778.7611	174509.8039	311227.4368	179201.7738	212653.374
Total Average of jp_sal	36342.10526	27234.72669	58571.42857	47395.83333	84140.78675	74210.52632	34100.29499	171192.8105	22587.24428	53991.13082	28044.4785
Total Average of other	80389.47368	33472.66881	68434.06593	70907.7381	67619.04762	36889.95215	86681.41593	61029.41176	105679.9037	49179.60089	82515.3374

Pivot by Platform (continued, bottom)

Row Labels	Average of na_sales	Average of eu_sales	Average of jp_sales	Average of other_sales
WeiiU	178658.5366	128536.5854	40000	28780.4878
X360	614648.0583	265097.0874	10327.6699	86274.27184
XB	258734.4029	82192.51337	1871.657754	11836.00713
XOne	498926.1745	277852.349	1812.080537	76442.95302
Grand Total	353879.4493	206016.3711	49458.01811	73996.03125

平均值:Average_Sales — Column Labels (by Year)

Row Labels	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Action	306458.3333	350378.7879	205393.2584	129879.8077	169952.8302	113550	115040.6504	140973.1544	195822.5806	145939.2265	149594.1558	163701.9231	201422.7642	285934.0659	178773.5849	121127.451	70000
Adventure	54375	134000	94673.91304	44285.71429	76547.61905	56944.44444	78300	164596.7742	83081.39535	73806.81818	81724.13793	120375	47916.66667	123571.4286	31111.11111	116875	31250
Fighting	214062.5	354375	133359.375	158796.2963	117578.125	130178.5714	124687.5	164761.9048	287962.963	210857.1429	152142.8571	148064.5161	105394.7368	140000	41666.66667	135576.9231	113055.5556
Misc	540000	216250	85921.05263	149239.1304	103515.625	202122.6415	383035.7143	289098.3607	164040.6977	119059.4059	237179.4872	110736.8421	235714.2857	232500	107968.75	116250	19531.2
Platform	204375	298571.4286	146388.8889	130535.7143	156111.1111	83728.81356	264456.5217	247053.5714	180304.878	401354.1667	316125	238611.1111	544062.5	170700	244444.4444	170312.5	30769.2307
Puzzle	102500	235357.1429	104583.3333	21666.66667	80714.28571	219642.8571	98695.65217	123088.2353	103928.5714	131111.1111	116093.75	22500	18750	80000	157500	8750	2500
Racing	176470.5882	246350	85845.58824	99726.0274	213125	225964.9123	128306.4516	146541.6667	387321.4286	128055.5556	197013.8889	170116.2791	89404.7619	215892.8511	173125	46750	
Role-Playing	113166.6667	210441.1765	211818.1818	197596.1538	222437.5	113139.5349	140375	163284.3137	219959.0164	182346.9388	219308.5106	339137.931	237177.4194	111203.7037	117555.5556	240000	60000
Shooter	72142.85714	232500	213722.2222	109008.6207	170793.6508	118618.4211	163333.3333	230270.2703	234385.9649	259916.6667	317454.5455	326250	452371.7949	350792.6829	354076.087	342976.1905	233355.263
Simulation	90416.66667	263846.1538	193958.3333	158666.6667	114333.3333	231770.8333	127937.5	192543.8596	137214.2857	85640.2439	104464.2857	72068.96552	315000	91785.71429	433750	154583.3333	59166.666
Sports	195648.1481	158071.4286	90183.33333	126107.9545	180162.3377	133848.3146	326684.2105	181495.3271	141785.7143	272378.6408	180840.708	124964.2857	165256.4103	262916.6667	261951.2195	237023.8095	181774.193
Strategy	100000	177500	55625	56153.84615	56428.57143	53593.75	27232.14286	37803.0303	95375	75603.44828	159062.5	95000	158333.3333	116458.3333	50000	77500	39000
Grand Total	180657.8947	234073.0337	133908.3176	124702.4952	158584.6304	137318.612	174248.7884	175789.6601	183244.0476	165975.9189	187416.2679	171266.835	227787.2671	237165.493	198317.1521	174067.4603	103738.938