



Purchase Price Allocation Study

December 2017

Table of Contents

- Introduction	3
- Criteria & methodology	4
- Statistics	
- Allocation based on transaction size	6
- Allocation across industries	7
- Allocation across intangibles	8
- Allocation across intangibles and industries	9
- Allocation across regions	13
- Useful life per intangible asset	14
- Useful life per intangible asset and industry	15
- Disclaimer	16
- About PPAlyser	17

Introduction

We are proud to present the sixth edition of our Purchase Price Allocation Study. In this study you will find statistics on publically disclosed purchase price allocation studies and economic useful lives of 2015 and 2016. The source for our analysis is the PPAAnalyser database. PPAAnalyser is a subscription database that includes financial details of publically disclosed purchase price allocations, discount rates and impairments. Besides purchase price allocation data, PPAAnalyser also provides economic useful life data used in PPA analyses. For more information visit www.ppanalyser.com.

In this sixth edition you will find a selection of statistics. These include statistics per type of industry, type of intangible and per region. In addition you will find statistics on economic useful lives.

Should you have any questions or comments, please don't hesitate to contact us on info@ppanalyser.com.

Criteria & methodology

- The source we used for this study was the [PPAnalyser](#) database. PPAAnalyser includes purchase price allocation data that was identified by searching for purchase price allocations disclosed in annual and quarterly reports.
- For the purpose of this study a selection of PPAs included in the database was made based on the following criteria:
 - Year: 2015 and 2016.
 - Financial information disclosed: only those PPAs were included that disclosed both the purchase price as well as the allocation of intangibles.
- Intangibles identified in the PPAs and discount rates were assigned to one of the following intangible categories:
 1. Marketing related intangible assets
 2. Customer related intangible assets
 3. Artistic related intangible assets
 4. Contract related intangible assets
 5. Technology related intangible assets
 6. Research & Development related intangible assets
- All amounts were converted to USD using a single exchange rate for 2015 and 2016.
- When analyzing the proportion of tangible assets, intangible assets and goodwill compared to total assets, total assets is determined by the purchase price net of liabilities.

Criteria & methodology

- We classified the PPAs and impairments into the following industry categories:
 - Agriculture, Forestry, Fishing
 - Construction
 - Finance, Insurance, Real Estate
 - Manufacturing
 - Mining
 - Public Administration
 - Retail Trade
 - Services
 - Transportation & Public Utilities
 - Wholesale Trade
- We segmented the allocation results across seven size categories (in USD x Millions):
 - > 1,000
 - 500 - 1,000
 - 250 - 500
 - 100 - 250
 - 50 - 100
 - 25 - 50
 - < 25
- Consolidated statistics were determined based on the percentages of the individual PPA's (i.e. not weighted).
- For categories with less than 10 observations the results are regarded as not significant and are not discussed in this analysis.
- For economic useful life a distinction is made between intangibles with definite and indefinite lifetime. Both are disclosed and analysed separately.

Statistics

Allocation based on transaction size

- The median purchase price in the year 2016 increased by 16% compared to the year 2015, from 57.5 million USD to 66.6 million USD. The number of transactions decreased in 2016, however it should be noted that transactions that took place in 2016 are typically not all disclosed in the annual reports of 2016, therefore a reporting delay exists.
- Although an increase in the overall median purchase price can be observed, the purchase price of transactions between 500 and 1,000 million declined with 14%. The median purchase price for transactions above 1 billion increased with 7%. Next to that, a large increase also is observed in transactions between 100 and 250 million with a 13% higher purchase price in 2016.
- The majority of the purchase price allocations included in this study are published in US annual reports. For 2016, the proportion of US related PPA's increased to 88%, compared to 87% in the year before. The proportion of Canadian PPA's remained stable over the last two years. The proportion of European PPA's showed a minor decrease from 4% in 2015 to 3% in 2016.

Comparison	Number of transactions			
	2016		2015	
	#	% of total	#	% of total
United States	376	88%	599	87%
Canada	13	3%	20	3%
Europe	13	3%	29	4%
Other	26	6%	42	6%
Total	428	100%	690	100%

	Transactions		Median PP (x1000)		
	2016	2015	2016	2015	% change
PP > 1,000	48	69	2,461,768	2,297,000	7.2%
500 < PP < 1,000	23	50	596,074	696,605	-14.4%
250 < PP < 500	38	56	351,900	330,250	6.6%
100 < PP < 250	72	104	154,613	136,372	13.4%
50 < PP < 100	47	85	73,063	73,941	-1.2%
25 < PP < 50	35	95	39,183	36,000	8.8%
PP < 25	165	231	9,000	8,912	1.0%
Total	428	690	66,630	57,540	15.80%

Statistics

Allocation across industries

Purchase price

- The median purchase price of all transactions increased in 2016 to approximately USD 66.6 million (+16%).
- Most transactions are observed in the manufacturing sector, with 42% of the total amount of transactions in 2016. The second largest sector is the services sector with 30% of the total amount of transactions.
- When looking at the median purchase consideration, the most significant increases can be observed in the Retail Trade industry (+60%). The most significant decrease is observed in the Wholesale Trade industry (-82%).

	Number of transactions				Median purchase consideration		
	2016	% of PPA's 2016	2015	% of PPA's 2015	2016	2015	% change
All industries	428	100%	690	100%	66,630	57,540	16%
Agriculture, Forestry, Fishing	0	0%	1	0%	5,571	21,300	-74%
Construction	3	1%	4	1%	34,052	61,031	-44%
Finance, Insurance, Real Estate	59	14%	69	10%	51,189	66,558	-23%
Manufacturing	179	42%	265	38%	94,294	79,650	18%
Mining	6	1%	7	1%	244,595	66,239	269%
Public Administration	2	0%	1	0%	89,650	157,500	-43%
Retail Trade	15	4%	27	4%	48,088	30,057	60%
Services	128	30%	211	31%	31,123	36,912	-16%
Transportation & Public Utilities	22	5%	74	11%	61,499	104,048	-41%
Wholesale Trade	14	3%	31	4%	14,465	81,928	-82%

Statistics

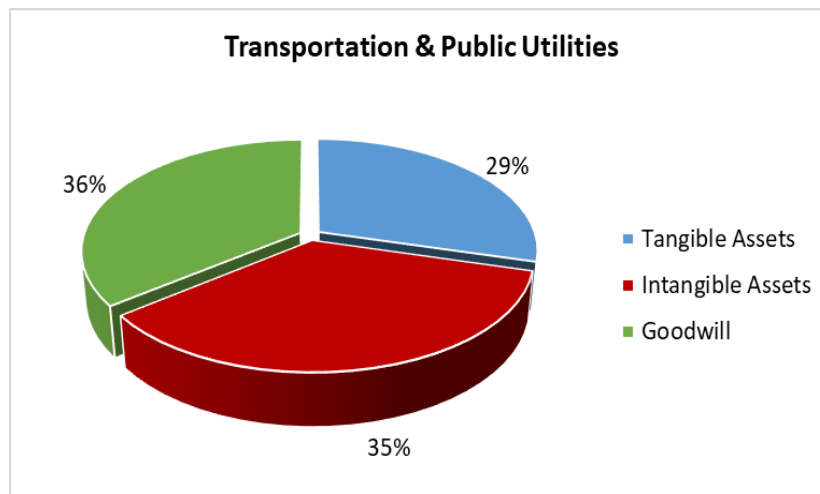
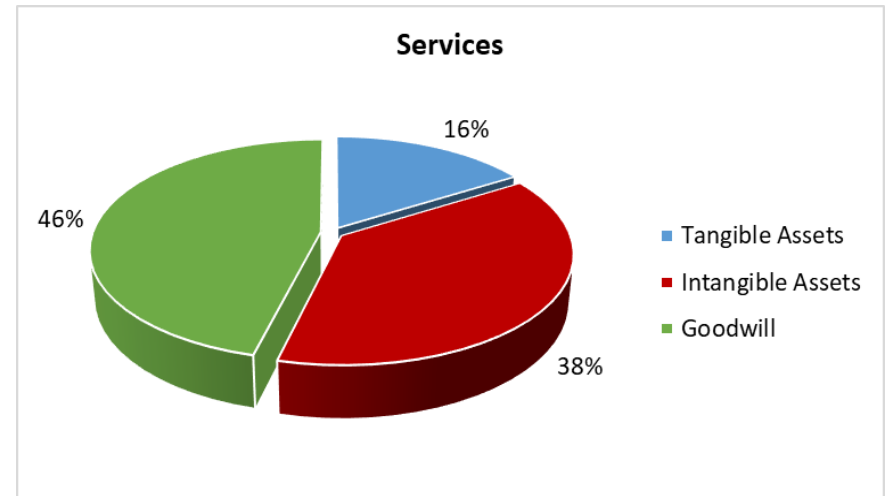
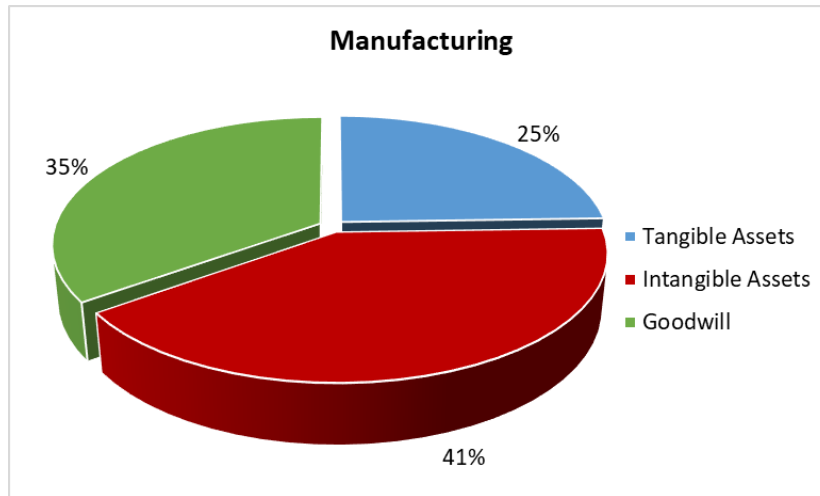
Allocation across intangibles

- Overall, the proportion of intangible assets (incl. goodwill) in relation to total assets increased slightly across all asset class sizes (0.9% on average). A significant decrease can be observed for transaction with asset values between 25 and 50 million (-4.5%) while a significant increase can be observed for transactions with asset values between 500 million and 1 billion (+5.4%) as well as for transactions with asset values lower than 25 million.
- The proportion of intangible assets (excl. goodwill) in relation to total assets increased slightly for all transactions (0.3% on average).
- The proportion of goodwill in relation to total assets increased with 0.6% on average.

	Int. asset % of total assets			Goodwill as % of total assets			Total Int. as % of total assets		
	2016	2015	% change	2016	2015	% change	2016	2015	% change
Total assets > 1,000	34%	33%	0.6%	35%	35%	-0.6%	69%	68%	0.0%
500 < Total assets < 1,000	37%	36%	1.5%	42%	38%	3.9%	79%	74%	5.4%
250 < Total assets < 500	29%	32%	-2.8%	41%	40%	1.1%	70%	72%	-1.7%
100 < Total assets < 250	32%	36%	-4.2%	41%	36%	4.7%	72%	72%	0.5%
50 < Total assets < 100	37%	35%	1.6%	39%	38%	0.5%	76%	74%	2.1%
25 < Total assets < 50	39%	38%	0.7%	39%	44%	-5.2%	78%	83%	-4.5%
Total assets < 25	43%	38%	4.6%	39%	39%	0.0%	82%	77%	4.6%
Average			0.3%			0.6%			0.9%

Statistics

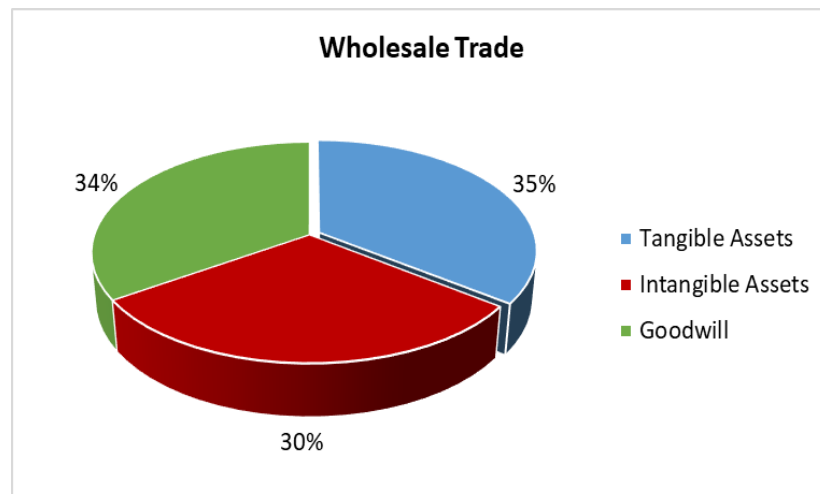
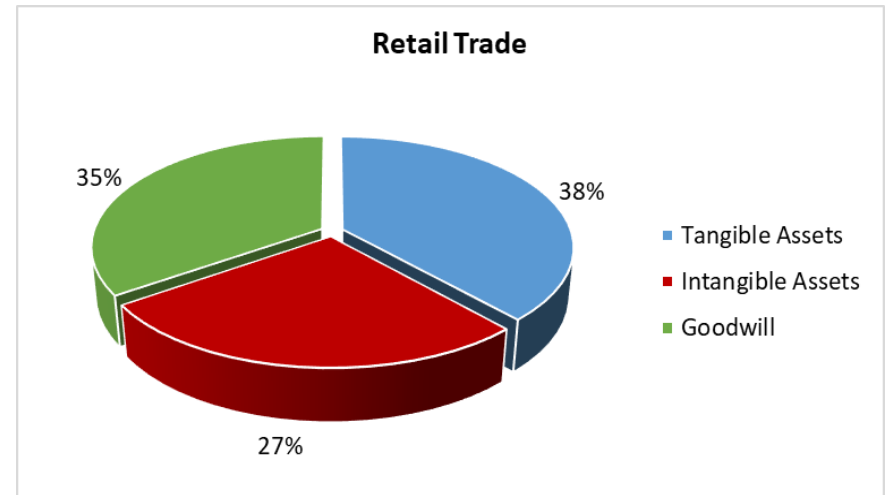
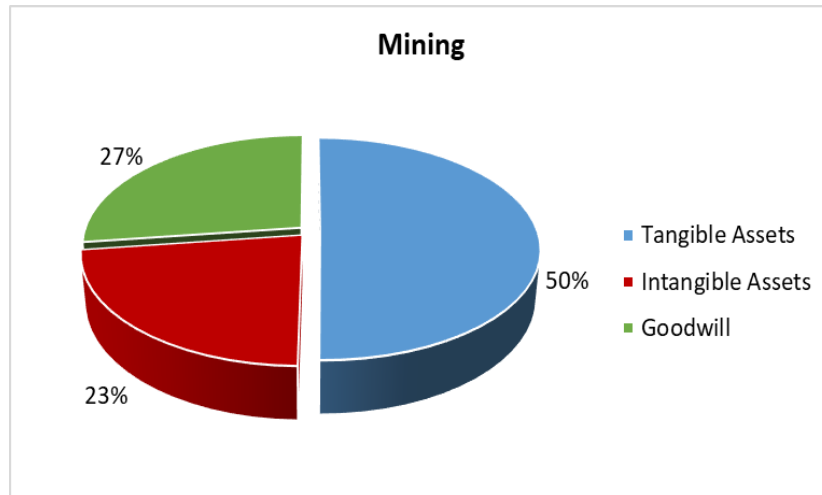
Allocation across intangibles & industries (1/3)



- The following 3 slides discuss the proportion of tangibles, intangibles and goodwill compared to total assets across industries
- The industries with the highest proportion of intangibles assets compared to total assets are Manufacturing, Services and Transportation & Public Utilities
- For Manufacturing, a more than 40% allocation to intangible assets can be observed
- The Services industry has the highest share of goodwill among all industries (46%)

Statistics

Allocation across intangibles & industries (2/3)



- Mining, Retail Trade and Wholesale Trade have the highest proportion of tangible assets compared to total assets among all industries
- The highest proportion of tangible assets among total assets is identified in the Mining industry (50%)
- Mining and Retail Trade both have the lowest percentage of intangible assets (23% and 27% respectively)

Statistics

Allocation across intangibles & industries (3/3)

- The most frequently identified intangibles are: marketing-, customer-, and technology related intangibles. Contract-, R&D-, and Artistic related intangibles are observed less frequently⁽¹⁾.
- The proportion of marketing related intangibles to Total Assets is highest in Retail Trade and Wholesale Trade industries.
- The proportion of contract related intangibles is highest in Transportation & Public Utilities and the Retail Trade industries.
- The proportion of technology related intangibles is highest in Retail Trade and Transportation & Public Utilities industries.

2016	Count						Intangible as a % of Total Assets					
Comparison	Mark	Cust	Art	Contr	Tech	R&D	Mark	Cust	Art	Contr	Tech	R&D
Construction	2	3	-	-	1	-	3%	22%	-	-	15%	-
Finance, Insurance, Real Estate	30	36	-	16	14	-	6%	22%	-	17%	13%	-
Manufacturing	110	137	-	23	93	40	8%	18%	-	19%	20%	27%
Mining	5	5	-	-	5	-	4%	13%	-	-	8%	-
Public Administration	2	2	-	-	2	-	1%	21%	-	-	8%	-
Retail Trade	5	5	-	9	3	-	12%	13%	-	27%	24%	-
Services	68	99	2	12	87	1	7%	21%	3%	15%	21%	1%
Transportation & Public Utilities	11	18	-	6	4	-	5%	29%	-	47%	22%	-
Wholesale Trade	6	11	-	2	8	-	9%	14%	-	11%	16%	-
Total	239	316	2	68	209	41						

Statistics

Useful life per intangible asset

- The number of PPA's that disclosed the economic useful life increased with 12% points (from 49% in 2015 to 61% in 2016).
- In 2016, the highest economic useful life was observed for both customer- and contract related intangibles with a median of 10 years. The lowest economic useful life was observed for marketing-related intangibles with a median of 5 years.
- When comparing 2016 to 2015, a few changes can be observed. The median economic useful life of contract intangibles increased from 7.5 to 10 years, while the median economic useful life of technology-related intangibles decreased slightly from 6 to 5.5 years. In 2016, the median economic useful life of both marketing related and customer related intangibles remained the same (5 years and 10 years respectively).

# PPA with useful life disclosure	2016		2015	
Comparison	#	%	#	%
Total PPA's	428	100%	690	100%
Total PPA's with disclosed useful life	262	61%	337	49%

Interquartile range (in years)	2016			2015		
Comparison ¹	Lower	Median	Upper	Lower	Median	Upper
Marketing- related	4.0	5.0	10.0	4.0	5.0	10.0
Contract related intangible assets	4.8	10.0	15.8	4.3	7.5	12.3
Customer related intangible assets	6.4	10.0	14.8	6.0	10.0	14.0
Technology related intangible assets	4.0	5.5	9.5	5.0	6.0	9.0
Artistic related intangible assets	-	-	-	3.0	3.0	3.0
R&D related intangible assets	-	-	-	3.0	3.8	8.0

Statistics

Useful life per intangible asset and industry

- The economic useful life attributed to marketing related intangibles is highest in the Wholesale trade (12.5 years) and the Transportation & Public Utilities industries (8.8 years) and lowest in the Mining (2.5 years)⁽¹⁾
- The economic useful life attributed to customer related intangibles is highest in the Finance, Insurance and Real Estate (12 years) and Manufacturing industries (11.8 years) and lowest the Mining industry (5 years)
- The economic useful life attributed to technology related intangibles is highest in Manufacturing (9 years) and Construction industries (8 years)

	Marketing Customer Artistic Contract Technology R&D						Marketing Customer Artistic Contract Technology R&D						
2016	Count of PPAs with eco. useful life						Median Economic useful life (years)						
Agriculture, Forestry, Fishing	-	-	-	-	-	-	-	-	-	-	-	-	
Construction	1	3	-	-	1	-	1.5	10.0	-	-	8.0	-	
Finance, Insurance, Real Estate	18	27	-	8	11	-	6.3	12.0	-	6.0	5.0	-	
Manufacturing	62	102	-	17	67	-	7.1	11.8	-	9.0	9.0	-	
Mining	2	5	-	0	3	-	2.5	5.0	-	-	5.5	-	
Public Administration	-	-	-	-	-	-	-	-	-	-	-	-	
Retail Trade	0	3	-	4	0	-	6.5	10.0	-	14.4	-	-	
Services	43	72	-	6	63	-	5.0	7.0	-	12.1	5.0	-	
Transportation & Public Utilities	4	9	-	2	2	-	8.8	10.0	-	15.5	4.0	-	
Wholesale Trade	2	8	-	1	6	-	12.5	7.0	-	12.0	7.0	-	
Total	132	229	0	38	153	0	Median Tot.	5.0	10.0	n.a.	10.0	5.5	n.a.

Disclaimer

- This material may not be reproduced in any format by any means or redistributed without the prior written consent of Bridgeton Software B.V. (hereafter “Bridgeton Software”).
- PPAlyser is a trade name used by Bridgeton Software.
- Bridgeton Software gathers its data from third party sources. Although it uses its experience to assess as far as is reasonably possible the reliability and suitability of such third party data, it cannot guarantee its accuracy.
- The data presented in this presentation reflects information known to the authors at the time this presentation was written, and this information is subject to change.
- Bridgeton Software makes no representations or warranties, expressed or implied, regarding the accuracy of this material.
- This presentation does not constitute advice or a recommendation of any kind. The information and material presented herein is provided for informational purposes only and is not intended to constitute accounting, tax or legal advice or as a substitute for obtaining accounting, tax or legal advice.

About PPAlyser

PPAlyser is an online subscription database developed and owned by Bridgeton Software B.V., a limited liability company based in Amsterdam, the Netherlands. Bridgeton Software develops, markets and distributes financial software. It's main product is PPAlyser, an online subscription database that includes data of over 7,000 purchase price allocation studies disclosed between 2007 and 2017.

For more information visit www.ppanalyser.com.