

Intro to Fractribution

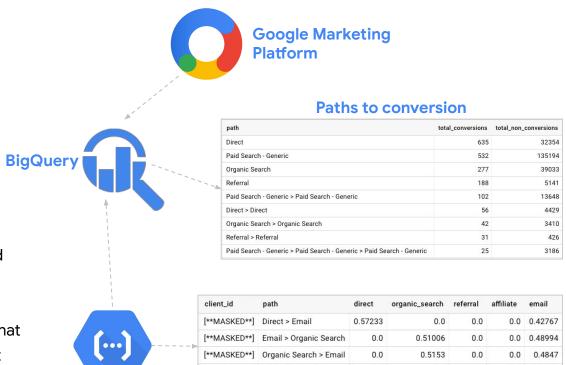
Custom Fractional Marketing Attribution



fractribution-requests@google.com

What is Fractribution?

- Fractribution drives an automated end-to-end user-level fractional attribution model.
- A generalisable process that can run on any custom event log (currently supporting GA360 sessions).
- The attribution algorithm uses a simplified
 Shapley Value method.
- It is an ideal solution for clients who find that the Data-Driven Attribution solutions built into GA360/DV360 are suboptimal for their specific use cases. E.g. regulation or data policy prevents ecommerce/revenue events being shared with GMP.



Referral > Email

[**MASKED**] Affiliate > Referral

Fractribution



0.0

0.0

0.0 0.47134

0.0

0.0 0.52866

0.0 0.50121 0.49879

How Fractribution works?

Preparing data for Attribution

fullVisitorId	visitStartTime_aest	channel
1321955548994962358	2018-03-22 21:21:41	Referral
1464282128005036096	2018-03-21 08:08:16	Paid Search - Generic
1464282128005036096	2018-03-21 08:42:47	Paid Search - Generic
1464282128005036096	2018-03-30 00:36:26	Paid Search - Generic
1464282128005036096	2018-03-30 03:51:05	Paid Search - Generic
1464282128005036096	2018-03-30 03:51:54	Referral
1464282128005036096	2018-03-30 03:56:45	Display - Prospecting
1464282128005036096	2018-03-30 11:51:41	Paid Search - Generic
1464282128005036096	2018-03-31 03:24:13	Paid Search - Generic
1464282128005036096	2018-03-31 03:55:59	Organic Search
1464282128005036096	2018-03-31 08:59:13	Unmatched Channel
1506295747200511732	2018-02-25 00:58:35	Paid Search - Generic
1506295747200511732	2018-03-02 11:57:42	Paid Search - Brand
1506295747200511732	2018-03-02 12:37:17	Paid Search - Brand
1506295747200511732	2018-03-03 07:30:29	Display - Retargeting
1506295747200511732	2018-03-03 08:09:15	Display - Retargeting
1506295747200511732	2018-03-03 12:10:07	Display - Retargeting
1632881112157734750	2018-03-04 12:09:49	Direct
1632881112157734750	2018-03-04 12:54:49	Paid Search - Generic
1632881112157734750	2018-03-04 13:05:36	Paid Search - Brand

fullVisitorId	visitStartTime_aest	channel
1321955548994962358	2018-03-22 21:21:41	Referral
1464282128005036096	2018-03-21 08:08:16	Paid Search - Generic
1464282128005036096	2018-03-21 08:42:47	Paid Search - Generic
1464282128005036096	2018-03-30 00:36:26	Paid Search - Generic
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1464282128005036096	2018-03-31 08:59:13	Unmatched Channel
1506295747200511732	2018-02-25 00:58:35	Paid Search - Generic
1506295747200511732	2018-03-02 11:57:42	Paid Search - Brand
1506295747200511732	2018-03-02 12:37:17	Paid Search - Brand
1506295747200511732	2018-03-03 07:30:29	Display - Retargeting
1506295747200511732	2018-03-03 08:09:15	Display - Retargeting
1506295747200511732	2018-03-03 12:10:07	Display - Retargeting
1632881112157734750	2018-03-04 12:09:49	Direct
1632881112157734750	2018-03-04 12:54:49	Paid Search - Generic
1632881112157734750	2018-03-04 13:05:36	Paid Search - Brand

We see each visitor's sequence of events during some defined reporting window (here it's 22 Feb to 31 Mar 2018)

fullVisitorId	visitStartTime_aest	channel
1321955548994962358	2018-03-22 21:21:41	Referral
1464282128005036096	2018-03-21 08:08:16	Paid Search - Generic
1464282128005036096	2018-03-21 08:42:47	Paid Search - Generic
1464282128005036096	2018-03-30 00:36:26	Paid Search - Generic
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1464282128005036096	2018-03-30 03:51:54	Referral
1464282128005036096	2018-03-30 03:56:45	Display - Prospecting
1464282128005036096	2018-03-30 11:51:41	Paid Search - Generic
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1464282128005036096	2018-03-31 03:55:59	Organic Search
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1506295747200511732	2018-03-02 11:57:42	Paid Search - Brand
1506295747200511732	2018-03-02 12:37:17	Paid Search - Brand
1506295747200511732	2018-03-03 07:30:29	Display - Retargeting
1506295747200511732	2018-03-03 08:09:15	Display - Retargeting
1506295747200511732	2018-03-03 12:10:07	Display - Retargeting
1632881112157734750	2018-03-04 12:09:49	Direct
1632881112157734750	2018-03-04 12:54:49	Paid Search - Generic
1632881112157734750	2018-03-04 13:05:36	Paid Search - Brand

2 Target endpoints

fullVisitorId	registration_time_aest
1464282128005036096	2018-03-31 04:05:27
1506295747200511732	2018-03-03 07:34:01
1632881112157734750	2018-03-04 13:33:46

fullVisitorId	visitStartTime_aest	channel
1321955548994962358	2018-03-22 21:21:41	Referral
1464282128005036096	2018-03-21 08:08:16	Paid Search - Generic
1464282128005036096	2018-03-21 08:42:47	Paid Search - Generic
1464282128005036096	2018-03-30 00:36:26	Paid Search - Generic
1464282128005036096	2018-03-30 03:51:05	Paid Search - Generic
1464282128005036096	2018-03-30 03:51:54	Referral
1464282128005036096	2018-03-30 03:56:45	Display - Prospecting
1464282128005036096	2018-03-30 11:51:41	Paid Search - Generic
1464282128005036096	2018-03-31 03:24:13	Paid Search - Generic
1464282128005036096	2018-03-31 03:55:59	Organic Search
1464282128005036096	2018-03-31 08:59:13	Unmatched Channel
1506295747200511732	2018-02-25 00:58:35	Paid Search - Generic
1506295747200511732	2018-03-02 11:57:42	Paid Search - Brand
1506295747200511732	2018-03-02 12:37:17	Paid Search - Brand
1506295747200511732	2018-03-03 07:30:29	Display - Retargeting
1506295747200511732	2018-03-03 08:09:15	Display - Retargeting
1506295747200511732	2018-03-03 12:10:07	Display - Retargeting
1632881112157734750	2018-03-04 12:09:49	Direct
1632881112157734750	2018-03-04 12:54:49	Paid Search - Generic
1632881112157734750	2018-03-04 13:05:36	Paid Search - Brand

Join to find each endpoint position

2 Target endpoints

fullVisitorId	registration_time_aest
1464282128005036096	2018-03-31 04:05:27
1506295747200511732	2018-03-03 07:34:01
1632881112157734750	2018-03-04 13:33:46

2018-03-03 12:10:07

2018-03-04 12:09:49

2018-03-04 12:54:49 1632881112157734750 2018-03-04 13:05:36 Paid Search - Brand

Display - Retargeting

Paid Search - Generic

Direct

days

days

days

1506295747200511732

1632881112157734750

1632881112157734750

Session event log

Join to find 3 each endpoint position

Target endpoints

fullVisitorId	registration_time_aest
1464282128005036096	2018-03-31 04:05:27
1506295747200511732	2018-03-03 07:34:01
1632881112157734750	2018-03-04 13:33:46

full	4 19
132	4
	AD 1/20/00 X0/10/0

days

Collect events within a lookback window

146428212 - Generic		
1464282128005036096	2018-03-21 08:42:47	Paid Search - Generic
1464282128005036096	2018-03-30 00:36:26	Paid Search - Generic
1464282128005036096	2018-03-30 03:51:05	Paid Search - Generic
1464282128005036096	2018-03-30 03:51:54	Referral
1464282128005036096	2018-03-30 03:56:45	Display - Prospecting
1464282128005036096	2018-03-30 11:51:41	Paid Search - Generic
1464282128005036096	2018-03-31 03:24:13	Paid Search - Generic
1464282128005036096	2018-03-31 03:55:59	Organic Search
1464282128005036096	2018-03-31 08:59:13	Unmatched Channel
1464282128005036096 1506295747200511732	2018-03-31 08:59:13 2018-02-25 00:58:35	Unmatched Channel Paid Search - Generic
		3
1506295747200511732	2018-02-25 00:58:35	Paid Search - Generic
1506295747200511732 1506295747200511732	2018-02-25 00:58:35 2018-03-02 11:57:42	Paid Search - Generic Paid Search - Brand
1506295747200511732 1506295747200511732 1506295747200511732	2018-02-25 00:58:35 2018-03-02 11:57:42 2018-03-02 12:37:17	Paid Search - Generic Paid Search - Brand Paid Search - Brand
1506295747200511732 1506295747200511732 1506295747200511732 1506295747200511732	2018-02-25 00:58:35 2018-03-02 11:57:42 2018-03-02 12:37:17 2018-03-03 07:30:29	Paid Search - Generic Paid Search - Brand Paid Search - Brand Display - Retargeting
1506295747200511732 1506295747200511732 1506295747200511732 1506295747200511732 1506295747200511732	2018-02-25 00:58:35 2018-03-02 11:57:42 2018-03-02 12:37:17 2018-03-03 07:30:29 2018-03-03 08:09:15	Paid Search - Generic Paid Search - Brand Paid Search - Brand Display - Retargeting Display - Retargeting

These are now your **paths** to conversion

Paid Search - Generic > Paid Search - Generic > Referral > Display - Prospecting > Paid Search - Generic > Paid Search - Generic > Organic Search

Paid Search - Generic > Paid Search - Brand > Paid Search - Brand > Display - Retargeting

Direct > Paid Search - Generic > Paid Search - Brand

fullVisitorId

1321955548994962358

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Filter the session event log to just non-converting visitors

fullVisitorId	visitStartTime_aest	channel
1321955548994962358	2018-03-22 21:21:41	Referral
1464282128005036096	2018-03-21 08:08:16	Paid Search - Generic
1464282128005036096	2018-03-21 08:42:47	Paid Search - Generic
1464282128005036096	2018-03-30 00:36:26	Paid Search - Generic
1464282128005036096	2018-03-30 03:51:05	Paid Search - Generic
1464282128005036096	2018-03-30 03:51:54	Referral
1464282128005036096	2018-03-30 03:56:45	Display - Prospecting
1464282128005036096	2018-03-30 11:51:41	Paid Search - Generic
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1464282128005036096	2018-03-31 03:55:59	Organic Search
1464282128005036096	2018-03-31 08:59:13	Unmatched Channel
1506295747200511732	2018-02-25 00:58:35	Paid Search - Generic
1506295747200511732	2018-03-02 11:57:42	Paid Search - Brand
1506295747200511732	2018-03-02 12:37:17	Paid Search - Brand
1506295747200511732	2018-03-03 07:30:29	Display - Retargeting
1506295747200511732	2018-03-03 08:09:15	Display - Retargeting
1506295747200511732	2018-03-03 12:10:07	Display - Retargeting
1632881112157734750	2018-03-04 12:09:49	Direct
1632881112157734750	2018-03-04 12:54:49	Paid Search - Generic
1632881112157734750	2018-03-04 13:05:36	Paid Search - Brand

S	fullVisitorId	visitStartTime_aest	channel	6 Construct your non-converting paths	Proprietary + Confidential
day	1321955548994962358	2018-03-22 21:21:41	Referral	Referral	
٧ ا	1000616322209632382	2018-02-27 10:48:58	Paid Search - Brand		
days	1000616322209632382	2018-02-27 10:49:16	Organic Search	Paid Search - Brand > Organic Search	
7 0	1000598485220432643	2018-02-27 03:44:33	Paid Search - Brand		
	1000598485220432643	2018-03-09 07:55:53	Paid Search - Brand		
	1000598485220432643	2018-03-11 02:01:28	Paid Search - Brand		
·0	1000598485220432643	2018-03-12 08:08:42	Paid Search - Brand		
days	1000598485220432643	2018-03-30 04:12:18	Paid Search - Brand	Paid Search - Brand	
7	1000408875265680585	2018-02-26 21:10:24	Paid Search - Brand		
	1000408875265680585	2018-02-27 11:37:29	Paid Search - Brand		
	1000408875265680585	2018-02-28 16:37:25	Paid Search - Brand		
	1000408875265680585	2018-03-22 04:09:48	Paid Search - Brand		
	1000408875265680585	2018-03-22 07:04:10	Paid Search - Brand		
S	1000408875265680585	2018-03-27 04:06:06	Paid Search - Brand	Deid County Brand - Brid County Brand	
7 days	1000408875265680585	2018-03-29 20:52:43	Paid Search - Brand	Paid Search - Brand > Paid Search - Brand	
	1000201269471321813	2018-03-29 00:55:34	Email	Email > Email	
7 days	1000201269471321813	2018-03-30 23:07:55	Email	Email > Email	
_	1000185760342848879	2018-03-10 21:37:34	Referral	Referral	
	1000152126453468655	2018-03-05 06:50:09	Paid Search - Generic	Paid Search - Generic	
	1000088225928354082	2018-03-07 10:26:43	Organic Search	Organic Search	Google

path	total_conversions	total_non_conversions
Direct	2236	89137
Organic Search	1296	137741
Referral	1051	16372
Paid Search - Generic	863	118292
Display - Prospecting	732	129677
Paid Search - Brand	691	8537
Direct > Direct	233	10353
Organic Search > Organic Search	223	12362
Paid Search - Generic > Paid Search - Generic	147	12670
Paid Search - Brand > Paid Search - Brand	132	1397
Affiliate	123	2017
Referral > Referral	116	1146
Display - Prospecting > Display - Prospecting	74	10764
Unmatched Channel	62	8853
Direct > Referral	53	486
Direct > Direct > Direct	51	3339
Direct > Organic Search	50	1052
Organic Search > Referral	45	253
Organic Search > Paid Search - Brand	42	254
Organic Search > Organic Search	38	2562

7 Create the path summary table

path	total_conversions	total_non_conversions
Direct	2236	89137
Organic Search	1296	137741
Referral	1051	16372
Paid Search - Generic	863	118292
Display - Prospecting	732	129677
Paid Search - Brand	691	8537
Direct > Direct	233	10353
Organic Search > Organic Search	223	12362
Paid Search - Generic > Paid Search - Generic	147	12670
Paid Search - Brand > Paid Search - Brand	132	1397
Affiliate	123	2017
Referral > Referral	116	1146
Display - Prospecting > Display - Prospecting	74	10764
Unmatched Channel	62	8853
Direct > Referral	53	486
Direct > Direct > Direct	51	3339
Direct > Organic Search	50	1052
Organic Search > Referral	45	253
Organic Search > Paid Search - Brand	42	254
Organic Search > Organic Search > Organic Search	38	2562



Run attribution algorithm to calculate fractions

client_id	path	direct	organic_search	referral	affiliate	email
[**MASKED**]	Direct > Email	0.57233	0.0	0.0	0.0	0.42767
[**MASKED**]	Email > Organic Search	0.0	0.51006	0.0	0.0	0.48994
[**MASKED**]	Organic Search > Email	0.0	0.5153	0.0	0.0	0.4847
[**MASKED**]	Referral > Email	0.0	0.0	0.52866	0.0	0.47134
[**MASKED**]	Affiliate > Referral	0.0	0.0	0.50121	0.49879	0.0

Fractribution

Google

How Fractribution works?

The attribution algorithm

1 Start with a baseline path



1 Start with a baseline path



2 Define its leave-one-out counterfactuals



1 Start with a baseline path



2 Define its leave-one-out counterfactuals



3 Calculate the conversion probabilities for each of these paths

Path summary						
path	total_conversions	total_non_conversions	conversion_prob	19 / (19 + 549)		
Direct > Paid Search - Generic	19	549	0.0335	~		
Direct > Paid Search - Brand	17	250	0.0637			
Paid Search - Generic > Paid Search - Brand	7	357	0.0192			
Direct > Paid Search - Generic > Paid Search - Brand	1	10	0.0909			



The marginal contribution of each event is the conversion probability difference between the baseline (full) path and the counterfactual path without the event in it

Path summary								
path	total_conversions	total_non_conversions	conversion_prob					
Direct > Paid Search - Generic	19	549	0.0335					
Direct > Paid Search - Brand	17	250	0.0637					
Paid Search - Generic > Paid Search - Brand	7	357	0.0192					
Direct > Paid Search - Generic > Paid Search - Brand	1	10	0.0909					

Marginal Contribution Direct = 0.0909 - 0.0192 = 0.0717				Marginal contribution	
	(direct		paid_search_generic	paid_search_brand
	7	0.07	17	0.0272	0.0574

4

The marginal contribution of each event is the conversion probability difference between the baseline (full) path and the counterfactual path without the event in it

Path summary							
path	total_conversions	total_non_conversions	conversion_prob				
Direct > Paid Search - Generic	19	549	0.0335				
Direct > Paid Search - Brand	17	250	0.0637				
Paid Search - Generic > Paid Search - Brand	7	357	0.0192				
Direct > Paid Search - Generic > Paid Search - Brand	1	10	0.0909				

Marginal Contribution Direct = 0.0909 - 0.0192 = 0.0717				Marginal contribution	
		direct		paid_search_generic	paid_search_brand
	7	0.071	7	0.0272	0.0574

5 Normalize these fractions so they add to 1

Fractional Attribution						
path	direct	paid_search_generic	paid_search_brand			
Direct > Paid Search - Generic > Paid Search - Brand	0.459	0.174	0.367			



6 Repeat for all paths

Fractional Attribution											
path	direct	paid_search_generic	paid_search_brand	organic_search	email	referral					
Direct > Paid Search - Generic > Paid Search - Brand	0.459	0.174	0.367	0.0	0.0	0.0					
Direct > Paid Search - Generic	0.784	0.216	0.0	0.0	0.0	0.0					
Direct > Paid Search - Brand	0.573	0.0	0.427	0.0	0.0	0.0					
Paid Search - Generic > Paid Search - Brand	0.0	0.198	0.802	0.0	0.0	0.0					
Direct > Email	0.572	0.0	0.0	0.0	0.428	0.0					
Email > Organic Search	0.0	0.0	0.0	0.510	0.490	0.0					
Organic Search > Email	0.0	0.0	0.0	0.515	0.485	0.0					
Referral > Email	0.0	0.0	0.0	0.0	0.471	0.529					
Display - Prospecting > Referral	0.0	0.0	0.0	0.0	0.0	0.501					

Google

6 Repeat for all paths

Fractional Attribution										
path	direct	paid_search_generic	paid_search_brand	organic_search	email	referral				
Direct > Paid Search - Generic > Paid Search - Brand	0.459	0.174	0.367	0.0	0.0	0.0				
Direct > Paid Search - Generic	0.784	0.216	0.0	0.0	0.0	0.0				
Direct > Paid Search - Brand	0.573	0.0	0.427	0.0	0.0	0.0				
Paid Search - Generic > Paid Search - Brand	0.0	0.198	0.802	0.0	0.0	0.0				
Direct > Email	0.572	0.0	0.0	0.0	0.428	0.0]			
Email > Organic Search	0.0	0.0	0.0	0.510	0.490	0.0				
Organic Search > Email	0.0	0.0	0.0	0.515	0.485	0.0				
Referral > Email	0.0	0.0	0.0	0.0	0.471	0.529				
Display - Prospecting > Referral	0.0	0.0	0.0	0.0	0.0	0.501				

Push the final results up to BigQuery (if required)

Upload to BigQuery





Getting to ROAS?

Joining Fractribution to your CRM and Revenue systems

(1)

Path to full Visitor Id mapping

Path to fullVisitorId								
path	fullVisitorId							
Direct > Paid Search - Generic > Paid Search - Brand	2248281639583218707							
Direct > Paid Search - Generic > Paid Search - Brand	8647436381089107732							
Direct > Paid Search - Generic	2055839700856389632							
Direct > Paid Search - Brand	0750846065342433129							
Direct > Paid Search - Brand	0573427169410921198							
Paid Search - Generic > Paid Search - Brand	8313021323030224050							
Direct > Email	9161549067325106850							
Direct > Email	7712738124831804349							
Direct > Email	6644155147493409979							

We establish this mapping through the path summary table creation process.

Path to full Visitor Id mapping

Path to fullVisitorId								
path	fullVisitorId							
Direct > Paid Search - Generic > Paid Search - Brand	2248281639583218707							
Direct > Paid Search - Generic > Paid Search - Brand	8647436381089107732							
Direct > Paid Search - Generic	2055839700856389632							
Direct > Paid Search - Brand	0750846065342433129							
Direct > Paid Search - Brand	0573427169410921198							
Paid Search - Generic > Paid Search - Brand	8313021323030224050							
Direct > Email	9161549067325106850							
Direct > Email	7712738124831804349							
Direct > Email	6644155147493409979							

2 fullVisitorId to crm_id mapping

fullVisitorId to crm_id							
fullVisitorId	crm_id						
2248281639583218707	ca978112ca1bbdcafac231b3						
8647436381089107732	2e7d2c03a9507ae265ecf5b5						
2055839700856389632	3f79b27b435b05321651daef						
0750846065342433129	cd0aa9856147b6c5b4ff2b7d						
0573427169410921198	de7d1b721a1e0632b7cf04ed						
8313021323030224050	3e23e8160039594a33894f65						
9161549067325106850	18ac3e7343f016890c510e93						
7712738124831804349	252f10c83610ebca1a059c0b						
6644155147493409979	aaa9402664f1a41f40ebbc52						

Note: If your session event log is keyed on the crm_id anyway, no need for this step.

Path to full Visitor Id mapping

Path to fullVisitorId									
path	fullVisitorId								
Direct > Paid Search - Generic > Paid Search - Brand	2248281639583218707								
Direct > Paid Search - Generic > Paid Search - Brand	8647436381089107732								
Direct > Paid Search - Generic	2055839700856389632								
Direct > Paid Search - Brand	0750846065342433129								
Direct > Paid Search - Brand	0573427169410921198								
Paid Search - Generic > Paid Search - Brand	8313021323030224050								
Direct > Email	9161549067325106850								
Direct > Email	7712738124831804349								
Direct > Email	6644155147493409979								

2 fullVisitorId to crm_id mapping

fullVisitorId to crm_id							
fullVisitorId	crm_id						
2248281639583218707	ca978112ca1bbdcafac231b3						
8647436381089107732	2e7d2c03a9507ae265ecf5b5						
2055839700856389632	3f79b27b435b05321651daef						
0750846065342433129	cd0aa9856147b6c5b4ff2b7d						
0573427169410921198	de7d1b721a1e0632b7cf04ed						
8313021323030224050	3e23e8160039594a33894f65						
9161549067325106850	18ac3e7343f016890c510e93						
7712738124831804349	252f10c83610ebca1a059c0b						
6644155147493409979	aaa9402664f1a41f40ebbc52						

CRM data, with revenue and demographics

CRM data										
crm_id	revenue	tenure	customer type	lifetime value	age band	gender	custom segment			
ca978112ca1bbdcafac231b3	\$100.00	5 years	personal	high	55+	female	Mobile first			
2e7d2c03a9507ae265ecf5b5	\$487.20	3 years	business	high	N/A	N/A	Loyalists			
3f79b27b435b05321651daef	\$17.57	6 months	personal	low	20 to 30	unspecified	Disengaged			
cd0aa9856147b6c5b4ff2b7d	\$14.50	1 month	personal	medium	16 to 18	male	Aspiring minnows			

Google



Direct > Paid Search - Brand

Join all to establish a link between revenue and attribution fractions

0.0

0.573

Path to fullVisitorId to crm_id							CR	M data				
path	fullVisitorId	crm_id		∢ →	crm_id		revenue	tenure		customer type	lifetime value	
Direct > Paid Search - Generic > Paid Search - Brand	2248281639583218	3707 ca978	112ca1bbdcafac231b3		ca978112c	a1bbdcafac231b3	\$100.00	5 years	3	personal	high	
Direct > Paid Search - Generic > Paid Search - Brand	8647436381089107	7732 2e7d2	c03a9507ae265ecf5b5		2e7d2c03a	9507ae265ecf5b5	\$487.20	3 years	3	business	high]
Direct > Paid Search - Generic	2055839700856389	9632 3f79b	27b435b05321651daef		3f79b27b4	35b05321651daef	\$17.57	6 mon	ths	personal	low]
Direct > Paid Search - Brand	0750846065342433	3129 cd0aa	9856147b6c5b4ff2b7d		cd0aa9856	147b6c5b4ff2b7d	\$14.50	1 mon	th	personal	medium]
										1		
↑												
		Fractiona	al Attribution							You might	t also filter using the	e other
path	direct pai	id_search_generic	paid_search_brand	organic_	_search email referral				demographic fields on the join, to do			
Direct > Paid Search - Generic > Paid Search - Brand	0.459	0.174	0.367		0.0	(0.0	0.0		specific fil	tered attribution.	
Direct > Paid Search - Generic	0.784	0.216	0.0		0.0	(0.0	0.0		L		

0.427



Join all to establish a link between revenue and attribution fractions

Path to fullVisitorId to crm_id						CRM data			
path	fullVisitorId	crm_id	∢ →	. crm_id	revenue	tenure	customer type	lifetime value	
Direct > Paid Search - Generic > Paid Search - Brand	2248281639583218707	ca978112ca1bbdcafac231b3		ca978112ca1bbdcafac231b3	\$100.00	5 years	personal	high	
Direct > Paid Search - Generic > Paid Search - Brand	8647436381089107732	2e7d2c03a9507ae265ecf5b5		2e7d2c03a9507ae265ecf5b5	\$487.20	3 years	business	high	
Direct > Paid Search - Generic	2055839700856389632	3f79b27b435b05321651daef		3f79b27b435b05321651daef	\$17.57	6 months	personal	low]
Direct > Paid Search - Brand	0750846065342433129	cd0aa9856147b6c5b4ff2b7d		cd0aa9856147b6c5b4ff2b7d	\$14.50	1 month	personal	medium	

Fractional Attribution											
path	direct	paid_search_generic	paid_search_brand	organic_search	email	referral					
Direct > Paid Search - Generic > Paid Search - Brand	0.459	0.174	0.367	0.0	0.0	0.0					
Direct > Paid Search - Generic	0.784	0.216	0.0	0.0	0.0	0.0					
Direct > Paid Search - Brand	0.573	0.0	0.427	0.0	0.0	0.0					



Distribute revenue by customer over the fractional attribution values

Fractional Revenue										
path	crm_id	direct revenue	paid_search_generic revenue	paid_search_brand revenue	organic_search revenue	email revenue				
Direct > Paid Search - Generic > Paid Search - Brand	ca978112ca1bbdcafac231b3	\$45.90	\$17.40	\$36.70	\$0.0	\$0.0				
Direct > Paid Search - Generic > Paid Search - Brand	2e7d2c03a9507ae265ecf5b5	\$223.62	\$84.77	\$178.80	\$0.0	\$0.0				
Direct > Paid Search - Generic	3f79b27b435b05321651daef	\$13.77	\$3.80	\$0.0	\$0.0	\$0.0				
Direct > Paid Search - Brand	cd0aa9856147b6c5b4ff2b7d	\$8.31	\$0.0	\$6.19	\$0.0	\$0.0				

 $0.427 \times $14.50 = 6.19

\$2,103,311 \$1,237,242

Aggregate channels to get attributed conversions, and attributed revenue

Attribution Report										
channel	channel		Attributed I	Revenue	Actual Spend (Ads, etc)	ROAS				
Direct		40,451		4 \$2,948,878	N/A	N/A				
Paid Search - Generic		28,852	2	, \$2,103,311	\$1,237,242	1.70				
Paid Search - Brand		10,785	5	\$597,732	\$711,585	0.84				
Organic Search	,,,	25,033	/	\$1,291,828	N/A	N/A				
Email	1000	807	, ,	\$41,645	\$44,303	0.94				
Referral	111	19,803	, ,	\$1,021,934	\$811,059	1.26				
			/							
$= sum(direct) = \frac{0.459}{0.784} + \frac{0.784}{0.000} + \frac{0.784}{0.0$	= sum(direct) = 0.459 + 0.784 + 0.573 + = sum(direct revenue) = \$45.90 + \$223.62 + \$13.77 + \$8.31 +									
ath	direct		direct revenu	le						
irect > Paid Search - Generic > Paid Search - Brand	0.459			\$45.90						
Direct > Paid Search - Generic 0.784 \$223.62										
ct > Paid Search - Brand 0.573 \$13.77										
				\$8.31						