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# Finding the Diamond in the Rough

Surfacing Trends in the Jewellery Market  
Through Automated Analytics

Diana Mitkov and Dr. Guillaume Aimetti

# YOUR SPEAKERS

DB



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Delivering the Best of Both Worlds

# TRANSACTION DATA FROM INDEPENDENT DIAMOND JEWELLERY RETAILERS...



1147 retailers

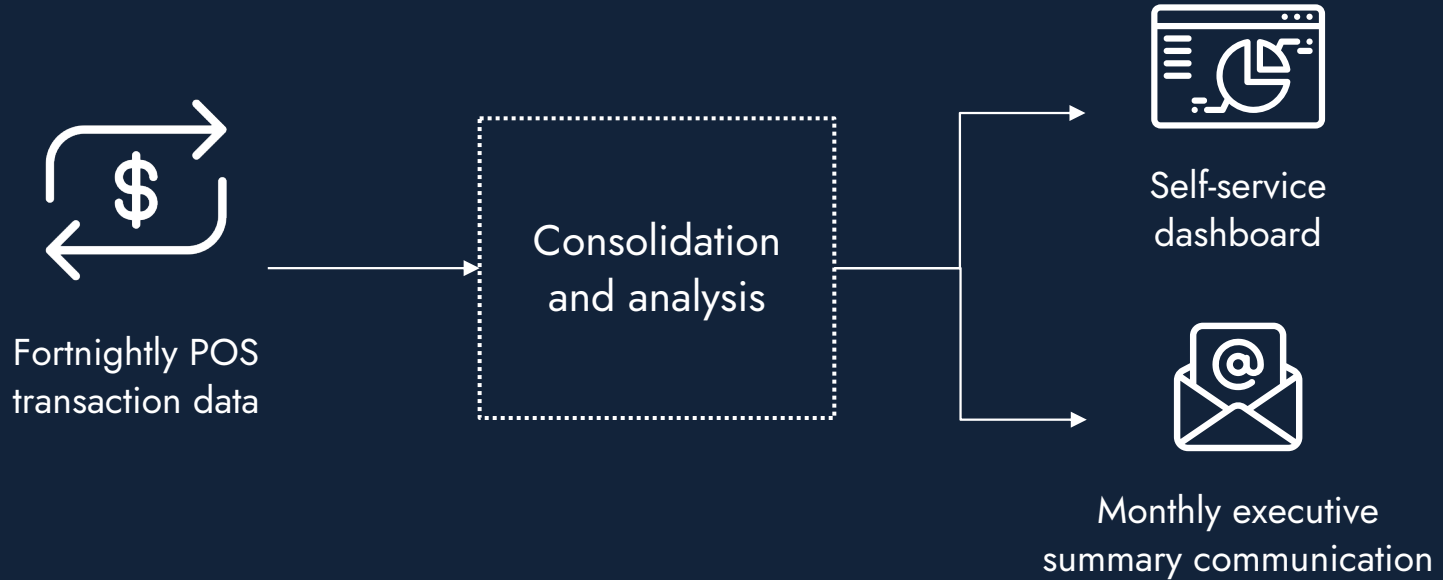
5 countries

84% US retailers

Over 1m transactions a year

Fortnightly data feed

# TARGET SOLUTION



## THE CHALLENGES

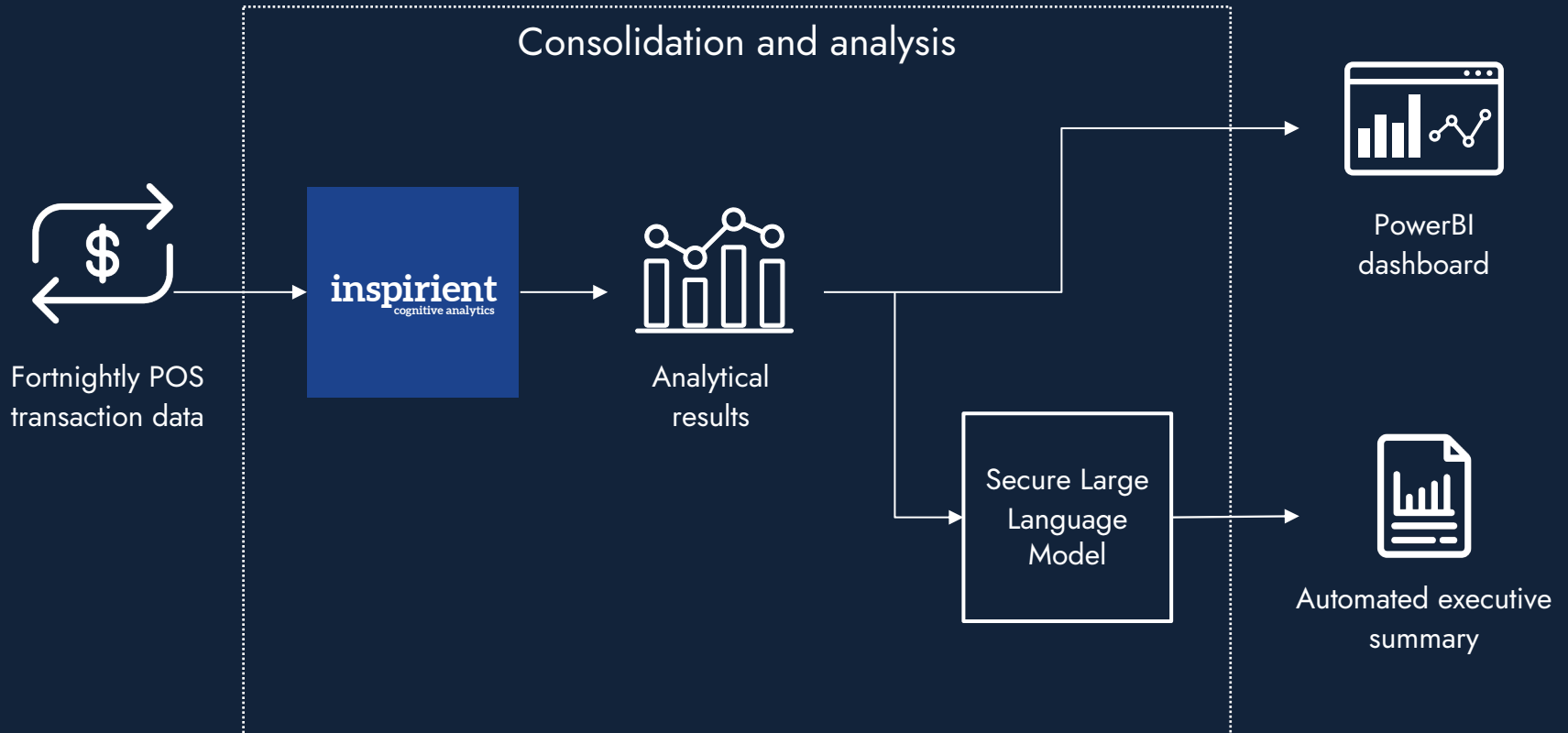
**Connecting the raw transaction data to BI dashboarding tools doesn't cut it...**

1. Too much data for multi-year analysis
2. Non-trivial jewellery classification
3. Data quality issues
4. Custom hierarchical category processing
5. Detecting and explaining trend changes across all categories



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# THE SOLUTION

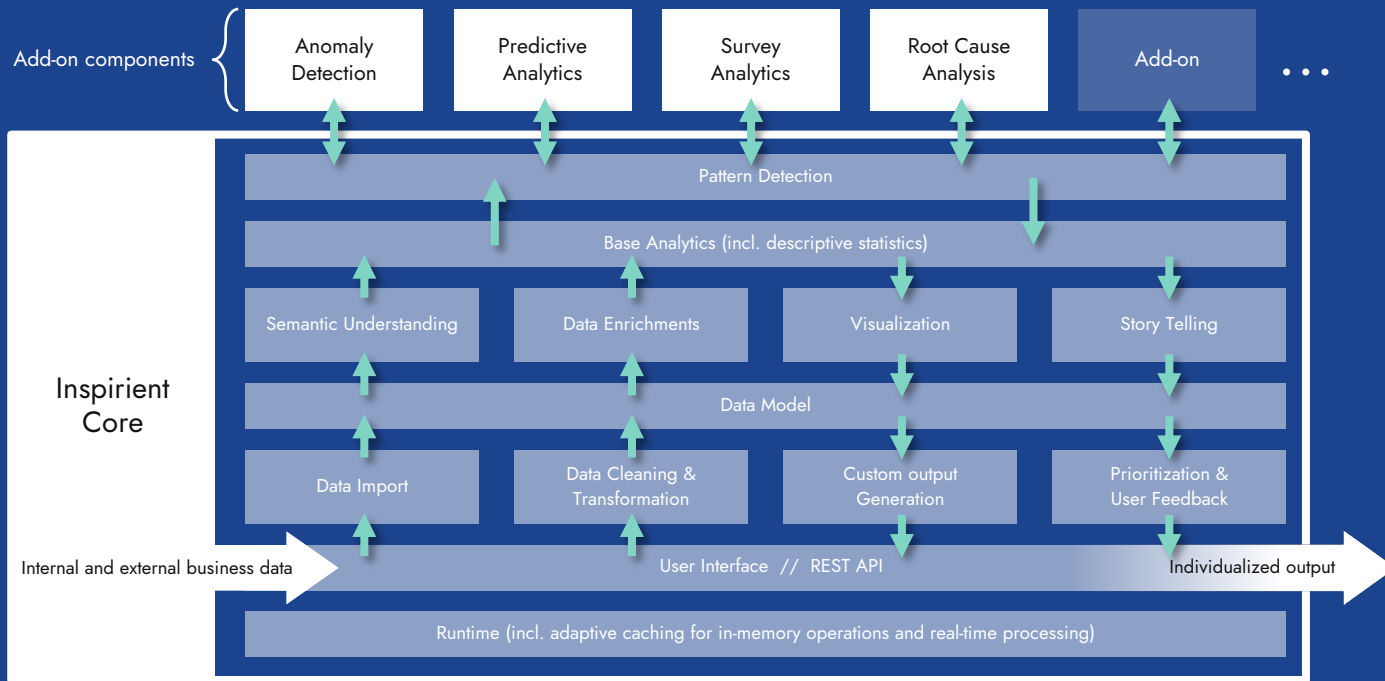


# THE SOLUTION: INSPIRIENT AUTOMATED ANALYTICS ENGINE



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Inspirient's hybrid AI that autonomously applies analytical reasoning





# THE SOLUTION: AUTOMATED ANALYSIS RESULTS



## Example custom Excel report

## Example generated PowerPoint

Autosave Magic Table - data\_20240317 (19 Mar 2024)

Home Insert Draw Page Layout Formulas Data Review View Developer Tell me

Magic Table

Created on 13 Mar 2024 at 12:38:59 (master) (level 0) - Jewellery (first 448) (level 0) (level 0)

Note: Category hierarchy generated using edge diamond definition (level 0 - 4)

To ensure accuracy of totals by comparison, the 'Total' calculation already considers a period exactly parallel to the last date of sales in the current period.

Analysis based on table "Concentration of tables" Tables: SalesIntrSales;SalesIntr797;SalesIntrSales;SalesIntr247 and 14 more tables"

Category level	Category	Sales	Share of total	Sales YoY	%YOY val.	Price/oz	Share of piece/oz	Pieces/oz	Share of pieces/oz	%YOY pieces
0	Total Jewellery	82,295,304	84%	76,379,858	-4.15%	68,829	92%	55,501	-4.25%	
1	Diamonds	67,271,386	79%	69,469,990	-5.14%	23,340	44%	26,658	-4.27%	
2	Natural diamonds	41,851,905	50%	41,861,896	-5.14%	79,254	39%	27,510	-7.31%	
3	Brilliant (ND)	14,924,704	19%	21,339,932	-7.94%	1,377	5%	4,646	-13.00%	
4	Engagement rings (ND)	6,560,961	8%	11,010,961	-10.24%	2,218	3%	3,954	-15.54%	
5	Diamonds loose (ND)	11,860,989	15%	11,881,567	-7.70%	1,078	2%	1,286	-6.84%	
6	Wedding bands (ND)	6,311,986	8%	4,466,639	-9.40%	5,833	6%	4,651	-11.67%	
7	Neo-Brilliant (ND)	21,525,689	26%	15,271,461	-2.79%	19,435	20%	16,112	-5.20%	
8	Earrings (ND)	5,870,257	7%	5,474,798	-0.94%	3,059	5%	3,649	-7.64%	
9	Bracelet (ND)	3,963,313	4%	4,020,062	-0.98%	1,544	2%	1,002	7.43%	
10	Necklace (ND)	2,943,498	3%	2,455,387	-6.54%	1,347	2%	1,308	-0.33%	
11	Pendants (ND)	2,847,468	3%	2,136,179	-9.59%	1,299	3%	1,270	-1.95%	
12	Other (ND)	11,545,840	14%	11,993,560	-4.60%	9,019	16%	10,117	-5.77%	
13	LGD	7,937,862	10%	7,311,582	-8.89%	4,380	7%	3,897	-33.84%	
14	Brilliant (LGD)	5,485,987	7%	6,897,499	-5.00%	2,372	3%	1,595	23.42%	
15	Engagement rings (LGD)	1,705,188	2%	1,557,285	-10.31%	586	1%	386	48.24%	
16	Diamonds loose (LGD)	3,465,211	4%	3,478,214	-16.46%	1,478	2%	1,813	-12.97%	
17	Wedding bands (LGD)	466,745	0%	229,640	-19.55%	260	0%	180	40.78%	
18	Neo-Brilliant (LGD)	1,068,416	1%	1,766,472	-17.71%	1,516	2%	1,096	34.14%	
19	Earrings (LGD)	1,003,805	1%	712,118	-27.55%	606	1%	432	38.17%	
20	Bracelet (LGD)	363,611	0%	344,001	-10.61%	66	0%	39	66.84%	
21	Necklace (LGD)	114,311	0%	141,898	-4.36%	55	0%	23	108.99%	
22	Pendants (LGD)	305,540	0%	305,189	-2.77%	66	0%	76	-23.53%	
23	Other (LGD)	962,273	1%	737,021	-11.47%	744	1%	646	29.48%	
24	Synthetic	79,948	0%	76,146	-13.10%	984	1%	983	-9.77%	
25	Other gems	2,261,983	3%	2,218,487	-12.75%	6,511	0%	6,655	-34.65%	
26	Colour gems	2,261,183	3%	2,014,148	-8.99%	3,061	5%	3,691	-6.40%	
27	Emerald	817,114	1%	815,460	-6.07%	712	1%	740	-4.71%	
28	Semi-precious	1,304,969	1%	1,532,747	-11.42%	2,114	3%	2,108	-7.18%	
29	Moonstone	34,620	0%	65,977	-46.59%	66	0%	71	-29.62%	
30	Other (gems)	71,038	0%	44,817	-64.10%	191	0%	114	25.18%	
31	Pearls	26,942	1%	487,810	-13.90%	2,134	1%	2,613	-6.48%	
32	Rose-gold / metal only	13,056,613	16%	11,493,656	-2.72%	28,656	33%	23,216	-6.89%	
33	Gold	8,338,030	10%	9,712,459	-0.87%	14,383	24%	18,839	-2.38%	
34	Yellow Gold	6,441,080	8%	4,009,650	-2.25%	9,180	1%	9,200	-3.80%	
35	18K Yellow Gold	431,608	1%	522,485	-12.29%	471	1%	304	6.97%	
36	14K Yellow Gold	3,419,225	4%	3,325,134	-0.69%	7,217	11%	7,692	-0.93%	
37	Yellow-gold any other	1,579,643	2%	1,174,867	-3.48%	2,004	2%	1,935	-2.74%	
38	White Gold	1,560,212	2%	1,763,030	-1.55%	2,944	6%	3,010	-1.58%	
39	18K White Gold	46,462	0%	66,461	-26.54%	68	0%	66	6.77%	
40	14K White Gold	1,254,512	1%	1,473,148	-1.80%	2,675	4%	2,747	-6.03%	
41	White-gold any other	237,090	0%	264,491	-10.40%	614	1%	633	-1.87%	
42	Rose-gold	254,059	0%	325,510	-16.06%	411	1%	744	-16.71%	
43	18K Rose-gold	15,329	0%	33,436	-15.39%	18	0%	29	-41.88%	
44	14K Rose-gold	106,772	0%	186,276	-11.19%	284	1%	330	-11.45%	
45	Rose-gold any other	76,546	0%	105,073	-11.81%	192	0%	280	-25.28%	
46	Mixed-metal Gold	259,920	0%	265,198	-10.25%	339	0%	477	-13.73%	
47	Other (Gold)	210,007	0%	276,653	-1.19%	525	1%	705	-3.98%	
48	Unplated colour-gold	857,865	1%	545,995	-17.47%	654	1%	1,390	-6.33%	
49	18K Unknown colour-gold	167,032	0%	107,822	-15.07%	118	0%	110	5.14%	
50	14K Unknown colour-gold	490,233	0%	407,239	-3.58%	513	2%	1,108	-1.29%	
51	Platinum	149,741	0%	205,796	-0.17%	150	0%	141	-2.43%	
52	Beating Silver	966,512	1%	1,015,541	-42.75%	2,277	5%	538	-36.14%	
53	Unbeating metal	2,119,933	3%	1,874,792	-1.39%	2,641	4%	2,392	-4.18%	
54	Other (metal only)	312,375	0%	392,010	-10.33%	1,628	2%	1,588	-14.70%	

Metric Summary: Annual Quarterly Monthly Weekly Holidays

Select destination and press ENTER or choose Paste



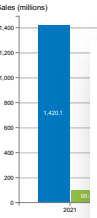
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data\_20240

For current period, 'Natural diamonds' category has greatest sales at 273.0M which is -798.6M from average across all periods



25 April 2024

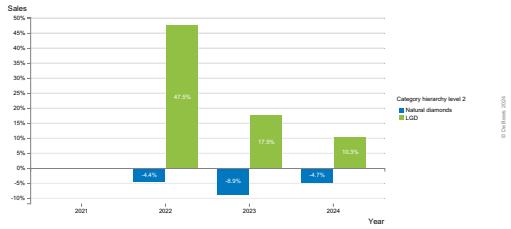
Sales by year 'Category hierarchy level 2'



For current period, 'LGD' category has increased in sales by 10% which is -14.8pp from average growth rate across all periods



Current year vs same period last year of Sales by year 'Category hierarchy level 2'



Note: Generated from dimension 'Year' derived from data tables in column 'SalesDate'. Category hierarchy level 2 generated from 'Category Hierarchy', category hierarchy generated using edge diamond definition (level 0 - 4). 'Natural diamonds' (LGD) category hierarchy level 2 generated from 'SalesDate', 'Category Hierarchy', 'Category Hierarchy', category hierarchy generated using edge diamond definition (level 0 - 4). 'Natural diamonds' (LGD) category hierarchy level 2 generated from 'SalesDate', 'Category Hierarchy', 'Category Hierarchy', category hierarchy generated using edge diamond definition (level 0 - 4). 'Natural diamonds' (LGD) category hierarchy level 2 generated from 'SalesDate', 'Category Hierarchy', 'Category Hierarchy', category hierarchy generated using edge diamond definition (level 0 - 4).

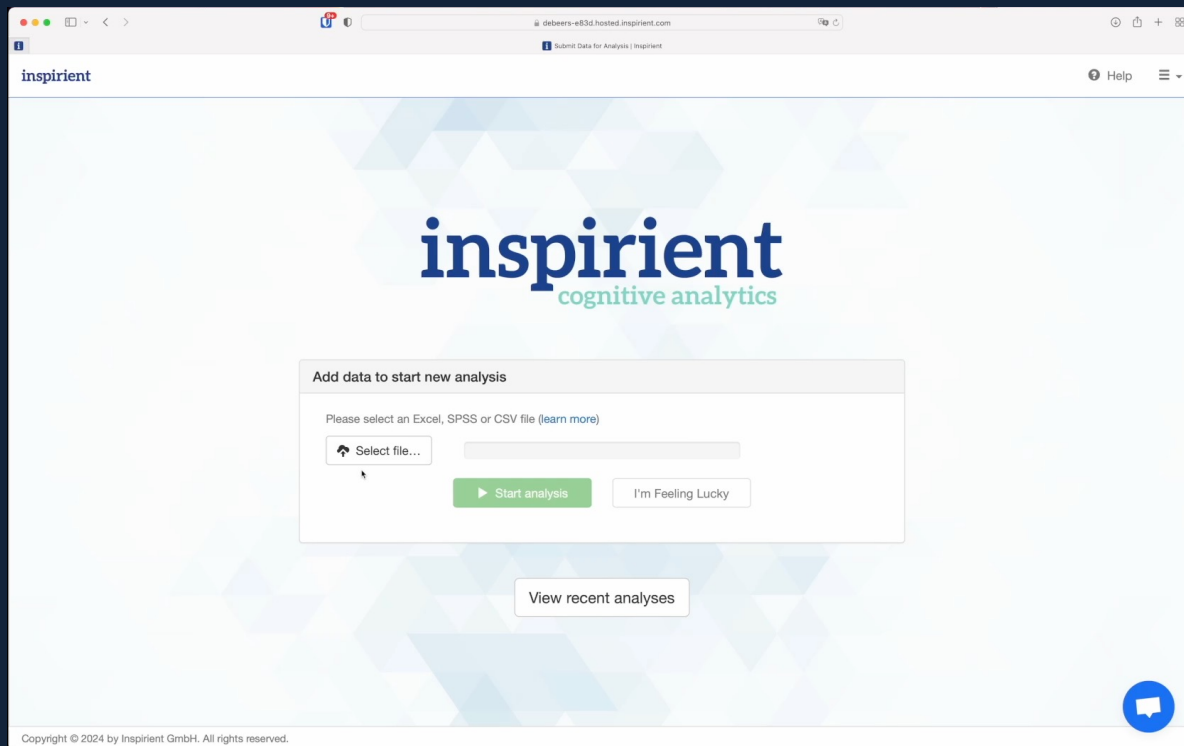
# THE LAST MILE: BEYOND DASHBOARDS



Intuitive Data Interrogation

Dynamic Digests

Timely Communication



## THE LAST MILE: USER FEEDBACK

*The creation of a hierarchical structure for the data has been essential in understanding the full picture*

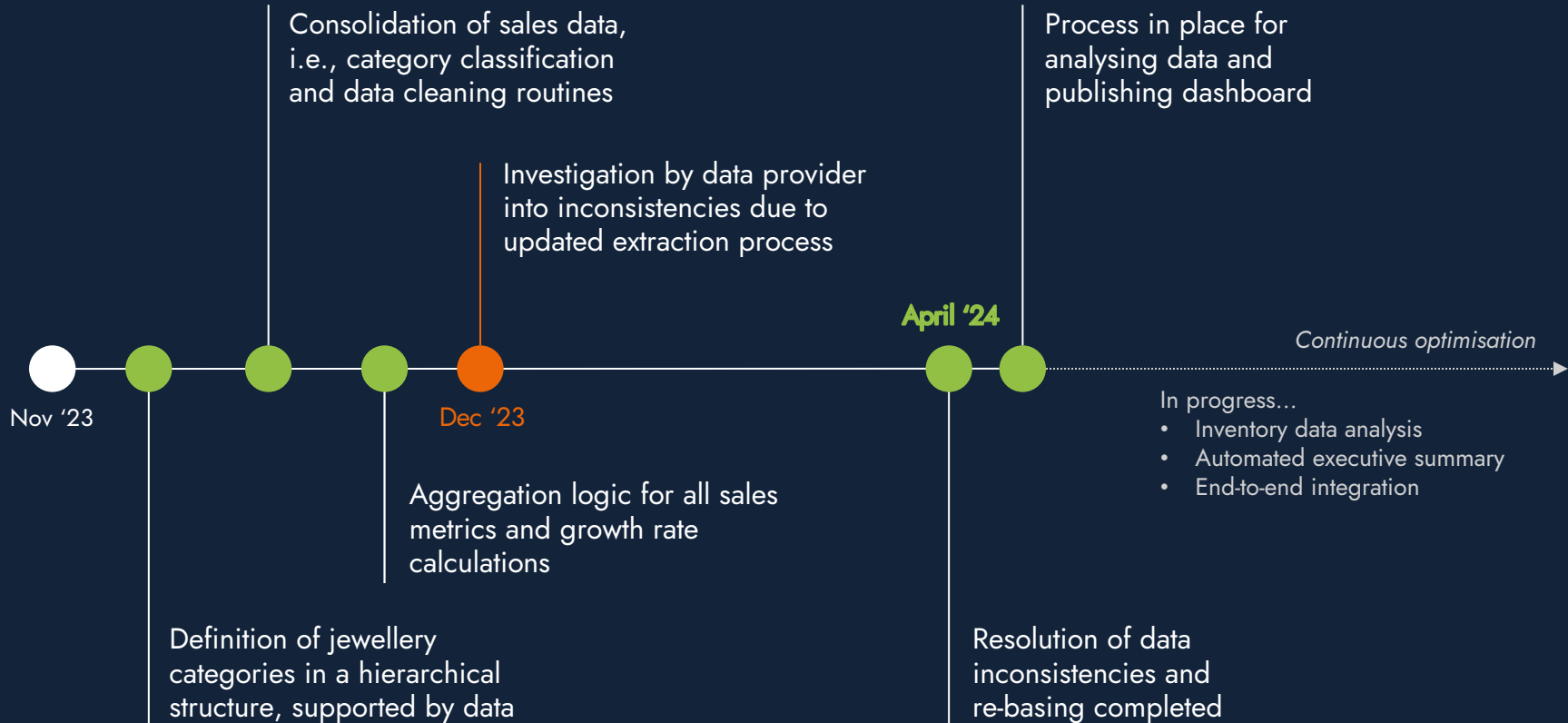
*Fast automated monthly summaries provide 'at a glance' updates for decision makers  
A great win!*

*Speed of data anomalies detection has enabled speedy resolution with the data provider, including remapping at their end*





# THE AUTOMATION JOURNEY SO FAR HAS CONSISTED OF THE FOLLOWING MAJOR STEPS...





# CONCLUSION

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## ACCOMPLISHMENTS

Implemented automated data analysis system that can handle large quantities of transactional data which can be analysed with non-trivial custom jewellery category definition.

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## IMPACT

Faster time-to-insight, which frees up time to think, and more comprehensive findings, which reduces the risk of missing the obvious.

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## CHALLENGES OVERCOME

Third party POS data extraction bug resolved through thorough data investigation and pro-active stakeholder management.

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## LESSONS LEARNED

Emphasized effective communication, stakeholder engagement, and ongoing optimization.

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## LOOKING AHEAD

Positioned to leverage automation for continued innovation and value creation.



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