Reporting Infrastructure Migration
(Fashion Retailer)

- **Migrated ~150 reports from legacy systems (1010 data platform) to new Azure SQL Server database** and automated the reports using Power Query/VBA

- **Validate data across both data platforms and fixed legacy issues with old reports, while migrating,** to ensure high accuracy of the reports for business users

- **Provided flexibility in the new reports for business users to slice and dice the data** from the database based on user inputs, using Power Query

SLIDE HEADING

ABOUT THE CLIENT

Client is a **retailer of jewelry, accessories and toys with operations across U.S. and Europe**

SITUATION

- Client was upgrading the technology infrastructure and as part of the upgrade was **migrating to a revamped Azure SQL Server database, from the existing legacy data system (1010 data platform) to support the reporting infrastructure**
- Merilytics partnered with the client to **validate the migrated data, and transition 150 reports into the new SQL Server database,** across multiple business functions such as Accounting, Finance, E-Commerce, Digital Marketing, Technology, Merchandising, Store Ops, Customer etc.

VALUE ADDITION

- Identified **potential concerns with the existing reporting infrastructure and recommenced solutions** to enhance the reporting capabilities
- Migrated about **150 reports from existing infrastructure to the new SQL database**, and built additional functionality in the new reporting infrastructure to **automate the data refresh process and provided flexibility to the users to slice and dice the data**
- Set up a **data validation exercise working closely with the client's IT team to identify any gaps in the data transitioned and recommended potential solutions** to ensure the accuracy of the new SQL database.

IMPACT

- **Achieved ~99% accuracy across the reports**, through exhaustive review of the data between the legacy and new databases and working with the external vendor to resolve any issues with data transition
- **Seamless continuity for the business users while transitioning to the new system** helped the stakeholders continue to take informed decisions across all business functions such as Buying & Merchandising, FP&A, Store operations, Accounting etc.

APPROACH FOR REPORT MIGRATION AND ACCURACY ASSESSMENT

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1010DATA

LEGACY SYSTEM

- Evaluate existing reports and run them on **existing data platform (1010)**
- **Identify fields and tables** used in the existing database for each KPI and report individually
- Evaluate **opportunities for automation** of the reports

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REPORT MIGRATION

- Identify equivalent tables and fields on the new **Azure SQL database**
- **Validate data types** of the fields, and the data itself for each field
- Transform the data for the reports using SQL and **optimize SQL code** based on best practices and standards
- Embed SQL code into the Excel using **Power Query**
- Automate the reports using **VBA**

DATA VALIDATION & RESOLUTION

- **Compare outputs** between legacy 1010 system and new Azure SQL system
- **Perform RCA** to understand the discrepancies and flag the gaps to the SI partner, with specific logic or format errors
- Iterate on **validation exercise till SI Partner addresses** all the identified issues
- Identified and executed **opportunities for optimizing the run-time** performance of reports

RE-VALIDATION AND UAT

- Conduct **robust UAT** to re-validate the outputs based on the updated code / database tables
- Address issues related to **report compatibility / user friendliness**
- Identify **logic errors in legacy calculations** and work with business stakeholder to address or migrate as-is, depending on context of usage

RELEASE OF REPORTS

- **Release** the reports to business
- **Monitor** the reports for daily updates and performance of run times

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DAILY TRACKERS FOR REPORTS MIGRATION AND ISSUES

REPORT MIGRATION STATUS TRACKER

Report ID	Priority	Department	Report SubGroup	Status	UAT Test	Ready for Business	Run time (legacy system)	Run time (New system)
Report 1	1 - Critical	Accounting	Sales data	Migrated 6/21	100%	Yes	62 Sec	53 Sec
Report 2	1 - Critical	Accounting	Sales & Inventory data	Migrated 6/22	100%	Yes	25 Sec	12 Sec
Report 3	1 - Critical	Buying & Merchand.	Dynamic XML code	Migrated 6/23	98%	Yes	27 Sec	23 Sec
Report 4	1 - Critical	Buying & Merchand.	Data dump	Migrated 6/24	97%	Yes	25 Sec	10 Sec
Report 5	1 - Critical	FP&A	Stock Change data	Migrated 6/25	100%	Yes	14 Sec	5 Sec
Report 6	2 - Medium	E-Commerce	user data dependency	Migrated 6/26	87%	No	120 Sec	90 Sec
Report 7	2 - Medium	Analytics	Sales data	Migrated 6/27	92%	No	120 Sec	27 Sec
Report 8	2 - Medium	Store Operations	Sales & Inventory data	Migrated 6/28	96%	Yes	42 Sec	14 Sec

DATA ISSUE RESOLUTION TRACKER

Sl. No.	Report No.	Date logged	Feedback	Resolution	Comments
1	Report 1	6/18/2021	Query fails to complete within 10 minutes and issues "timeout" error. Updated calendar for 2021 as per Merilytics notes	Optimized the code	Re-supplied the file 6/21
2	Report 8	6/23/2021	Issue that report displaying items as markdown when sold full price. Date of markdown causing possible incorrect stock holding group appearing in new system	There is a marginal variance of 1-2% arising due to variance in **Column-A data in Table-1 for 2020 and** the variance is higher (60%) for the year 2019	NA (6/23) Needs a database fix
3	Report 5	6/23/2021	This is in regards to the Report 4 delivered yesterday. Store 5267 variance of -80% to existing system in Sales, -71% in EP Units, -84% in Quantity, -75% in Coupon, -72% in EP Sales for Week 18 2021	Looks like the data is updated for week 18 2021 in new system and the output matched with existing system on a refresh	NA (6/23)

REPORT MIGRATION SUMMARY

Departments	Reports Migrated	Accuracy	Avg. run time (sec)	Avg. run time on SQL (sec)	% Optimized
Accounting & Reporting	23	99%	125	55	127%
Analytics & Store Segmentation	49	100%	102	68	50%
E-Commerce & Digital Marketing	7	99%	146	65	125%
Financial Planning & Analysis	12	99%	64	51	25%
IT Reports	11	98%	26	24	8%
Loss Prevention	8	99%	30	22	36%
Buying & Merchandising	30	99%	29	27	7%
Store Operations	17	97%	128	89	44%
Total	**157**	**99%**	**84**	**54**	**57%**

ACCURACY ASSESSMENT REPORT EXAMPLE

Migrated Report output

Department Code	Department Desc	Current Stock Quantity
01	Dept A	10,188,745
02	Dept B	847,824
03	Dept C	2,491,770
04	Dept D	-160
05	Dept E	3,006,546
06	Dept F	450,590
07	Dept G	135,012
08	Dept H	1,825,934
09	Dept I	1,032,912
10	Dept J	460,278
11	Dept K	1,782,487
21	Dept L	958,174
22	Dept M	960,912
23	Dept N	1,066,233
25	Dept o	2,999,880
27	Dept P	1,862,620
28	Dept Q	2,183,170
29	Dept R	455,000
30	Dept S	4,930,011
42	Dept T	424,800
45	Dept U	4,614,903
49	Dept V	4,753,179

Legacy Systems output

ProductDept Code	Product StructureDept Desc	Current Stock Quantity
01	Dept A	10,188,745
02	Dept B	847,824
03	Dept C	2,491,770
04	Dept D	-160
05	Dept E	3,006,546
06	Dept F	450,590
07	Dept G	135,012
08	Dept H	1,825,934
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29	Dept R	455,000
30	Dept S	4,930,011
42	Dept T	424,800
45	Dept U	4,614,903
49	Dept V	4,753,179

Accuracy Assessment

Match	Match	Variance
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0
TRUE	TRUE	0

Total		47,430,820			47,430,820			0