Introduction

This report provides a comprehensive analysis of two critical areas impacting the company's operational efficiency and strategic growth: data quality issue within the finance department and sales performance analysis.

Data quality is essential in the finance department to ensure accurate reporting, maintain regulatory compliance, and support reliable business insights. In this analysis, I have assessed the consistency, accuracy, and completeness of financial data and recommended actionable improvements to enhance data reliability.

Sales analysis, on the other hand, is fundamental to understanding customer behavior, evaluating revenue trends, and identifying growth opportunities. This analysis investigates key performance indicators, offering strategic insights that can optimize sales and contribute to the company's revenue objectives.

This report is organized into two main sections. The first addresses data quality issues within finance, highlighting findings and recommended improvements. The second provides a detailed sales performance analysis with actionable recommendations.

Problem1 : Data quality – the difference between NetSuite ERP and payment gateway

Objective and Context

JetBrains provides various payment methods to customers, with the most popular being online card payments through the Adyen payment gateway due to its speed and convenience, allowing immediate activation of software license keys post-payment.

To adhere to accounting standards, JetBrains must record all transactions accurately. However, due to previous reliance on an external tool for manually processing CSV settlement files, several

unknown and unlogged errors occurred, resulting in mismatches between NetSuite and Adyen settlement reports. Now, settlement processing has been automated to reduce error rates, but residual discrepancies from past manual processing need to be identified and resolved. The accounting department has provided initial data, including batch numbers and merchant account comparisons, to aid in this reconciliation process.

Merchant Account	Batch Number	NetSuite	Payment Gateway	Difference
JetBrainsAmericasUSD		22,298,648	0	22,298,648
JetBrainsAmericasUSD	138	9,445,798	9,445,798	0
JetBrainsAmericasUSD	139	0	11,255,775	-11,255,775
JetBrainsAmericasUSD	140	11,256,666	11,256,666	0
JetBrainsAmericasUSD	141	0	11,042,873	-11,042,873
JetBrainsAmericasUSD	142	7,581,479	7,581,479	0
JetBrainsEUR	138	11,235,135	11,318,386	-83,251
JetBrainsEUR	139	13,463,478	13,451,949	11,529
JetBrainsEUR	140	13,268,388	13,268,388	0
JetBrainsEUR	141	13,165,714	13,165,714	0
JetBrainsEUR	142	9,127,436	9,127,436	0
JetBrainsGBP	138	870,196	870,196	0
JetBrainsGBP	139	1,065,368	1,065,368	0
JetBrainsGBP	140	1,089,633	1,089,633	0
JetBrainsGBP	141	0	1,021,258	-1,021,258
JetBrainsGBP	142	735,494	735,494	0

JetBrainsUSD	138	1,762,238	1,762,238	0
JetBrainsUSD	139	2,156,538	2,156,538	0
JetBrainsUSD	140	2,088,749	2,088,749	0
JetBrainsUSD	141	2,026,363	2,026,363	0
JetBrainsUSD	142	1,410,287	1,410,287	0

Column *NetSuite* – a sum of all Payments and Customer Deposits foreign amounts on accounts:

- 315700 JBCZ: Receivables against ADYEN-EUR

- 315710 JBCZ: Receivables against ADYEN-USD

- 315720 JBCZ: Receivables against ADYEN-GBP

- 315800 JBA: Receivable from Adyen - USD

- 548201 Other operating costs

Column *Payment gateway* – a sum of Adyen settlement overview, equal to the content of CSV settlement files.

Key goals of this analysis include:

1. **Provide a list of all differences in transaction level** between NetSuite and payment gateway records.

2. **Reconciliating differences** between NetSuite and Adyen records to ensure accounting integrity.

Methodology

The data analysis was conducted in a structured approach with SQL Server as the primary tool for data extraction and comparison.

1. **Schema and Table Analysis**: Initially, I examined the finance-related tables within the NetSuite schema, focusing on their structure, relationships, and data types to ensure accurate alignment with the analysis requirements.

2. **NetSuite Balance Derivation**: I then summarized the NetSuite balances by merchant and batch number, using the provided question details as a guide, to create a clear baseline for comparison.

3. **Difference Categorization and Transaction-Level Analysis**: Next, I categorized the discrepancies by merchant account and performed a transaction-level analysis to identify the specific causes of the variances. To streamline this process, only batches with differences in ADYEN were uploaded in bulk into SQL Server as a new table (dbo.Settlement_details_report), specifically for comparison purposes.

4. **Multi-Batch Query Analysis**: To identify and understand the differences between the transaction file and NetSuite, five multi-batch queries were used, targeting specific merchant accounts (JetBrainsAmericasUSD139, JetBrainsAmericasUSD141, JetBrainsEUR138, JetBrainsEUR139, JetBrainsGBP141). Each multi-batch query involved two stages:

   o **Difference Analysis**: Provide a list of transactions that are present in the Adyen Gateway but missing in NetSuite, as well as any records where the sales amount differs between the two sources.

   o **Reconciliation**: Provide a list of NetSuite transactions that correspond to the above discrepancies.

Analysis and Findings

- The NetSuite records for MERCHANT ACCOUNT 'JetBrainsAmericasUSD' without a batch number were found to exactly match the total records of batches 139 and 141, which were missing.

- In the analysis of records for MERCHANT ACCOUNT 'JetBrainsEUR' batch 138, all records in NetSuite matched those in the settlement file, except for 255 records. Only part of the order value was found in NetSuite. Reconciliation identified that these 255 matching records, all associated with ACCOUNTNUMBER 311000 and missing both BATCHNUMBER and MERCHANT fields, were the cause of the discrepancy. Consequently, the NetSuite sales amount decreased by 83,251, as indicated by the summary data provided by the Accounts department.

- For MERCHANT ACCOUNT 'JetBrainsEUR' batch 139, all records in NetSuite matched the settlement file records except for forty-two. Reconciliation revealed that these 42 matching records, all tied to ACCOUNTNUMBER 311000 and also missing BATCHNUMBER and MERCHANT fields, were responsible for the difference. Since all were credit note transactions, the NetSuite sales amount increased by 11,529, according to the Accounts department summary.

- The reconciliation further revealed that Adyen records for MERCHANT ACCOUNT 'JetBrainsGBP' batch 141 were identical to those in NetSuite for ACCOUNTNUMBER 311000, with both BATCHNUMBER and MERCHANT fields missing.

- For a detailed list of the differences and reconciliations, please refer *Analysis of Difference.CSV* and *Reconciliation.CSV*. The SQL queries used in the analysis are also included in the project files for reference.

Recommendations

Except for records under the MERCHANT ACCOUNT 'JetBrainsAmericasUSD,' there is a discrepancy between all the transaction dates of newly reconciled records in NetSuite and the corresponding transaction dates in the settlement file. Further analysis is required to address these differences.

Problem2 : Sale analysis – revenue decline in ROW region

Objective and Context

JetBrains is a global software company with two primary sales divisions: the US team, focusing on the American market, and the ROW team, based in Vienna and responsible for all markets outside the US. Both teams, while independently managed, collaborate closely on shared campaigns that account for most of their annual revenue. Despite this collaboration, each market presents unique conditions, leading to occasional localized campaigns tailored to regional needs.

Revenue YTD growth has been the principal metric guiding both teams' performance, with results reported and discussed regularly. While the US and ROW teams achieved comparable growth in recent years, a concerning trend emerged in the first half of 2019: ROW's growth significantly lagged behind that of the US. This divergence has prompted multiple discussions among sales managers from both regions, yet a clear cause remains unidentified.

The objective of this analysis is to investigate and understand the factors contributing to the recent decline in performance of the ROW sales team in the first half of 2019. By comparing key sales metrics, particularly the year-to-date (YTD) revenue growth, between the ROW and US teams, we aim to identify specific trends, issues, or factors affecting ROW sales.

Methodology

To conduct a comprehensive sales performance analysis, I used SQL to examine key dimensions of the data, including time, geography, product types, and customer categories. This multi-dimensional approach enabled a detailed understanding of sales patterns and potential cause for the ROW performance drop. The steps were as follows:

1. **Data Extraction**

   o   Accessed and extracted sales data from SQL databases, ensuring it covered the necessary dimensions: time (monthly and quarterly), country, product lines, and customer categories.

   o   Focused on obtaining both year-over-year (YoY) revenue figures in USD and local currencies, which allowed for comparison across global markets.

2. **Sales Analysis Across Key Dimensions**

   •   Segmented sales data by each primary dimension:

      o   **Time**

      o   **Country**

      o   **Product Family**

Analysis and Findings

Year-Over-Year Sales Comparison Analysis:

In the Year-Over-Year (YOY) sales analysis across dimensions such as Month, Country, Product Family, , it was found that the ROW (Rest of World) sales change from 2018H1 to 2019H1 was relatively insignificant both in sales volume and amount. However, further investigation revealed that the observed fluctuation in ROW sales was primarily influenced by changes in exchange rates

between 2018 and 2019. When exchange rate effects were isolated, the actual change in sales figures per country in ROW was minimal compared to the variations in USD amounts.

Country	Sales USD 2018H1	Sales USD 2109H1	Sales Local 2018H1	Sales Local 2019H1	YOY USD Percnt	YOY Local Percnt
Austria	4065556	3760885	3358037	3328747	-7.49	-0.87
Switzerland	6891343	6435553	5691354	5695189	-6.61	0.07
Germany	54028060	50600462	44604403	44788808	-6.34	0.41
United Kingdom	5694845	5334302	4136134	4124091	-6.33	-0.29
Israel	2153740	2092294	2153740	2092294	-2.85	-2.85
Australia	2097816	2052908	2097816	2052908	-2.14	-2.14
Korea	986463	976445	986463	976445	-1.02	-1.02
New Zealand	944465	964099	944465	964099	2.08	2.08

Table - YOY Sales Analysis

currency	month_start _date	end_of_month _rate	prev_month _rate	month_over_month_change_ percentage
EUR	1/1/2019	0.874967	NULL	NULL
EUR	2/1/2019	0.878272	0.874967	0.38
EUR	3/1/2019	0.890076	0.878272	1.34
EUR	4/1/2019	0.896861	0.890076	0.76
EUR	5/1/2019	0.89815	0.896861	0.14
EUR	6/1/2019	0.878735	0.89815	-2.16
EUR	7/1/2019	0.896539	0.878735	2.03

EUR	8/1/2019	0.906125	0.896539	1.07
EUR	9/1/2019	0.914495	0.906125	0.92
EUR	10/1/2019	0.900414	0.914495	-1.54
EUR	11/1/2019	0.910581	0.900414	1.13
EUR	12/1/2019	0.893735	0.910581	-1.85
GBP	1/1/2019	0.764205	NULL	NULL
GBP	2/1/2019	0.750949	0.764205	-1.73
GBP	3/1/2019	0.763952	0.750949	1.73
GBP	4/1/2019	0.77435	0.763952	1.36
GBP	5/1/2019	0.791971	0.77435	2.28
GBP	6/1/2019	0.78783	0.791971	-0.52
GBP	7/1/2019	0.821705	0.78783	4.3
GBP	8/1/2019	0.820632	0.821705	-0.13
GBP	9/1/2019	0.81187	0.820632	-1.07
GBP	10/1/2019	0.776157	0.81187	-4.4
GBP	11/1/2019	0.776043	0.776157	-0.01
GBP	12/1/2019	0.761534	0.776043	-1.87

Table- Month over Month change in exchange rate in 2019

- **Austria, Switzerland, Germany, and the United Kingdom** show a significant Year-over-Year (YOY) decline in sales when measured in USD (between -6% to -7.5%). However, in local currencies, the decline is far less pronounced or even positive (Austria at -0.87%, Switzerland at +0.07%, Germany at +0.41%, and the United Kingdom at -0.29%). This indicates that exchange rate fluctuations had a considerable effect on perceived revenue changes in USD for these countries.

- For **Israel, Australia, and Korea**, the YOY sales percentage change is similar for both USD and local currency (between -1% and -2.85%), since currency used in these countries is USD.

- **New Zealand** is the only country showing positive YOY growth in both USD and local currency sales (2.08%), suggesting a genuine increase in sales activity without significant exchange rate impact.

- The EUR showed fluctuations in its exchange rate throughout 2019, starting at **0.874967** in January. The highest end-of-month rate occurred in **December** at **0.893735**, with noticeable peaks in **March** (**0.890076**) and **August** (**0.906125**).

- The GBP started at **0.764205** in January and experienced more pronounced fluctuations throughout the year. Notably, there was a sharp decline in February (**-1.73%**) followed by a recovery in subsequent months, particularly with the largest increase observed in **July** (**4.3%**).

Recommendations for Sales Manager

- Regularly track and analyze exchange rate fluctuations, especially for currencies that are significant to ROW markets. Understanding how these changes affect sales revenue in USD versus local currencies can help in making more informed pricing and sales strategies.

- Continue to track sales in both local and USD terms for all markets. Monitoring this dual metric may reveal patterns masked by exchange rate changes and provide early indicators for growth potential.

- The sales team can focus more on New Zealand where there is positive YoY sales increase, review any specific sales strategies, promotions, or product offerings that contributed to the growth in New Zealand. If unique sales tactics were applied, these could be tested in other markets.

- Compare the New Zealand approach with the strategies used in other countries showing a decline. Adjust and adapt these methods for similar-sized markets, such as Australia, where conditions might be alike.