Case Study: Setup MS Excel for Advanced Device & Commercial Performance Analysis

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Abstract:
It is possible to setup MS Excel to manage large data sets and quickly produce statistics for Health Performance reports, Device Performance reports and Commercial Performance reports

Keywords: PSUR, MS Excel, Commercial Performance Analysis, Post-Market Surveillance, Vigilance

This case study proved the following;

- MS Excel can manage large data if setup correctly
- The architectural structure presented resulted in;
  - **93.01%** time reduction first year
  - **99.42%** time reduction following years
  - Saved 104 days / year

1 Introduction

Microsoft Excel is a major tool for data management. However, the software is limited to 1 million rows and does not offer templates nor functions to easily sort, analyze and present the amount of data required by *Governmental Health Authorities, Device Performance* and *Commercial Performance*. This case study presents a method proved tremendously effective in fulfilling these requirements.

2 Setup explanation

Excel's built in *Pivot Table* functionality (using *"Power Query"* to setup the connection) allows to connect and read from files with millions of rows. By then referencing a static table and utilizing user facing *Pivot Tables* to the static table, the amount of data required for processing decreases by more than 90%. Connecting the user facing *Pivot Tables* filtering function with the *"Slicer"* function enables the user to update all the user facing *Pivot Tables* simultaneously. See *Figure 1* for a high-level visualization of the architectural setup
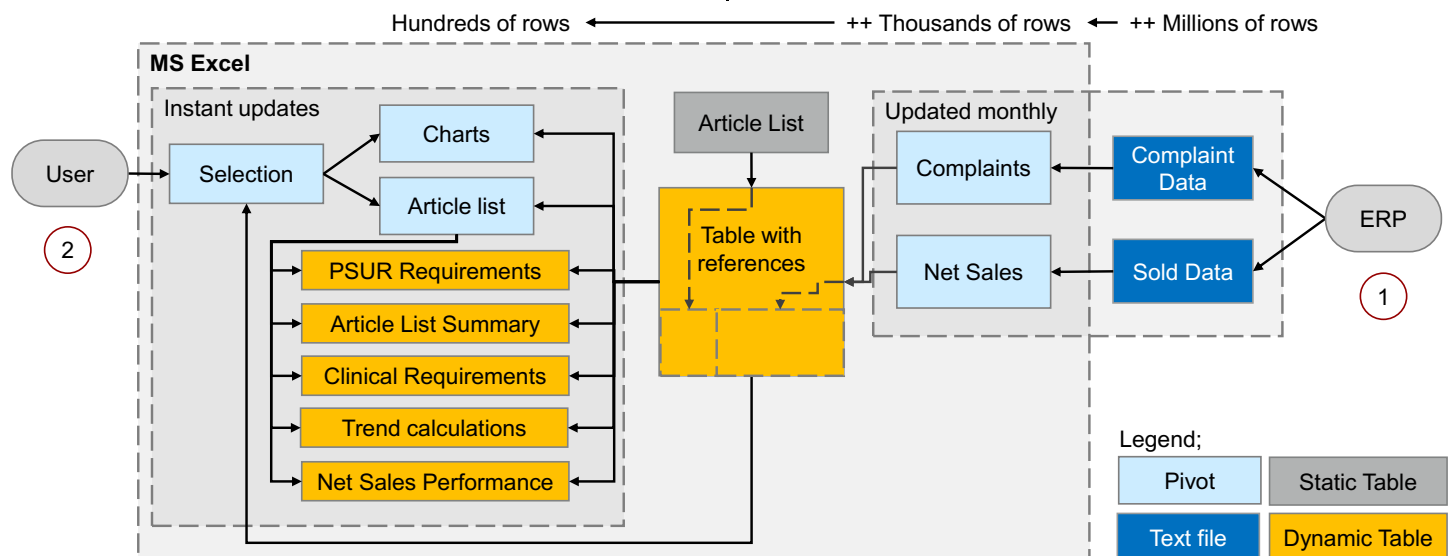

Figure 1. High-level visualization of the architectural structure

(2) User changes selection and gets instant tables and charts with statistics

Typical Formula for the table with the references;

```
=IFERROR(INDEX(Reference_Complaints!$AA$55504:$AA$5
7700,MATCH(TEXT(G14,0),Reference_Complaints!$W$5550
4:$W$57700,0),0),0)
```

3   Result and Demonstration
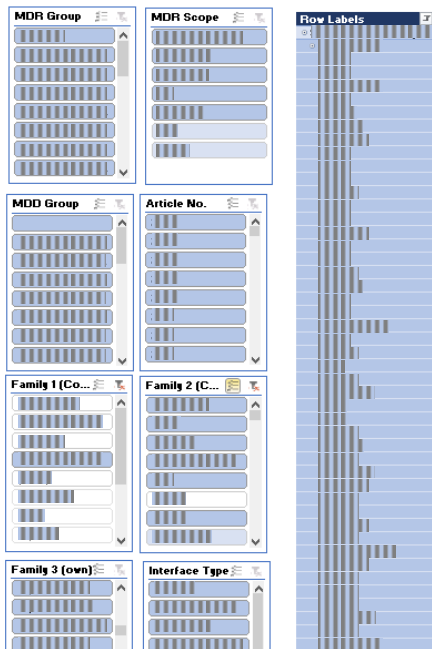
User selects scope;

Figure 2. User selection

And instantly receives output (time series charts and tables with regulatory information) of device performance and commercial performance ready to be pasted into respective report;
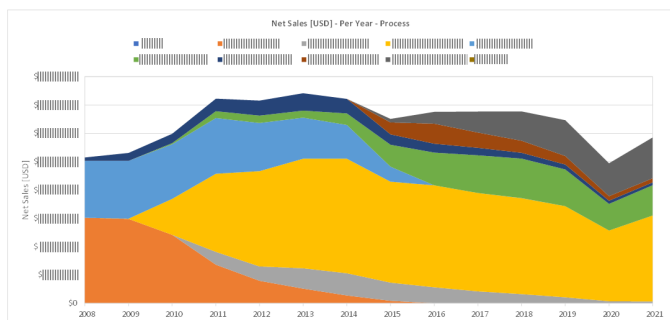
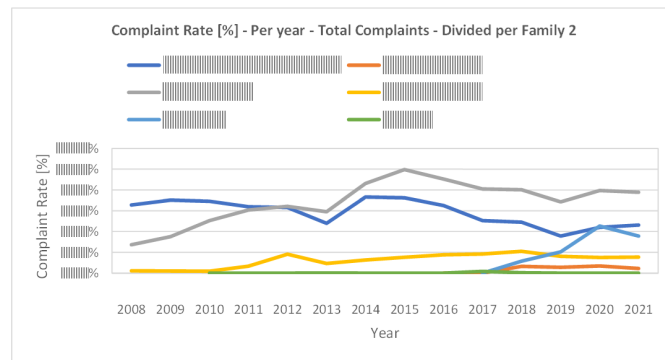

Figure 3. Charts with volumes (sold/complaint/sales)

Figure 4. Charts with Complaint Rates

Figure 5. Tables with regulatory information and statistics

4   Result

A time study was performed for 7500 devices, divided into 26 *Periodic Safety Update Reports* (PSUR) and two *Commercial Performance* reports. The setup resulted in a 93.01% time reduction for first year, and 99.42% time reduction for coming years. The setup saved ~104 days / year.

	Traditional	The setup + Initial Development	The setup
Saved	0	2321.5	2481.5
Hours	2496	174.5	14.5