Strategic Analysis of Product Assortments of 22 Online Shops

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1. Introduction

This report presents a comprehensive analysis of the product assortments available across 22 leading online retailers. The aim is to gain actionable insights into current market trends, identify high-demand and commonly listed products, and evaluate the alignment between external offerings and the Kosatec portfolio. Through this comparative assessment, the report seeks to uncover potential gaps in Kosatec's assortment and provide strategic recommendations for portfolio enhancement and market responsiveness.

The key objectives of this analysis are as follows:

- To conduct a comparative analysis of product data from approximately 22 online retailers and the Kosatec portfolio to support strategic assortment planning.

- To identify frequently listed products using key identifiers such as EAN and manufacturer details, offering insights into core market demand and standard inventory practices.

- To assess the extent of alignment between Kosatec's current offerings and external assortments, highlighting areas of overlap and identifying significant gaps.

- To evaluate leading brands and prominent product categories that dominate online retail spaces, providing a basis for informed portfolio development.

2. Data Sources

The analysis is carried out on about 22 CSV files, each of which is the product assortment of an online shop. These files include different product-related fields (where available): product_url (link to the product page), product_name, product_category, product_manufacturer, product_article_number, product_ean (EAN code), manufacturer_number (MPN), product_price, currency (e.g., EUR), and in_stock (availability status or quantity). Apart from the market data, there is one CSV file that represents the Kosatec portfolio. This internal file can be structured differently or use a different field naming convention. It is noteworthy that not all fields are always present in all the files, and they need to be normalized during data processing.

3. Methodology

The analysis was conducted through a structured and multi-step data preparation and processing workflow. Initially, product data from 22 external online shops was collected in CSV format. These files varied in structure, so the first step involved merging, cleaning, and normalizing the data to create a consistent format. Product matching was carried out using

a prioritized approach: first by product_ean, then by manufacturer_number, and finally by product_article_number, depending on the availability of each field.

Among the 22 files, 15 had consistent and complete product_ean values. For these files, duplicate entries were removed using a combination of product_ean, manufacturer_number, and product_article_number, and the shop count was calculated based on the presence of the same product_ean across different shops. The next set of 6 files did not contain product_ean but had consistent manufacturer_number values. In these files, duplicates were removed using manufacturer_number and product_article_number, and shop counts were based on manufacturer_number. The last file, bueromarkt_26_02_2025.csv, lacked both product_ean and manufacturer_number, so duplicates were removed using only the product_article_number. All deduplication and shop count calculations were performed using Python (Pandas) for consistency and automation.

After deduplication, the datasets were merged using the defined matching hierarchy, beginning with product_ean, then manufacturer_number, and finally product_article_number. The consolidated dataset was analyzed using Python in a Jupyter Notebook environment. The analysis addressed several key business questions, including identifying the most listed products across shops, determining the overlap between external assortments and the Kosatec portfolio, highlighting assortment gaps, and identifying top brands and product categories. A price comparison was also conducted to benchmark Kosatec's pricing against market competitors. All findings were visualized using charts and tables and compiled into a clear, structured PDF report.

4. Key Findings

4.1 Common Products Across Shops

Based on the results obtained through Python-based analysis, this section highlights the most frequently listed products across the surveyed online retailers. The primary metric used in this evaluation is *shop_count*, which indicates the number of shops in which a particular product appears. A higher shop_count typically reflects greater market demand and broader distribution, suggesting the product's significance within the online retail landscape.

Leading the list of most frequently listed products are the Dell Docking Station WD19S 130W and the Aten KVM Switch CS1794, each featured in 18 different online shops. Such widespread presence suggests these products are either in consistently high demand or are considered standard inventory items across multiple retailers. Their high visibility in the

dataset underscores their strategic importance in terms of market coverage. A summary table of the top-listed products is provided below. For the investigation of all dataset, read the downloadable file provided. (https://docs.google.com/spreadsheets/d/15C-Cj5bAfaEwmZfYJEcNFpYKRCZxcyey/edit?usp=sharing&ouid=114137909434064952757&rtpof=true&sd=true)

Table 1: Common Products Across Shops

Product Name	Manufacturer	Shop Count
Docking Station WD19S 130W	DELL	18
Aten KVM Switch CS1794	Aten	18
Jabra Anschlusskabel für Cisco IP RJ-10 - QD	Jabra	17
KC 1000 USB Tastatur Englisch Grau	Cherry	17
4 Port HDMI Switch 3x HDMI & 1x DisplayPort 4K	StarTech.com	16
…	…	…
Brother Trommel DR-2200 Black	Brother	6
iPhone 16 Pro 256GB Titan Schwarz	Apple	6
TCON-T01 Telekonverter zu TG-1	Olympus	6
Vonmählen USB-Kabel High Six Silver	Vonmählen	6
963XL Tintenpatrone ca. 2000 Seiten Schwarz	HP Inc.	6

4.2 Assortment Overlap with Internal Portfolio

An overlap analysis was carried out to identify the number of products that are also listed among the external online shops of the Kosatec portfolio. The comparison endeavor was accomplished through Python, matching product records that are internal and external. Of the 23,968 products in Kosatec's portfolio, it was seen that 20,315 products were listed by the external shops as well. It leads to an 84.76% assortment overlap with the general market, implying a high match of Kosatec's offerings with the general market. As the overlap of the portfolio is great, it indicates that an appreciable portion of the portfolio comprises widely distributed products or those that are commonly available. This indicates a competitive assortment strategy that corresponds with the existing market trends. Yet, it also reveals the

potential benefits of discovering and implementing other products, more exclusive or defined, as a tool for a firm's market positioning. The graph below compares Kosatec products, external shop products, and those that overlap the two.

Table 2: Assortment Overlap with Internal Portfolio

Metric	Value
Total Kosatec Products	23,968
Overlapping Products	20,315
Overlap Percentage	84.76%

From the graph, it is very clear that many products (1,862,178 products) are being listed from the external shops as compared to Kosatec's portfolio, which has 23,968 products. Out of these two sets, 20,315 products are common, and this shows an overlap. The bar graph indicates the numbers of each category (Kosatec Products, External Shop Products, Overlapping Products) using different colors, where the numbers of exact products are shown above the bar, thus making the data easier to comprehend. This visual presentation corroborates the text-based analysis and presents a demonstration of how relevant and competitive Kosatec's product portfolio is on the market.
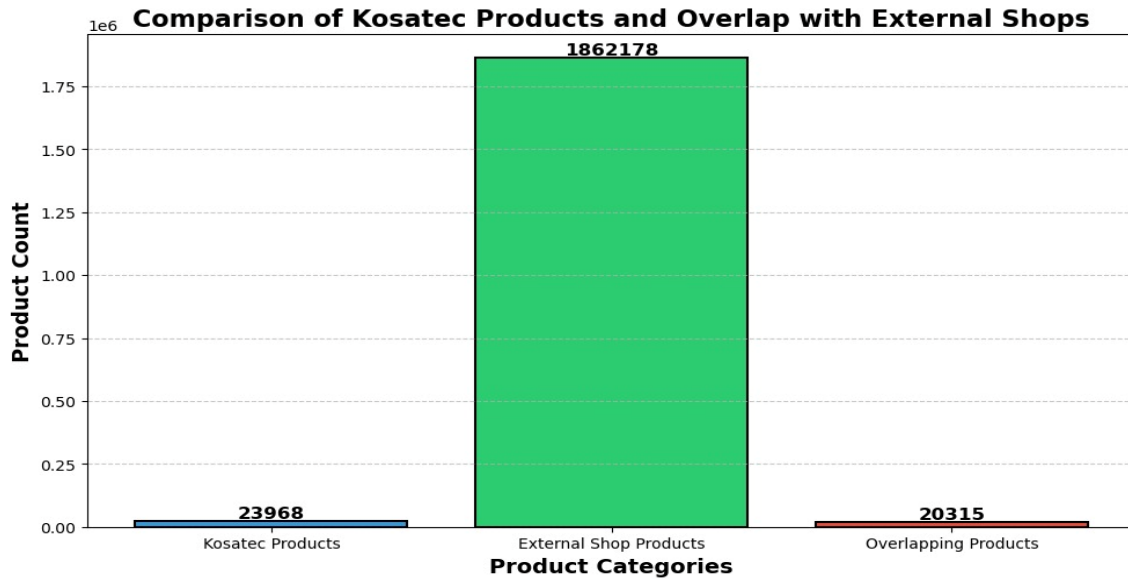
Figure 1: Comparison of kosatec products and overlap with external shops

4.3 Assortment Gaps

This analysis is aimed at highlighting the assortment gaps by comparing the product listings of about 22 external online shops with the Kosatec portfolio. The aim is to find products that are widely present on the market but are not represented in the assortment of Kosatec. This comes down to a total of 1,862,178 unique products identified through all external sources and 1,018,067 that are missing from the Kosatec portfolio. This gives a gap percentage of 54.67%, which means that more than half of the externally available market assortment is not covered in Kosatec's offerings. This is a strategic prospect to increase the internal portfolio through adding high-demand or regularly listed missing products selectively. Focusing on gaps in strong categories and brands that are popular might increase a company's competitiveness, respond to larger customer needs, and help a company grow its portfolio. The whole list of missing products has been saved for further analysis in the file named kosatec_assortment_gaps.csv.

https://drive.google.com/file/d/1GhoQoJnwkkL22t31IpEekySny2195hzs/view?usp=sharing

Table 3: Assortment Gaps

Metric	Value
Total Market Products	1,862,178
Products Missing in Kosatec	1,018,067
Gap Percentage	54.67%

The following pie chart shows the comparison of products that form a part of Kosatec's assortment and those absent from it. The blue part (45.3%) refers to those products that are in Kosatec, the red part (54.7%) – several products that are lacking. The chart indicates very clearly that Kosatec does not cover more than half of the external market assortment now. This graphical representation goes along with the analytical data and highlights the room for possible development and strategic enhancement in the product portfolio.

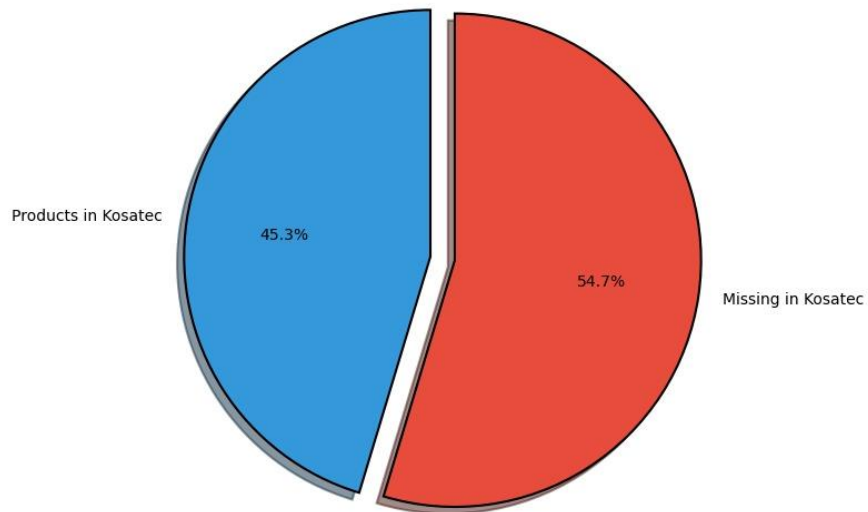Comparison of Products in Kosatec vs Missing in Kosatec

Products in Kosatec 45.3%

54.7% Missing in Kosatec

Figure 2: Comparison of products in Kosatec vs Missing in Kosatec

4.4 Top Brands and Manufacturers

Based on the insights gained using Python analysis, the following details the most frequently appearing brands and manufacturers on a large set of online shop data. The metric employed is Brand_Count; this shows the number of times the different brands occur on different online platforms, a proxy for distribution breadth and market visibility. According to the results, Phs-Memory has the largest number of mentions, happening many more times than any other brand; the number is 550,736. Lenovo (84,128), Noreve (78,335), Apple (60,238), and HP Enterprise (51,134) also rank as the other major players. These numbers reflect a strong presence of digital retailing and brands that have a strong supply chain and a wide customer base. This kind of analysis is essential for analyzing the leading market actors and can be employed based on strategic purchase decisions. Focusing on collaborations or stock of brands that are often cited, especially Lenovo, Apple, and HP, can make the assortment of Kosatec consistent with market demand and optimise the level of competitiveness. For a ready reference, a small preview table of the top brands is given below. For the full dataset, you can get the file from the link given below.

(https://docs.google.com/spreadsheets/d/1Qjs4naKlxqHXlYTMPU9sNJmRei6tJRms/edit?usp=sharing&rtpof=true&sd=true)

Table 4: Top Brands and Manufacturers

Brand	Brand_Count
Phs-Memory	550736
Lenovo	84128
Noreve	78335
Apple	60238
Hp Enterprise	51134
...	...
Tech Air	64
Plan Toys	64
Wrebbit	64

Venta Luftwã¤Scher	64
Solac	64

The bar chart below is a pictorial representation of the top 10 brands by frequency, and this shows a clear market dominance of Phs-Memory as a brand versus its competitors.
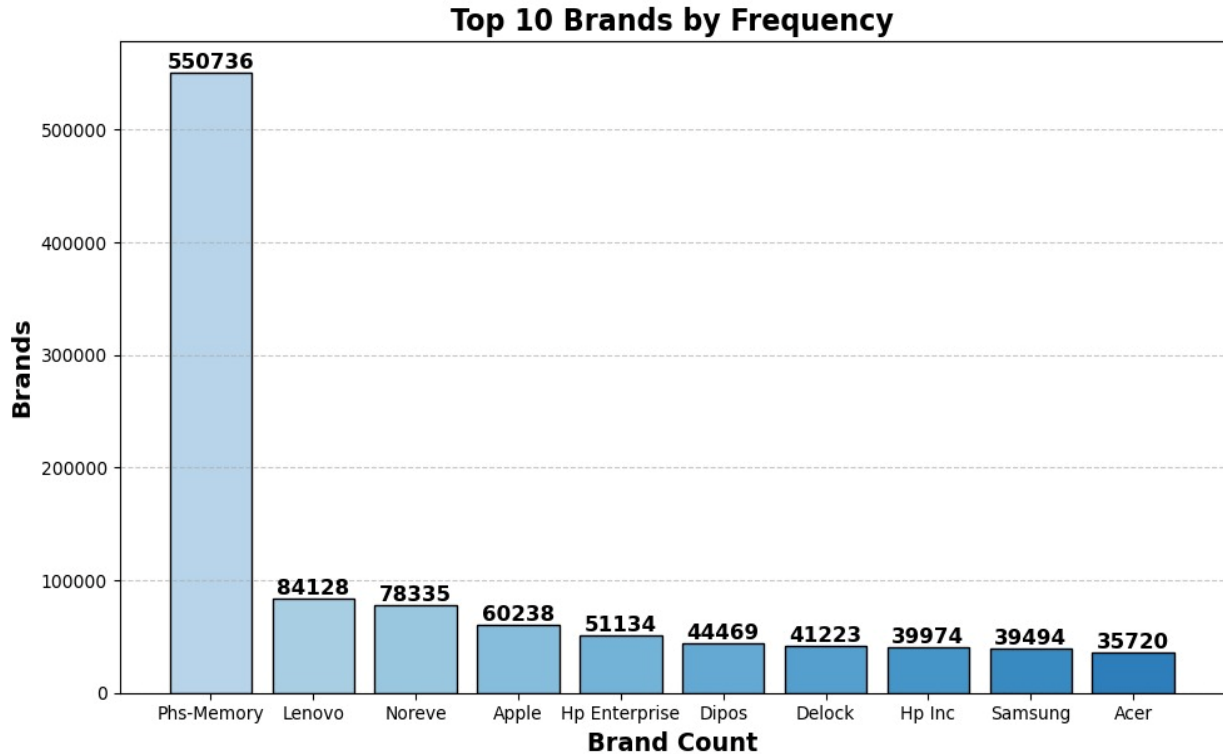

Figure 3: Top 10 Brands by Frequency

4.5 Top Product Categories

According to the results achieved from Python analysis, this section reveals the prevailing product categories that are enumerated on a variety of external online shops. The main metric applied in this evaluation is the number of listings per category, which indicates how often products of the given category are noted in the external shop inventories. More listing usually indicates more significant market demand, as well as more robust commercial presence and broader distribution. From the results obtained, the top categories in the market are PC components and accessories, IT & multimedia equipment, and enterprise service and support products. For example, the "PC & Zubehör | Komponenten" is only mentioned more than 344,000 times, meaning this category serves as a backbone of tech-

related inventories. On the same note, general-purpose categories such as "Divers", "Home" also have a significant presence, which highlights the amount of product variety online marketplaces contain. These leading categories are probably regarded as the norm in many retailers, thus indicating reliability and constant demand. Their significant listing numbers make them pointers to what is going on in the current market and the preferences in the online retail environment. A summary table for a quick reference of the top-listed categories is presented below. To access the full results, the full dataset is available from the file link (https://docs.google.com/spreadsheets/d/1RgXigh-xUEzn1ROudmnooZamWaoftKzc/edit?usp=sharing&ouid=114137909434064952757&rtpof=true&sd=true)

Table 5: Top Product Categories

Product Category	Number of Listings
Alle Kategorien | PC & Zubehör | Komponenten	344,327
Alle Kategorien | Divers	268,424
Gesamtsortiment | IT + Multimedia | PC Komponenten	231,000
Gesamtsortiment | IT + Multimedia | Smartphones	119,379
Home	52,383
...	...
Gesamtsortiment | Haushalt + Garten | Waschmaschinen	5,684
Gesamtsortiment | Haushalt + Garten | Kühlschränke & Gefrierschränke	5,671
Gesamtsortiment | Haushalt + Garten | Kaffee & Espresso	5,584
Alle Kategorien | Haushalt & Küche | Kaffee & Espresso	5,412
Alle Kategorien | Haushalt & Küche | Waschmaschinen	5,212

5. Strategic Insights & Recommendations

The analysis of product offerings across 22 online retailers highlights key areas where Kosatec can strengthen its market position. Significant gaps and emerging trends in the broader market present clear opportunities to refine and expand Kosatec's assortment strategically. Below are some recommendations:

- Ensuring that high-frequency products appear in 15 or more external online shops should be a priority for Kosatec, since it shows that the market demands them. The Dell Docking Station WD19S 130W and the Aten KVM Switch CS1794 are prime examples and are available in 18 shops. Items such as the Jabra Anschlusskabel für Cisco IP RJ-10 - QD, Cherry KC 1000 USB Tastatur Englisch Grau, and the StarTech.com 4 Port HDMI Switch (16 shops) have a lot of potential and should be part of the product range straight away.

- The analysis shows that certain brands are far more popular than others: Phs-Memory on eBay (with 550,736), followed by Lenovo, Noreve, Apple, and HP Enterprise. Strengthening ties with these manufacturers should involve looking at preferred distributor agreements, improved terms on the supply chain, and giving them exclusive or priority status. Such teamwork will increase the supply and add to the credibility of the brand for its customers.

- Kosatec must increase its variety in PC components, IT & multimedia products, and models of smartphones. The "PC & Zubehör | Komponenten" section, by itself, counts more than 344,000 listings. Increasing the range of items in these high-selling categories is important since it serves what customers expect and encourages them to buy again.

- While businesses must imitate market trends, they also need to figure out how to stand out to survive over the long term. Unique or rare products should be selectively added to Kosatec's range, so they are set apart from the products offered by other firms. For example, such items consist of unique accessories, commercial solutions for businesses, or tech goods that are only available in limited numbers. To stay distinct from those with low profit margins, Kosatec can sell accessories along with its key devices as part of a bundle.

- Kosatec can facilitate quick changes by using a data-centered monitoring arrangement that monitors any items overlapping, gaps in their portfolio, and all emerging trends. To identify these issues, sales and marketing will make use of a structured dashboard. Every quarter, you should review all categories in the assortment to keep the portfolio up to date with what the market and customers want.