**Market Basket Analysis Report**

1. **Background**

Blackwell Electronics is considering acquiring Electronidex, an online electronics retailer. We were tasked with conducting an analysis of a month’s worth of Electronidex’s transactions (9835) to better understand whether or not Blackwell should acquire Electronidex. Each of these 9835 transactions had at least 1 of 125 different products. Some of the questions that will help us analyze and understand are as follows:

* What are their sales? How much did they sell?
* What products sell best/worst?
* What combinations of products sell well together?

1. **Patterns & Item Relationships**

The below chart shows the top 5 most purchased items through Electronidex.

|  |  |
| --- | --- |
| **Product** | **# of Transactions** |
| iMac | 2,217 |
| HP Laptop | 1,764 |
| CYBERPOWER Gamer Desktop | 1,472 |
| Apple Earpods | 1,363 |
| Lenovo Desktop Computer | 1,340 |

3981 (~40%) of the 9835 transactions had either the iMac or the HP Laptop in them.

The below chart shows the 10 most likely combinations of items in a transaction, in order of strongest likelihood. It shows us that the item in column 3 (HP Laptop or iMac) is more likely to be purchased when the customer bought the items in column 2, rather than just buying the item in column 3 on its own. This type of information can help with product placement, as well as recommendations when a customer is buying a certain product.

|  |  |  |
| --- | --- | --- |
| **No** | **When Customers buy these 2 items:** | **They are likely to buy:** |
| 1 | Acer Aspire,ViewSonic Monitor | HP Laptop |
| 2 | Dell Desktop,ViewSonic Monitor | HP Laptop |
| 3 | CYBERPOWER Gamer Desktop,ViewSonic Monitor | HP Laptop |
| 4 | ASUS 2 Monitor,Lenovo Desktop Computer | iMac |
| 5 | Apple Magic Keyboard,Dell Desktop | iMac |
| 6 | ASUS Monitor,HP Laptop | iMac |
| 7 | ASUS 2 Monitor,HP Laptop | iMac |
| 8 | Dell Desktop,ViewSonic Monitor | iMac |
| 9 | Lenovo Desktop Computer,ViewSonic Monitor | iMac |
| 10 | HP Laptop,Microsoft Office Home and Student 2016 | iMac |

1. **Recommendation**

Blackwell would benefit from selling many of Electronidex’s items, as many of them are of the same brand and sell really well together. Additionally, mixing Blackwell’s products with that of Electronidex will get customer’s to buy them together, which could increase the sales of Blackwell’s products. The potential to get discounts based on bulk buying of these similar electronic products could further benefit the company as well. With this in mind, I would recommend for Blackwell to buy Electronidex. Here are some promotional recommendations as well:

|  |  |
| --- | --- |
| **Promotion Type** | **Product** |
| Cross-Sell | ViewSonic Monitor and HP Laptop |
| Cross-Sell | Apple Magic Keyboard and iMac |
| Discontinue | 1TB Portable External Hard Drive |
| Discontinue | 2TB Portable External Hard Drive |
| Discount | ASUS 2 Monitor |
| Discount | CYBERPOWER Gamer Desktop |
| Discount | Dell Desktop |
| Discount | HP Laptop |