

Module 2 Task 4: Associations Between Products

Background:

We have been asked by Danielle Sherman, CTO of Blackwell Electronics, to perform a market basket analysis in order to understand the clientele Electronidex is currently serving, to help the board of directors decide whether to acquire Electronidex or not.

Executive Summary:

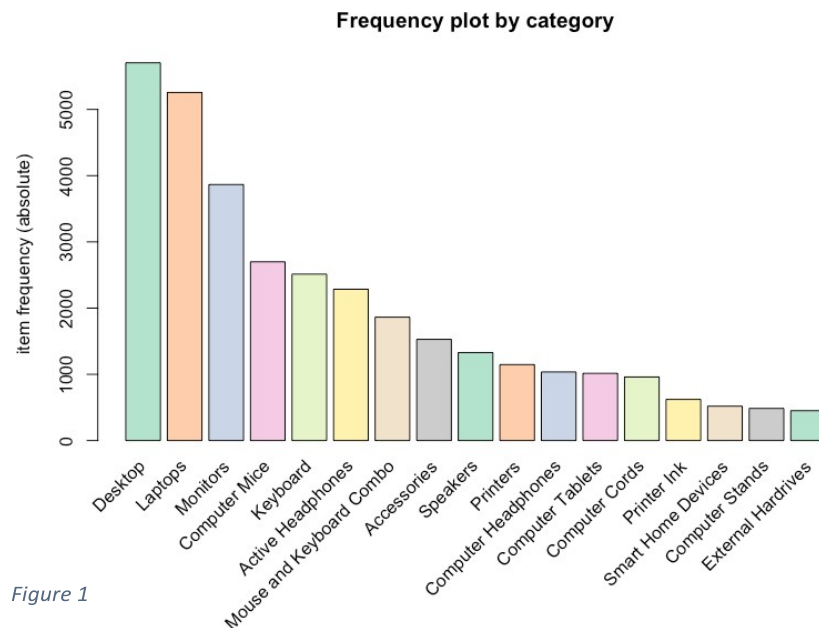
- We have observed that Electronidex has three different types of clients: “Gamers”, business (B2B transactions) and retail (B2C transactions). While Blackwell’s has mainly B2C transactions where include some gaming consoles.
- Electronidex seems to be more specialized on Desktop and Laptops, as a large amount of their sales comes from those categories. As an example, the top seller product for Electronidex is an iMac followed by an HP Laptop.
- We have also observed that the majority of transactions lead Electronidex’s customers to buy some accessories, making quite interesting for Blackwell.
- We believe that both companies will be beneficiated in case of acquisition, as the products for both companies are complementary. Electronidex customers could benefit from extended warranties and software for their laptops and desktops (for retail and business), along with game consoles for gamers. While Blackwell’s customer could benefit for a larger variety of displays, PC’s and some accessories.

Analysis:

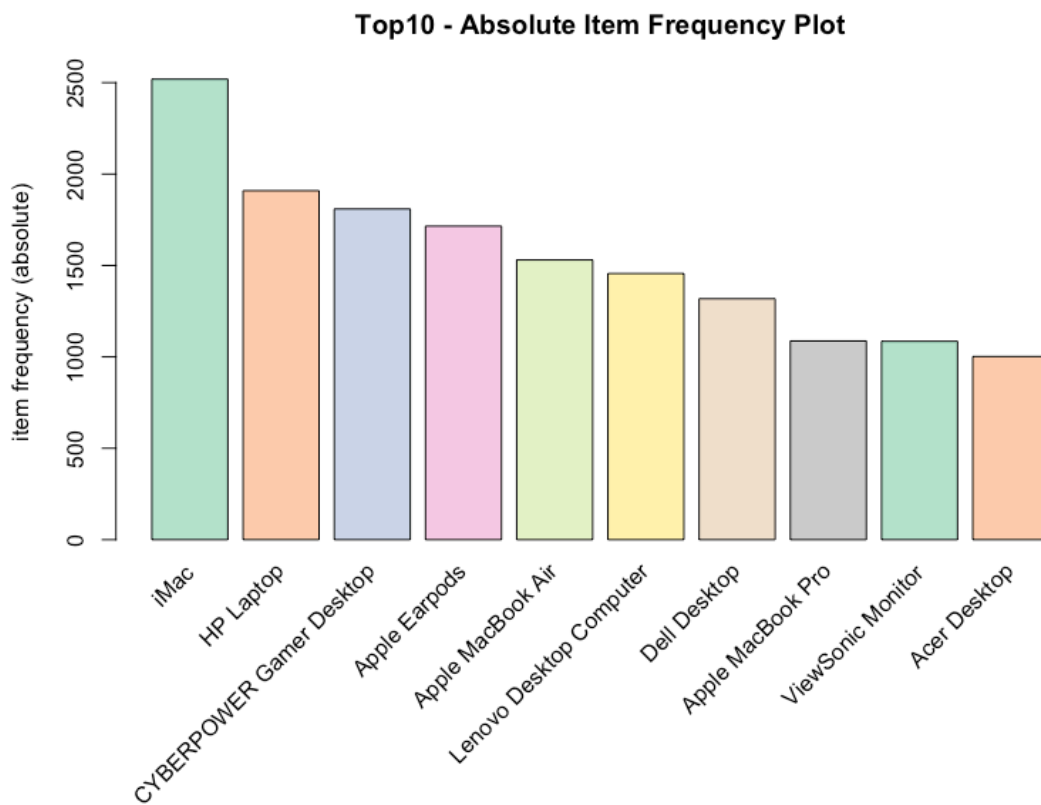
When analyzing Electronidex’s sales, we realized that an important set of the transactions was too big for a final consumer to buy, so it must be because they are selling to other companies. So, we have divided Electronidex’s transactions in Business transactions (B2B) and Retail transactions (B2C) But we have also spotted that there are quite a few transactions that have purchased “Gaming” products, making us to believe that there are a third group of customer that are “Gamers”. We have set the below conditions to categorize Electronidex’s customers:

<i>Condition \ Client cathegory</i>	B2B	B2C	Gaming
<i>Buys 2 or more PC's or Laptops.</i>	X		
<i>Buys 2 or more Printers</i>	X		
<i>Buys more than 6 products by transaction</i>	X		
<i>Buys 2 or more "Gaming" products</i>			X
<i>Buys a laptop and a monitor at the time.</i>	X		
<i>Rest of transactions</i>		X	
TOTAL TRANSACTIONS	4782	667	4386

As we can see in *Figure 1*, the biggest part of Electronidex's sales are Laptops, Desktops and Monitors; whereas Blackwell Electronic's sales, as we saw in previous analysis, are mainly based in Accessories. So, we could say that regarding the products sold, both companies are complementary and could create synergies together.



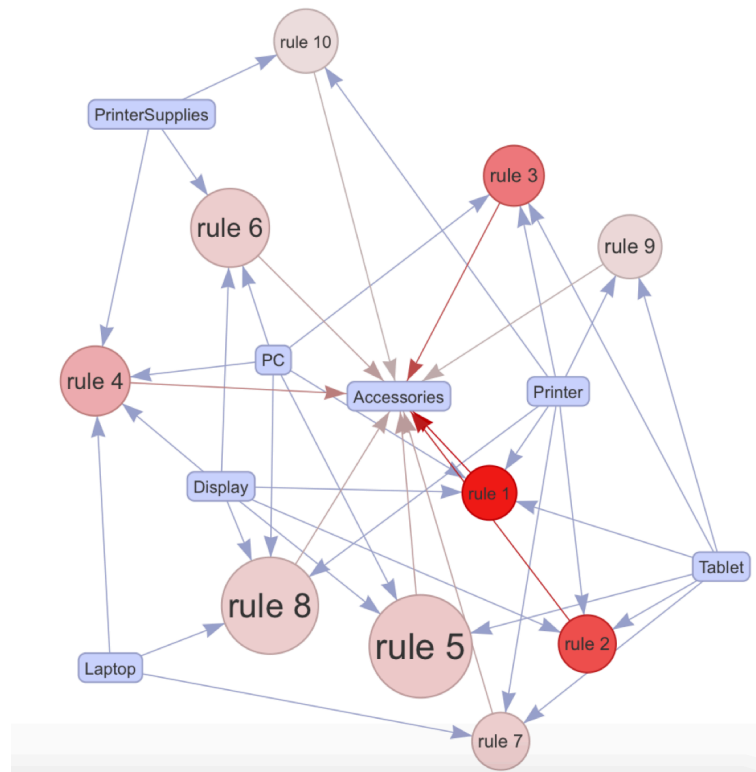
What is quite remarkable for the dataset as well is that 4 out of the **“Top 10”** products are from the same manufacturer (Apple), leading us to believe that Electronidex are some sort of specialist on Apple products.



Regarding the business to business transactions of Electronidex, as we can see in the following rule's graph, a lot of companies that buy major products such as PC's, laptops, printers or monitors (display products), also buy Accessories.

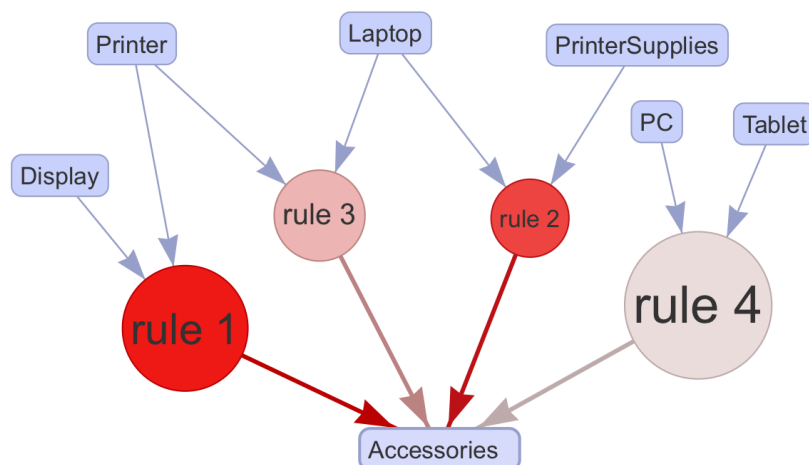
This graph is also really useful to illustrate Blackwell Electronic's and Electronidex complementarity, as Blackwell is specialized in selling accessories and Electronidex in selling Desktops, Laptops and Monitors.

Rules for B2B



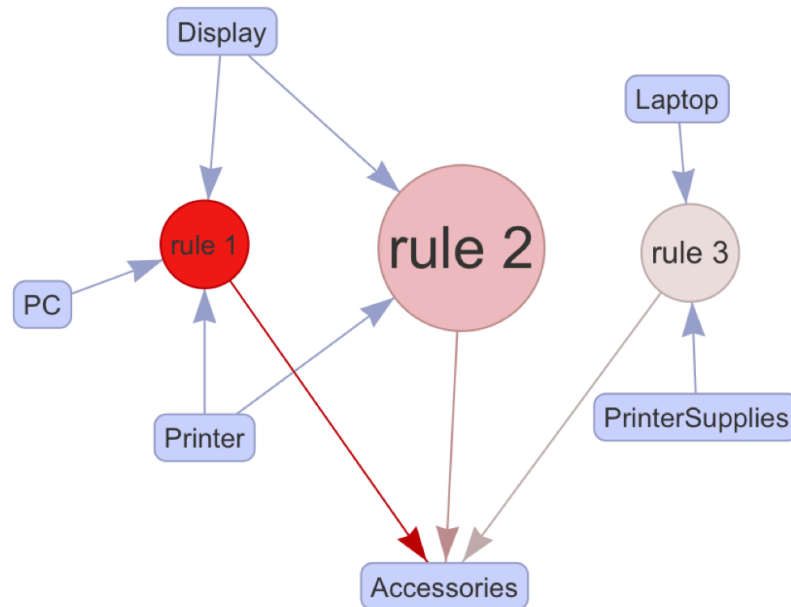
Regarding gaming transactions, we observe that the patterns/rules are not that strong as they are for B2B transactions, but they all have something in common, that they lead us to the same conclusion: *Accessories*.

Rules for Gaming



Finally, for retail transactions, we observe that the patterns/rules are not that strong as they are for B2B transactions again, but they all have something in common, that they lead us to the same conclusion: *Accessories*.

Rules for B2C



Conclusions:

Our recommendation is that Blackwell Electronics should acquire Electronidex, as it will allow Blackwell to expand their actual market by including B2B business. In addition, as we have seen, Electronidex mainly sales Laptops, Desktops and Monitors, which are category products that are not that developed in Blackwell, so it would perfectly complement Blackwell's sales, as well as create synergies with the good performance of Accessories' sales in Blackwell.

If Blackwell acquires Electronidex, we would also recommend Blackwell to create bundles of products, combining desktop or laptop with some accessories, software and/or extended warranties, taking advantage on those synergies mentioned above.