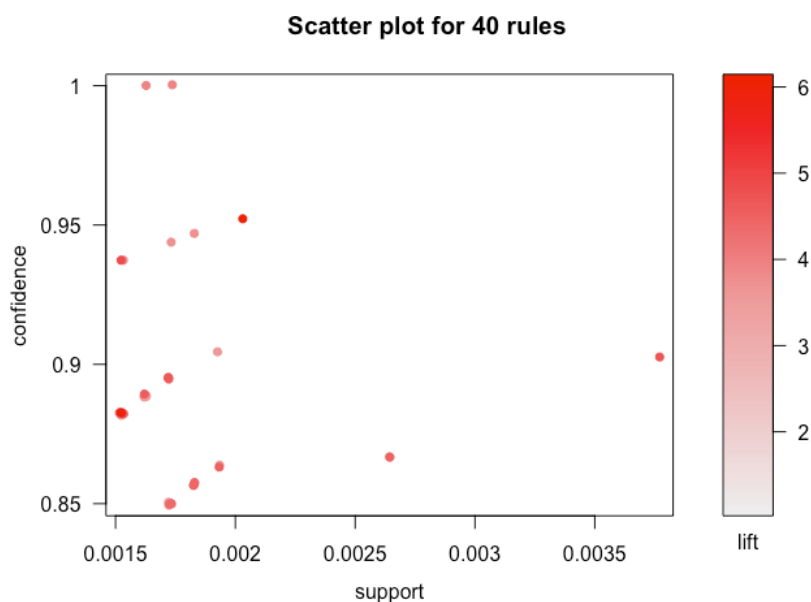


Acquisition of Electronindex

To: Danielle

After receiving the one monthly orders history from our target company, 9835 lines of transactions containing 125 products. I believe the significant buyers on this site are for business purposes, and a few are individual buyers. The following paragraphs will be illustrating how we got this result.

To figure out the pattern of the items in different transactions, I applied the Apriori algorithm. To make this algorithm work best for our purpose, I manually set different parameters to provide the most reliable yet enough rules of items that customers are likely to purchase. With parameters of support= 0.0015, confidence= 0.85, 40 rules been generated. And these rules are selected because they all at



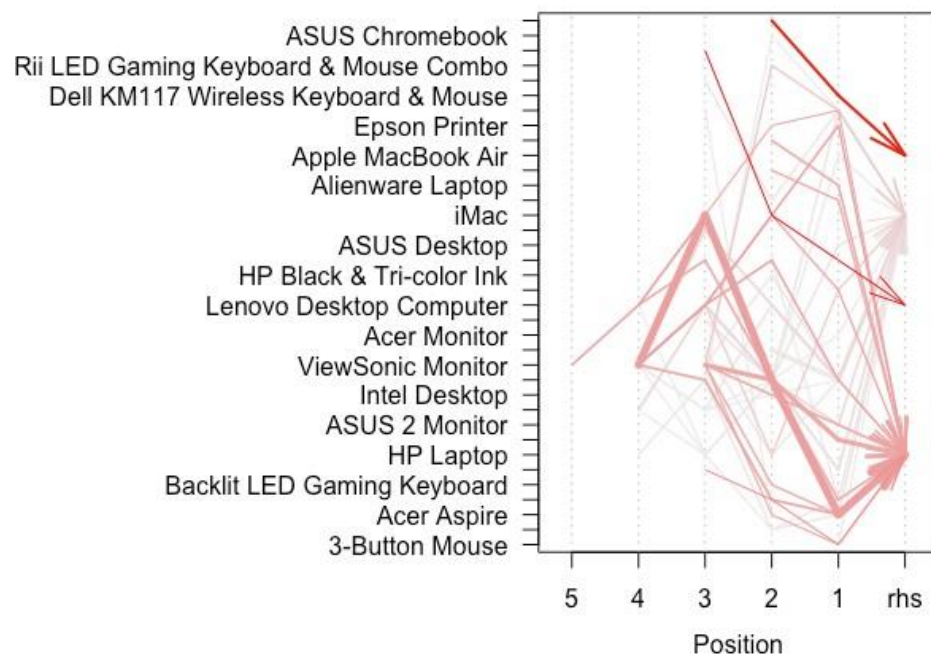
least appear 15 times within the past transactions, and the probability of correcting the resulting item would be 85% or higher. With rules that satisfy parameters, another index called 'lift' also determines how often the rule will happen, and the higher the 'lift' is, the more accurate the rule is.

After determining the 40 rules, I find that 39 of the resulting items are HP laptop and iMac, and Air MacBook for just one, so in total, the algorithm leads to 3 main products out of 125 total products that the Electronidex sells as what could be considered as resulting products.

Please refer to the chart on the right to see visualized data of customer purchasing patterns. And the end of the hands leads to one of the four resulting items. Just like what's in the excel chart above, there is only 1 Air MacBook. But the 'lift' for the rule is very high to shown in dark red.

{Dell KM117 Wireless Keyboard & Mouse,iPhone Charger Cable} => {Apple MacBook Air}
{Belkin Mouse Pad,Otium Wireless Sports Bluetooth Headphone} => {HP Laptop}
{Alienware Laptop,LG Monitor} => {HP Laptop}
{Dell Desktop,HP Laptop,Mackie CR Speakers} => {iMac}
{Dell Desktop,HP Black & Tri-color Ink,ViewSonic Monitor} => {iMac}
{ASUS Desktop,Dell Desktop,iPad Pro} => {iMac}
{ASUS 2 Monitor,Intel Desktop,ViewSonic Monitor} => {HP Laptop}
{Dell Desktop,Intel Desktop,Microsoft Office Home and Student 2016} => {iMac}
{Computer Game,Dell Desktop,ViewSonic Monitor} => {HP Laptop}
{Apple Magic Keyboard,ASUS Chromebook,Dell Desktop} => {iMac}
{Apple Magic Keyboard,Belkin Mouse Pad,CYBERPOWER Gamer Desktop} => {iMac}
{3-Button Mouse,Acer Desktop,ASUS Monitor} => {HP Laptop}
{Acer Aspire,Backlit LED Gaming Keyboard,ViewSonic Monitor} => {HP Laptop}
{Apple MacBook Air,Dell Desktop,Microsoft Office Home and Student 2016} => {iMac}
{3-Button Mouse,Acer Aspire,Apple Magic Keyboard} => {iMac}
{3-Button Mouse,Acer Aspire,ViewSonic Monitor} => {HP Laptop}
{Etekcity Power Extension Cord Cable,HP Laptop,Lenovo Desktop Computer,ViewSonic Monitor} => {iMac}
{Apple Magic Keyboard,Epson Printer,iMac,Lenovo Desktop Computer} => {HP Laptop}
{Epson Printer,iMac,Lenovo Desktop Computer,ViewSonic Monitor} => {HP Laptop}
{Acer Monitor,Dell Desktop,Lenovo Desktop Computer,ViewSonic Monitor} => {iMac}
{ASUS 2 Monitor,Dell Desktop,Lenovo Desktop Computer,Microsoft Office Home and Student 2016} => {iMac}
{ASUS Monitor,Dell Desktop,Lenovo Desktop Computer,Microsoft Office Home and Student 2016} => {iMac}
{ASUS Monitor,Dell Desktop,Lenovo Desktop Computer,ViewSonic Monitor} => {iMac}
{Apple Magic Keyboard,Dell Desktop,Lenovo Desktop Computer,Microsoft Office Home and Student 2016} => {iMac}
{Apple Magic Keyboard,Dell Desktop,HP Laptop,Microsoft Office Home and Student 2016} => {iMac}
{Dell Desktop,Lenovo Desktop Computer,Microsoft Office Home and Student 2016,ViewSonic Monitor} => {iMac}
{Acer Desktop,HP Monitor,Lenovo Desktop Computer,ViewSonic Monitor} => {iMac}
{Acer Desktop,Dell Desktop,HP Monitor,Lenovo Desktop Computer} => {HP Laptop}
{Dell Desktop,HP Monitor,Lenovo Desktop Computer,ViewSonic Monitor} => {HP Laptop}
{Acer Aspire,Apple MacBook Pro,Dell Desktop,HP Laptop} => {iMac}
{Acer Aspire,Acer Desktop,Dell Desktop,ViewSonic Monitor} => {HP Laptop}
{Acer Aspire,Dell Desktop,iMac,ViewSonic Monitor} => {HP Laptop}
{Dell Desktop,Lenovo Desktop Computer,Samsung Monitor,ViewSonic Monitor} => {iMac}
{Acer Desktop,Apple MacBook Pro,HP Laptop,ViewSonic Monitor} => {iMac}
{Acer Aspire,Dell Desktop,HP Laptop,Lenovo Desktop Computer,ViewSonic Monitor} => {iMac}

Parallel coordinates plot for 40 rules



To view the rules with lift in descending order. Air MacBook has the highest lift number, and several rules lead to HP Laptop follows after. Although iMac is the best-selling product here on the website, the iMac product has a relatively lower lift number.

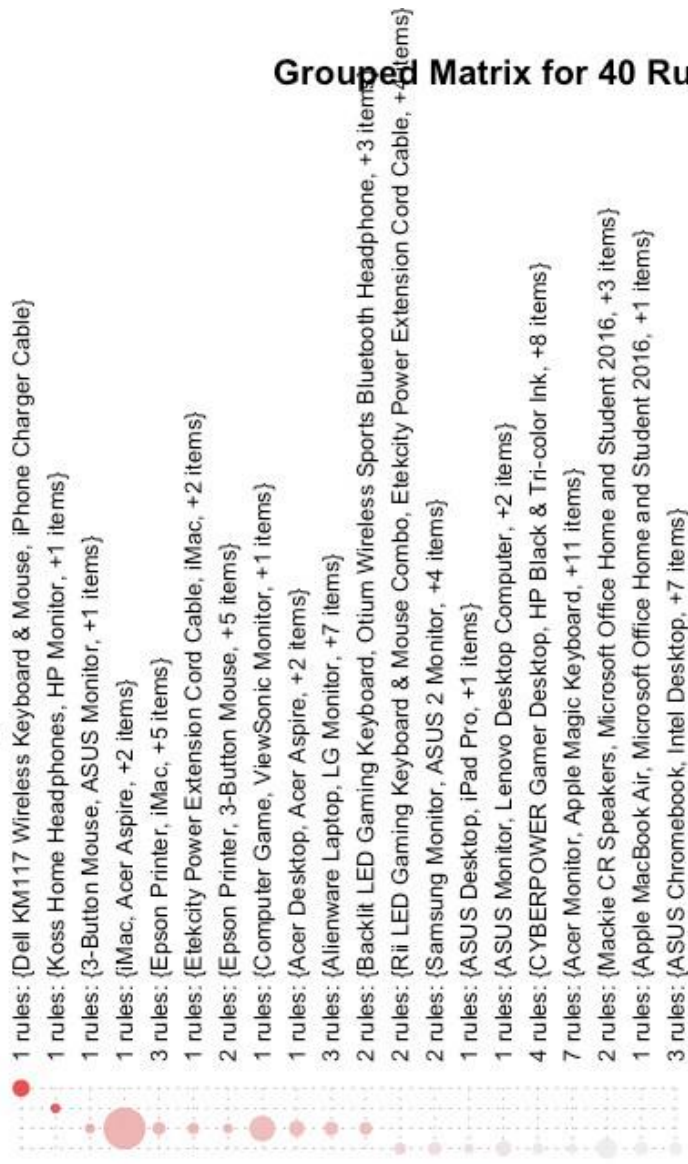
rules	lift	count
{Dell KM117 Wireless Keyboard & Mouse,iPhone Charger Cable} => {Apple MacBook Air}	6.12200435729847	20
{3-Button Mouse,Acer Desktop,ASUS Monitor} => {HP Laptop}	4.82991749607124	15
{Acer Aspire,Dell Desktop,iMac,ViewSonic Monitor} => {HP Laptop}	4.64928643524256	37
{Epson Printer,iMac,Lenovo Desktop Computer,ViewSonic Monitor} => {HP Laptop}	4.60960546993466	17
{Dell Desktop,HP Monitor,Lenovo Desktop Computer,ViewSonic Monitor} => {HP Laptop}	4.60960546993466	17
{Acer Aspire,Dell Desktop,iMac,Lenovo Desktop Computer,ViewSonic Monitor} => {HP Laptop}	4.60960546993466	17
{3-Button Mouse,Acer Aspire,ViewSonic Monitor} => {HP Laptop}	4.5458047021847	15
{Apple Magic Keyboard,Epson Printer,iMac,Lenovo Desktop Computer} => {HP Laptop}	4.5458047021847	15
{Computer Game,Dell Desktop,ViewSonic Monitor} => {HP Laptop}	4.46499039636808	26
{Acer Aspire,Acer Desktop,Dell Desktop,ViewSonic Monitor} => {HP Laptop}	4.44937854183533	19

After the observation, I noticed that there are quite many transactions, including the purchase of Monitor, Desktop, and iMac. These are all considered to be essential for a business scenario. Therefore, based on this observation, I believe Electronidex is mainly for business shoppers. Since our significant consumers are individual buyers, the acquisition of Electronidex would expand our potential customers' category, and it could be our vital supplement for covering more diverse demands in the electronics world.

However, a few things that deserve our notice is that our current customers prefer Sony products over Acer, but in Electronidex, they don't sell Sony products at all, but their Acer products seem to be popular by many of their clients. If we were to purchase this company, we might need to redo our brand preference research to see if changing buyer sources will result in a huge change of brand preference.

I recommend that we buy Electronidex to enhance our ability to fulfill people with more diverse demands and introduce business buyers to our current site to better serve their off-work electronics needs. The way to achieve it could be as simple as universal membership, issuing coupons across the different websites. If the result is good, we can merge the two supply chain, therefore saving more money logistic part while gaining more customers.

Items in LHS Group



RHS

{Apple MacBook Air}
 {Lenovo Desktop Computer}
 {HP Laptop}
 {iMac}

Size: support
 Color: lift

Grouped Matrix for 40 Rules

