

Blackwell Electronics: Market Basket Analysis

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Task Outline

Asked to perform Market Basket Analysis on possible acquisition target's transactions, particularly:

- Would Blackwell benefit from selling any of Electronidex's items?
- Should Blackwell acquire Electronidex?
- If Blackwell does acquire Electronidex, do you have any recommendations for Blackwell?

Methodology

Apriori algorithm used to identify frequency of transactions and to generate association rules.

e.g.

$\{\text{Acer Aspire, Belkin Mouse Pad}\} \Rightarrow \{\text{Logitech Wireless Mouse}\}$

Divergent Customer Behaviour

{Asus 2 Monitor} \Rightarrow {iMac}

{Apple Magic Keyboard} \Rightarrow {HP Laptop}

{Microsoft Office Home and Student 2016} \Rightarrow {iMac}

Product Type Comparison

Blackwell Only:

Game Console
Smartphone
Software
Netbook

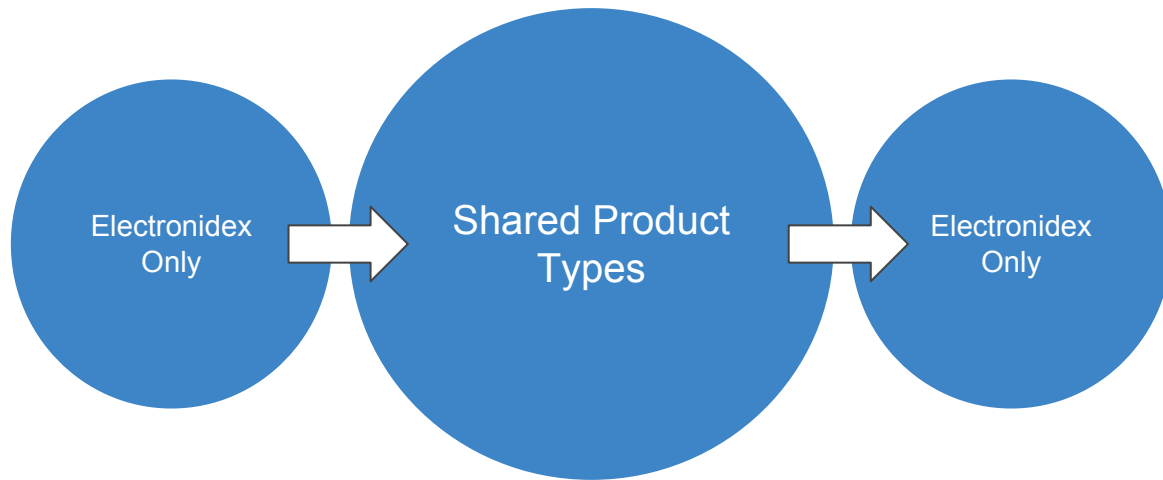
Shared:

Accessories
Monitor
Laptop
Desktop
Printers
Printer Ink
Computer Tablets

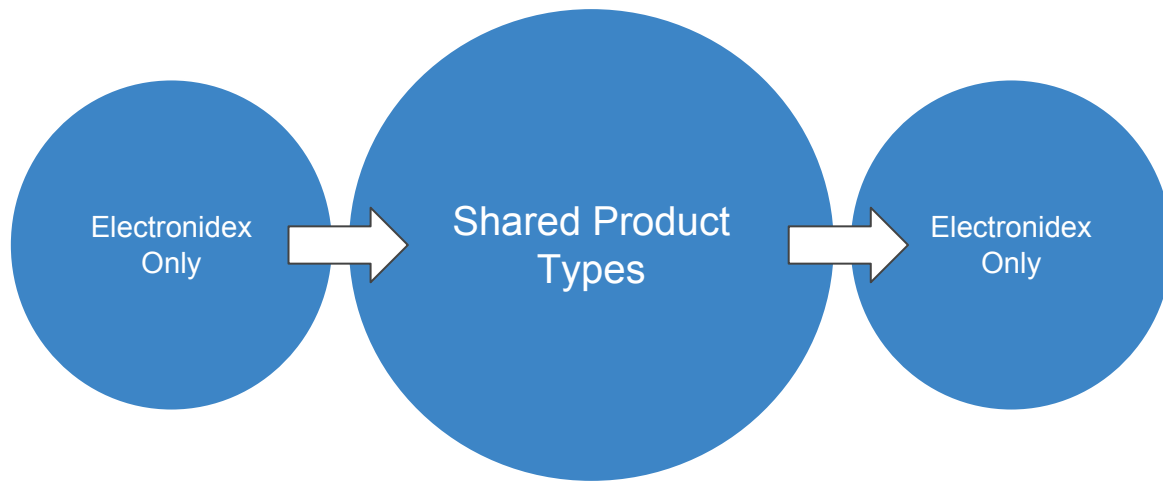
Electronidex Only:

Mice
Keyboard
Mouse/Keyboard Combo
Computer Headphones
Active Headphones
Computer Cords
Speakers
Computer Stands
External Drive
Smart Home

Comparison Strategy



Comparison Results



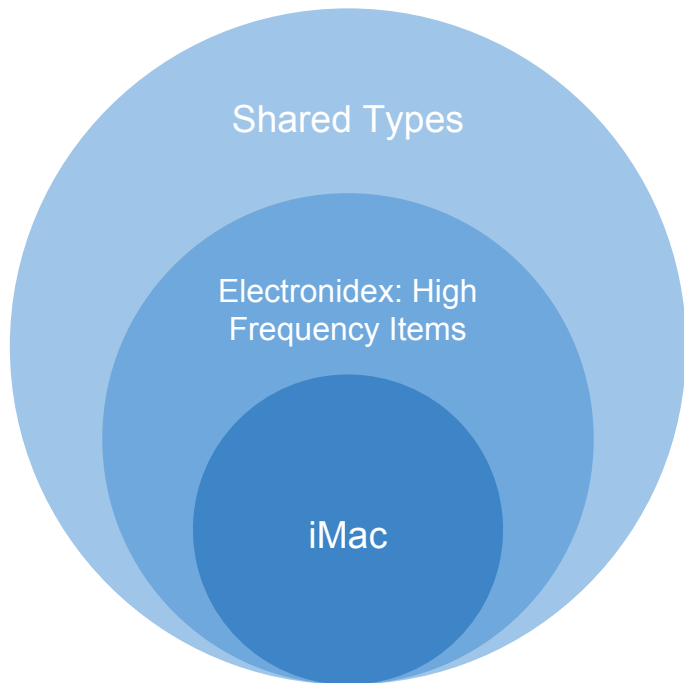
e.g.

{keyboard,monitor} \Rightarrow {desktop}

Sell: Logitech Keyboard

No Products

Shared Types Transaction Frequency



On-Purchase Recommendations

Review Low-Frequency Items

VGA Monitor Cable - 0.2%

Cross-selling: Recommendation Engine

Use association rules to
generate recommendations

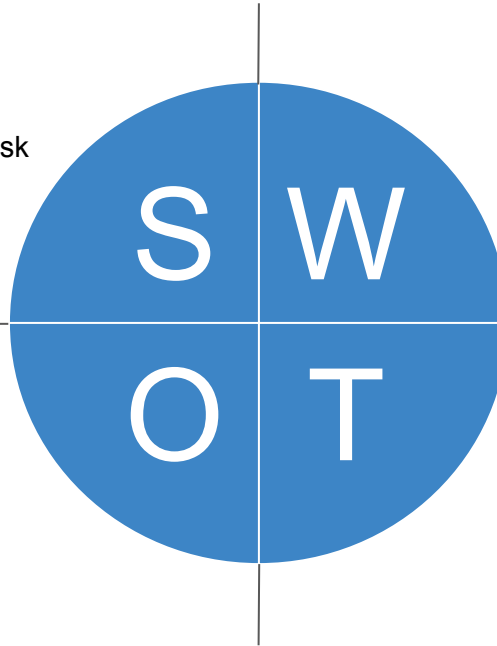
Sales Recommendations

{iMac} \Rightarrow {Dell Desktop}
5% of transactions
20% confidence

SWOT Analysis

- Online/in-store model decreases risk
- Analytics capabilities
- Majority working-age customers
- Mature business

- Teen consumer market
- Smart appliances
- M(obile) Commerce



- Limited, generic offering
- Small profit margins
- Lack of innovation

- Larger online electronics retailers
- Larger physical electronics retailers
- Niche retailers offering more depth
- Pace of change in product preferences

**Vision: Nimble and niche, leveraging
analytic strengths and developing
mCommerce capabilities**

Acquisition Recommendation

Niche ⇔ Scale

- Recommendation is to aim for niche rather than try to compete with the large stores on scale.
- Purchasing Electronidex would represent a move towards scale.

Consumer ⇔ Business

- Recommendation is to stay within the consumer market and expand towards the teen market.
- Purchasing Electronidex would represent a move towards the B2B market.

Synergy ⇔ Expansion

- Analysis shows limited synergy with Electronidex products.
- Recommendation is to use analytics to identify synergies.
- Purchasing Electronidex would represent a move towards expansion.

Recommendation: Do not acquire Electrinodex

Conclusion & Recommendations

Conclusions

Analytics team are able to provide insight for data driven decision-making apart from when data is inappropriate, poor or unavailable.

Data availability and quality is essential.

Recommendations

Organisational:

- Provide analytics team direct access to data
- Develop a company strategy to manage and centralise data

Analytical:

- Conduct Market Basket Analysis of Blackwell Products
- Repeat profit prediction with valid data

Thank-you