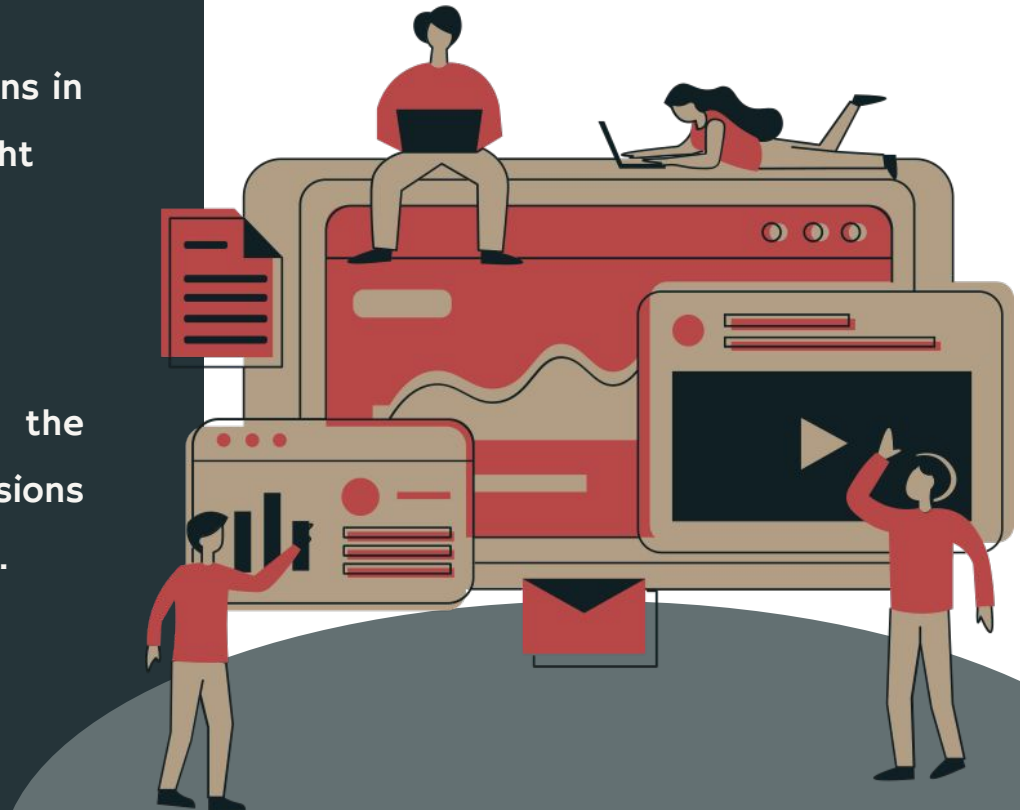
Blackwell Electronics

GROWTH PLAN

Objectives of Project eCommerce Boost

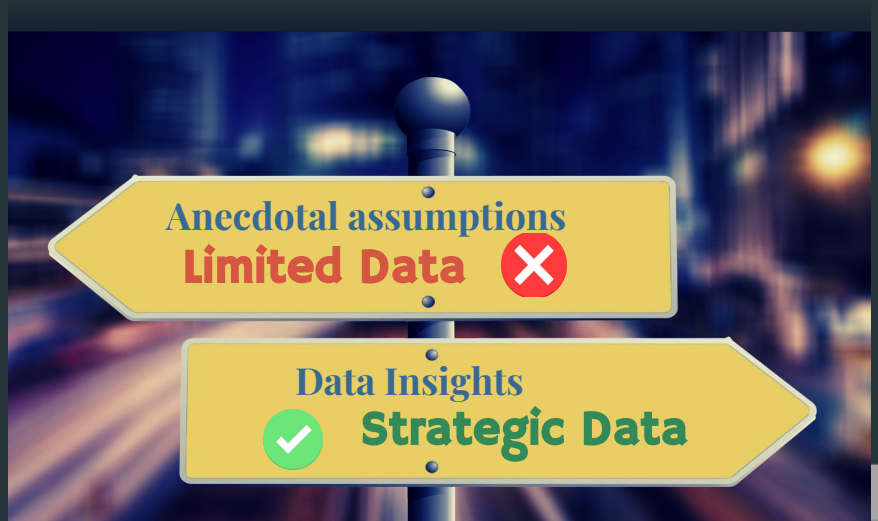
- Tasked with investigating the patterns in customer sales data to provide insight into customer buying trends and preferences.
- Apply insights from data to help the business make data-driven decisions about sales and marketing activities.



Methodology

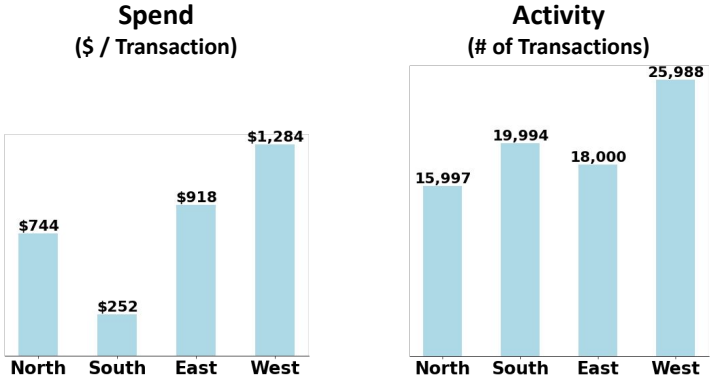
- Analyzed nearly 80,000 transactions
- Used machine learning to make predictions
- Explored data to find significant relationships
- Data: *Region, Age, Amount Spent, Number of Items, Purchase Method (online/in-store)*

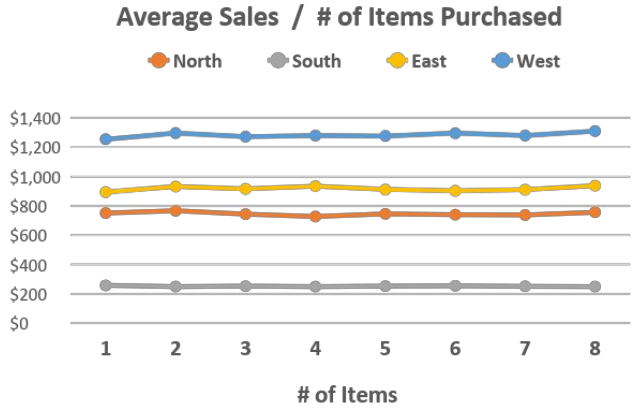
Data Analysis revealed some limited data collected and instead generated opportunities for more targeted data that produces potential for optimized growth.



Regional Spending Patterns

Question: Do customers spend more per transaction in different regions? Does amount spent correlate to number of items purchased?





West is strongest performer:
- Highest spend ≈ $1,300 per transaction
- Highest activity ≈ 26,000 transactions

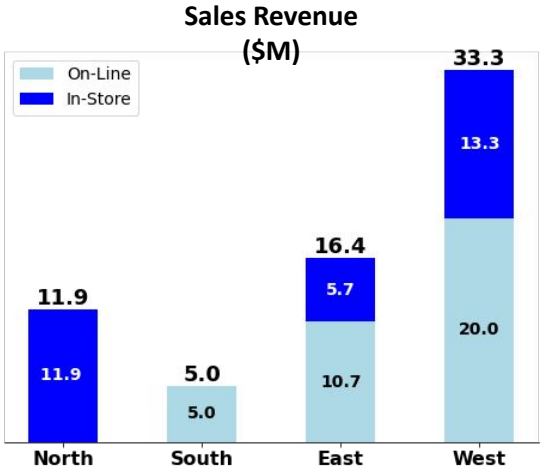
What factors are driving West's performance and can they be applied to other regions? Online vs. In-Store?

There is no correlation between amount spent and the number of items purchased → Counterintuitive

Suggests there is a spend limit driving customer behavior, not items to purchase → Upsell opportunity

What kinds of items are being purchased in each region and what are their prices?

Regional Spending Patterns



Online sales account for 53% of all revenue

Three types of regional business models:

1. North = In-store
2. South = Online
3. East and West = In-store & online (hybrid)

The hybrid regions perform better with online sales accounting for more than half of their revenue.

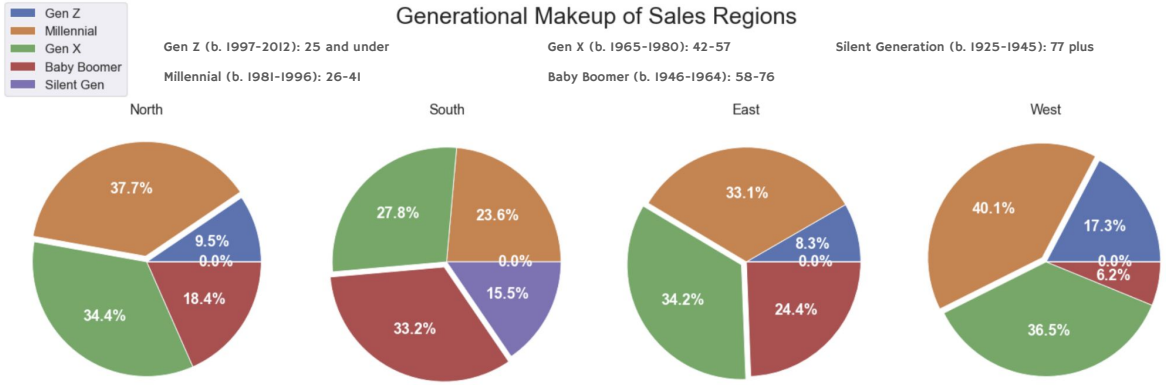
<u>Opportunity: explore North region adopting hybrid model by adding on-line business?</u>

Given they have similar business models, why is the East lagging the West region?

- *Customer demographics (neighborhood, income level, education level, race)*
- *Business practice differences (marketing programs, customer services, etc.)*

Regional Demographics

Question: Are there differences in the age of Blackwell customers between regions? If so, can the age of a customer in a region be predicted based on other demographic data?



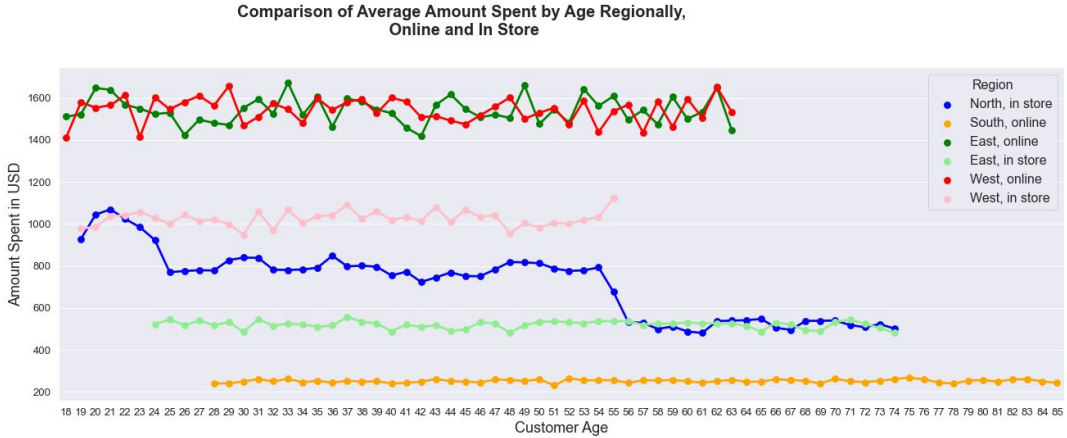
Each region consists of its own unique blend of age demographics.

South is oldest. West is youngest. North leans younger, but is a very similar makeup to East.

Using computer modeling, we can identify relationships between the other collected data points to predict a customer's age range with varying degrees of confidence. But no model is perfect for pinpointing an exact age given the data available.

Age Bracketing	Overall Confidence	Regional Confidence
By Generation	36%	31-39%
Over/Under 30	83%	73-97%
Over/Under 35	72%	60-88%
Over/Under 40	64%	54-79%

Regional Demographics



What do we learn from knowing a customer's age?

- With the exception of the North region, age doesn't seem to correlate with spending.

Are there other known variables that are more informative to a customer's spending habits?

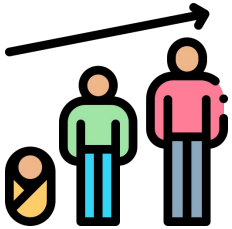
- Region and purchase method (online or in store) are better predictors of spending.

Are there other unknown variables we could be observing?

- Understanding what is unique to the regions' demographics beyond age could provide us with more informative data (e.g. education levels, occupations, income)

Online Purchasing Predictors

Question: Is there any correlation between age of the customer and if the transaction was made online or in-store? What other factors correlate?



In general the correlation is weak, but if we divide the regions that use two purchasing methods (in-store and online) from the ones that only use one...

North and South (one purchasing method):

- Older customers tend to buy online and the younger ones in-store.
- In-store transactions tend to be bigger in amount spent.
- North buys in-store and South buys online.

East and West (two purchasing methods):

- Age doesn't affect if people buy online or in-store.
- Online transactions tend to be bigger in amount spent.

Online Purchasing Predictors

Focus on Millennials and Gen X

Customers aged 26-57:

- Represent 67% of total customers
- Make up 61% of online transactions.
- Represent 72% of total revenue.

Don't sleep on Gen Z

- 3rd largest spender behind Millennials and Gen X.
- Represent 9% of total customers.
- On average is the largest spender per transaction.

WRAP UP

Strategic Data

- *Spending Patterns:* Item category, cost of items, regional management, zip-code (derives median income, education levels, urban/suburban/rural, retail sales per capita).
- *Regional Demographics:* education level, occupation, income, urban/suburban/rural
- *Online Purchasing Predictors:* specialized/customized items, occupation, education level

Strategic Questions

- Where should we focus our marketing efforts?
- Does it make sense to expand brick-and-mortar in certain regions?
- Where does it make sense to expand online business.
- How can we leverage or online business to maximize sales?
- What are business best practices that can be applied across all regions?

THANK YOU!

Questions?