

Product Recommendation System for E-commerce

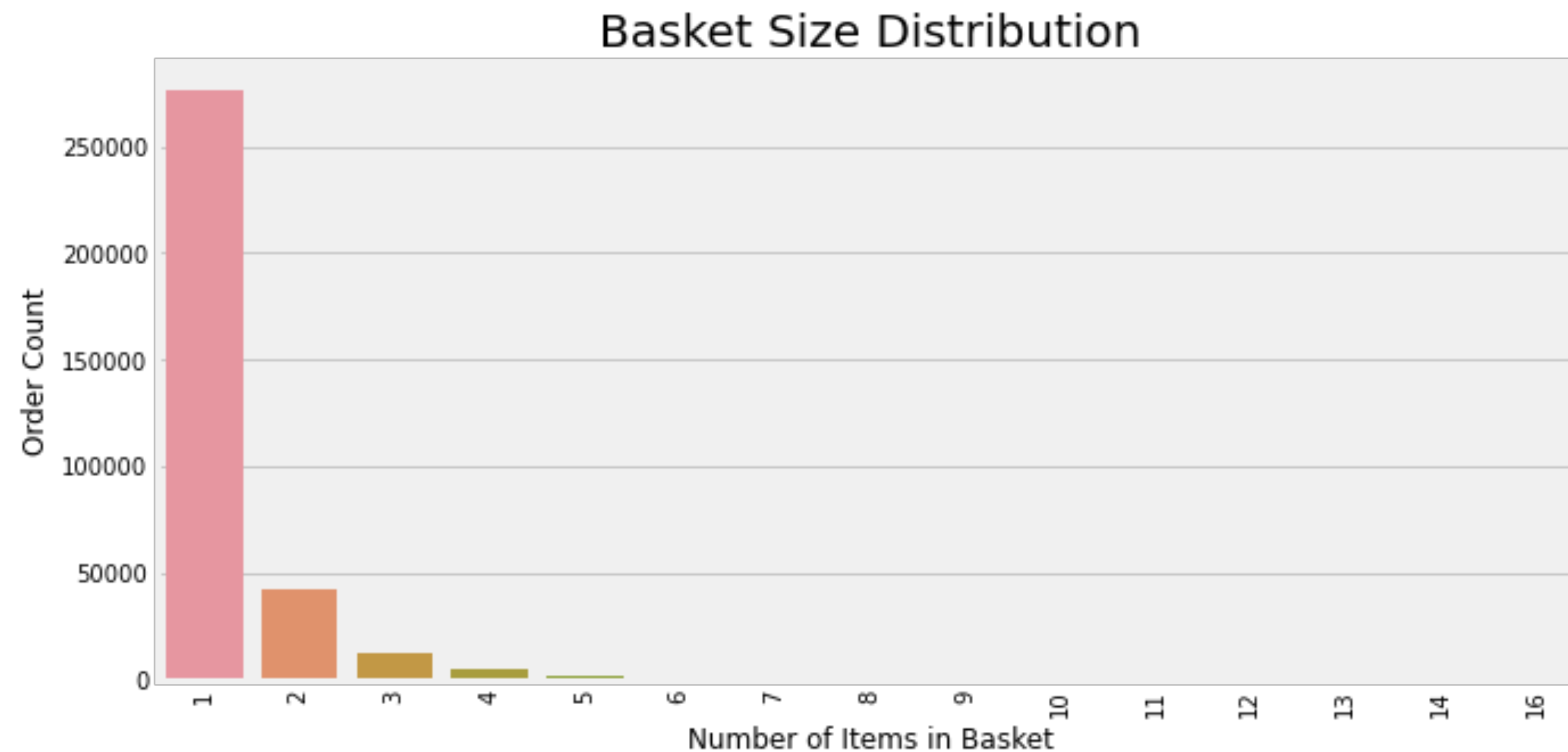
What is the business problem?

81%

of customers are checking out with single item in the cart.

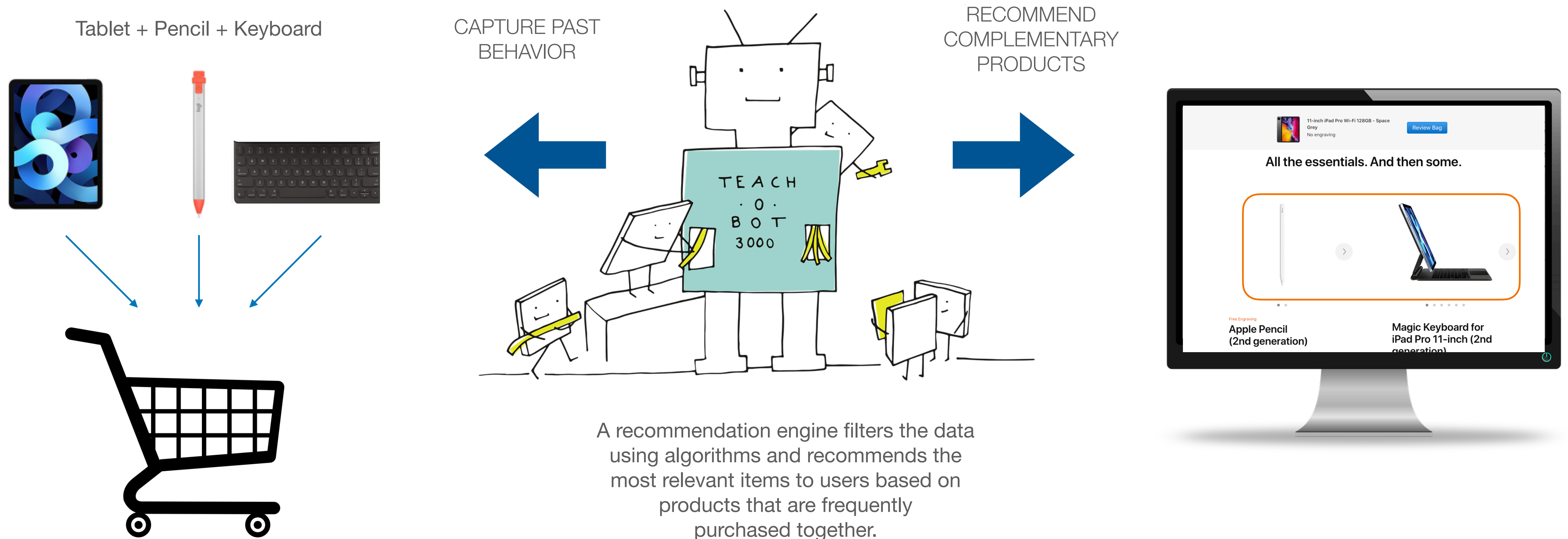
What is the business problem?

How do we increase the basket size for customers who only have 1 item in the cart?



What is our proposed solution?

Product Recommendation System

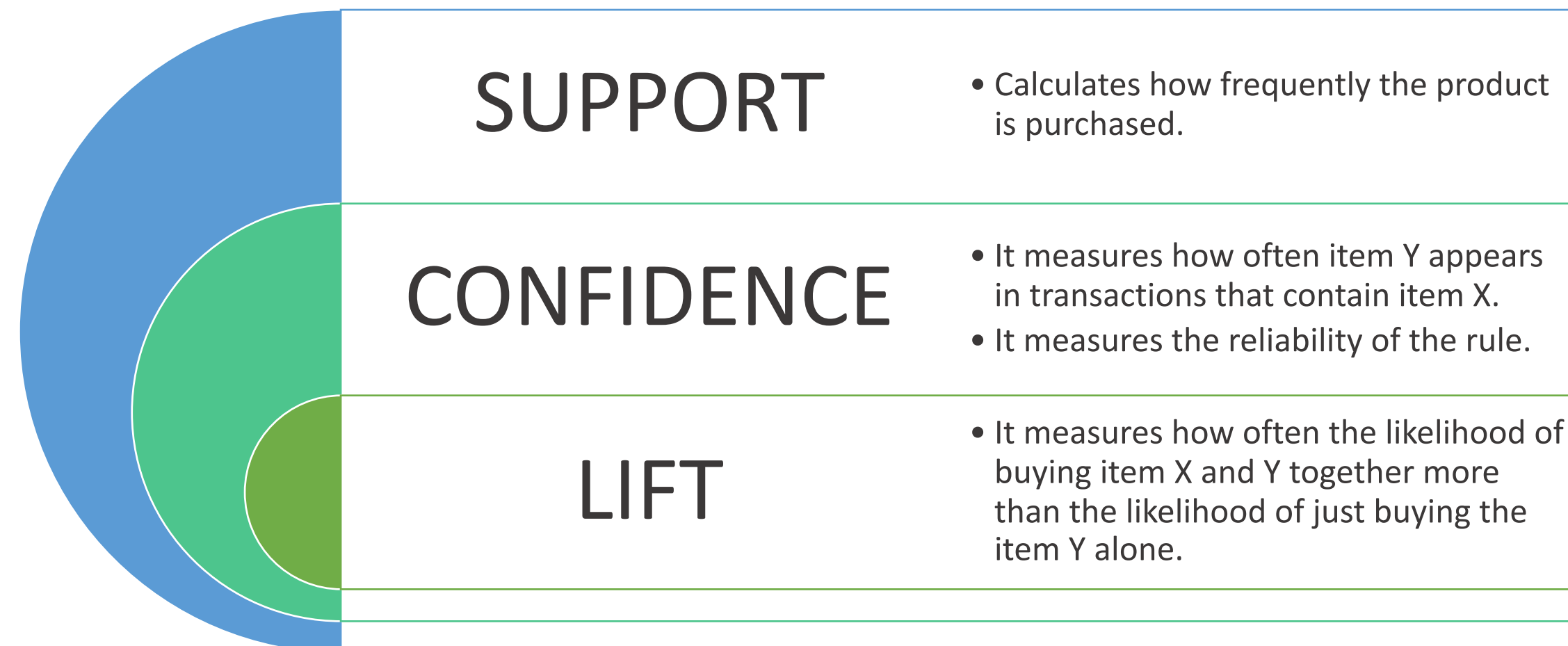


How do we accomplish this?

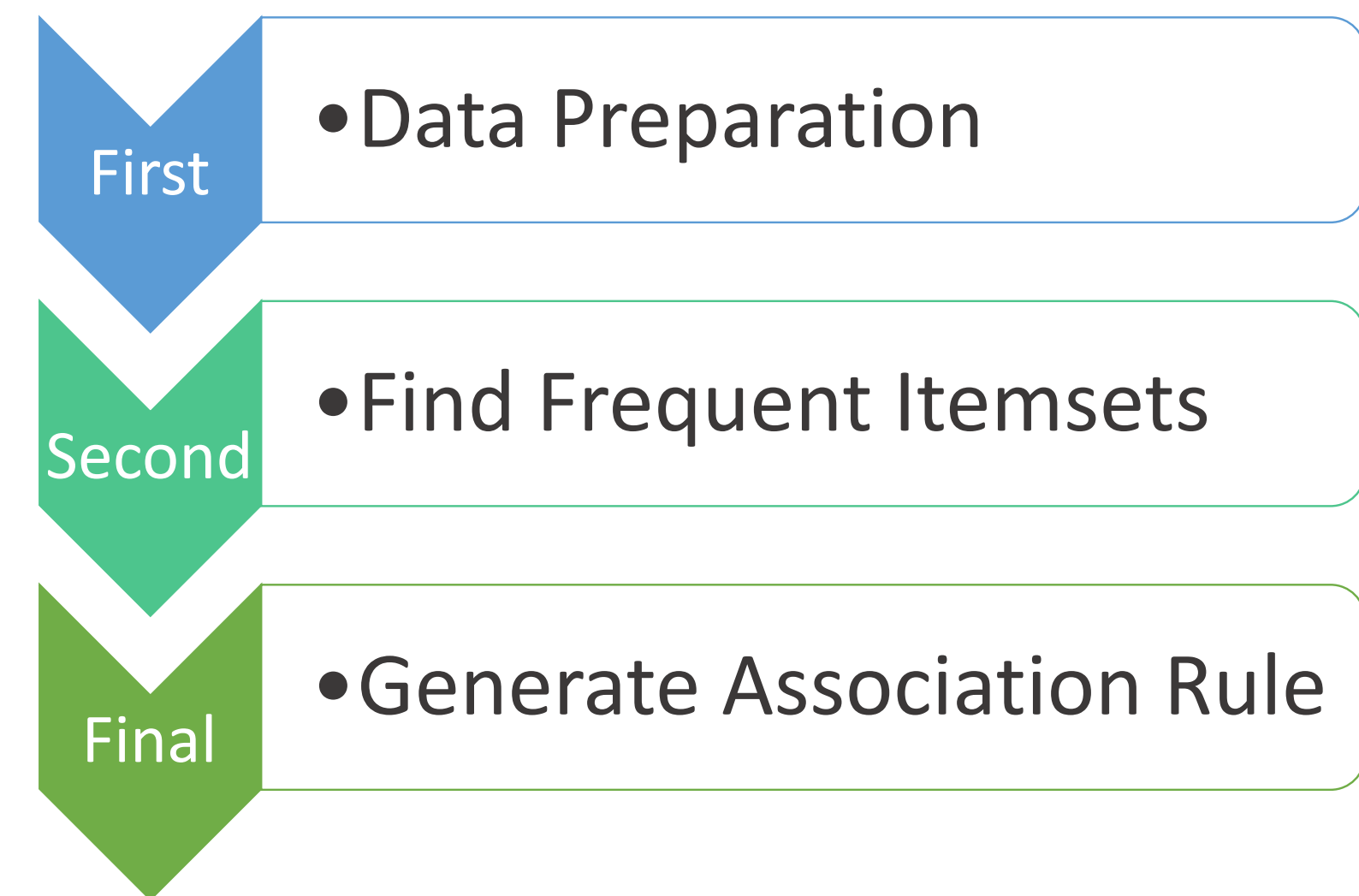
Predictive Model Development using Association Rule Mining

Association Rule Mining is a method used to identify frequent patterns, correlations and associations.

Three major metrics to assess the strengths of this rule:



Three steps to implement Association Rule



What is the result?

antecedents	consequents	antecedent support	consequent support	support	confidence	lift
(components.power_supply, components.motherboard)	(components.cpu)	0.001151	0.010684	0.001024	0.889744	83.281377
(kitchen.oven, kitchen.microwave)	(kitchen.hood)	0.001382	0.023017	0.001228	0.888889	38.618158
(components.motherboard, components.hdd)	(components.cpu)	0.001160	0.010684	0.001024	0.882952	82.645641
(components.memory, components.motherboard)	(components.cpu)	0.001408	0.010684	0.001222	0.867925	81.239079
(kitchen.oven, kitchen.refrigerators, kitchen....)	(kitchen.hood)	0.001768	0.023017	0.001467	0.829716	36.047375
(components.power_supply, components.cpu)	(components.motherboard)	0.001246	0.002521	0.001024	0.822275	326.160050
(kitchen.oven, kitchen.washer)	(kitchen.hood)	0.002772	0.023017	0.002273	0.820021	35.626176

89% of customers who buys power supply and motherboard also buys a CPU.

Key Terms:

- Antecedents:
An item found within the data
- Consequents:
An item found in combination with the antecedents.
- Confidence:
Measures the reliability of the rule.
The higher the confidence, the greater the likelihood that the item set will be purchased together.
- Lift:
It summarises the strength of association between the antecedents and consequents.
The larger the lift the greater the link between the item sets.

Next steps

Application of product recommendations

1

Send a **personalised email** to show items related to previous purchases.
“Since you already own this, you may also want this”



(Source: Hubspot)

2

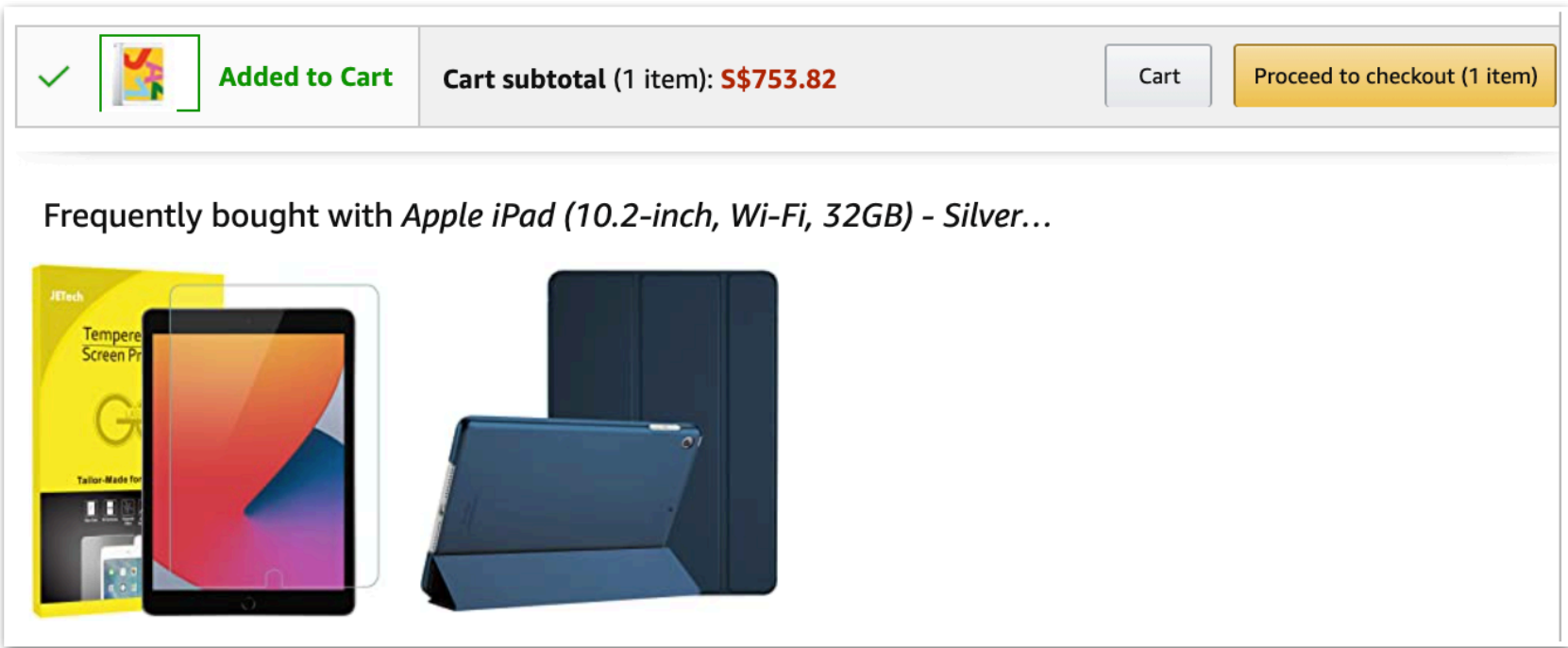
Generate **product bundles** and offer a special discount or attractive rates.



(Source: Amazon)

3

Displaying frequently bought together products on the **product page** or on the **cart page**.

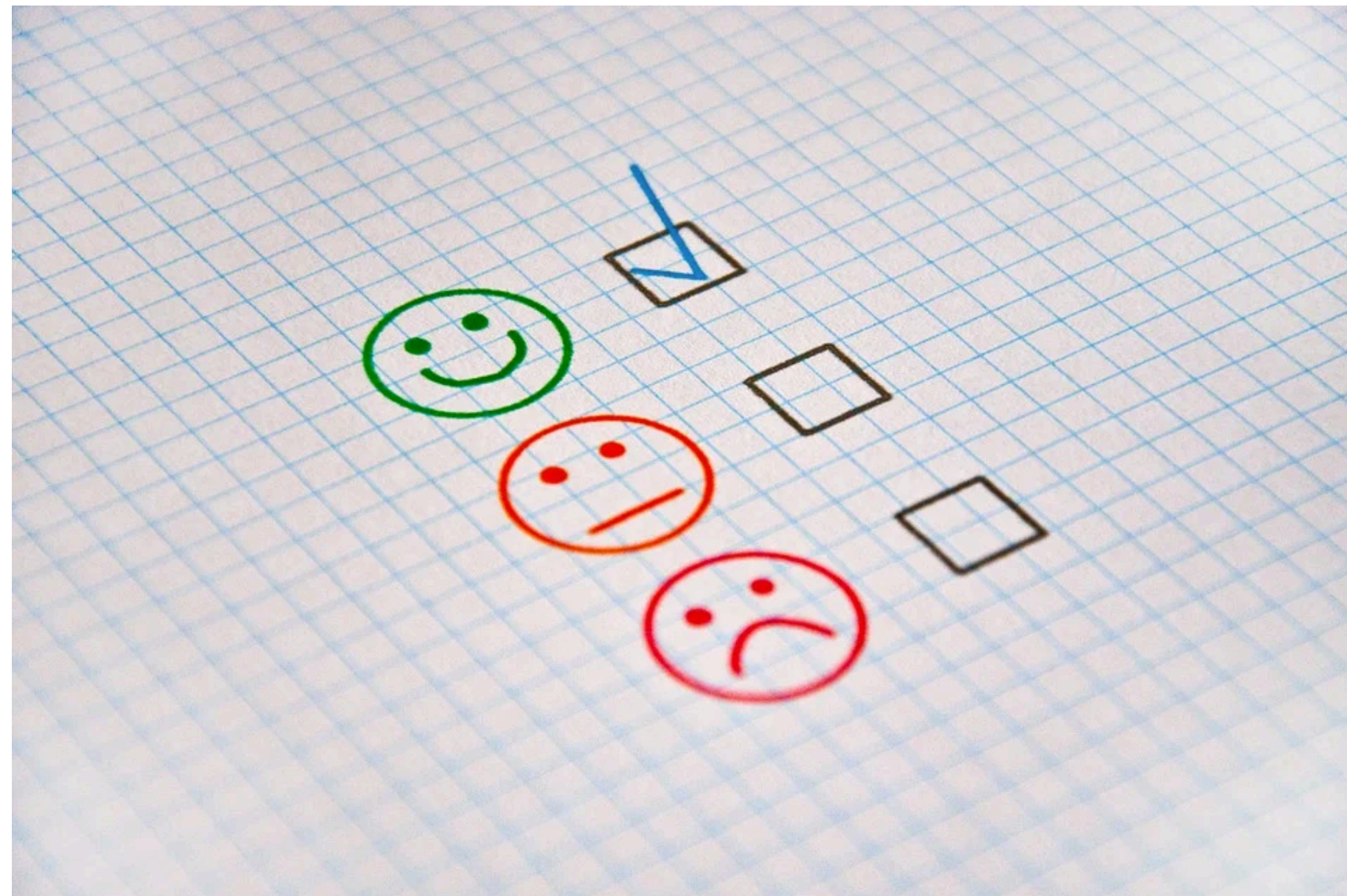


(Source: Amazon)

How does it impact your business?

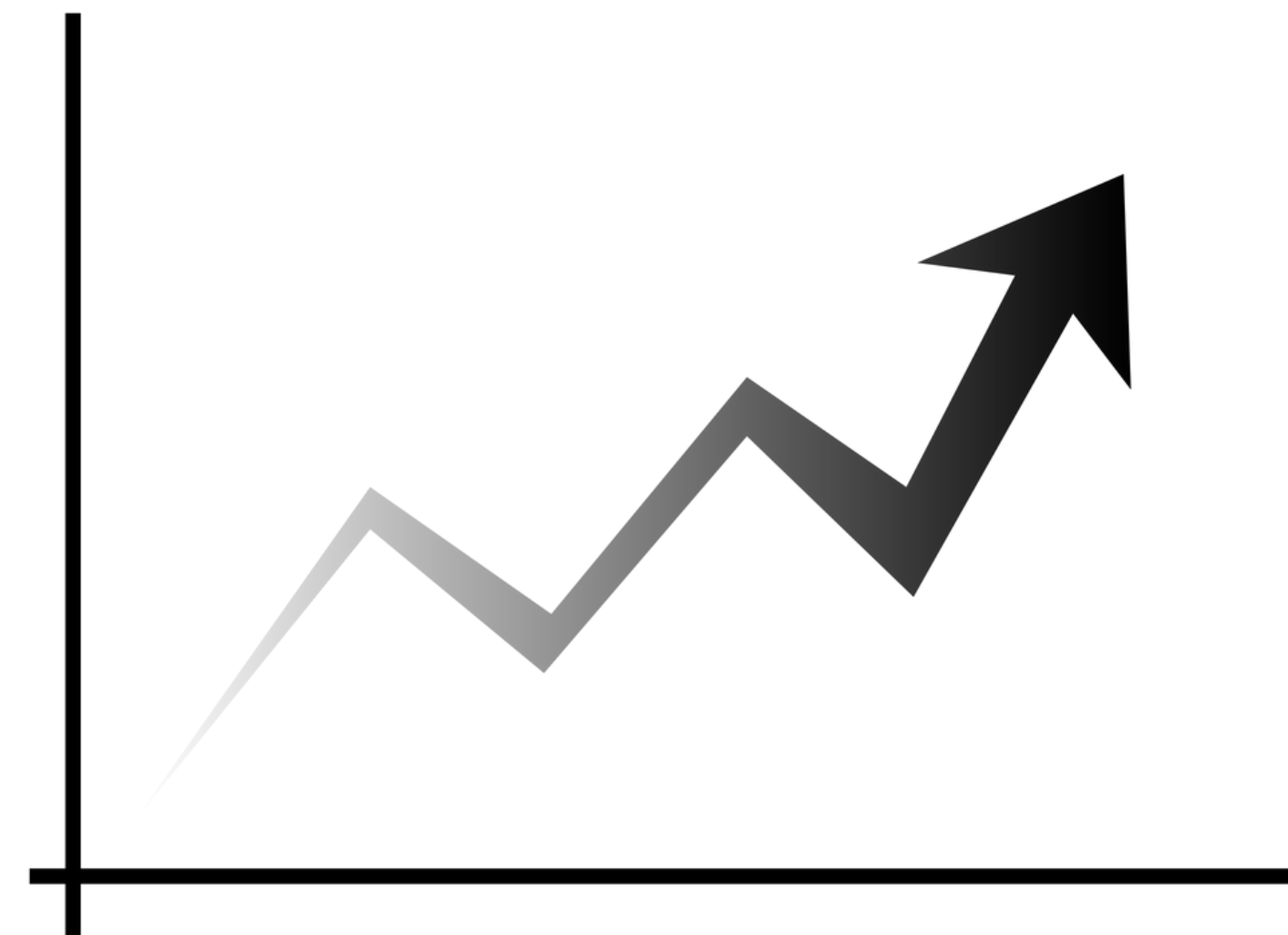
Two major benefits of a product recommendation system

CUSTOMER SATISFACTION



- Delivers more convenient UX to user
- Provide a great overall shopping experience
- User loyalty and retention

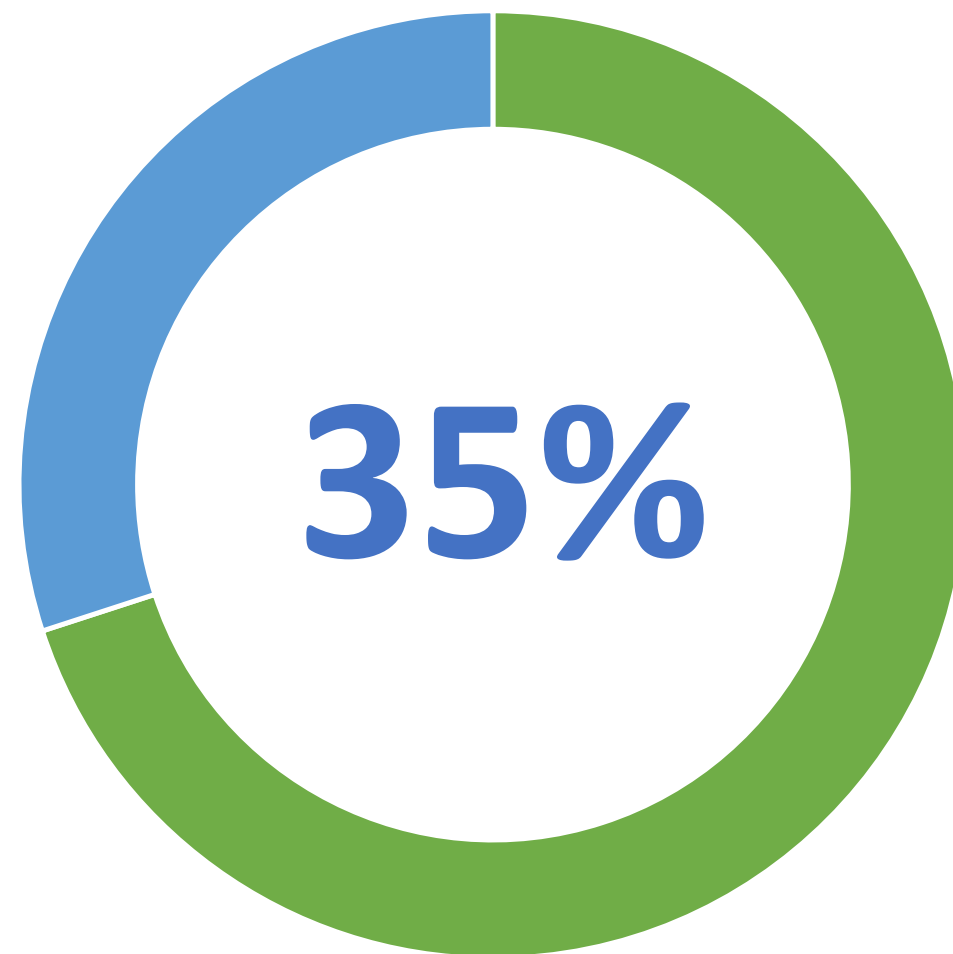
BOOST REVENUE



- Increase the product exposure
- Boost sales
- Higher overall average order value for the business

Some success stories...

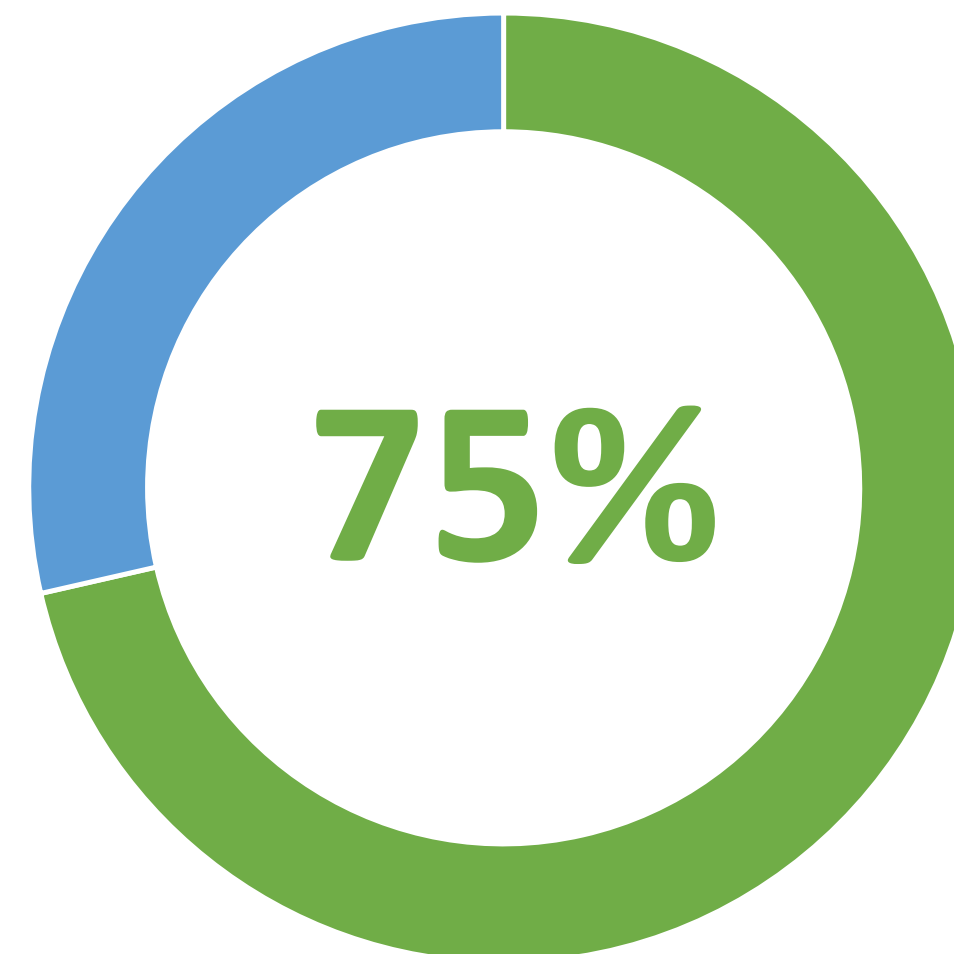
amazon



35% percent of Amazon.com's revenue is generated by its recommendation engine.

(Source: McKinsey)

NETFLIX



75% percent of what users watch on Netflix come from product recommendations.

(Source: McKinsey)



The new recommendation system has helped Spotify increase its number of monthly users from 75 million to 100 million at a time.

(Source: Bloomberg)

Thank you!

It's really hard to design products by focus groups. A lot of times, people don't know what they want until you show it to them.

Steve Jobs

