



# CONTOSO

## Inter-purchase time interval analysis

DA Capstone project



# Context

Contoso customer base

Pareto principle

Inter-purchase time intervals (ITI)



# Problem

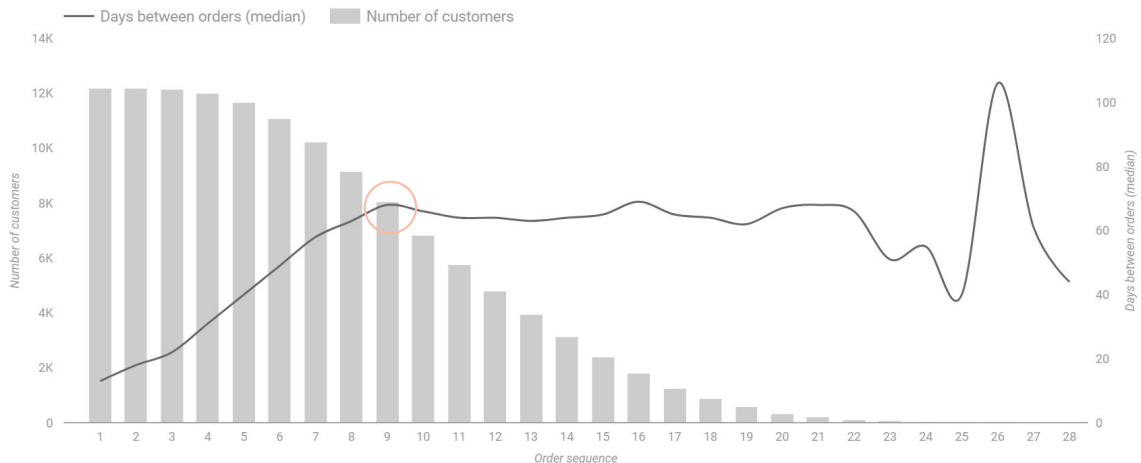
What is the customer interpurchase time interval dynamic?

- How long are the intervals between purchases?
- Do they depend on the lifespan of a customer?

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# Results

# IPI and Number of customers













Overall, the average time between each purchase is 75 days.

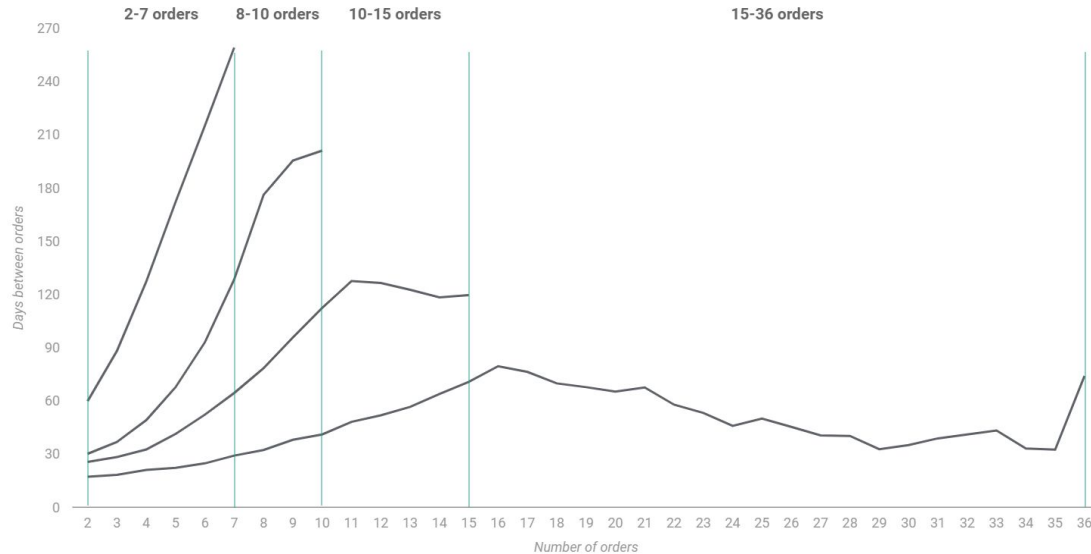
The median time between the initial purchases is around **one month**, later increasing to at least 2 months.



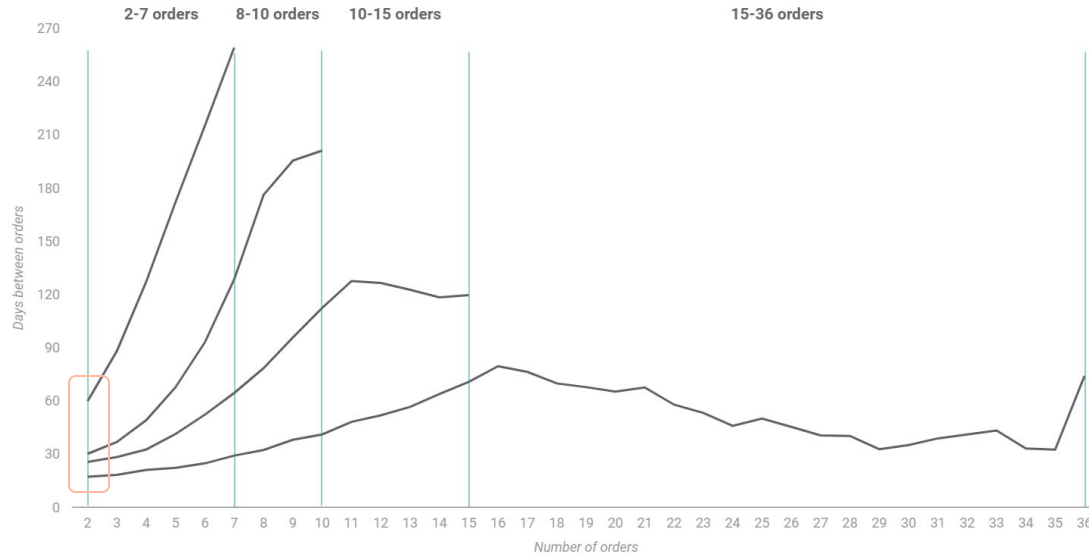
## Customer groups according to number of purchases

	2-7 purchases	<b>4.9k</b> customers
 	8-10 purchases	<b>4.7k</b> customers
  	11-15 purchases	<b>4.9k</b> customers
   	16-36 purchases	<b>3.9k</b> customers

# Customer lifespan dynamic



# Customer lifespan dynamic



**Longer time** between the first two purchases might indicate a **less frequent** shopper.





## Can we predict customer lifespan by the timing of initial purchases?





# Can we predict customer lifespan by the timing of initial purchases?



A simple linear regression analysis  
revealed acceptable predictive ability  
( $\beta = -0.38$ ,  $R^2 = 0.15$ ,  $p < 0,001$ )

A customer who spends **less time** between making the **3 initial purchases**, is more likely to shop frequently.

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# Conclusion



## Conclusions

The time between the initial purchases is around **one month**, later increasing to at least 2 months.

The interval between the first ~10 orders tends to increase with every single order.

Customers who have made the least number of orders, usually spent more time before making the initial purchases.

The time interval between first three orders of a customer predicts more future purchases.



# Recommendations

Implement an email-based reminder system to new and *drifting* customers.



# Limitations

Time intervals between the purchases vary widely between customers, with the explanations for such variance not easily identifiable.