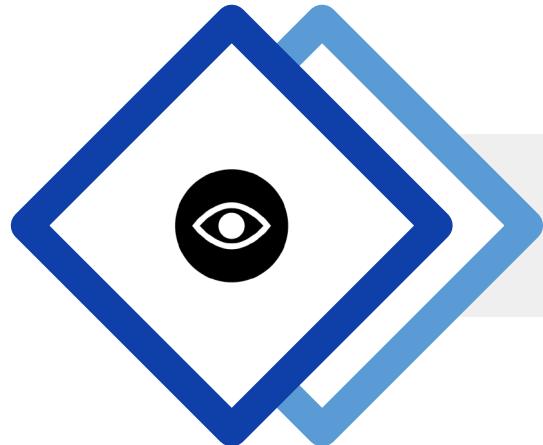


Viplove Raj Sharma

Associate Director at Great Learning



- 14+ years of experience in designing, developing and delivering analytics and data science solutions for businesses
- Consulting senior management and leadership across geographies, industries, and functions
- Earlier at the Royal Melbourne Institute of Technology (RMIT) Melbourne, and Mu Sigma, Bangalore
- Leading product and delivery of Great Learning's data programs – analytics, data science and AI



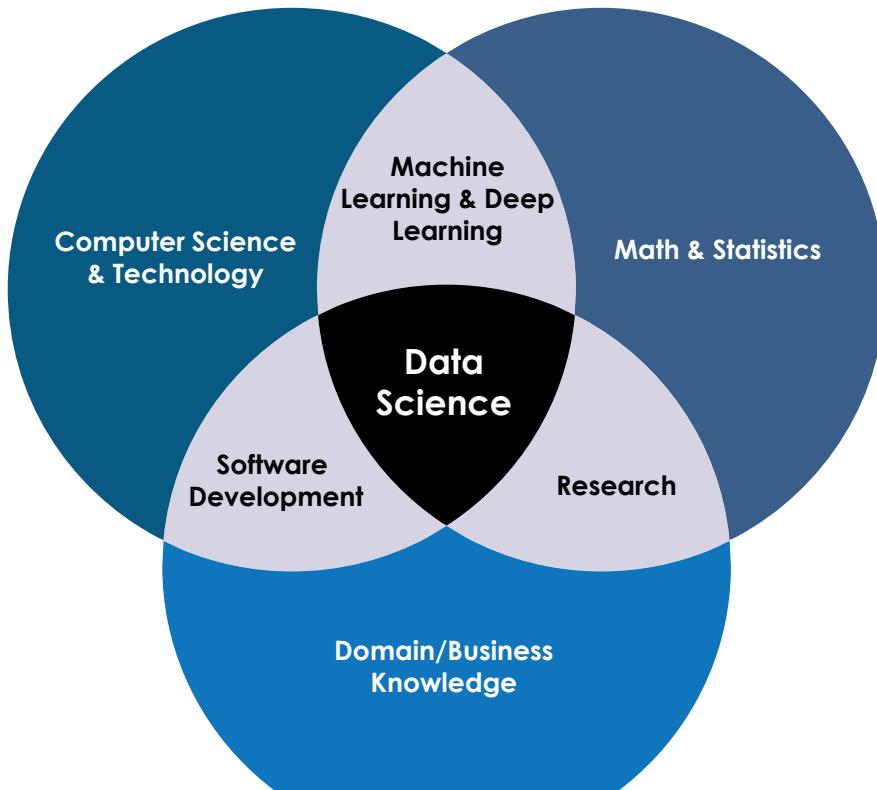
From Insights to Impact

*Transforming Industries with
Data Science*

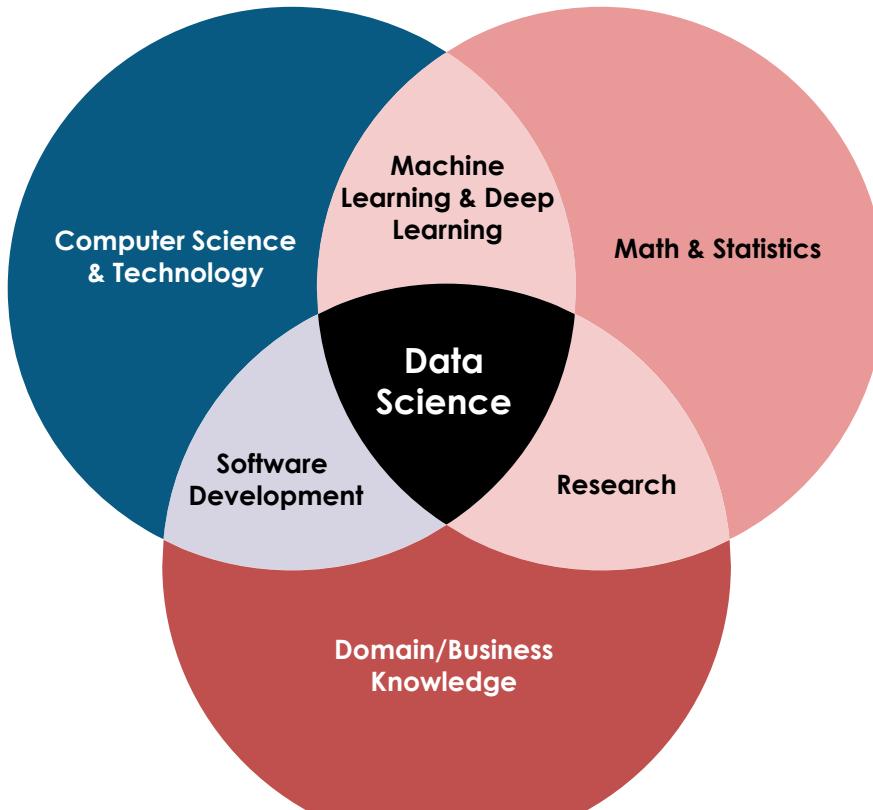
Learning Objectives

- Develop an understanding of what is an “insight” for a business
- Get exposure to how problems exist in the real world
- Get a view on how data science can solve those problems
- Get initiated on what it takes to navigate that journey from insights to impact

Revisiting definition of Data Science



Revisiting definition of Data Science – today's focus



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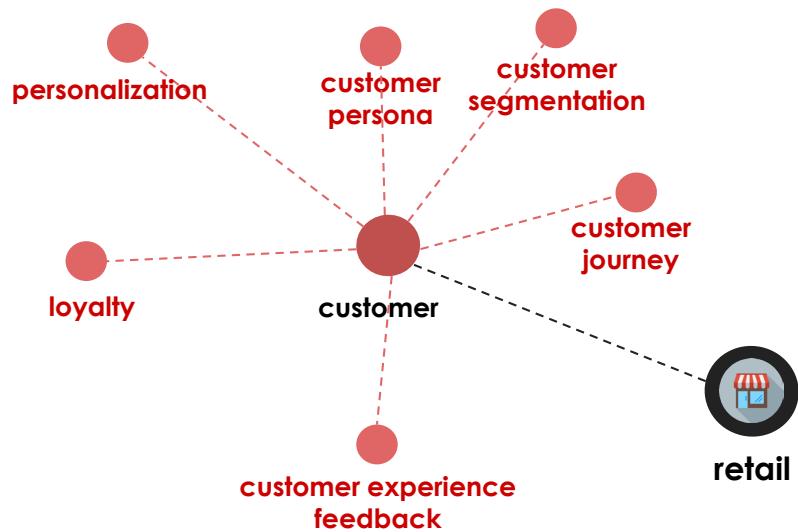
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Problem Space - Retail Industry

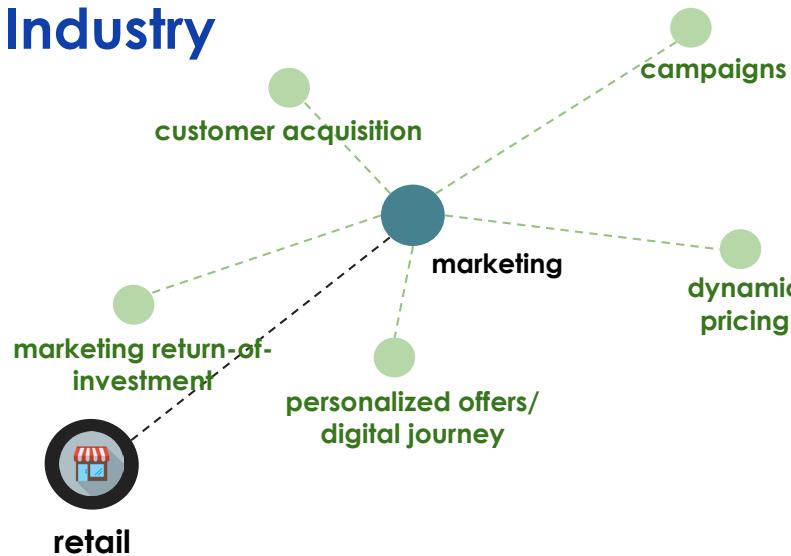


retail

Problem Space - Retail Industry

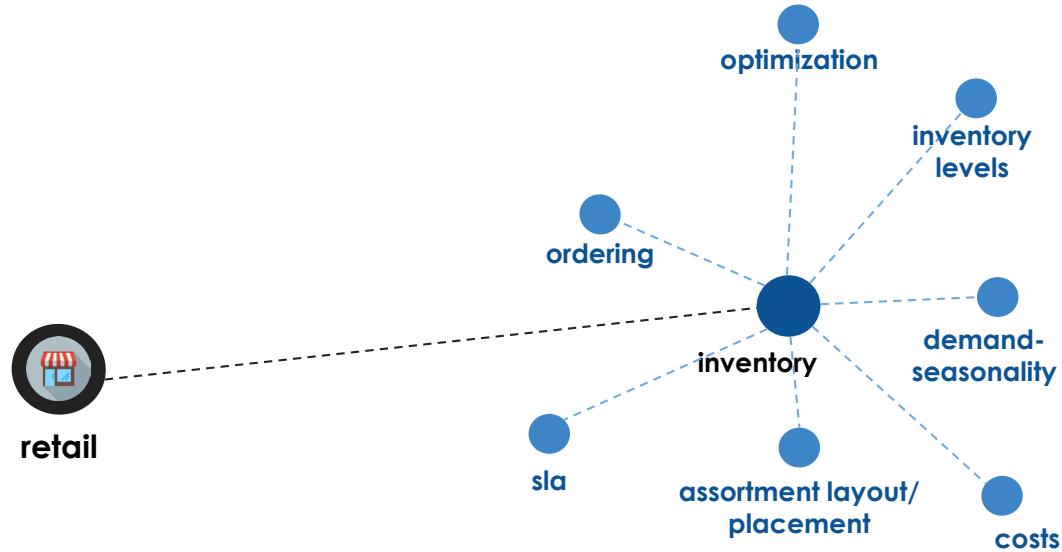


Problem Space - Retail Industry



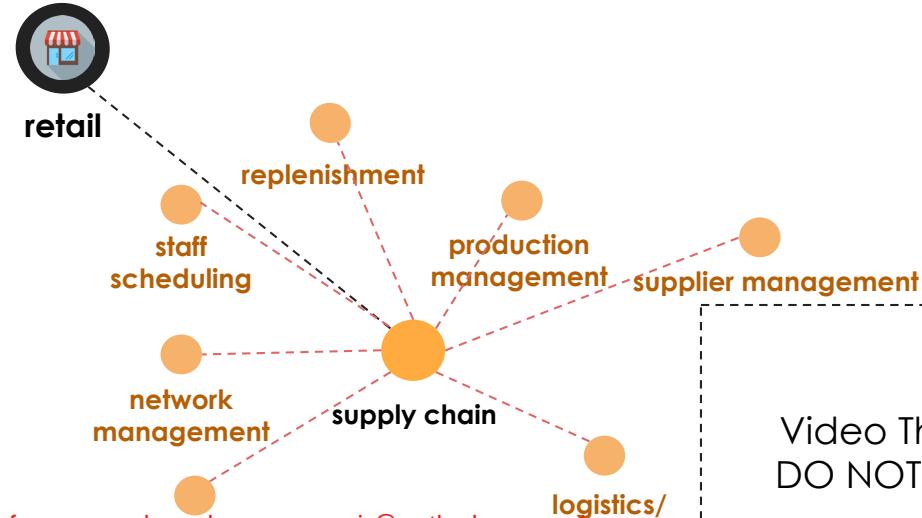
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Problem Space - Retail Industry

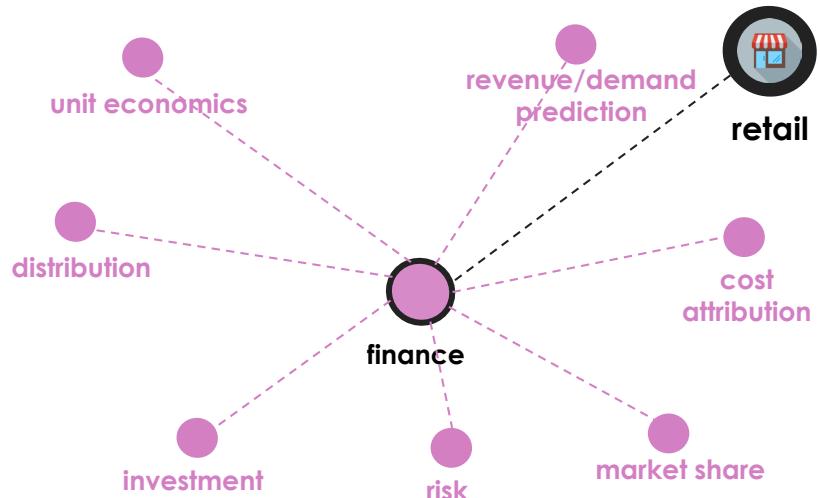


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Problem Space - Retail Industry



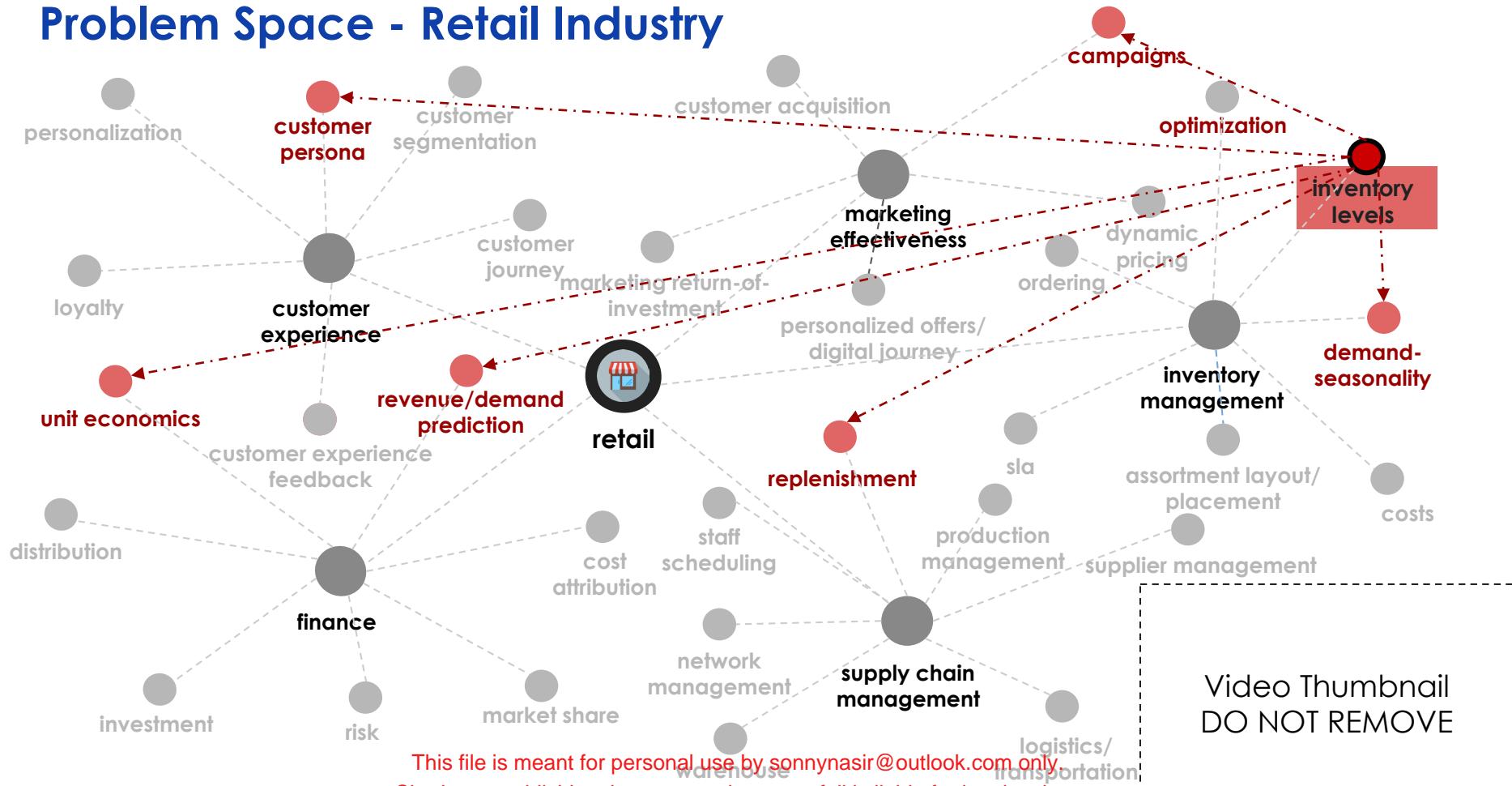
Problem Space - Retail Industry



Problem Space - Retail Industry



Problem Space - Retail Industry



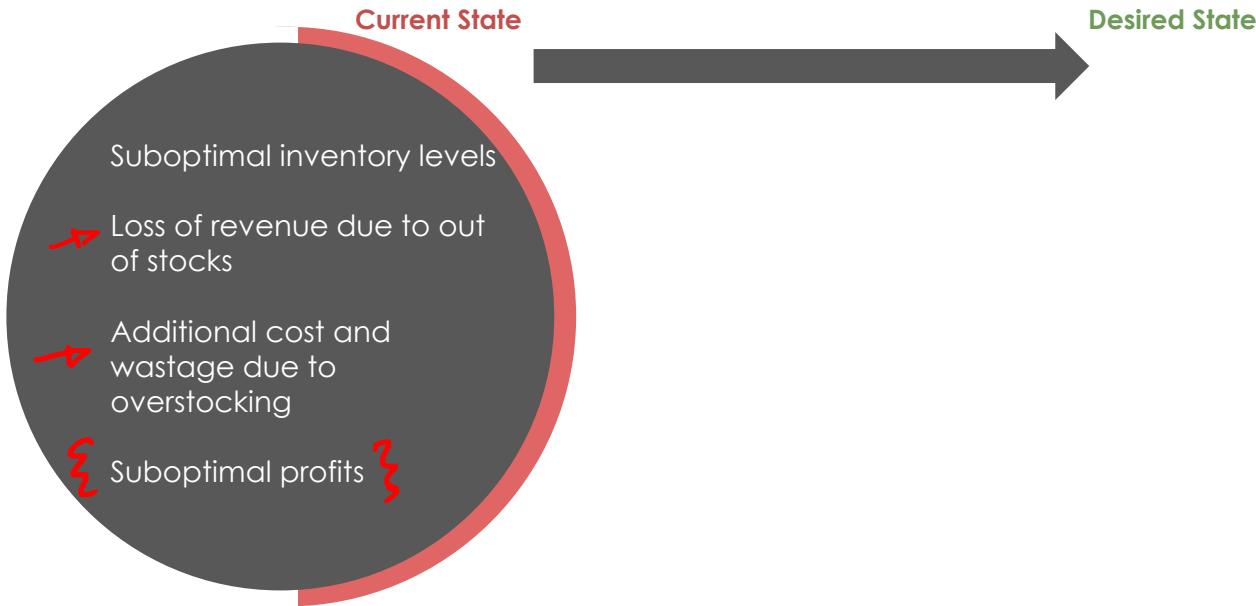
Optimizing Inventory Levels

Current State

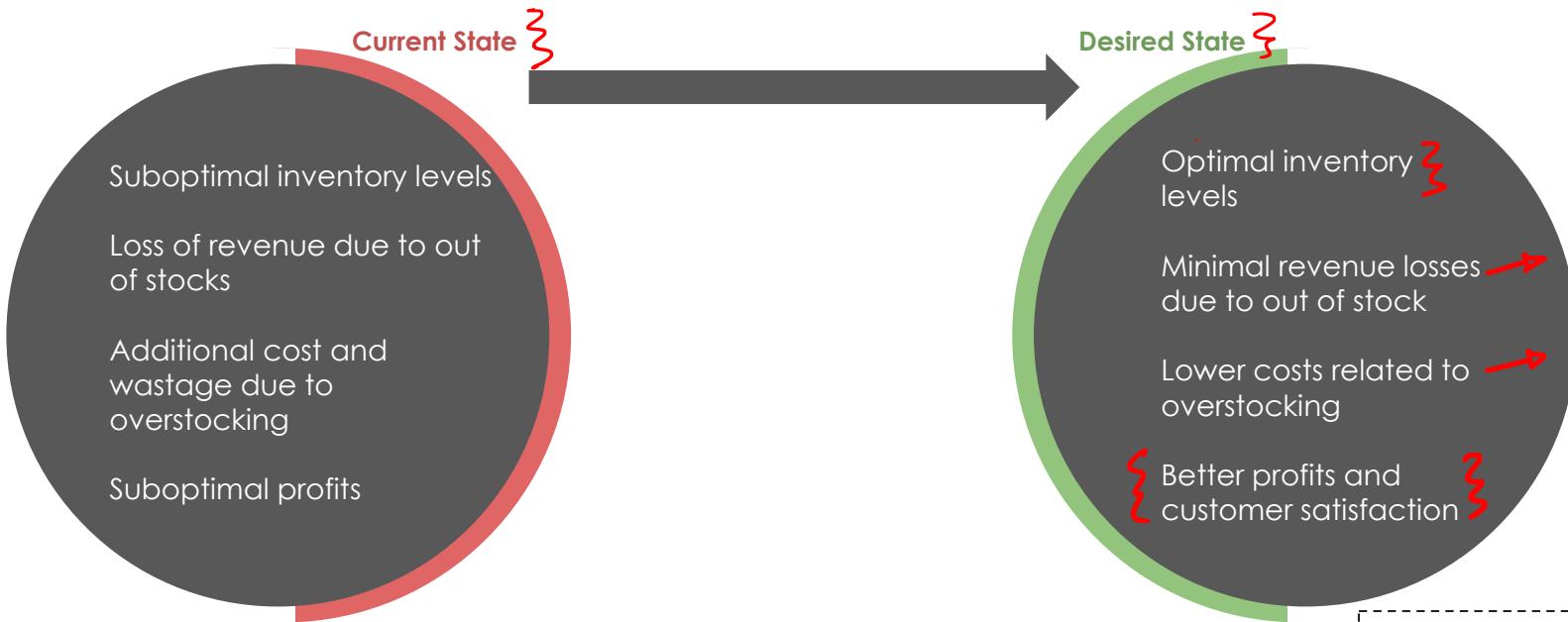


Desired State

Optimizing Inventory Levels

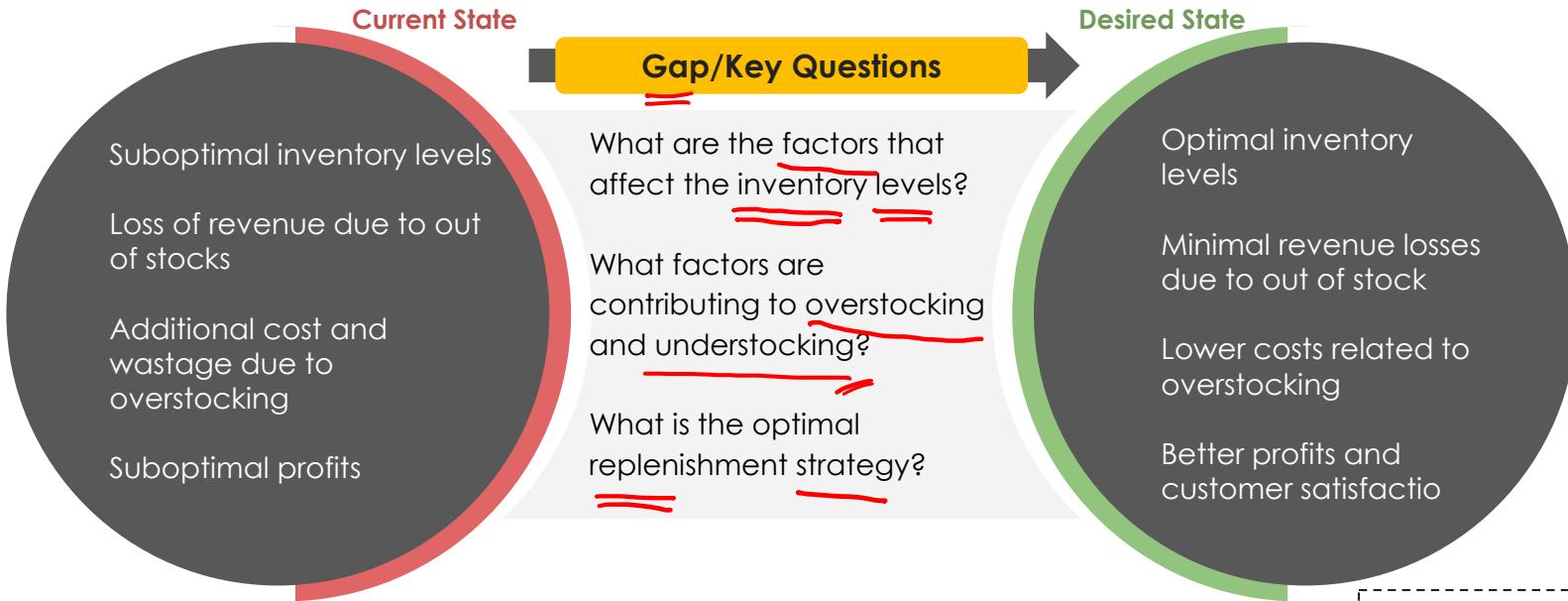


Optimizing Inventory Levels



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Optimizing Inventory Levels



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Optimizing Inventory Levels – data science solution

Opt. I \Rightarrow max. Rev / min. cost \Rightarrow Set smart SLAs + meet them

} demand forecast



+ seasonality



\Rightarrow cluster

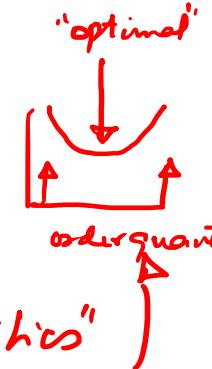
\Rightarrow + replenishment
constraint

\Rightarrow lead time

n/n
warehouse
production.

Safety
Stock.

\$ A.C.

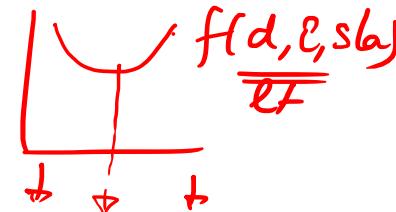
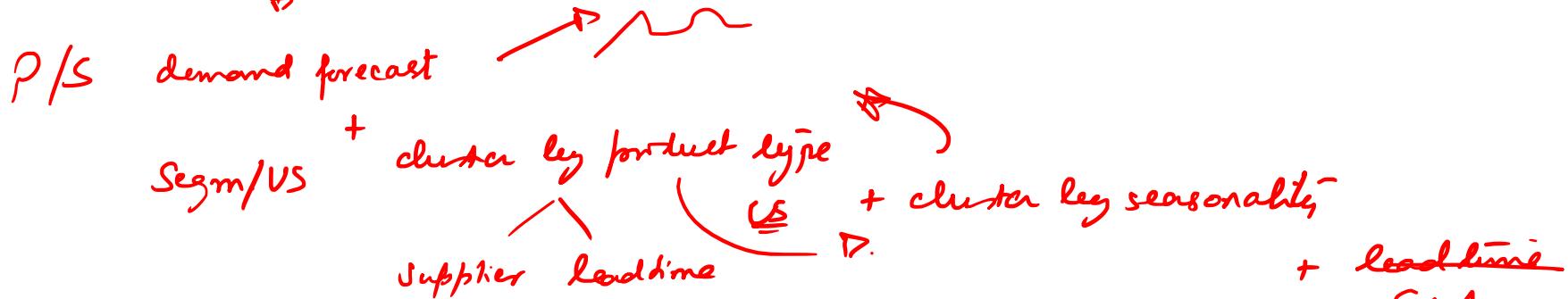


~ statistics")

EDQ

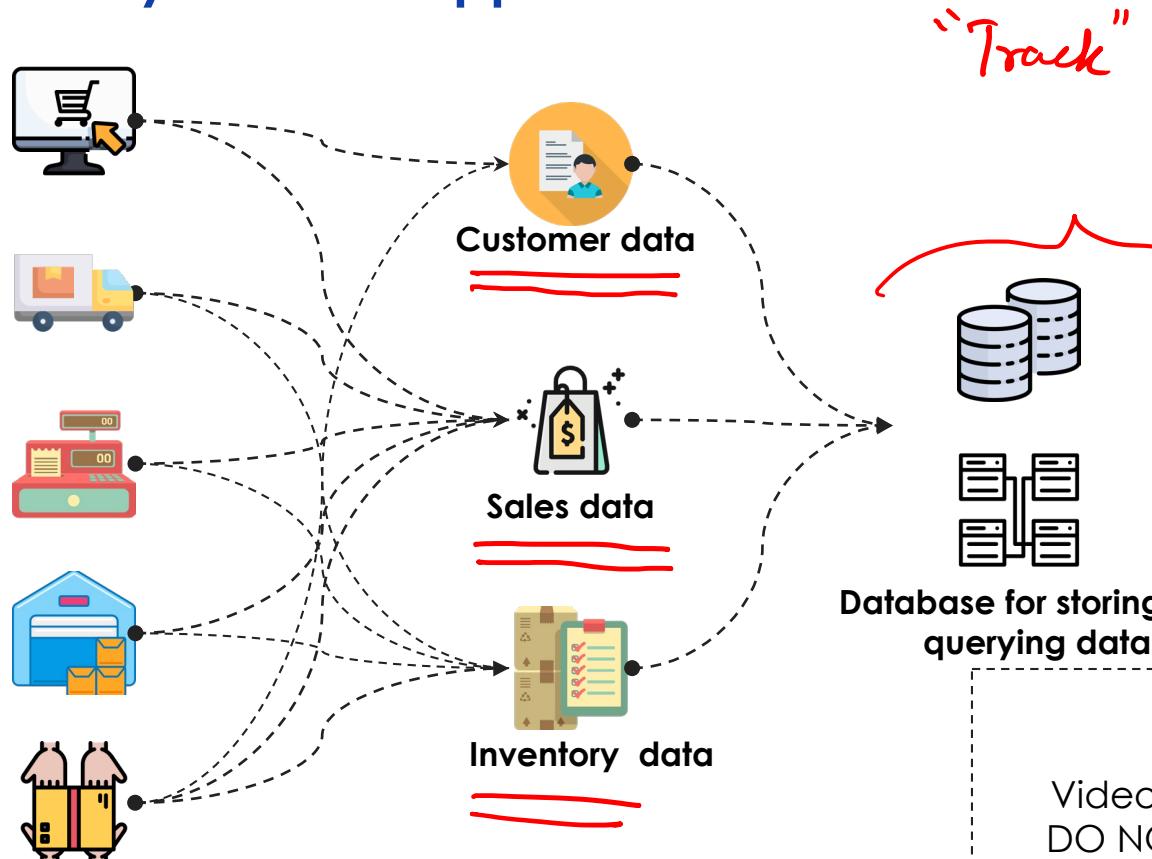
$$\Rightarrow SLA = f(d, c, r.c.)$$

Opt. Inv. \Rightarrow maximize Rev / minimal costs \Rightarrow set smart SLAs + meet them + variations across time

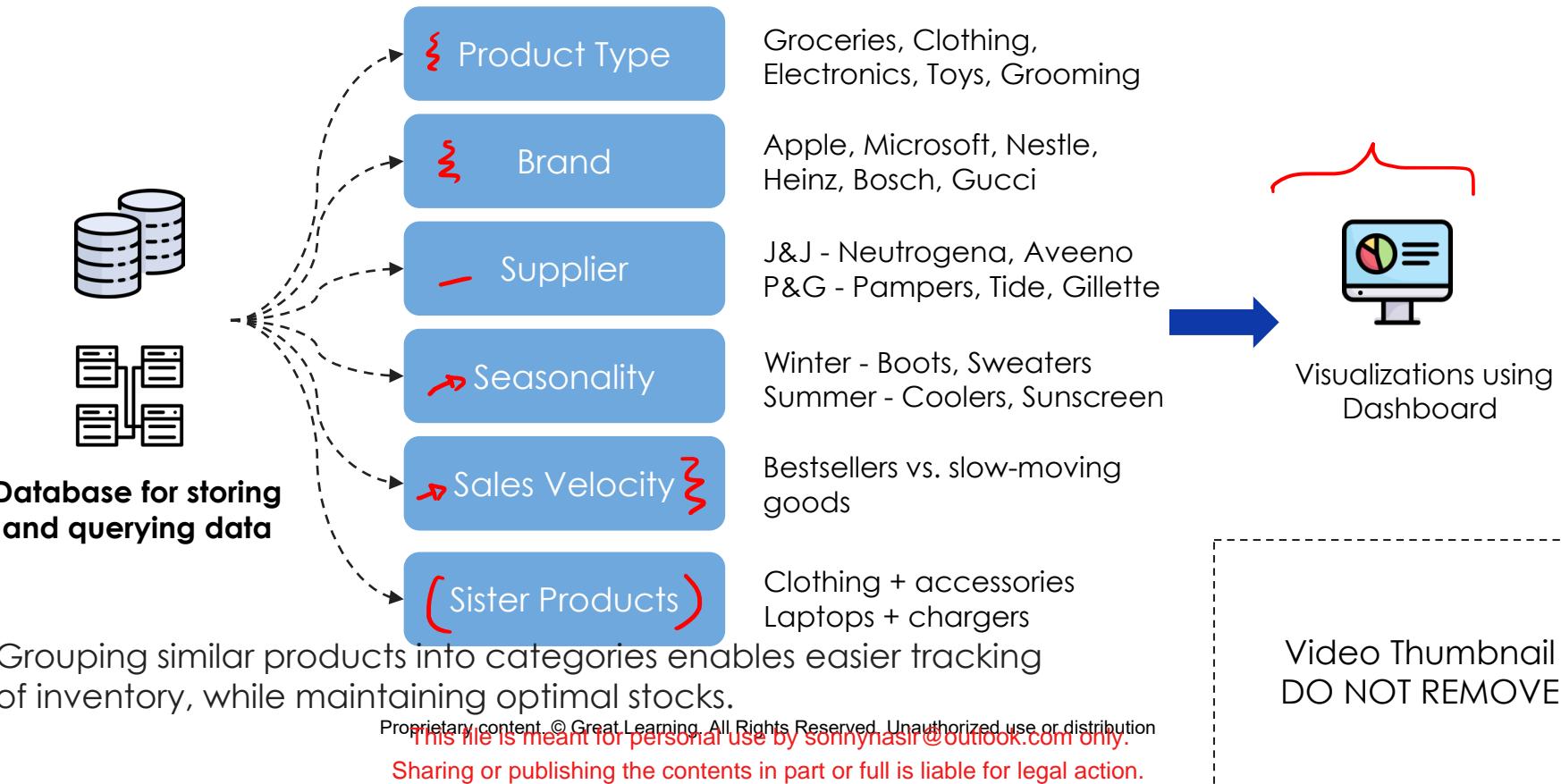


Optimizing Inventory Levels – Approach - Data

- Website
- Supplier shipment
- Checkout at stores
- Warehouse stock
- Dispatch and delivery

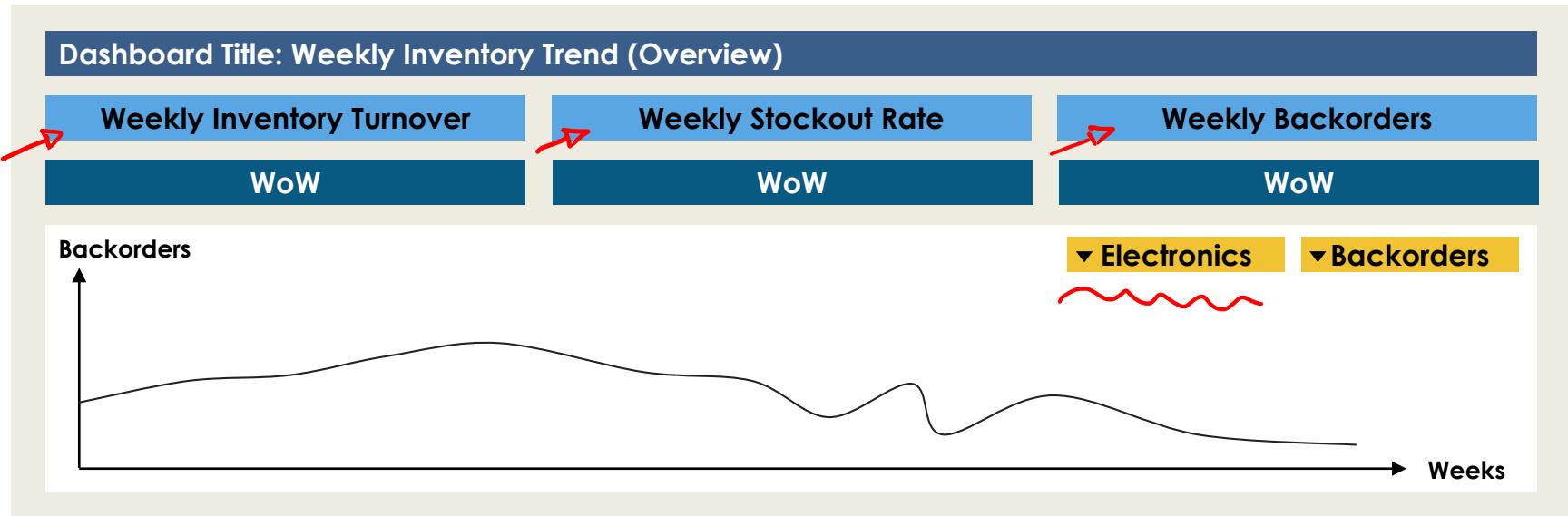


Optimizing Inventory Levels – Approach - Factors

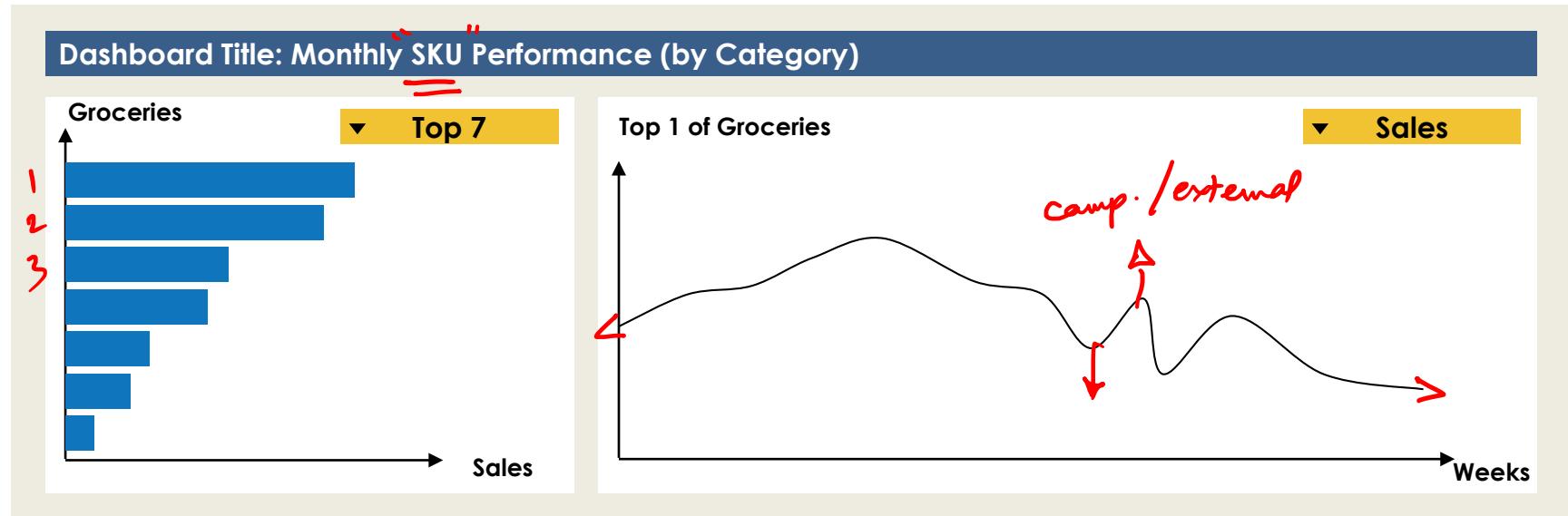


Optimizing Inventory Levels – Approach

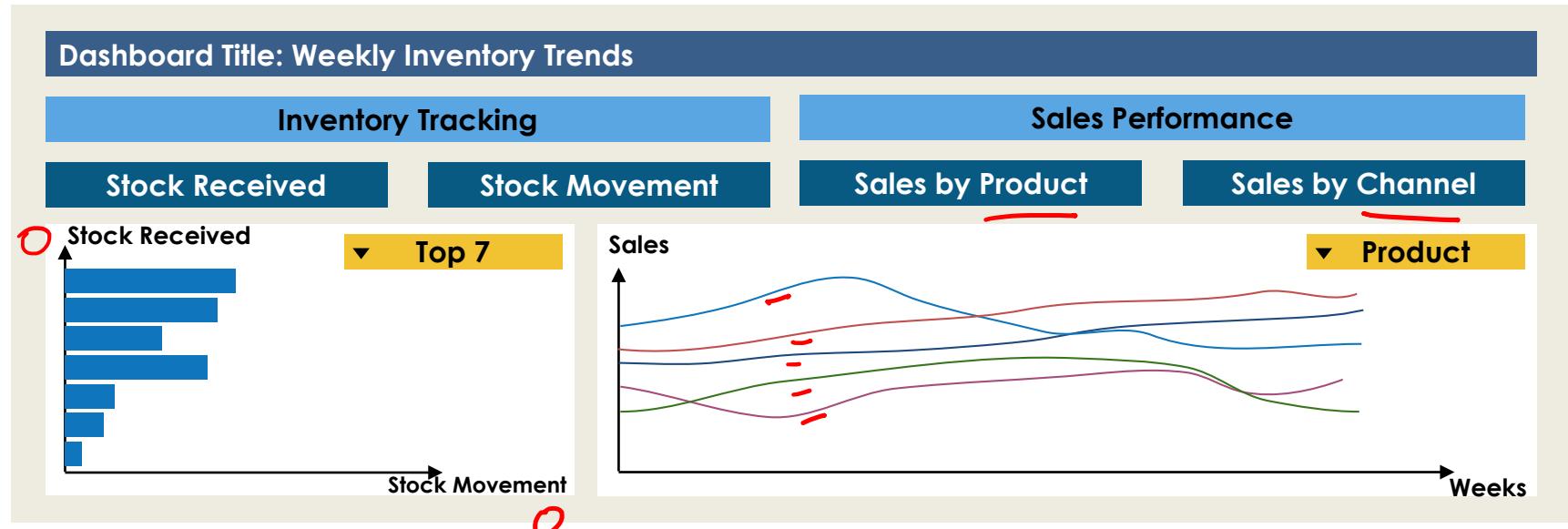
Optimizing Inventory Levels - Tracking



Optimizing Inventory Levels - Tracking



Optimizing Inventory Levels - Tracking



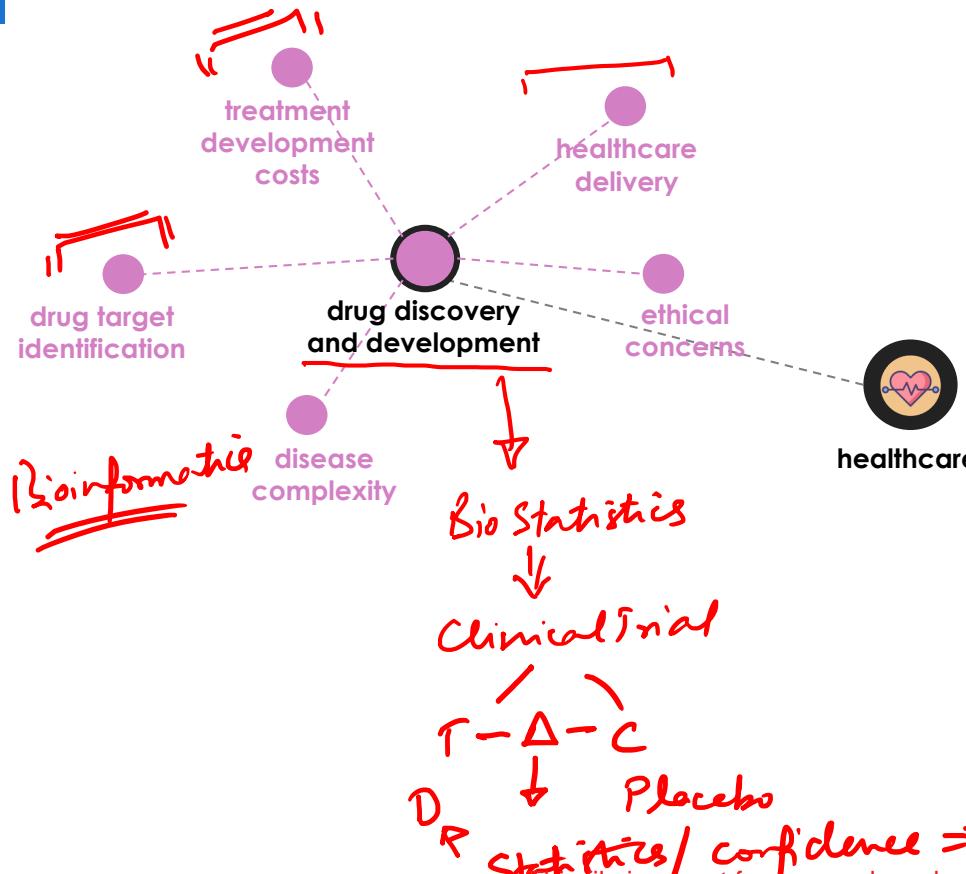
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Problem Space - Healthcare Industry



healthcare

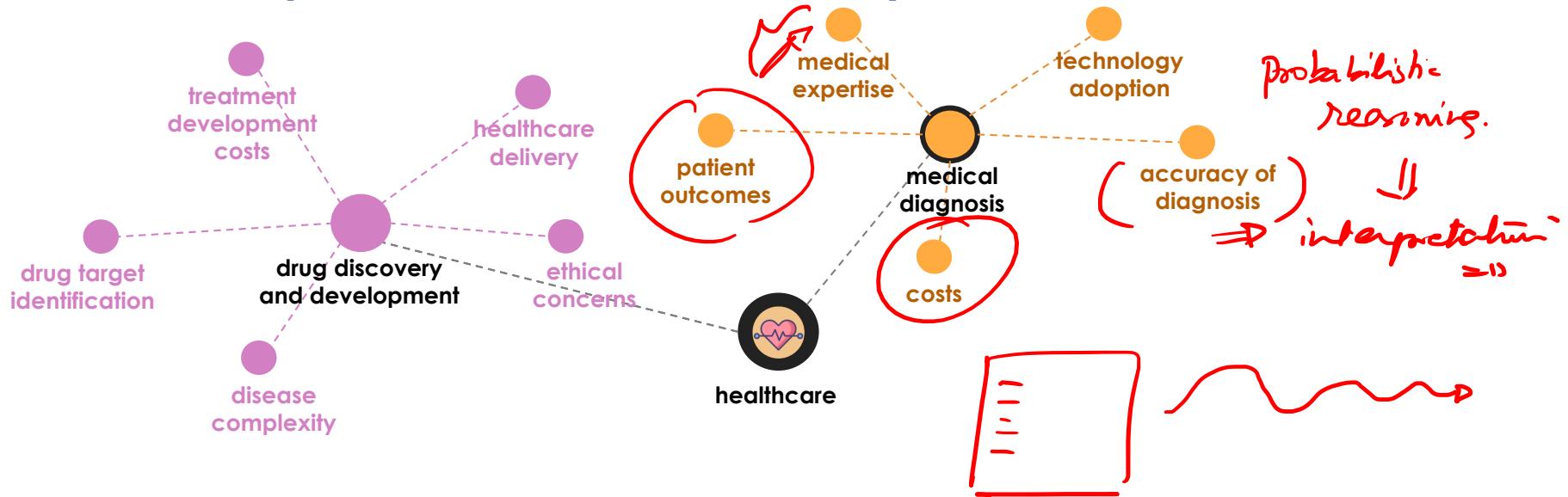
Problem Space - Healthcare Industry



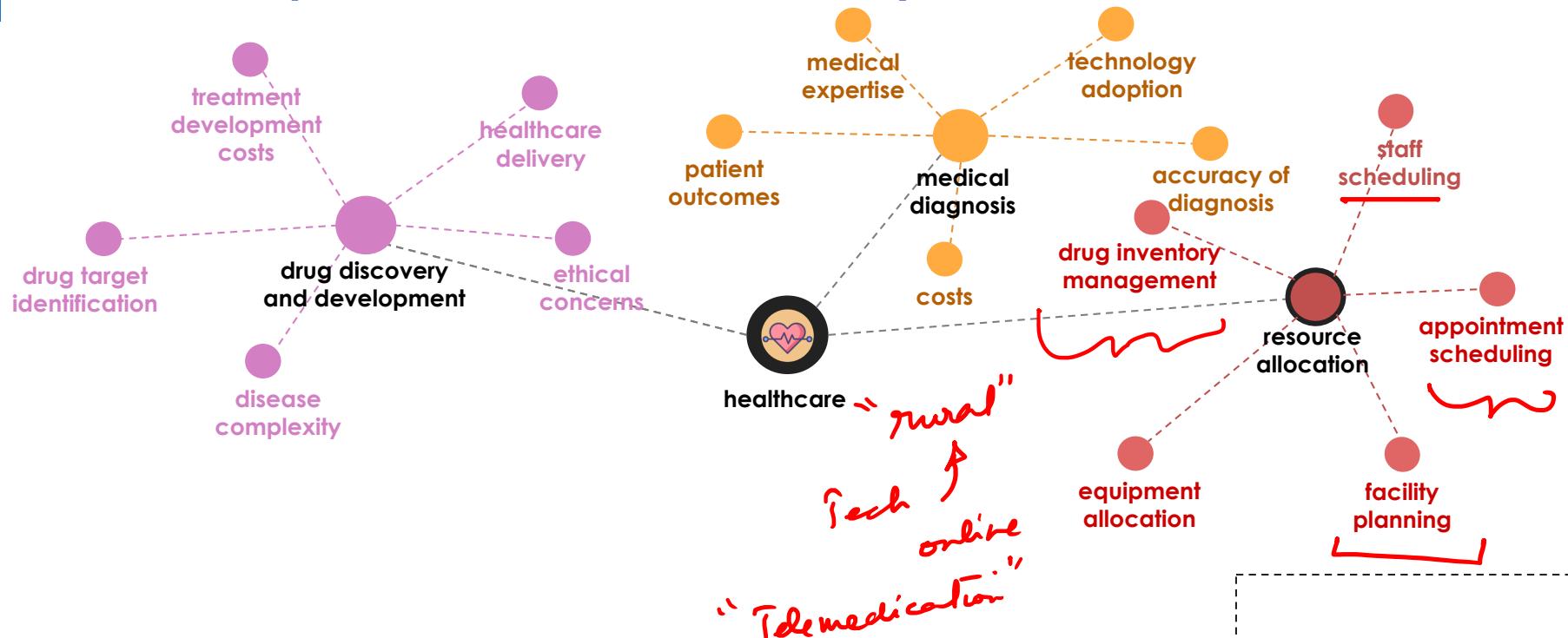
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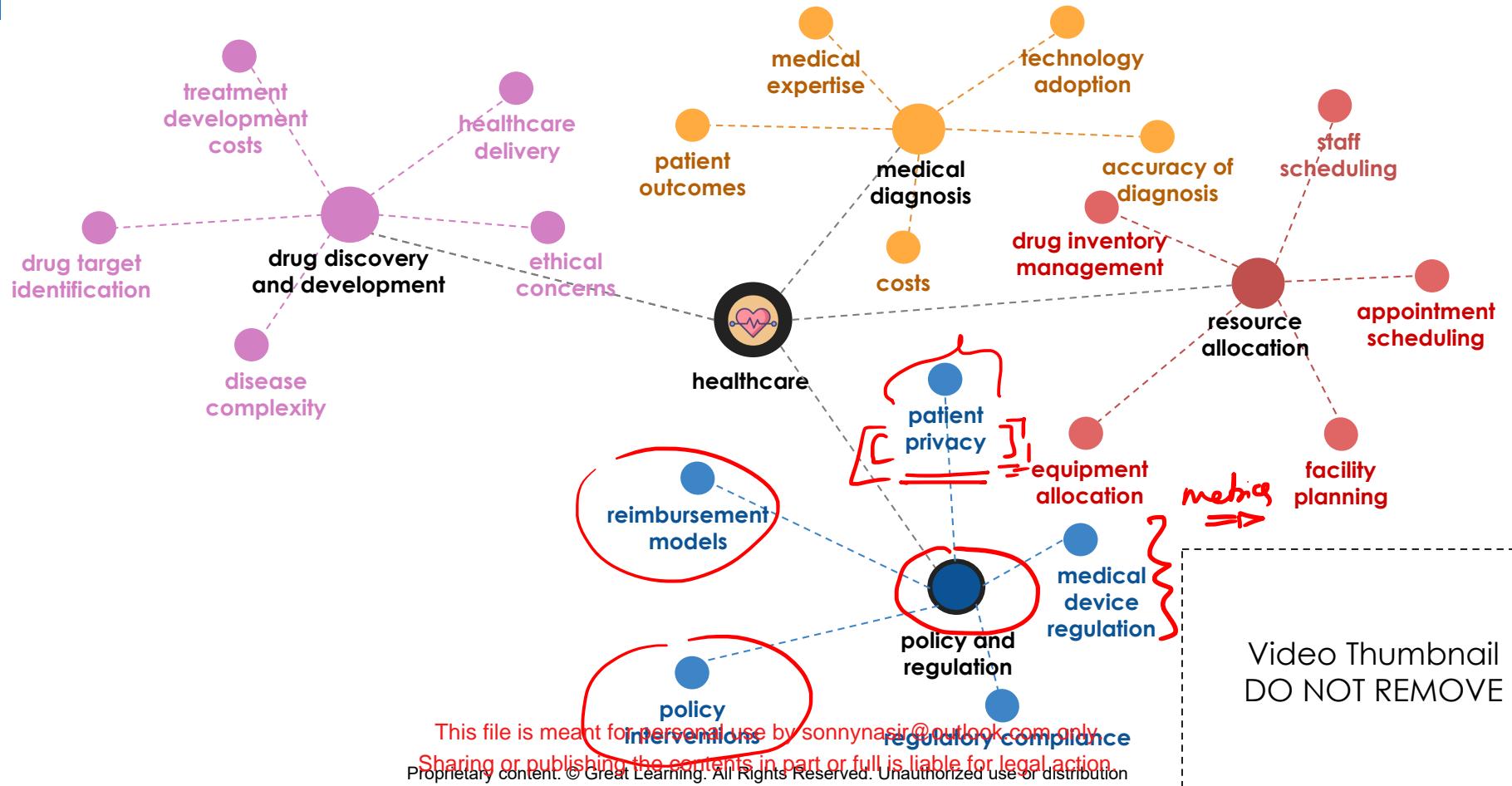
Problem Space - Healthcare Industry



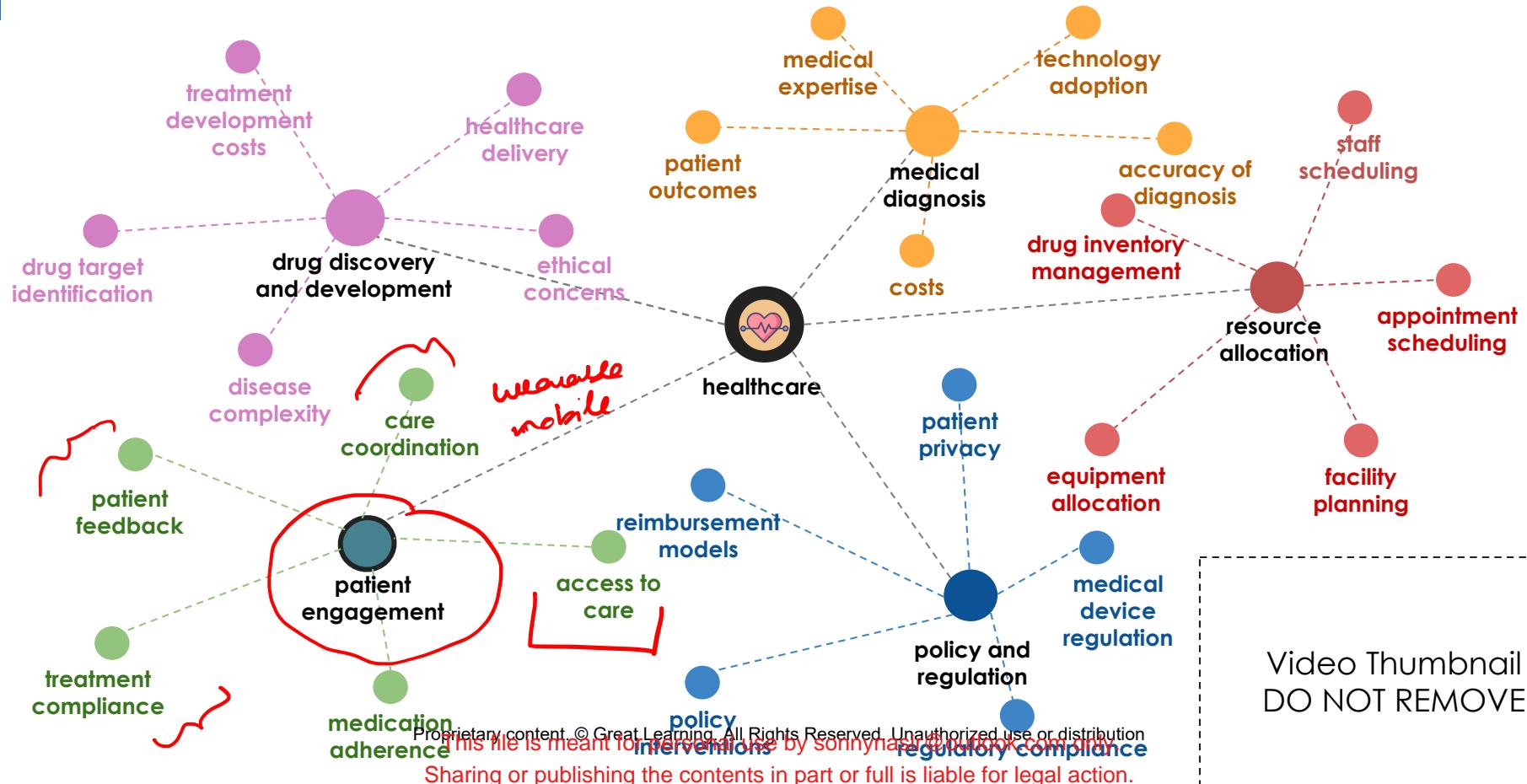
Problem Space - Healthcare Industry



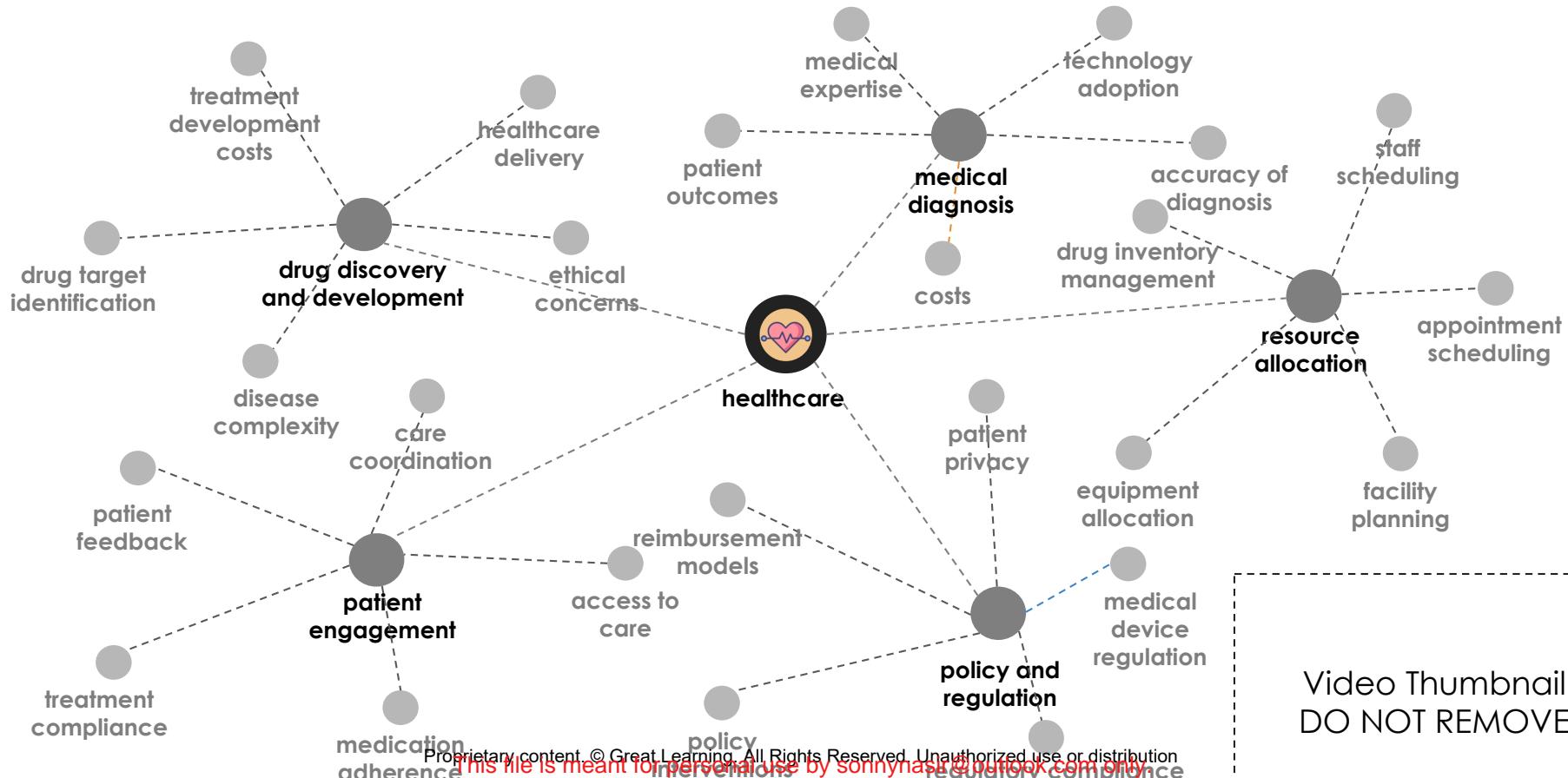
Problem Space - Healthcare Industry



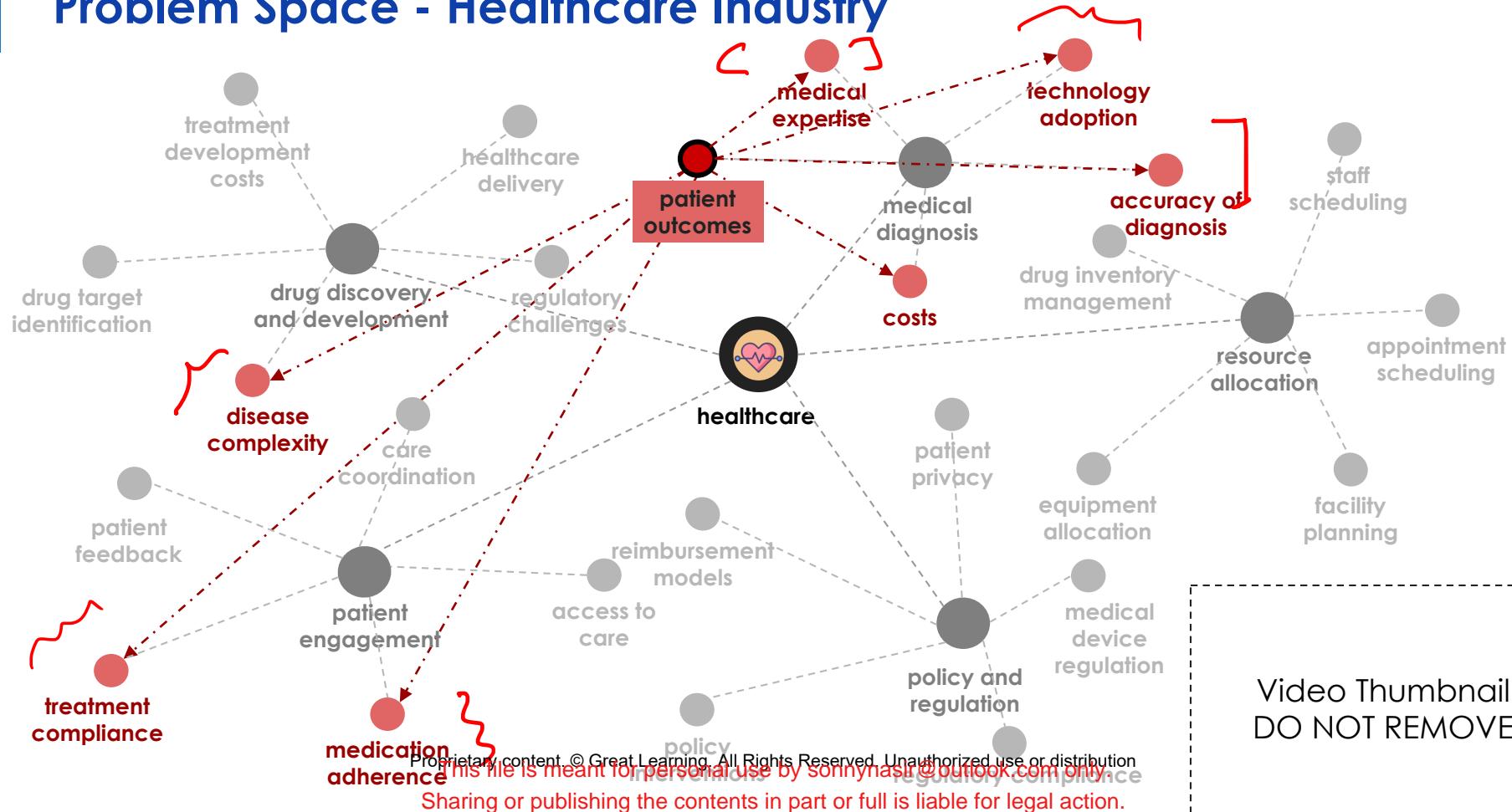
Problem Space - Healthcare Industry



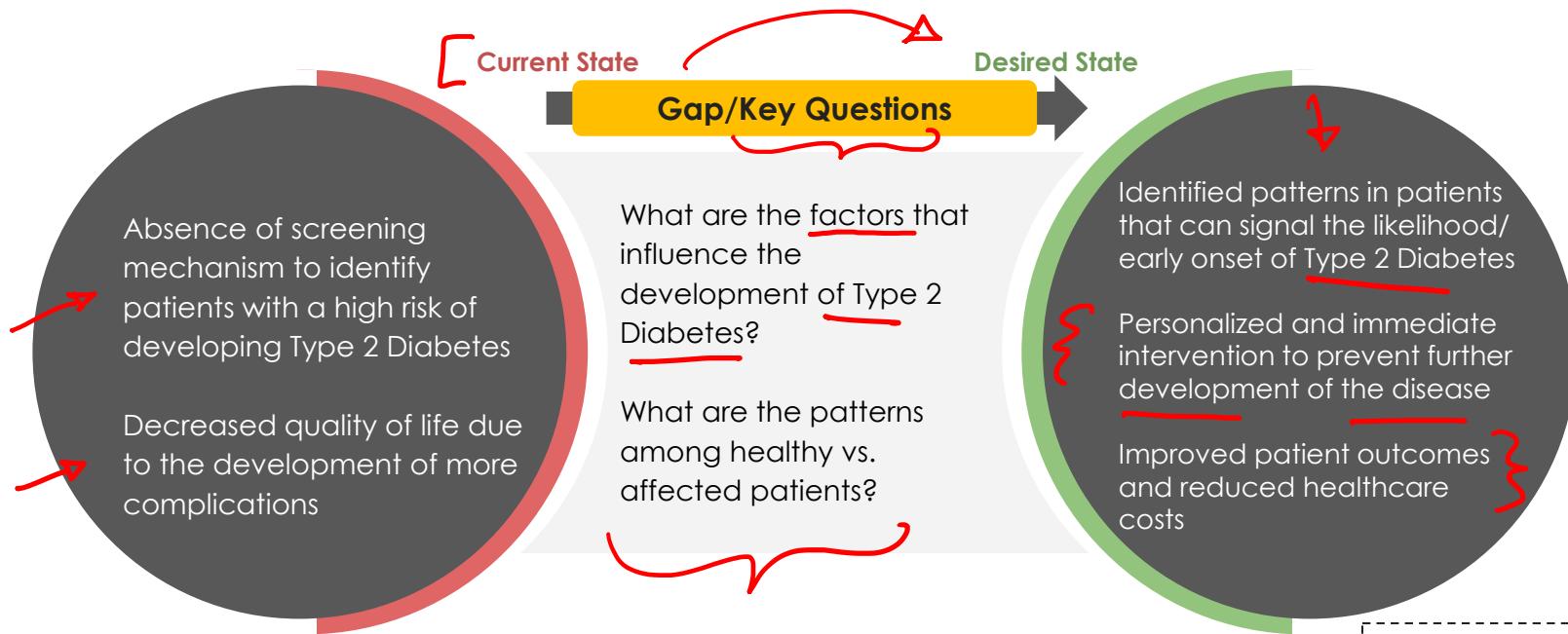
Problem Space - Healthcare Industry



Problem Space - Healthcare Industry

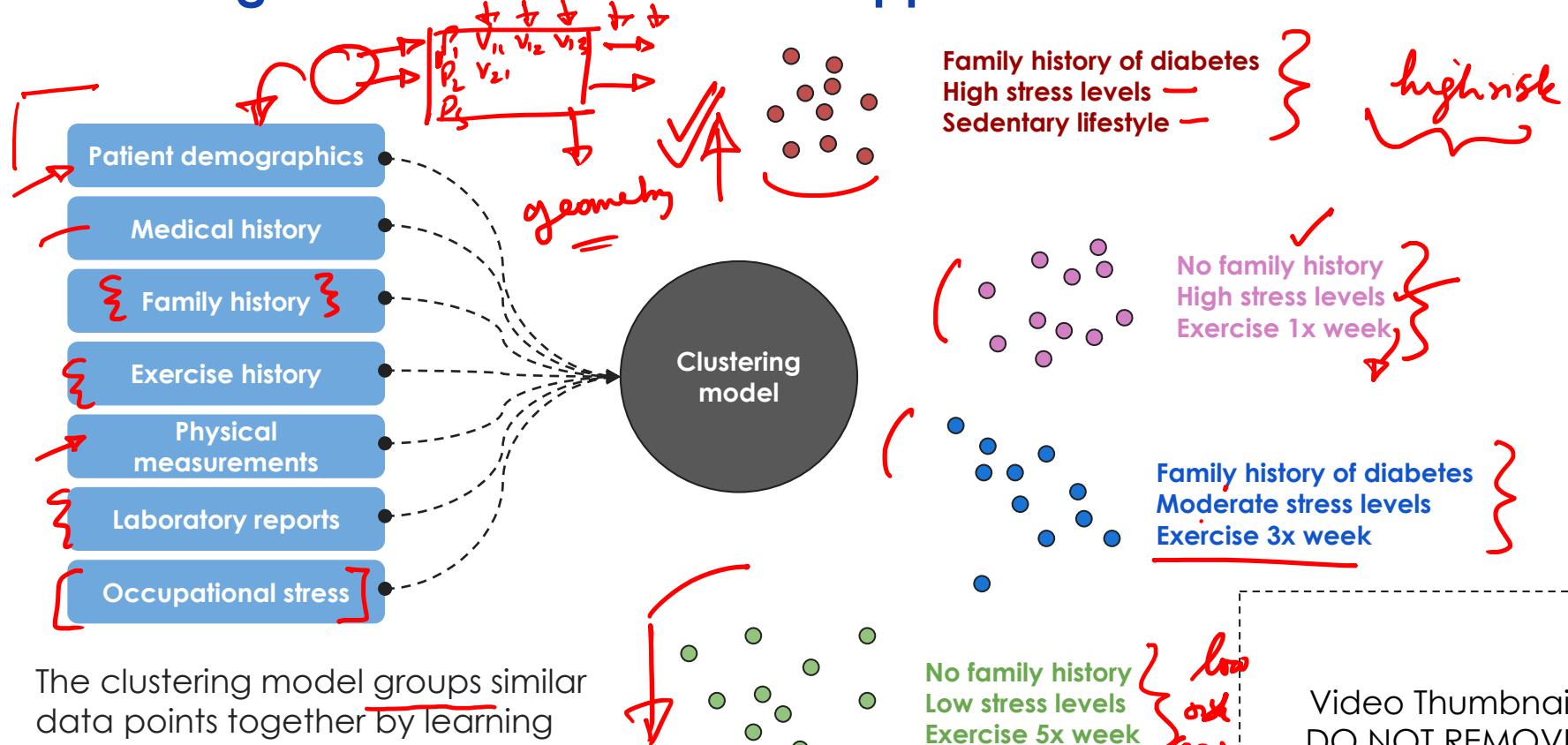


Assessing the onset of Diabetes



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Assessing the onset of Diabetes - Approach

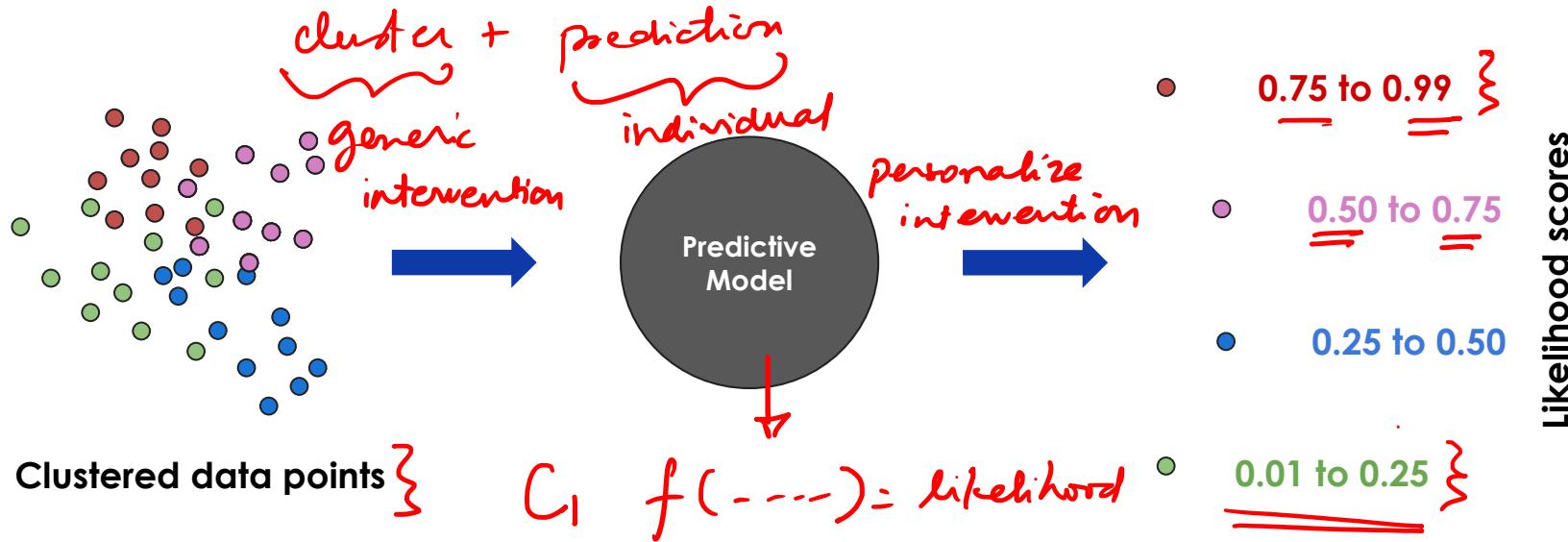


The clustering model groups similar data points together by learning the patterns within the input data.

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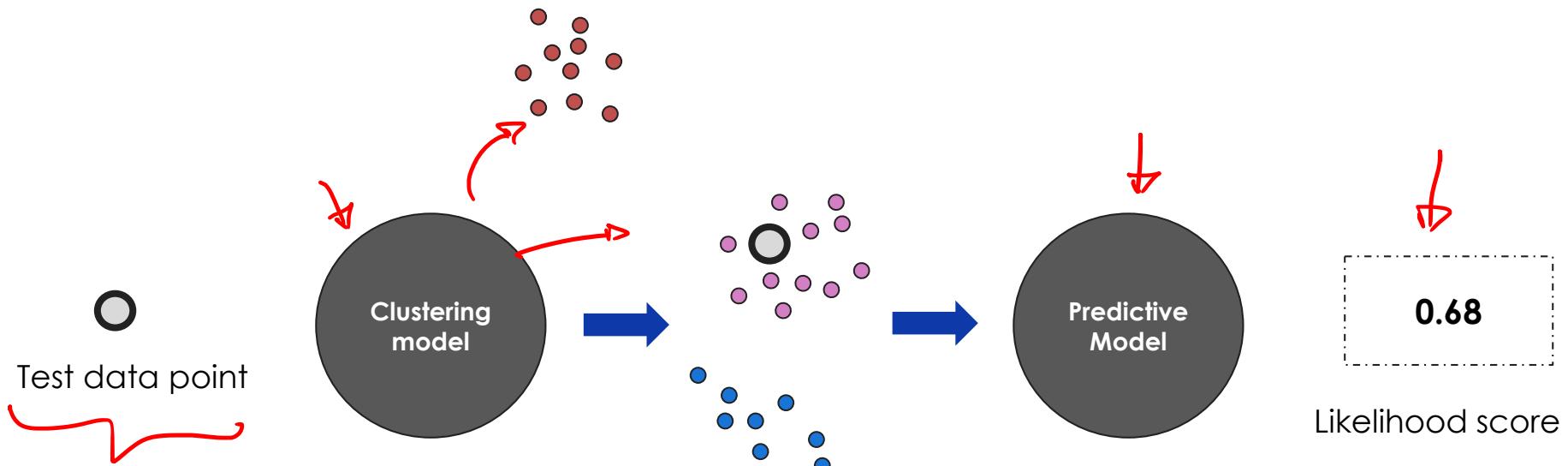
Assessing the onset of Diabetes - Approach



The predictive model assigns a likelihood score to each data point depending on its features and the group characteristics.

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Assessing the onset of Diabetes - Approach

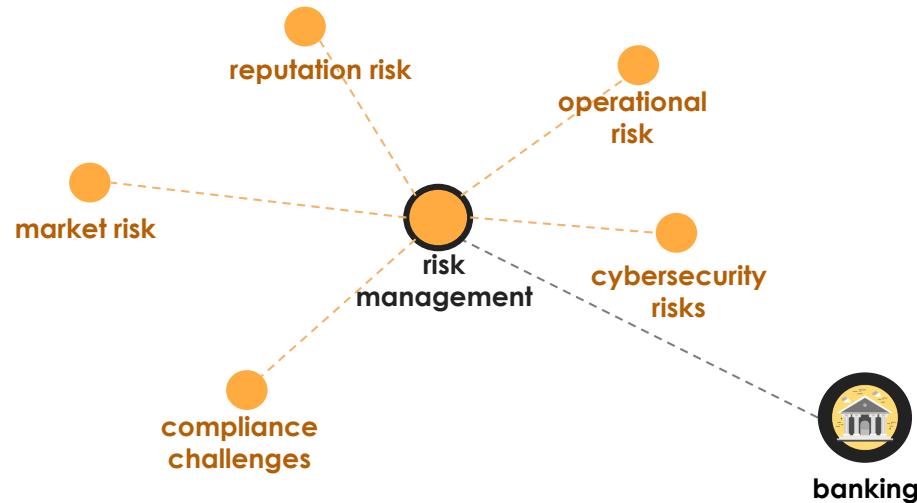


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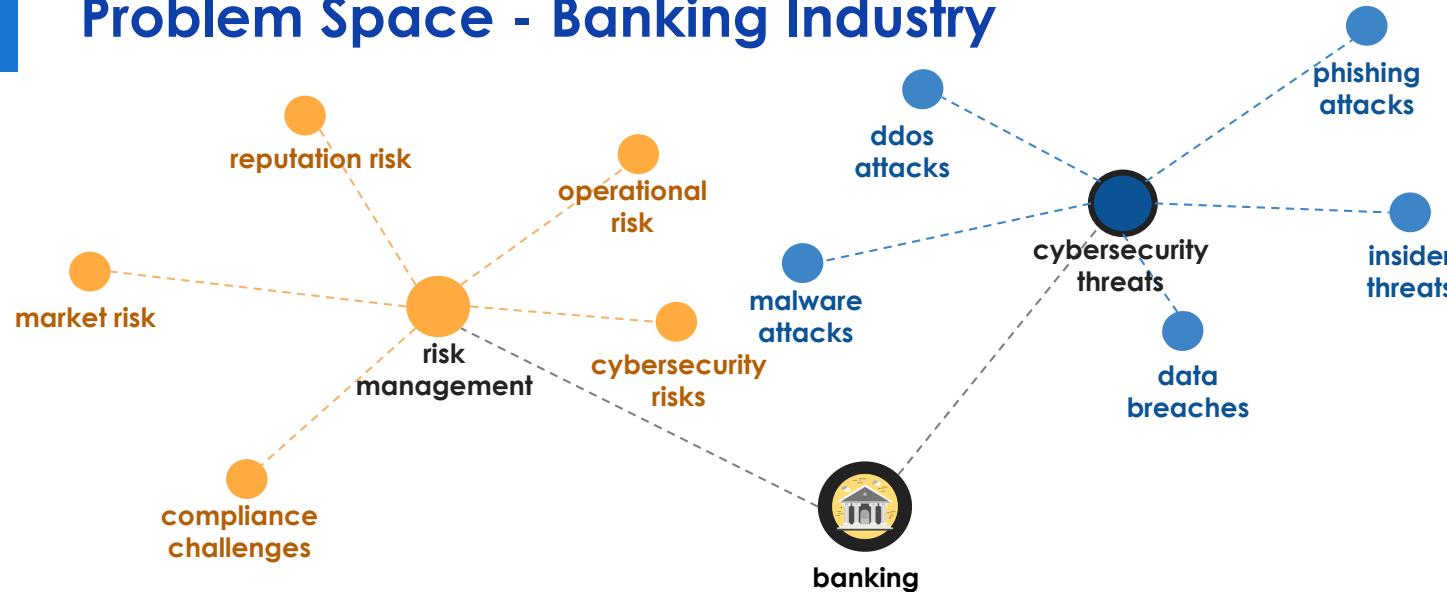
Problem Space - Banking Industry



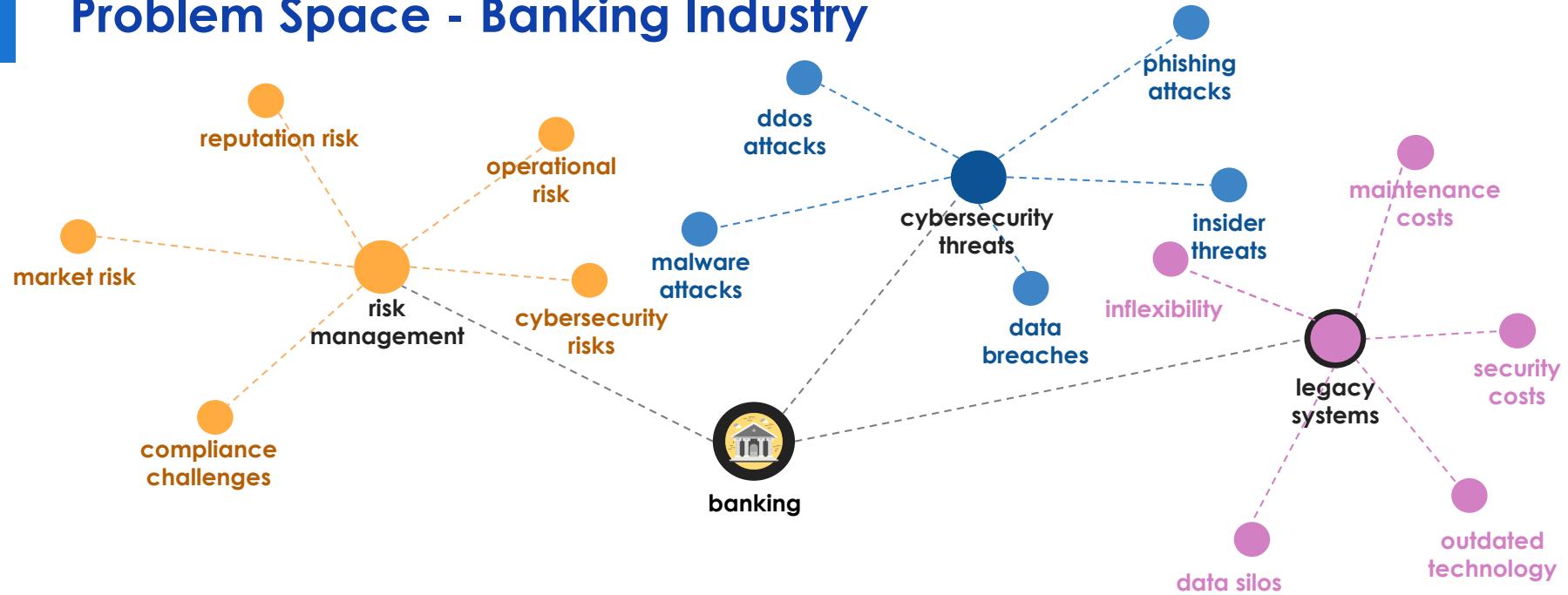
Problem Space - Banking Industry



Problem Space - Banking Industry

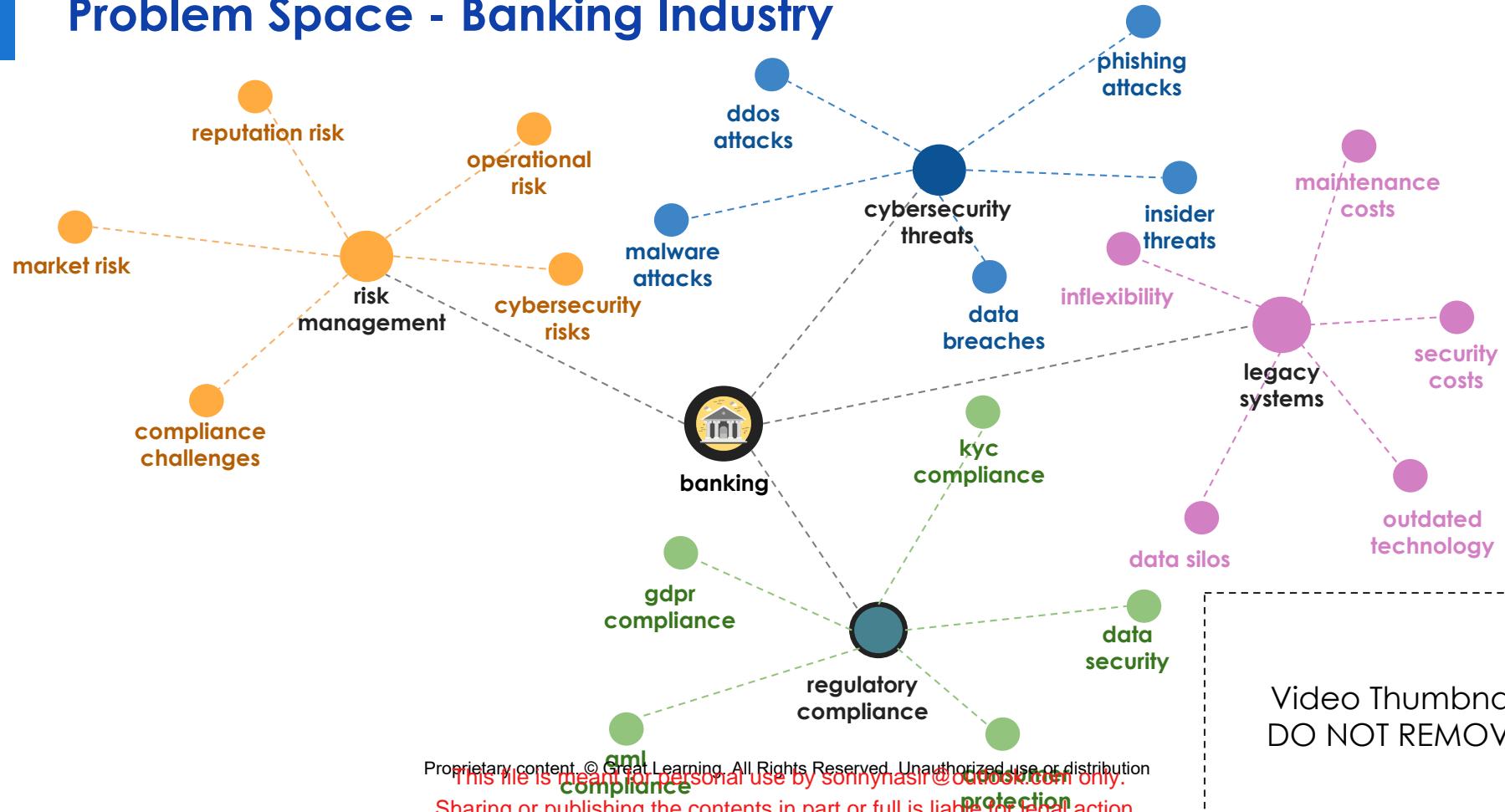


Problem Space - Banking Industry

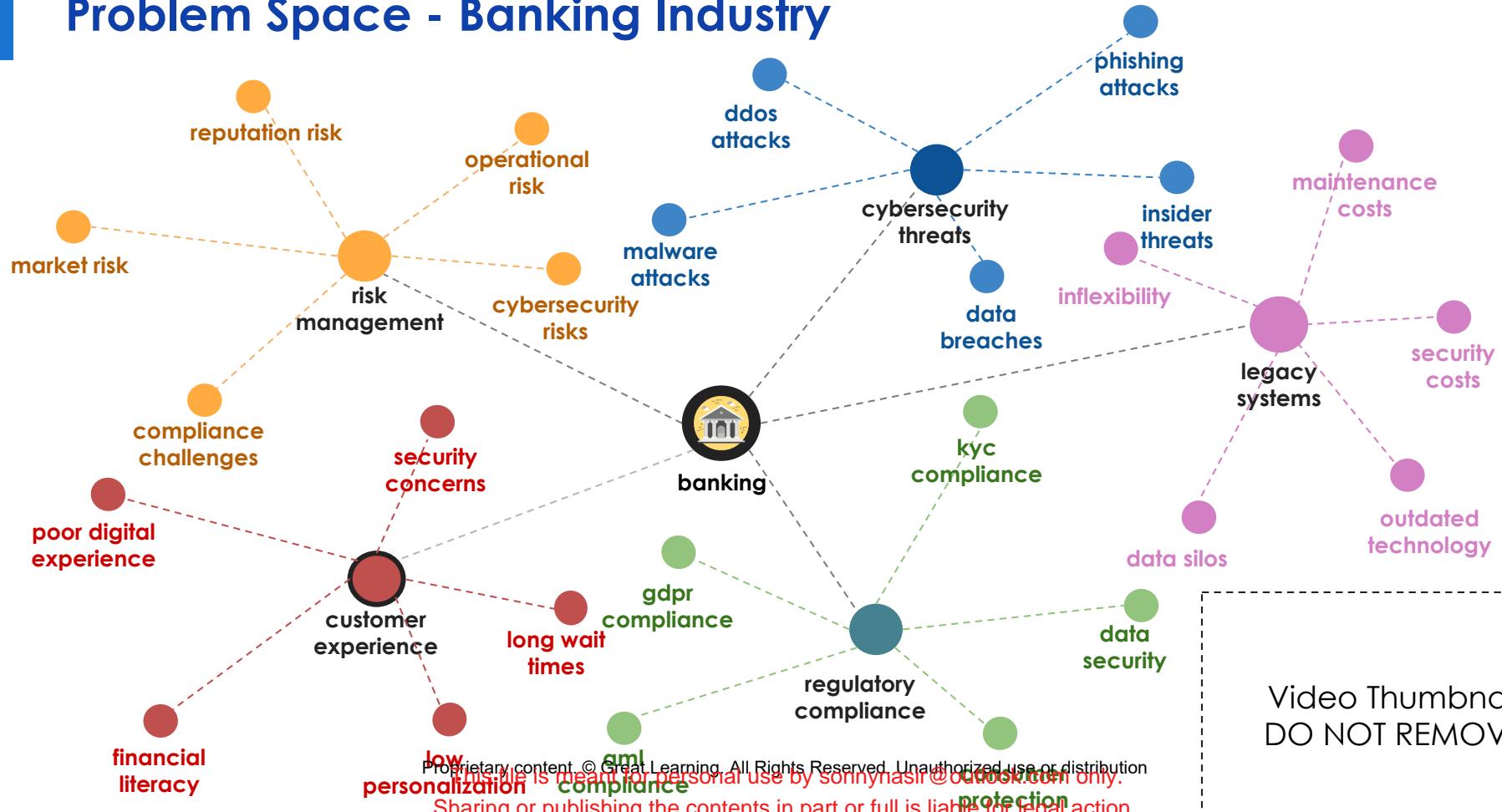


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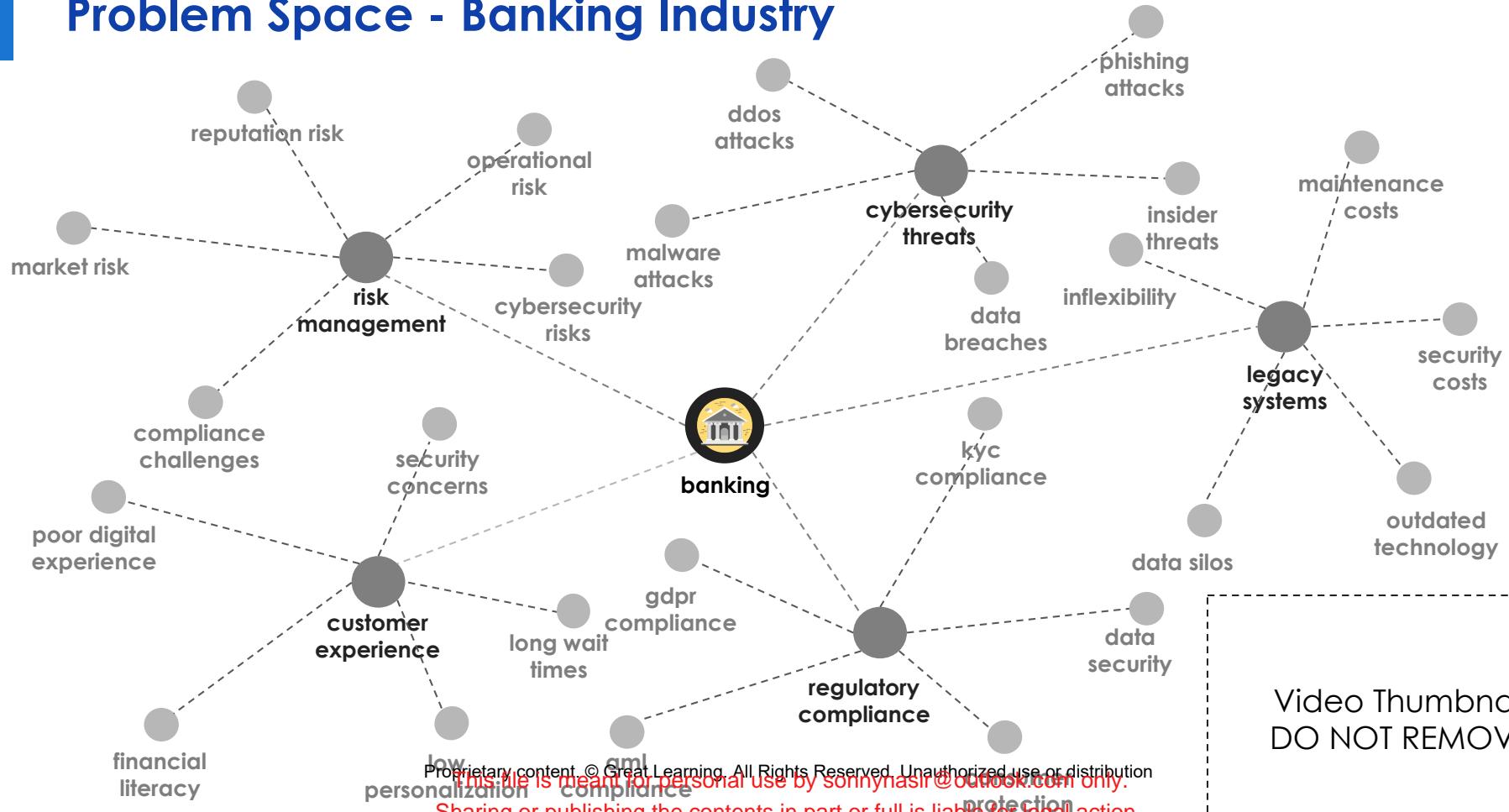
Problem Space - Banking Industry



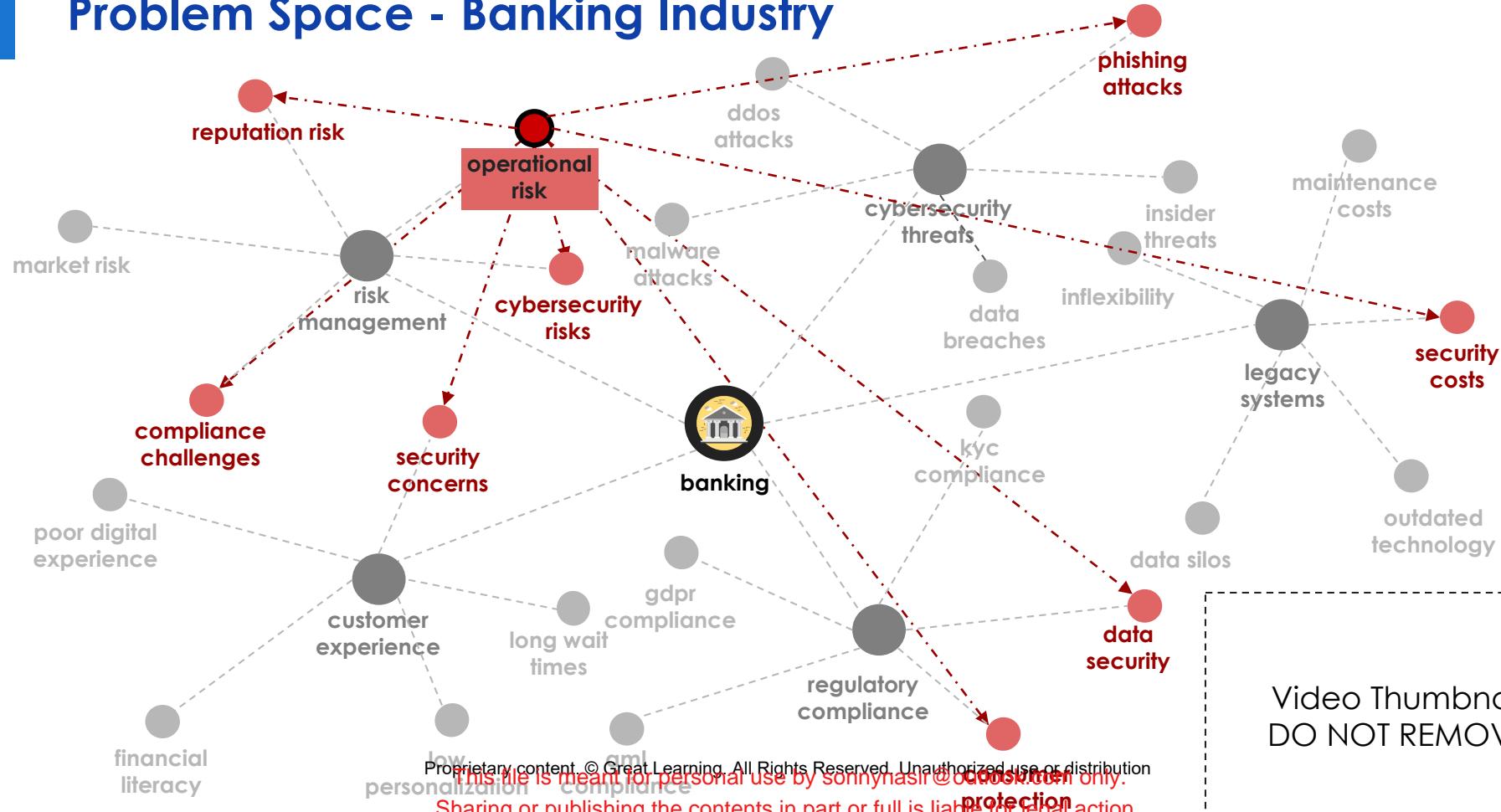
Problem Space - Banking Industry



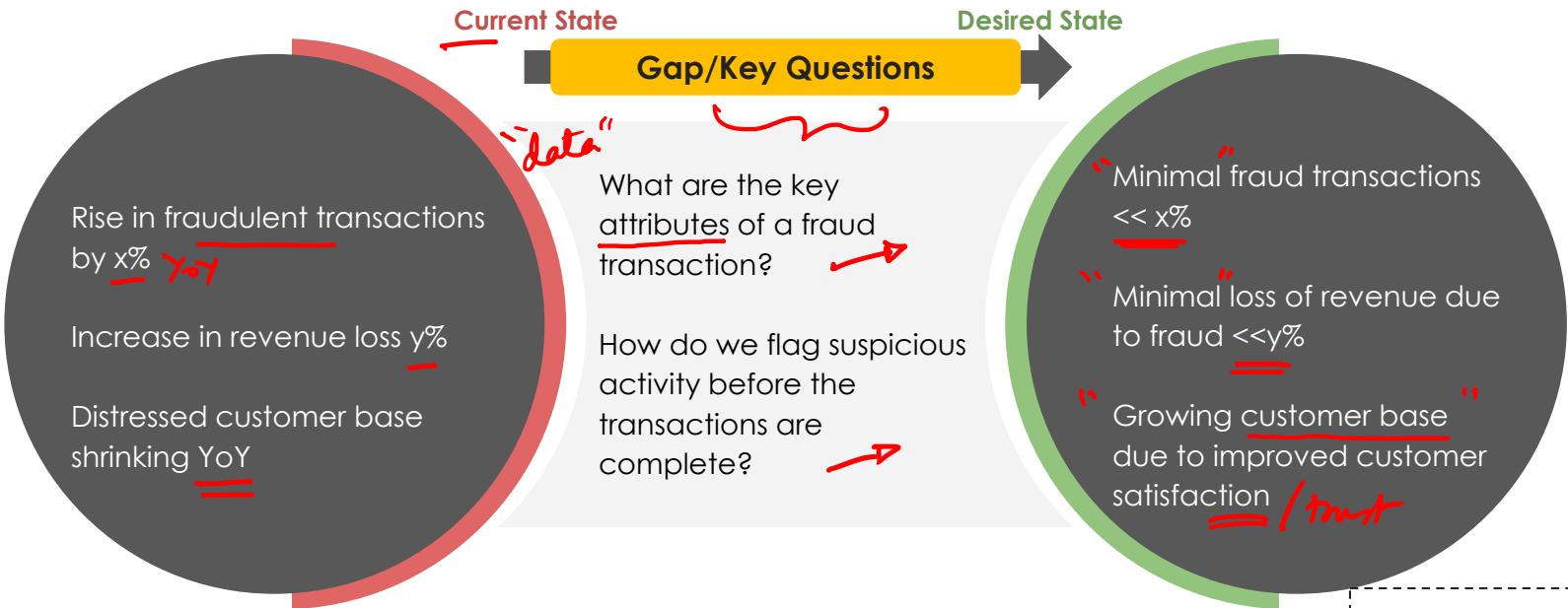
Problem Space - Banking Industry



Problem Space - Banking Industry



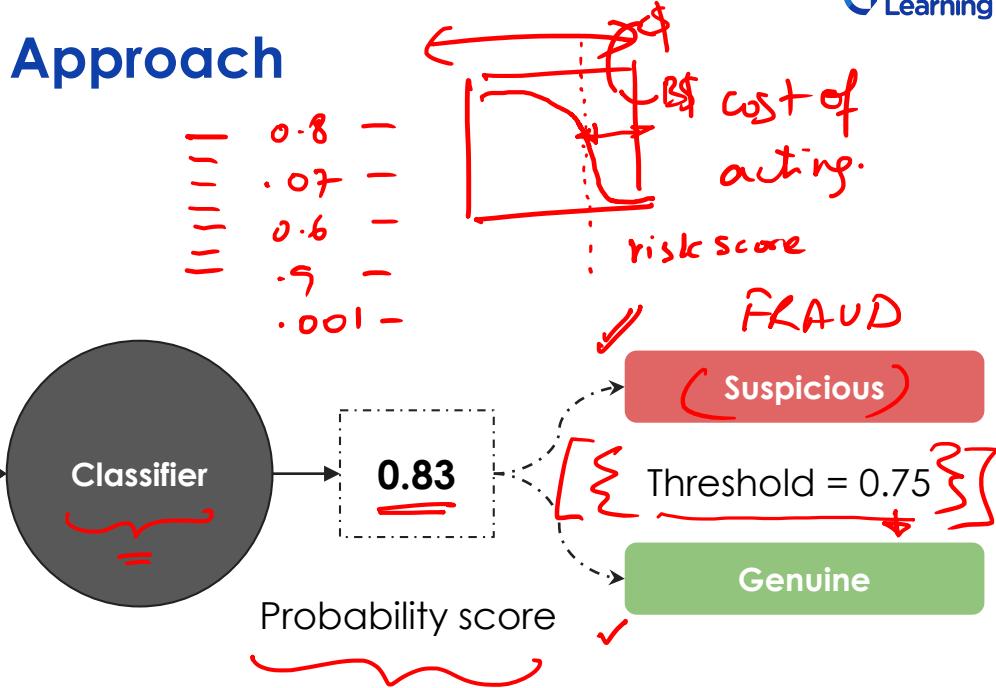
Credit Card Fraud detection



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Credit Card Fraud detection - Approach

- Is the transaction amount unusually high?
- Is the location of transaction new/unusual?
- Is the device new/old?
- Is the merchant category new/unusual?
- What kind of transactions have been performed in the past?
- When was the card issued?
- Has the card been reported stolen/lost?

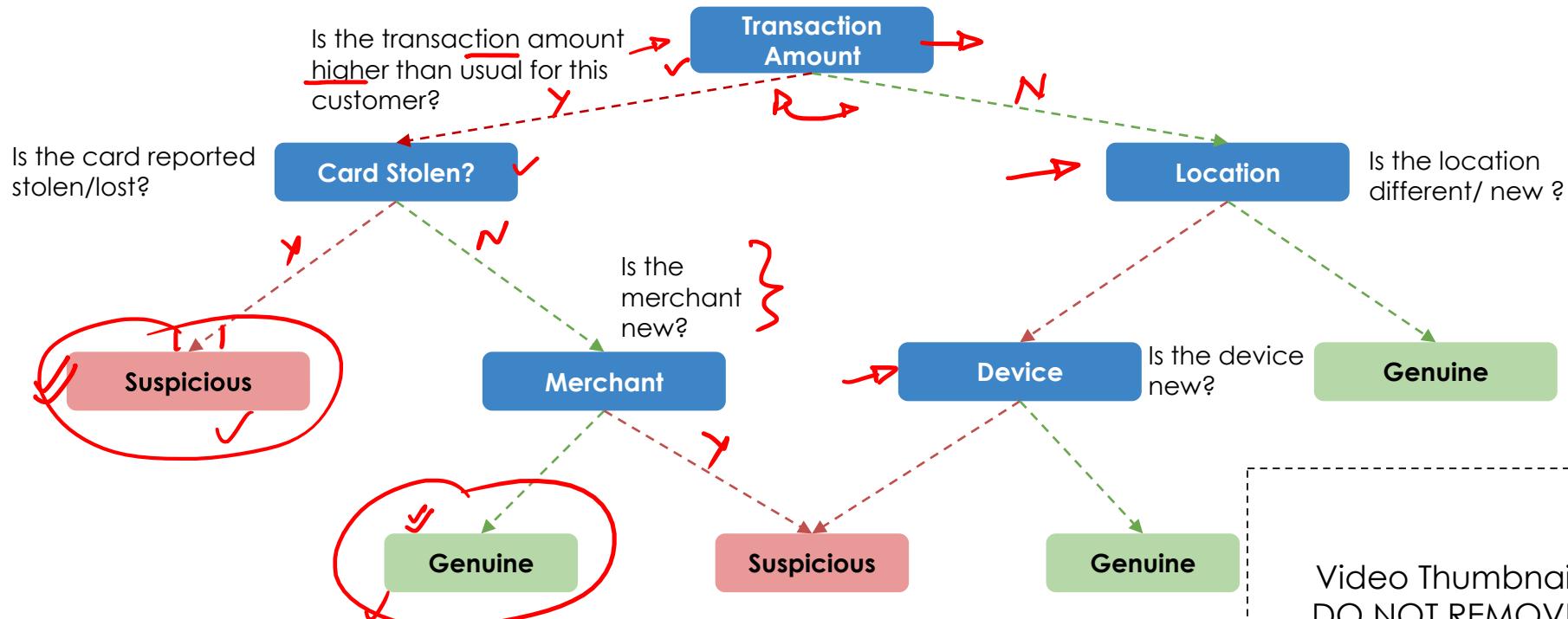


The classifier learns the features of the input data to classify data into categories based on a certain threshold.

Credit Card Fraud detection - Approach

A simple decision tree

Threshold: More than 2 questions are suspicious



Summary

- The problems exist in an interconnected manner
- Solving one problem requires one to think thru many factors
- Ability to think through factors is driven by the depth of domain knowledge
- Collecting, preparing and using the right data is directly dependent on domain knowledge
- Using the right data science method is also heavily dependent one's understanding of the domain
- Defining the problem well in light of the domain context is critical to finding right insights and delivering impact for the business

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Happy Learning !

