Construction Management Company

Roadmap

01 Introduction

02 Model Formation

03 Queries in Practice

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Introduction

Construction Management is changing quickly becoming more digital

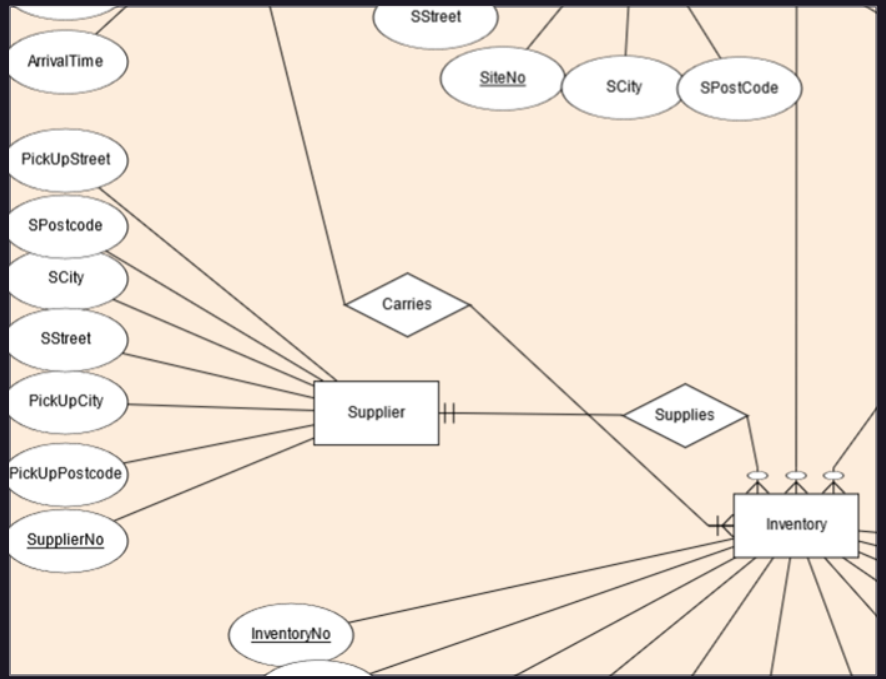
- Construction project management is difficult without database digitization
- High inventory costs with long project timelines
- Optimize resource management
- Long UVA Construction projects

A database could be the answer to optimize inventory management

- Database that will make supply chain and inventory management more efficient, ensures projects finish on time and remain within scope.
- Find delays, conditions, and specific employees and contractors along the inventory process
- Optimized Construction Projects

Model Formation

The conceptual model has entities that are essential to construction efficiency



- Constructed a schema to establish connections between entities
  - Entities were selected for each involved party in a business transaction
    - Who and what need to interact to get a project finished?

- **Example relationship -** Supplier and inventory: Suppliers supply 0 to many pieces of inventory.

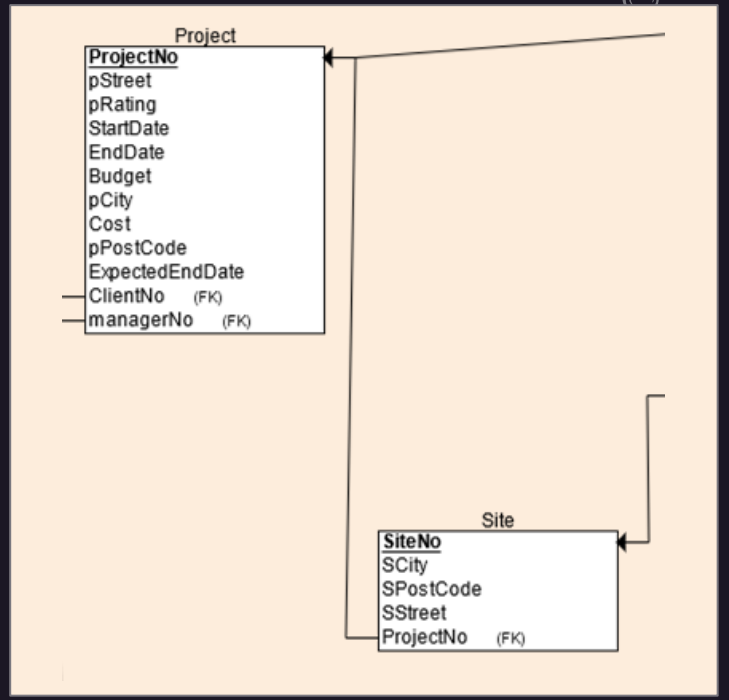
Using 3NF relational modeling helps with flexibility and ease of use

Industry Standard 3NF

- Reduces redundancy
- Enforces data integrity
- Avoids anomalies like inaccuracies and deletions

Designed for flexibility and ease of use

- Add, update and remove data quickly and efficiently
- Data associated with entities in reasonable manner



Queries In Practice

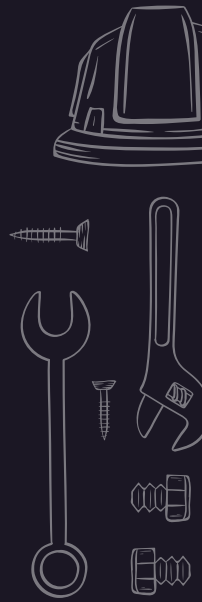
A properly implemented database generates information

Using data to create information

Business Understanding: What questions do we have?

Data Understanding: What data do we have?

Data Transformation: How do we turn data into information?



Case Study: Tracking inventory information to plan order dates and supplier quality

Inventory quality and delivery is key to project success.

By tracking delivery dates and expected delivery times, we can determine **days late**

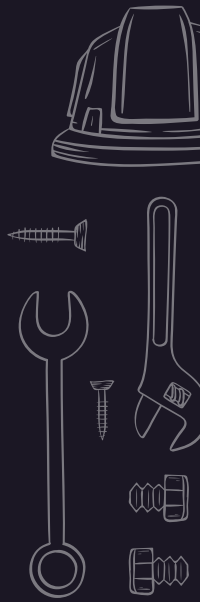
Allows for better **supplier management** and budget planning

Change expected delivery times to increase ratings

Late Inventory directly leads to **higher budgets** and **lower client** ratings

Some suppliers and inventory types are **late more**

Use this information to plan more **accurate timelines**



Other Queries Valuable to CMC

Ratings

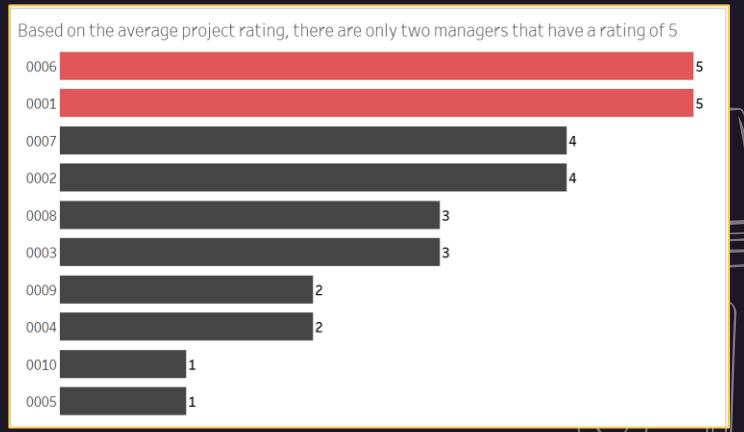
- By tracking project delivery, and storage ratings, we can identify problems in our value chain.

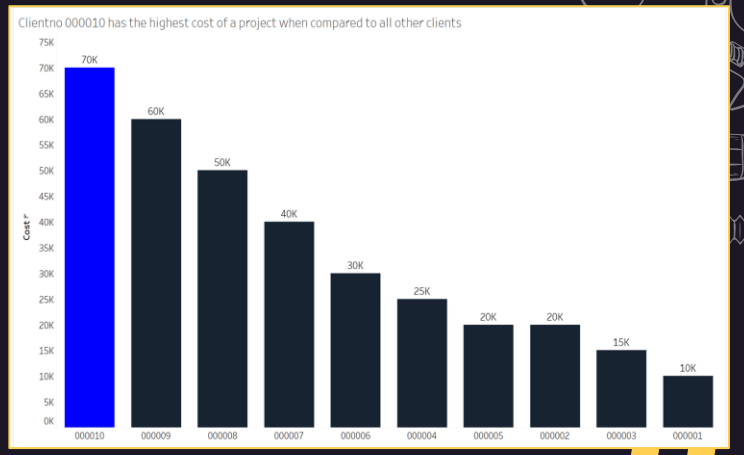
Facility Usage

- Tracking inventory usage and cost by facility allows us to optimize cost structure.

Client Prioritization

- Tracking client locations, project success, and client revenue allows us to optimize our revenue and value creation.





Conclusion

Quantity of data, rating systems, and separating business expenditures are limitations

Limitation #1: Lack of quantity of data

Limitation #2: Rating systems utilized to score the firm

Limitation #3: Inability to separate business expenditures.

Employee information and inclusion of other divisions are future plans

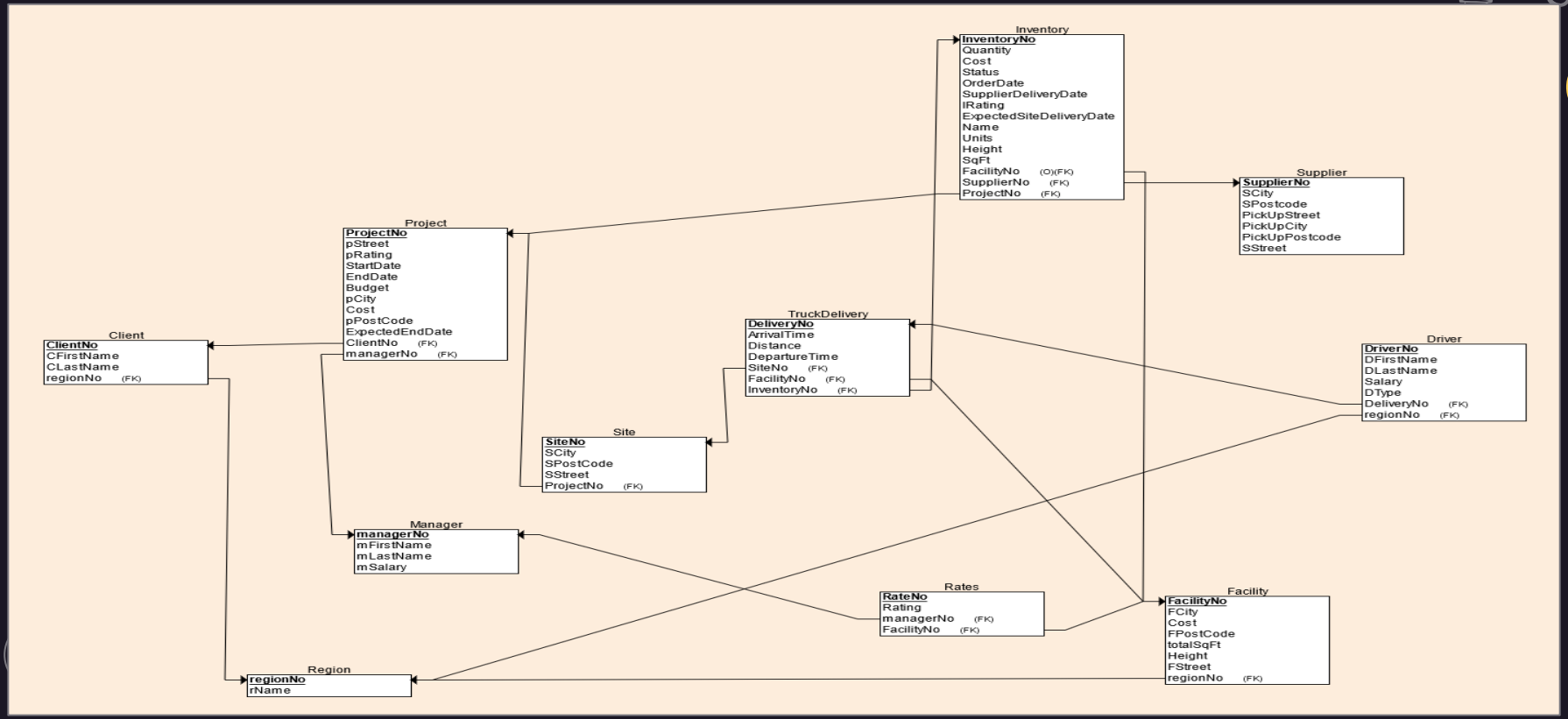
Idea #1: Add Employee attributes and relationships

Idea #2: Inclusion of other divisions

Questions?

Appendix

Appendix #1: Relational Model



Appendix #2: Conceptual Model