To: Dana Edberg

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RE: CutGlass Mosaic & Tile Database

The purpose of this database is to take CutGlass Mosaic & Tile’s paper system to a fully computerized system with the possibility of full automation, and expandability in the future.

**Data Model**

There are two main tables that the the prototype database runs on.

* WorkOrder
  + This table stores all information regarding a specific work order for a customer.
  + The information that can be gathered from this work order includes:
    - Who managed and worked on the order.
    - The status of where the work order is at.
    - Weather it is a preliminary or secondary work order.
    - The name of the customer the work order belongs to.
    - Any important notes.
    - The various dates associated with the work order.
* WorkOrderTask
  + This table stores specific tasks that are worked on for each work order.
  + The information in this entity includes:
    - Task information such as the description and the status of that task.
    - It includes all of the estimates for the task itself.
      * Estimated hours, material costs, labor price.
    - It also includes the square feet of the task.
    - Dates associated with that specific task.

The two tables can be used to find an assortment of information including:

* Average hours worked on each task.
* What tasks are completed.
* The variance in different costs as well as the profit.
* See what employees are doing what as well as what their estimates are.
* Average time that a work order is open.
* Which work orders might be over-due to figure out priorities.
* After some work deriving information you could find the average variance between estimates and actuals to better estimate things in the future.
* See which tasks are done more often than others.
* Get an average of square footage.

The other tables in the database include a majority of the master data, or they are there to support the two main tables.

* Employee
  + Contains information about the employee such as their name, employee ID, and manager or ID if applicable.
* PayRates
  + Includes current and historical pay rate information on an employee.
* DailyTimeSheet
  + This gives a list of tasks and hours worked on those tasks by a given employee for a given date.
* Material and its intersecting table WorkOrderMaterial
  + Together these tables provide information on a given material.
  + What the material is, its unit of measure (UOM), quantity, and its cost given the date.
* Customer
  + This gives information on the customer such as their name, billing address, contact information, and an ID
* Location
  + This table provides the location zip code and address for a given work order.

There are other smaller tables that store information such as descriptions and statuses. An example of this is TaskType which just stores the description for a specific task.

Each of these tables can be used to find derived information such as actual hours, and actual costs, as well as other information such as average pay rates for each employee.

**Next steps and Recommendations**

Before the full implementation of the database a few changes would have to be made in the process.

* Costs will have to start being estimated by task for a specific location.
* They would no longer need job proposals as those have been combined with work orders in the database.
* Estimates must be completed and put in the system before and actual work begins.
* Tasks have to become standardized.
* Materials have to become standardized.

Once the database has been implemented there needs to be some sort of a debugging and testing phase. This means that Cutglass would need to continue their process of keeping paper records as well as inputting the same information into the system. After a short amount of testing (2 to 3 weeks worth if not more) we could move into a first use phase. This includes training everybody how to use the system, and continuous debugging and tweaking as the system begins handling more and more data.

Phase three of the implementation would be the maintenance phase. This phase just consists of training any new employees who will be using the system, as well as maintaining and constantly refining the database to be more efficient. Phase four will be the phase that expands the system. As the business grows the database and its operations will have to scale and grow with it. This involves adding and removing things from the current database.