
School is Cool Inc.

Process & Data Management

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AGENDA

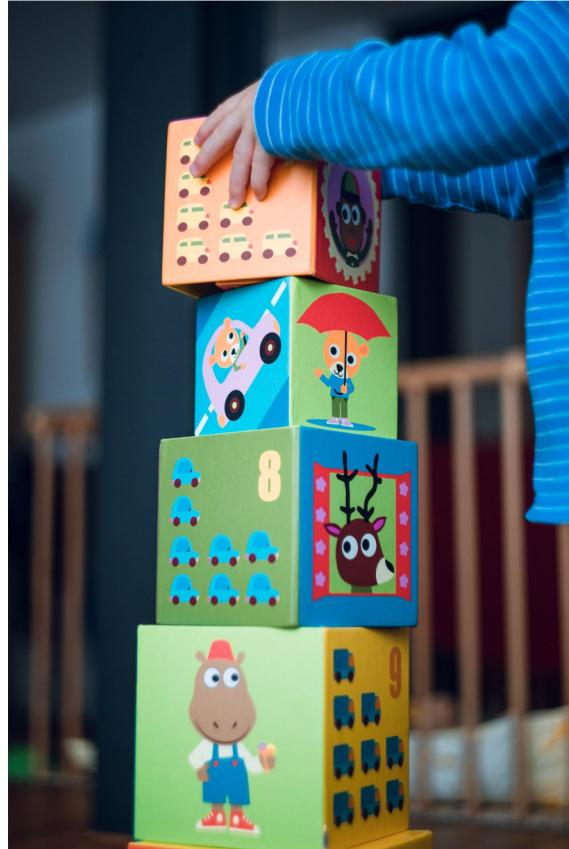
- **Background**
- **Business Process Improvement**
- **Data Management System**
 - ERD Overview
 - Report Demonstration
- **Key Takeaways/Next Steps**



BACKGROUND

Business Overview

- Toy company based in the U.S. and operates internationally
- Large variety of toy products and brands
- Key customers are retailer companies



Business Challenges Overview



Customers receiving
orders in too many
shipments

Inefficient Warehouse
Management



Large amount of
internal data stored in
non-dynamic format



Cross-functional teams
cannot align on most
up-to-date data



Difficulty making high
level strategic decisions
in a timely manner

3 Key Reasons for Business Challenges



Company Growth & Location Changes

- More employees hired
- Decentralization of information



Large IP Sensitive Brand Portfolio

- IP sensitive properties
- Compliance



External Environment

- Technology advances
- Consumer expectations
- Security concerns

Process Review

Step 1

Met as a management team to identify key business challenges for School is Cool Inc.

Step 2

- Brainstormed key considerations for
1. Customer shipment challenges
 2. Data management challenges

Step 3

Created as-is versus to-be business processes

Designed new data management system focusing on needs of sales team and warehouse team

Step 4

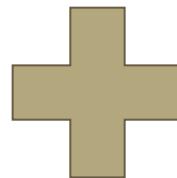
Assessed and refined the business process improvement and data management solution outputs

Step 5

Share business process improvement and new data management system + reports with broader team

Key Deliverables

**Business
Process
Improvement**



**Data
Management
System**

Business Process Improvement

As-Is

Inefficient Order Placement:

- Sales reps do not have visibility on available products before sales meetings
- Need to involve order management team to check product availability



To-Be

Seamless Order Placement:

- Grant sales teams access to inventory system or production schedule
- Sales teams to have more autonomy in the entire process



High Cost Order Fulfillment:

- Orders were sent out to customers in different shipments based on inventory levels in each warehouse

Centralize Order Fulfillment:

- Designate one warehouse as a hub, and ship all products from that hub
- Reduce costs and improve customer experience

Data Management System

ERD OVERVIEW

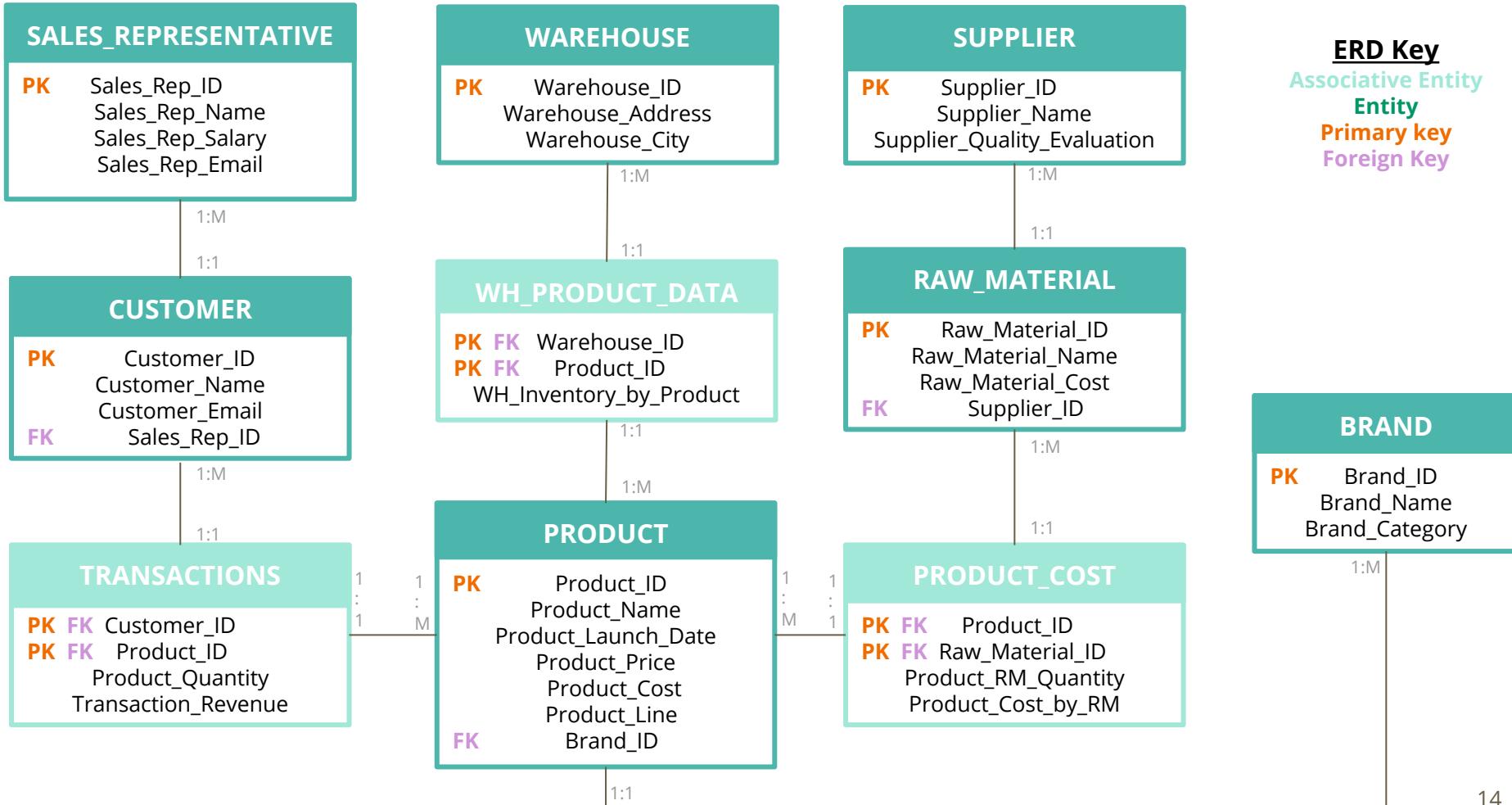
ERD Considerations

1. Ability to generate dynamic business reports for management/sales/warehouse teams
2. Database design, debugging and creation
3. Ease of viewing & updating data
4. Reveal database problems easier



ERD Key

Associative Entity
Entity
Primary key
Foreign key



REPORT DEMONSTRATION

Report 1: Sales Representative Performance

Report Elements

- Sales Rep ID
- Sales Rep Name
- Sales Rep Salary
- Total Sales
- % of Total Sales
- Avg Sales/Customer

Business Value

- Determine annual bonus compensation
- Assess base salary compensation
- Increase training as needed
- Identify upselling & cross-selling opportunities

Report 2: Contribution Margin by Product

Report Elements

- Product ID
- Product Name
- Product Line
- Price/Unit
- Total Raw Material Cost
- Total Labor Cost
- Contribution Margin (CM)

Business Value

- Assess portfolio to prioritize sales of higher contribution margin products
- Allocate resources accordingly
- Assess which variable costs most negatively impact CM

Report 3: Product Recommender

Report Elements

- Antecedent Product
- Product Recommendation
- Support
- Lift
- Model Parameters

Business Value

- Increases cross sell probability
- Data-driven recommendations
- More value from Data Management Solution

Report 3: Product Recommender

```
SELECT ROWNUM RANK,
CONSEQUENT_NAME RECOMMENDATION,
NUMBER_OF_ITEMS NUM,
ROUND(RULE_SUPPORT, 3) SUPPORT,
ROUND(RULE_CONFIDENCE, 3) CONFIDENCE,
ROUND(RULE_LIFT, 3) LIFT,
ROUND(RULE_REVCONFIDENCE, 3) REVERSE_CONFIDENCE
FROM (SELECT * FROM DM$VRAR_SH_SAMPLE
WHERE NUMBER_OF_ITEMS = 2
AND EXTRACT(antecedent, '//item[item_name="Block Bananza - Spring Sun - Spring 2020"]') IS NOT NULL
ORDER BY RULE_LIFT DESC, NUMBER_OF_ITEMS)
WHERE ROWNUM <= 5;
```

RANK	RECOMMENDATION	NUM	SUPPORT	CONFIDENCE	LIFT	REVERSE_CONFIDENCE
1	Dont Get Bored Board Game	2	0.125		1	8

Key Takeaways/Next Steps

Key Takeaways

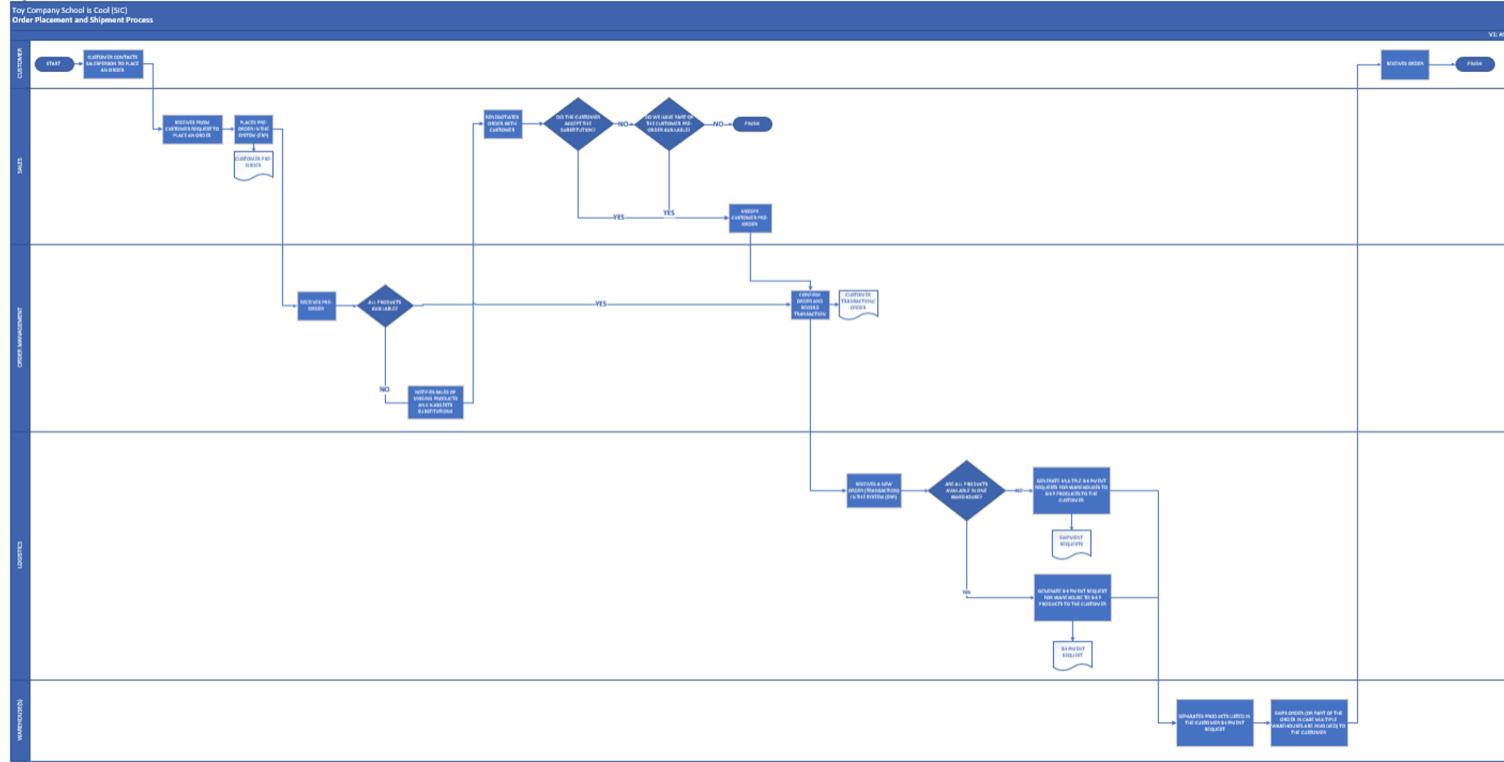
- Project was an important first step for SIC data management improvement from old Excel system
- Launching a new Data Management System and its reports improve SIC performance by using the following enablers:
 - Information Technology
 - Motivation and Measurement
- Process and system improvements combined are powerful to improve business performance

Next Steps

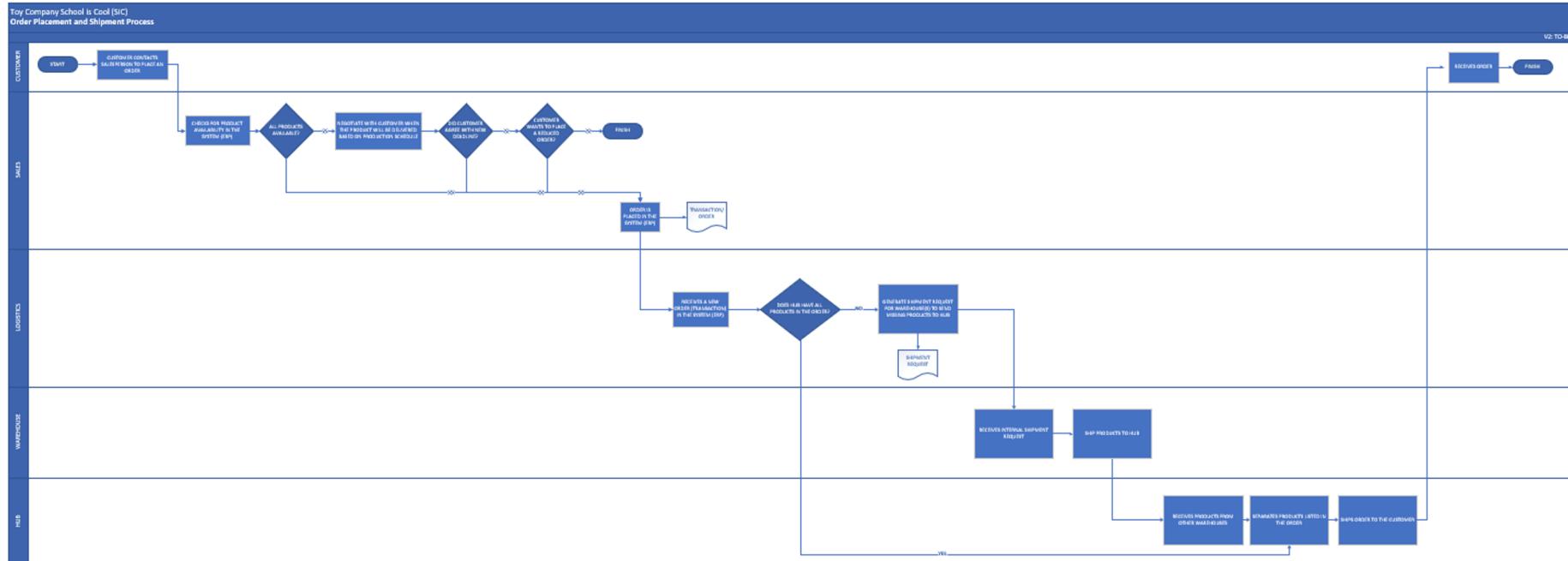
1. Add more departments to the Data Management System (Finance)
2. Assess new opportunities in as-is processes for continuous process improvement
3. Build capacity to leverage Data Miner extension to create Predictive Reports

APPENDIX

As Is Process



To Be Process



Report 1: Sales Representative Performance (Script)

```
select s.sales_rep_id, s.sales_rep_name
, s.sales_rep_salary
, nvl(sum(t.transactions_revenue), 0) "TOTAL_SALES"
, lpad(concat(round(nvl(sum(t.transactions_revenue)
/(select sum(transactions_revenue)
from transactions)*100, 0)
, 2), '%'), 9, ' ')
"PERCENTAGE_OF_TOTAL_SALES"
, round(nvl(avg(t.transactions_revenue),0),2) "AvgSalesPerCustomer"
from transactions t join customer c
on (t.customer_id = c.customer_id)
right outer join salesRepresentative s
on (c.sales_rep_id = s.sales_rep_id)
group by s.sales_rep_id, s.sales_rep_name, s.sales_rep_salary
order by 4 DESC
;
```

Report 1: Sales Representative Performance (Output)

	SALES REP ID	SALES REP NAME	SALES REP SALARY	TOTAL SALES	PERCENTAGE_OF_TOTAL_SALES	AvgSalesPerCustomer
1	1000003	Will West	70000	54619.5	34.08%	18206.5
2	1000001	Jessie Jones	95000	44477	27.75%	22238.5
3	1000006	Cora Connors	70000	31484	19.65%	15742
4	1000000	Sally Smith	80000	21980	13.72%	10990
5	1000004	Ben Brown	80000	7693	4.8%	7693
6	1000005	Danielle Downs	95000	0	0%	0
7	1000007	Gary Garcia	95000	0	0%	0
8	1000009	Joe Johnson	65000	0	0%	0
9	1000002	Tom Twain	65000	0	0%	0
10	1000008	Harry Hwang	95000	0	0%	0

Report 2: Contribution Margin by Product (Script)

```
select p.product_id
, p.product_name
, p.product_line
, p.product_price "Price per unit"
, sum(c.product_cost_by_raw_material) "RawMaterialCostPerUnit"
, sum(c.product_cost_by_labor) "LaborCostPerUnit"
, round((p.product_price - sum(c.product_cost_by_raw_material) - sum(c.product_cost_by_labor)) * 100
        /(p.product_price), 2) "% ContributionMargin"
from product_cost c, product p
where p.product_id = c.product_id
group by p.product_id, p.product_name, p.product_line, p.product_price
order by 6 DESC
;
```

Report 2: Contribution Margin by Product (Output)

	PRODUCT_ID	PRODUCT_NAME	PRODUCT_LINE	Price per unit	RawMaterialCost...	LaborCostPerUnit	% Contribution...
1	1009	Math Mayhem - Fun with...	Math Mayhem - Basics	16.99	7.15	9	4.94
2	1008	Daisy Doll - Annie the...	Daisy Doll - Careers	29.99	14	2.5	44.98
3	1002	Playful Pets - Benny t...	Playful Pets - Dogs	24.99	12.85	2.4	38.98
4	1004	Marvel - Superhero Cla...	Marvel - Multipack	14.99	8.1	2.3	30.62
5	1003	Color and Learn - Spac...	Color and Learn - ...	10.99	3.9	2.2	44.49
6	1006	Chemistry Creations - ...	Chemisty Creation...	12.99	2.84	1.2	68.9
7	1001	Block Bananza - Spring...	Block Bananza - S...	19.99	11.7	1.2	35.47
8	1000	Block Bananza - Fall F...	Block Bananza - S...	10.99	8.6	1	12.65

Recommendation Engine

```
SELECT ROWNUM RANK,
       CONSEQUENT_NAME RECOMMENDATION,
       NUMBER_OF_ITEMS NUM,
       ROUND(RULE_SUPPORT, 3) SUPPORT,
       ROUND(RULE_CONFIDENCE, 3) CONFIDENCE,
       ROUND(RULE_LIFT, 3) LIFT,
       ROUND(RULE_REVCONFIDENCE, 3) REVERSE_CONFIDENCE
  FROM (SELECT * FROM DM$VRAR_SH_SAMPLE
         WHERE NUMBER_OF_ITEMS = 2
           AND EXTRACT(antecedent, '//item[item_name="Math Mayhem - Fun with Fractions"]') IS NOT NULL
         ORDER BY RULE_LIFT DESC, NUMBER_OF_ITEMS)
 WHERE ROWNUM <= 5;
```

RANK	RECOMMENDATION	NUM	SUPPORT	CONFIDENCE	LIFT	REVERSE_CONFIDENCE	
1	Chemistry Creations - Dinosaur Wonders	2	0.125		1	8	1

Recommendation Engine

```
SELECT ROWNUM RANK,
CONSEQUENT_NAME RECOMMENDATION,
NUMBER_OF_ITEMS NUM,
ROUND(RULE_SUPPORT, 3) SUPPORT,
ROUND(RULE_CONFIDENCE, 3) CONFIDENCE,
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RANK	RECOMMENDATION	NUM	SUPPORT	CONFIDENCE	LIFT	REVERSE_CONFIDENCE
1	Dont Get Bored Board Game	2	0.125		1	8