MIS710
Process Innovation and Management
Individual Assignment

Reengineering the Auto Loan Process

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Assignment

1. **Read and Assess IS system**
   - Functional specification
   - PROCESS constituents
   - Relationship map
   - Process map

2. **Develop SHOULD system**
   - Narrative
   - Change levers - PROCESS constituents
   - Identify the key principles of reengineering you plan to use

3. **Develop the following (Rummler)**
   - SHOULD Organizational goals
   - SHOULD Process goals
   - SHOULD Process map
   - SHOULD Relationship map
   - SHOULD Process Map /Sub-Goals
   - SHOULD Functional Goal Summary
   - SHOULD Job/Responsibility Matrix
   - SHOULD Job Model (Design)

4. **Develop a high-level conceptual data model** (e.g., ER) for the business process

6. **Extend the Vision**
   - Other Processes Impacted
   - Future evolution of the System

5. **Costs & Benefits**
   - (Not necessarily in dollar terms)

Auto Loan Process:
Brief Functional Description (IS)

Some steps in the current Auto Loan Process include:

- A customer visits a car dealer and finalizes a car s/he wants to buy after price negotiations
- Customer pays initial down payment, and wants rest of the cost as auto loan
- Dealer prepares paperwork, collect required documents from customer, receives signatures from customer
- Dealer faxes those documents to lender for approval and awaits approval decisions (typically 3-7 days)
- On receipt of the loan request, Lender's "Loan Initiation Agent" creates a loan request case, scan and upload all documents, identify and categorize them, enter required details in the case.
- Reviewer from lender checks all documents, runs credit check and makes approval decision
- Lender might request addition documents or information
- On approval, Lender shares loan details, dealer contacts customer
- Customer visits car dealer again, signs any other required documents
- Dealer applies for VIN registration, permanent license plate
- Customer drives away with newly purchased car
- Lender disburse money to car dealer, sends loan agreement document and monthly payment instructions to customer
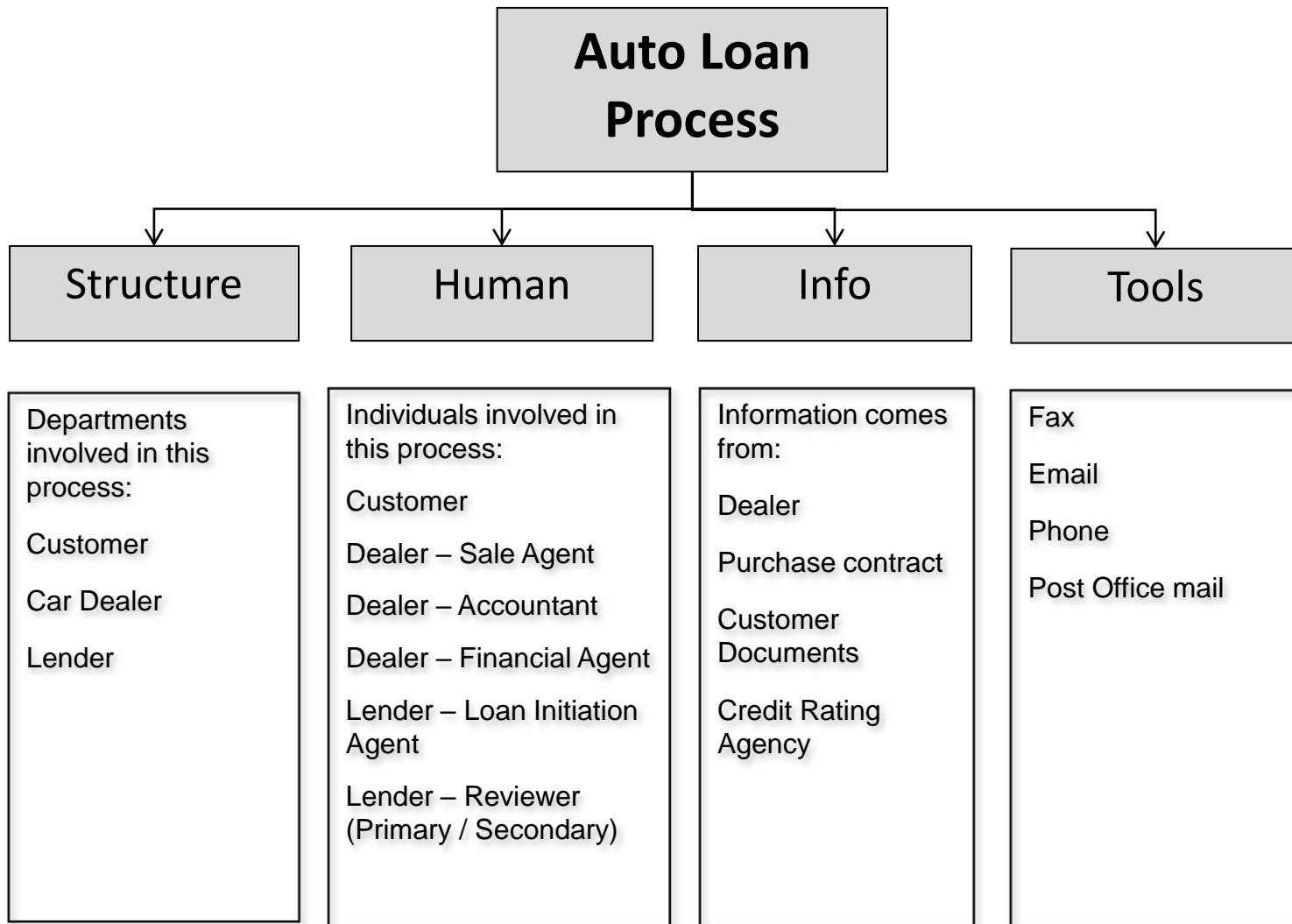
Auto Loan Process:
Brief Functional Description (Current Process)
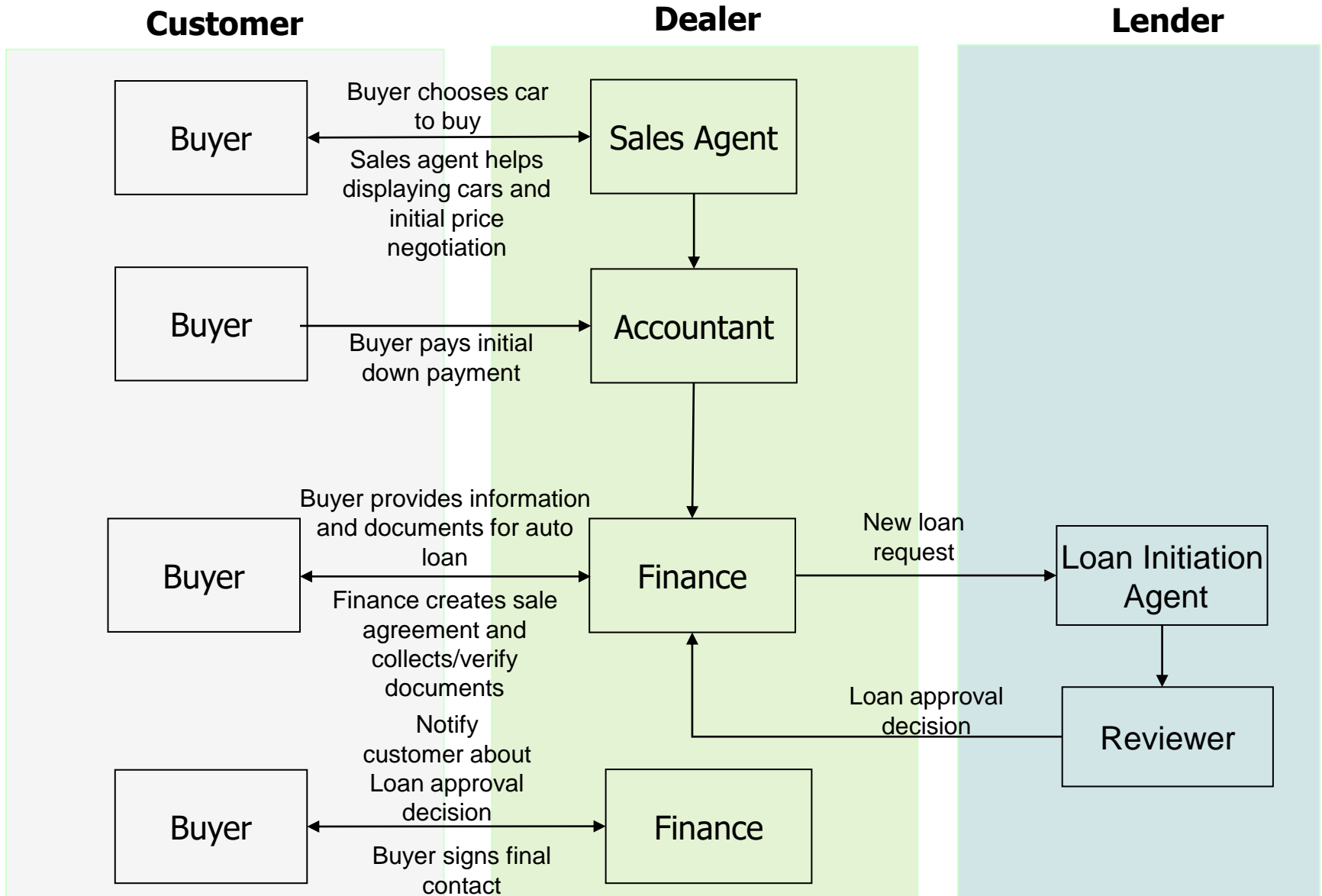
Some of the problems with current process:

– This is a labor-intensive process. All steps are performed manually.

– This is a mostly paper-based process involving paperwork of car purchase contract, customer documents. The main communication tools are fax, mail, email, and phone.

– A lot of time is wasted on the Loan Initiation Agent scanning fax documents, creating a Loan request case, manually entering required details. This is error prone, and many times typos result in unwanted rejections or extended time on corrections

– Loan approval process is mostly manual. Lack of standard on approvals made by different reviewers

– Fraud may be committed by using forged documents. There is no proper control in place to prevent fraud.

– Customer and Dealer will have to wait long time before the sale can be final

– Process is not Covid proof. Customer will have to visit dealership to show physical copy of documents

Auto Loan Process:
PROCESS Constituents (Current State)

Auto Loan Process

- Structure
- Human
- Info
- Tools

Structure

Departments involved in this process:

Customer

Car Dealer

Lender

Human

Individuals involved in this process:

Customer

Dealer – Sale Agent

Dealer – Accountant

Dealer – Financial Agent

Lender – Loan Initiation Agent

Lender – Reviewer (Primary / Secondary)

Info

Information comes from:

Dealer

Purchase contract

Customer Documents

Credit Rating Agency

Tools

Fax

Email

Phone

Post Office mail

Auto Loan Process : Relationship Map (Current State)

Customer **Dealer** **Lender**

Buyer ⟷ Sales Agent
- Buyer chooses car to buy
- Sales agent helps displaying cars and initial price negotiation

Buyer → Accountant
- Buyer pays initial down payment

Buyer ⟷ Finance
- Buyer provides information and documents for auto loan
- Finance creates sale agreement and collects/verify documents

Finance → Loan Initiation Agent
- New loan request

Loan Initiation Agent → Reviewer

Reviewer → Finance
- Loan approval decision

Buyer ⟷ Finance
- Notify customer about Loan approval decision
- Buyer signs final contact

Relationship Map (Current State)

Illogical steps

- Customer signed the initial contract to buy the car without knowing if his/her loan request will be approved or not

- Customer pays initial down payment before the loan process starts. Customer is locked-in without guarantee of loan approval.

Bottlenecks

- Time wasted by Loan request initiation agent to manually scan all documents, categorize and match them against required set of documents. Manual approval decisions widely vary from agent to agent – lack of standards

- Incase more documents needed, lending company will need to contact car dealer, who will then need to contact customer, collect documents and resubmit

Extraneous steps

- Loan request initiation agent has to manually extract data from faxed documents and enter those details in loan application

Auto Loan Process (Current State)
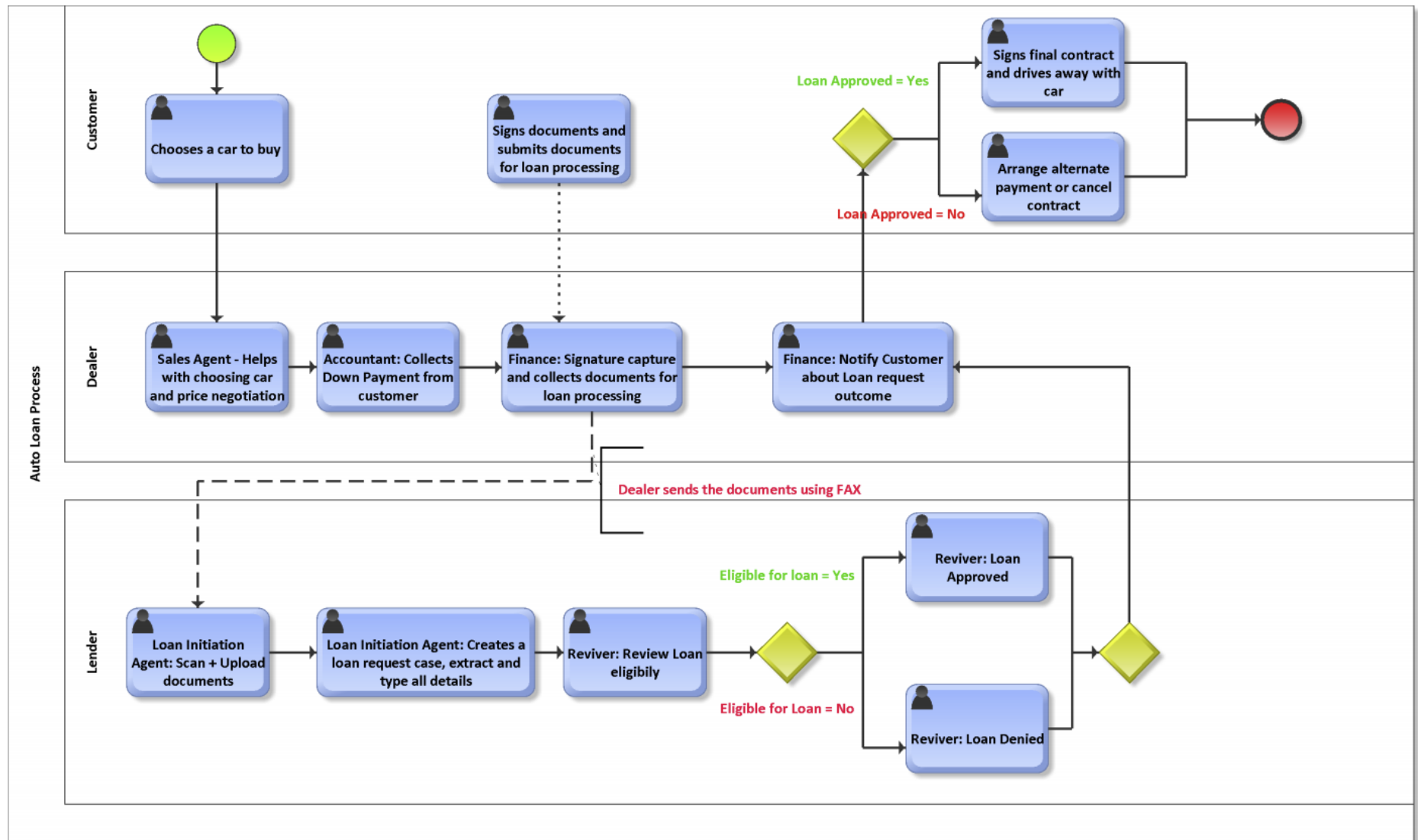
Auto Loan Process : Functional Narrative (SHOULD)

- The customer browses through the brand websites to select the cars and see prices

- Through the respective brand website the customer schedules a test drive and the respective auto dealer is assigned to the customer

- The customer test drives the car, if he does not like the car, repeats the whole process, if the customer likes the car then goes ahead to informing the dealer via phone.

- Dealer and customer discusses about the loan offers.

- Customer portal is made for auto loan by the dealer.

- Required documents are uploaded by the customer and E-signatures are verified by AI and lender

- Lender reviewing agent runs credit checks with the bank and approves/disapproves the loan

- If the loan is approved, the selected car is delivered to customer's house by the car showroom after e-signing final documents with dealer
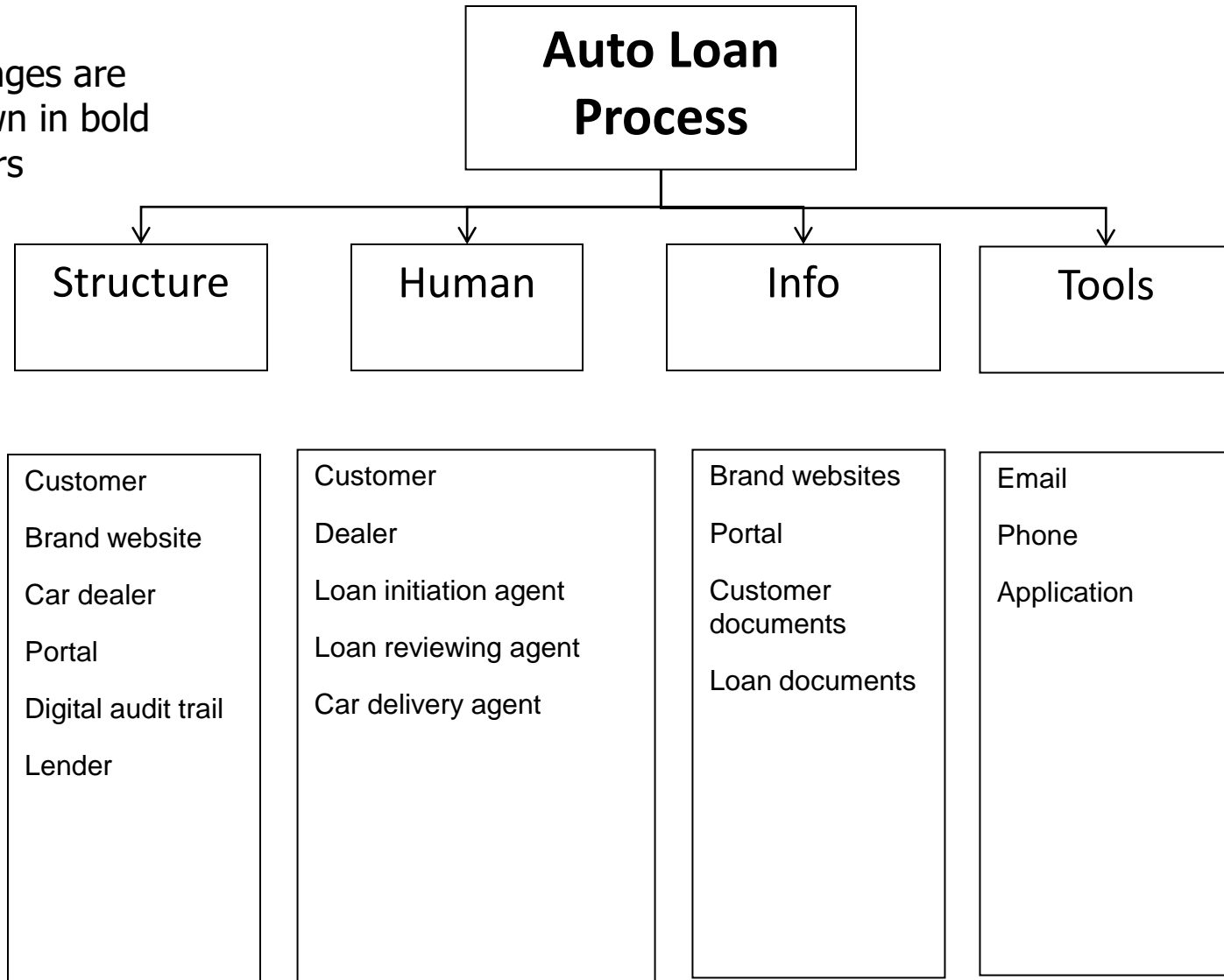
Auto Loan Process :
Behavior Narrative (SHOULD)

- Test drive to be performed after driver brings car to customer's house
- Dealer will connect with lender and customer portal will be created by dealer, for which lender will also have access to.
- Portal will verify and authenticate documents, ID and

  E-signatures
- Lender will do the final review and approve or disapprove the loan after running credit checks
- Final documents will be signed in the portal
- Selected car will be delivered to customer by showroom

Auto Loan Process :
PROCESS Constituents (SHOULD)

Changes are shown in bold letters

Auto Loan Process

Structure	Human	Info	Tools

Structure	Human	Info	Tools
Customer	Customer	Brand websites	Email
Brand website	Dealer	Portal	Phone
Car dealer	Loan initiation agent	Customer documents	Application
Portal	Loan reviewing agent	Loan documents	
Digital audit trail	Car delivery agent		
Lender			

Auto Loan Process :
Key Reengineering Principles Proposed

- **Principle 2:** Question the traditional ways of doing business

Moving to automated process to achieve efficiency and reduction in cost

- **Principle 3: Case Management -** Organize jobs around outcomes

Departments and jobs must be assigned after examining the process of workflow to reduce extra labour

- **Principle 4: Self Service –** Let users do the work

Users do half the job of the labour like uploading documents and selecting car and tracking progress

- **Principle 12: Rationalize the Process -** Perform activities in parallel

Parallel work like reviewing documents while other's documents are being uploaded if missed will speed up the process

- **Principle 14: Triage –** Provide multiple versions of processes

Triage is required during emergency situations when the customer is in need after lender sets priorities and evaluation, even based on incomplete information
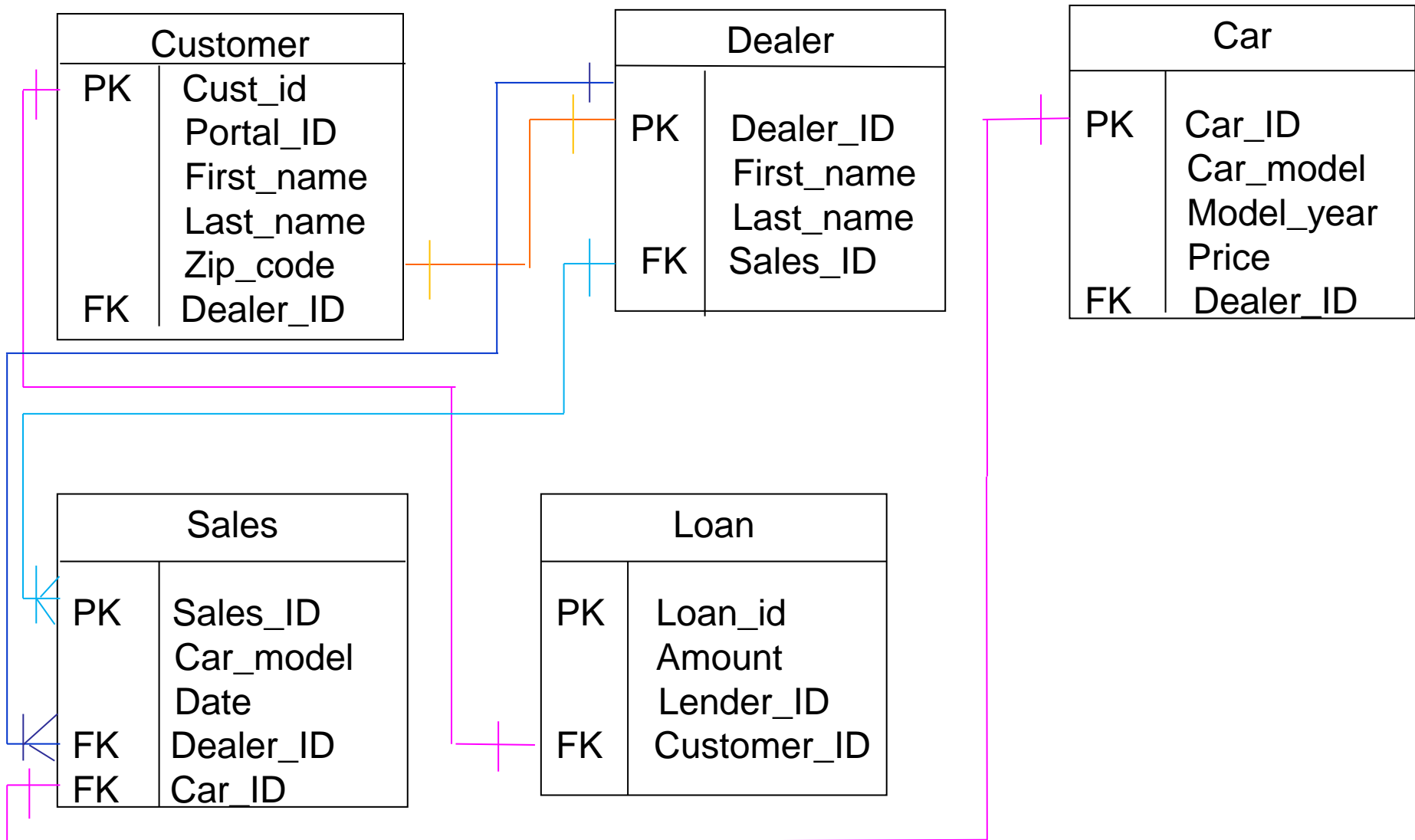
- **Principle 15: Relieve Bottlenecks -** Concentrate first on bottleneck processes/activities

Looking at processes that maximize the process and make it labor intensive with more manual work must be removed to smoothen the process
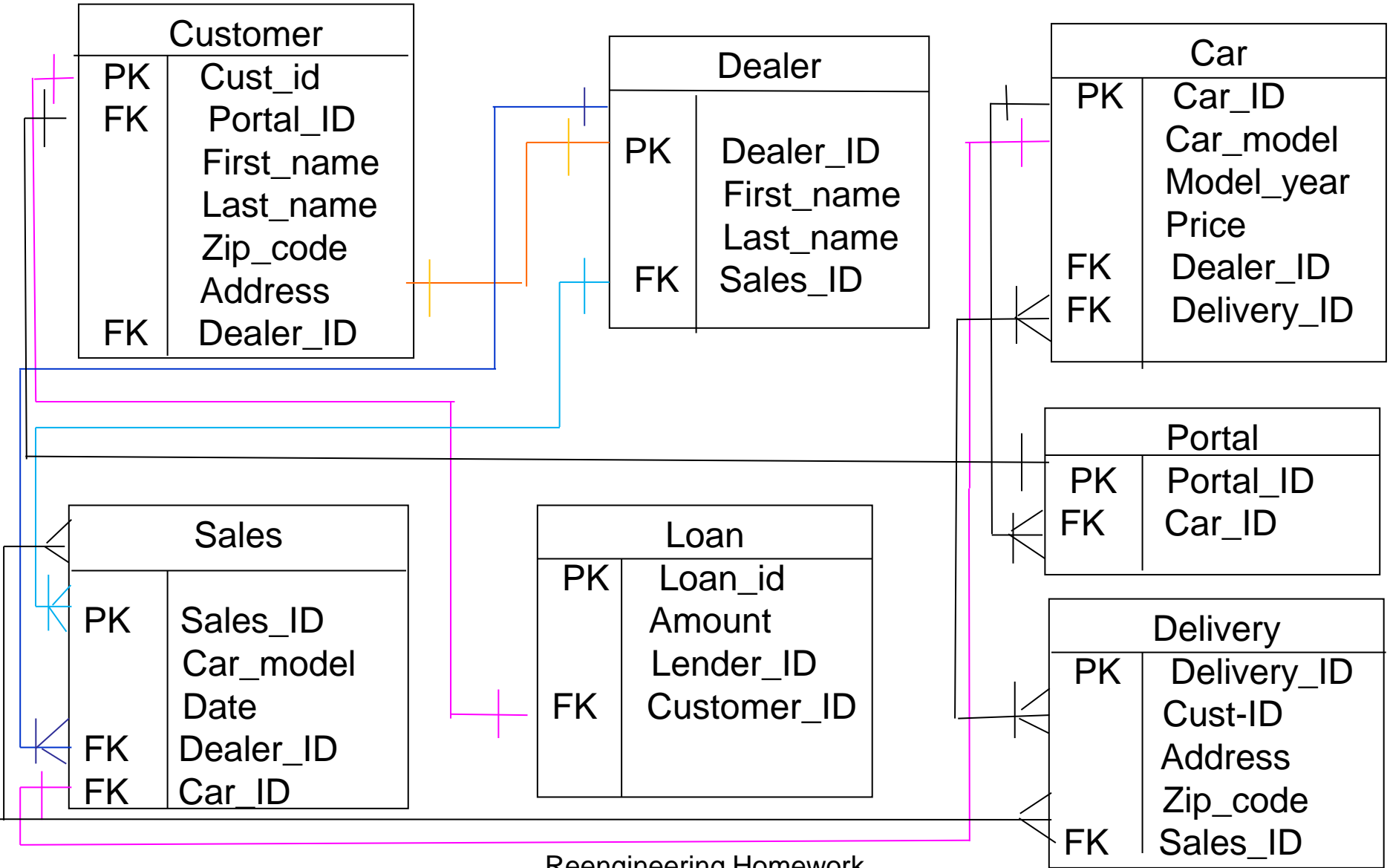
- **Principle 17: Informate -** digitize, provide for human communication and soft information, build in feedback loops

Customer service can be done using chatbots as well as humans to answer queries. This is essential as users take care of half the process
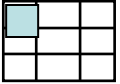
Conceptual Data Model (1)

Customer

PK	Cust_id
	Portal_ID
	First_name
	Last_name
	Zip_code
FK	Dealer_ID

Dealer

PK	Dealer_ID
	First_name
	Last_name
FK	Sales_ID

Car

PK	Car_ID
	Car_model
	Model_year
	Price
FK	Dealer_ID

Sales

PK	Sales_ID
	Car_model
	Date
FK	Dealer_ID
FK	Car_ID

Loan

PK	Loan_id
	Amount
	Lender_ID
FK	Customer_ID

Conceptual Data Model (2)

Customer

PK	Cust_id
FK	Portal_ID
	First_name
	Last_name
	Zip_code
	Address
FK	Dealer_ID

Dealer

PK	Dealer_ID
	First_name
	Last_name
FK	Sales_ID

Car

PK	Car_ID
	Car_model
	Model_year
	Price
FK	Dealer_ID
FK	Delivery_ID

Portal

PK	Portal_ID
FK	Car_ID

Sales

PK	Sales_ID
	Car_model
	Date
FK	Dealer_ID
FK	Car_ID

Loan

PK	Loan_id
	Amount
	Lender_ID
FK	Customer_ID

Delivery

PK	Delivery_ID
	Cust-ID
	Address
	Zip_code
FK	Sales_ID

Reengineering Homework

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Auto Loan Process :
Rummler Matrix: Organizational Goals

- Provide correct and authentic information to customers

- Guiding with proper and accurate knowledge

- Ensure productivity that helps conquer new markets

- Provide integrity and security to customers and stakeholders

- Ensure on-time delivery by assessing all provided documents

- Carry processes to reduce cost and increase productivity by following sustainability

Auto Loan Process :
Rummler Matrix: Process Goals
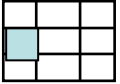
Process Design Goals

- Making the process a more digitized approach

- Increasing efficiency by integrating cloud computing and AI for faster action and results

- Ensuring security and integrity of customer information

- Providing assistance online with information and on-time delivery

- Reducing time taken for reviewing documents by applying a more digitized approach

Operating goals

- The process of scheduling a test drive with the showroom and getting connected with a dealer should be done in 5 mins after customer fills in details
- Dealer and customer discusses loan offers via email and phone
- Customer portal must allow customer to upload required details, documents and e-signatures and queries to be cleared via chatbots and customer service
- Documents review and verification to be finished within seconds by AI and cloud computing and later by lender
- Lender reviewing agent runs credits checks with bank which would take 3- 4 days
- After approval of loan, the car is delivered to the customer's house
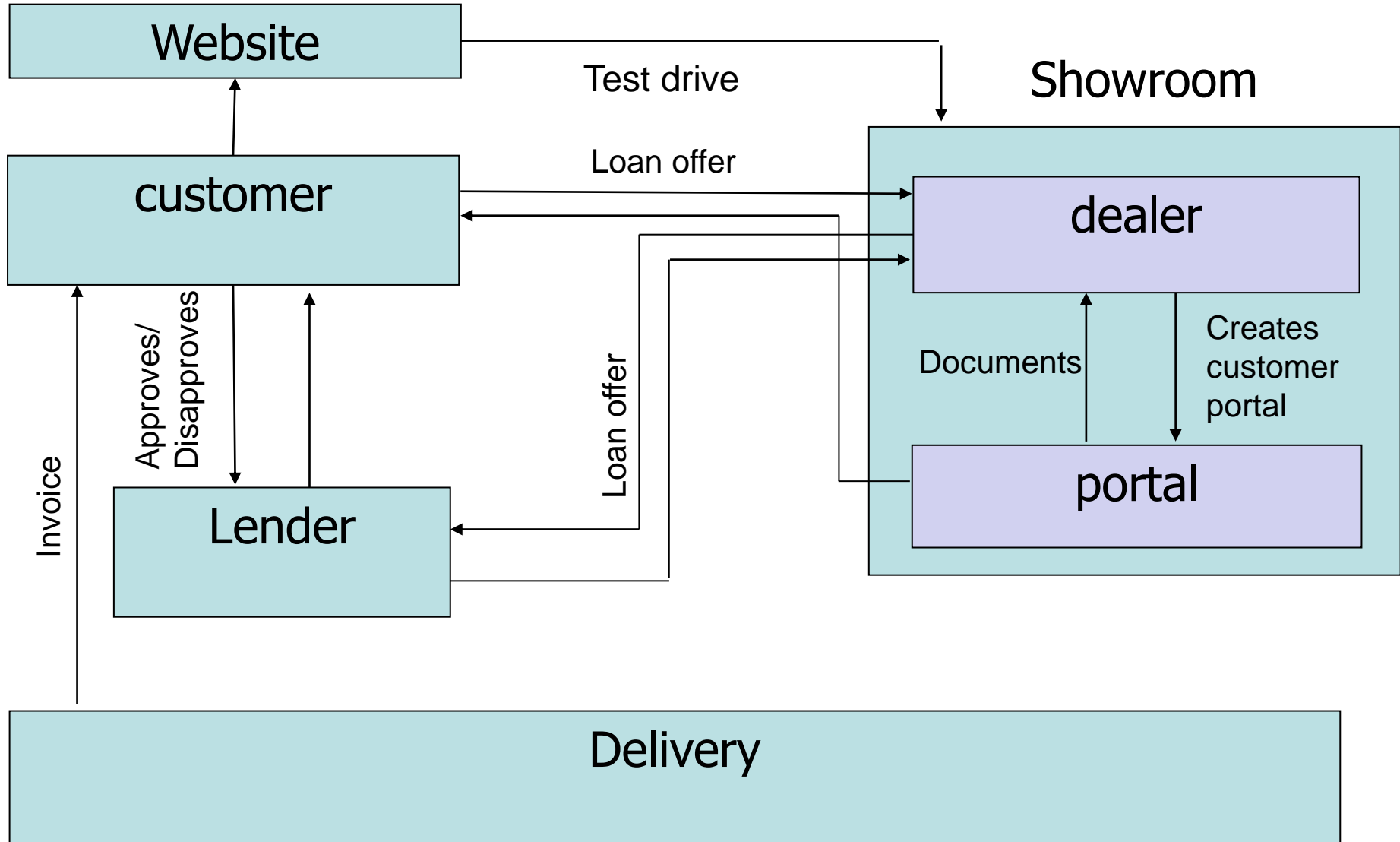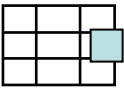- The whole process to be finished within less than a week

Auto Loan Process :
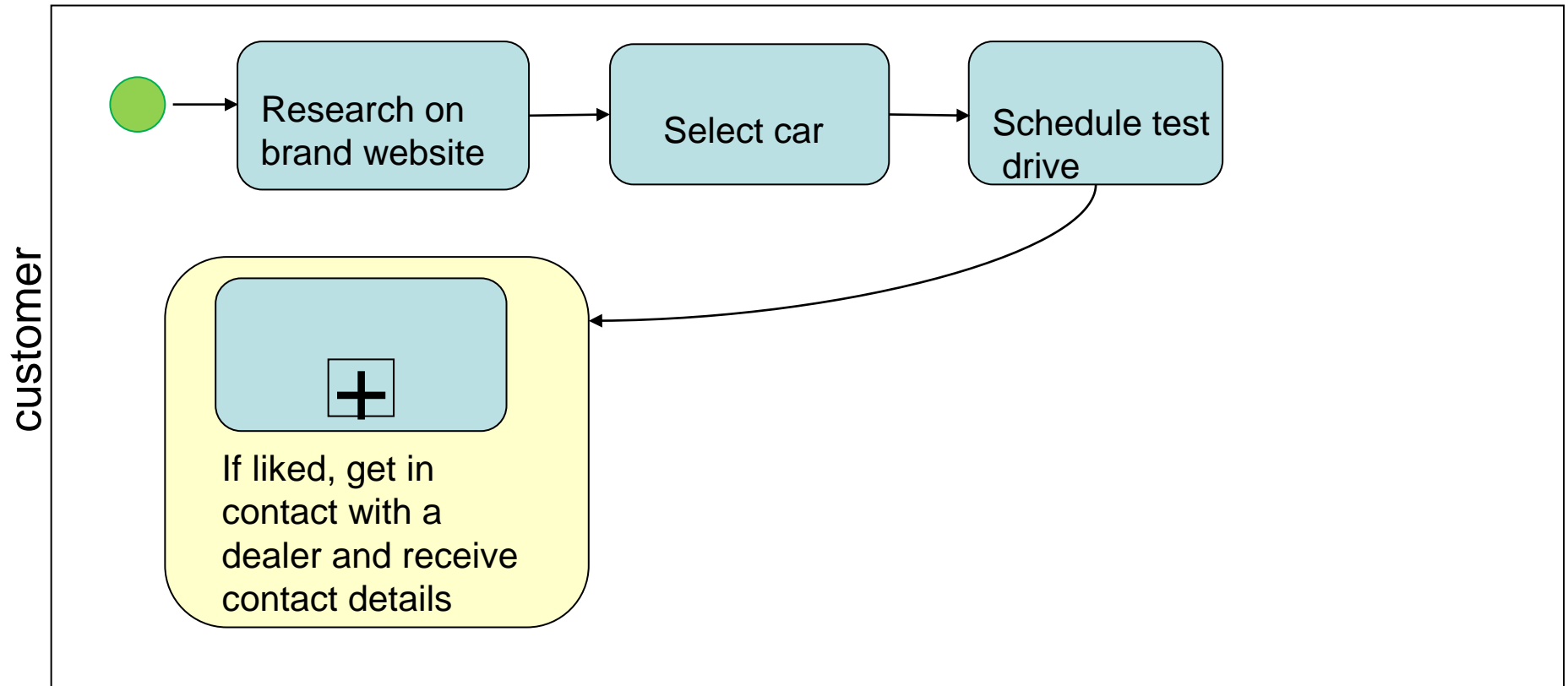## Process Map (SHOULD) – Use BPMN standard

customer: (start) → Research on brand website → Select car → Schedule test drive

Dealer: Test drive → [gateway] Liked / Disliked → [gateway] → Speak to dealer for loan offer over email/ phone → Connect with Loan initiator via portal

Lender/Portal: E-sign E-verification → Documents reviewed by AI and cloud-computing → Credit checks done with bank through same portal by loan initiator → Loan reviewer grants amount after verification

Delivery: Dealer delivers car to house → (end)
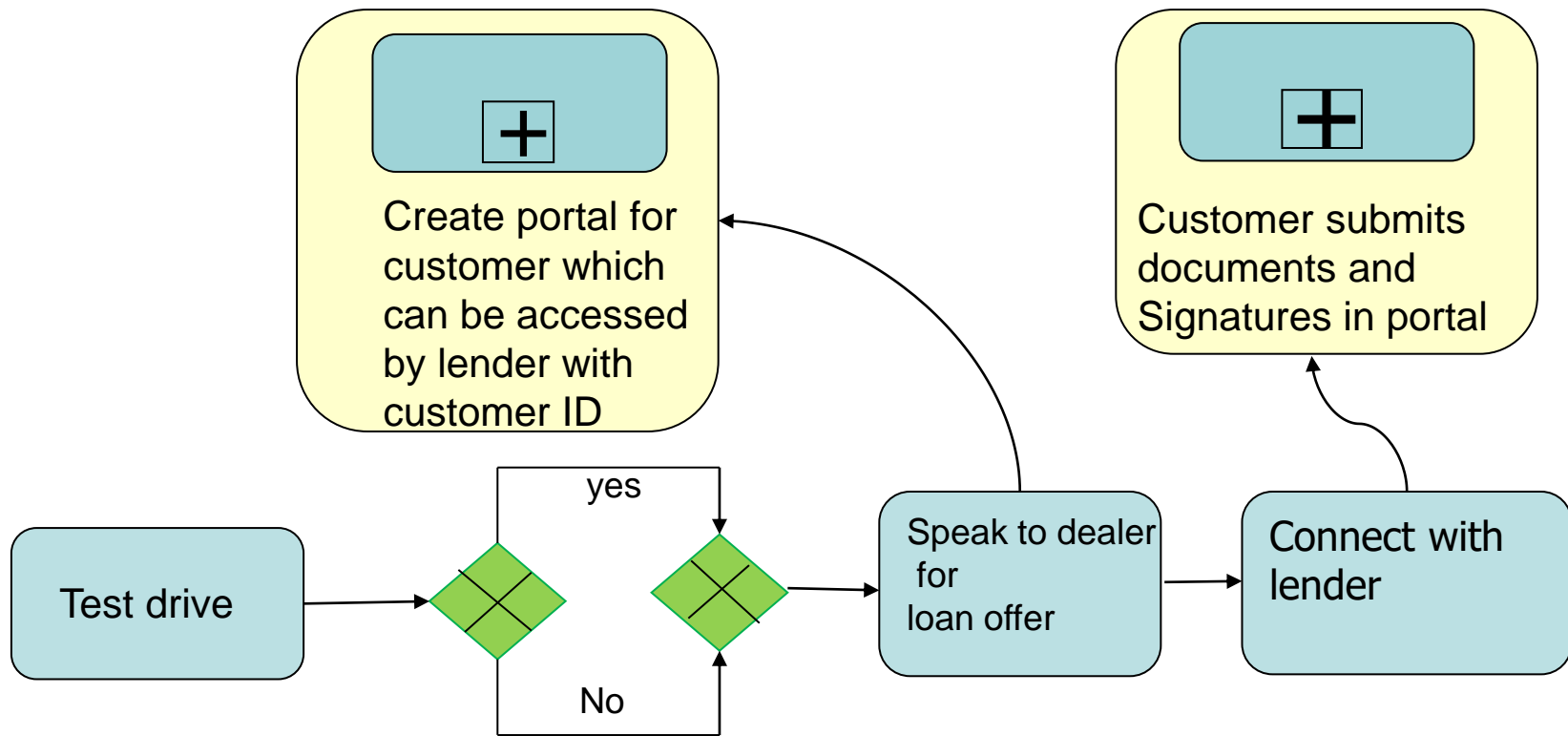
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Auto Loan Process :
Rummler Matrix: Relationship Map

Process Map with Task Sub-Goals

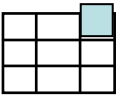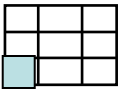Dealer

Test drive → (gateway) → yes / No → (gateway) → Speak to dealer for loan offer → Connect with lender

Create portal for customer which can be accessed by lender with customer ID [+]

Customer submits documents and Signatures in portal [+]

Lender/Portal

After digitized checks
are approved, loan reviewing
agent runs final checks and
uploads decision in portal

E-sign
E-verification

Documents
reviewed
by AI and
cloud-computing

Credit checks
done with bank
through same
portal by loan
initiator

Loan reviewer
grants
amount after
verification

Customer can track
Progress on portal

Delivery

Dealer delivers car to house

Final documents signed by customer and portal becomes invalid

+

Functional Goal Summary

Functions	Functional goals summary							
	Timeliness		Quality		Budget		Business Impact	
	Measures	Goals	Measures	Goals	Measures	Goals	Measures	Goals
Data security and integrity	Protect confidential data of customers							
	Ensure authentic and reliable data	100%	Cross verification of data	100%			Percent of fraud	< 1%
Digitization	Reduce process time							
	Reduce manual entries and labor	95%	Manage process with AI and Cloud computing	100%	Meet budget	within 10% variance	Process efficiency	95%
Application maintenance	Timely updates of software					within 10% variance		
	Check for theft and virus	100%	Update anti-virus software	100%	Meet budget	variance		

Role/Responsibility Matrix

Tool function			Tool responsibilites		
Major process steps	Outputs	Goals	Portal	Verification	Application manager
Reviewing customer documents	Customer documents reviewed	1.Gathered all documents. 2. Authenticate signature. 3.Ensure data security	Allow E-signatures for authentication.	Collect documents necessary for loan approval	Assists with data collection
Verifying customer documents	Customer documents verified	1.Check for data fraud through verification. 2.Ensure process efficiency. 3.Credit checks	Verifying ID with the documents		
Requirements					Frequent checks for updates and virus

Job Model (Design)
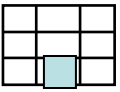
Sales Department		Sales agent			
Outputs	Goals	Outputs	Critical dimensions	Measures	goals
Product launched and sale strategies maximized	Sales monitored every quarter and reports matched	Targets monitored and matched	Sales target	Percentage of sales and sales agents	5% increase per sales agent
			Customer satisfaction	Percentage of queries and complaints with products	95%
Process made faster and revenue increased	Introducing AI and cloud computing for digitzation	Efficiency improved by digitization	Process speed	Percentage of customer documents reviewed	95%

Auto Loan Process :
Costs & Benefits

- Costs:
  - Initial Investment
  - Operating Costs
  - System maintenance and license
  - Software cost
  - Labor cost
  - Delivery and test drive costs

- Benefits:
  - Reduce paper-work and labor
  - Reduce departments
  - Reduced human error
  - Reduce process time
  - Reduction in process costs
  - Increase data security and integrity
  - Improved customer satisfaction

Auto Loan Process :
Other Processes Impacted

- Reduction in jobs and departments

- Time taken for answering queries of customers might be impacted during seasonal times

- Load on data administrators to manage data load

- Sudden change in flexibility of process

- Adapting to remote work might be a challenge

Auto Loan Process
Future Evolution of The System

- Payment process can be made more dynamic and flexible

- Transportation/ Logistics process can be made faster

- Review through AI can be made accurate

- Customer service platform can be made flexible and faster with increased accuracy