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Information Systems 01PDWOV

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Books, notes are not allowed. Write only on these sheets.

Car damage repair after accident

Accidents happen and cars are damaged. Car insurance may cover this damage. Let's assume that D1 (Driver1, V1 = vehicle1), insured with I1, had an accident with Driver2 (insured with I2, and driving V2). D1 is responsible for the accident, so I1 will pay the repair of V2.
In the following we consider the damage claim process. So assume that all the process for notifying the accident to companies I1 and I2 has been made, the agreement on who was responsible for the accident was completed too, the handling of the damage claim can start by opening a claim request.
In the damage claim process the delicate point in the repair is the estimation of the cost for the repair. This evaluation is made by an insurance adjuster (perito assicurativo). An insurance adjuster is a professional, by law must not be an employee of any insurance company, can do this job only after passing an exam, and must be part of the national insurance adjuster register (albo professionale). The value of the repair cannot exceed the commercial value of the car.

AS IS process
The claim process (reimburse D2 for damages on V2) is handled by I2 . (Remark that, by law, I2 and not I1 manages the claim).
I2 opens a claim request, in the name of D2, for V2. Company I2 selects an insurance adjuster IA and sends to IA the claim request by email. IA contacts D2, agrees on an appointment to evaluate the damage. After the appointment IA sends, by email, a report with a description of the damage, an estimate of the amount, pictures of the damage on V2.
I2 analyzes the report, if accepted sends to D2 (by paper letter) the damage reimbursement proposed. D2 can agree or not with it, if he agrees he brings V2 to a body shop (carrozzeria), V2 is repaired, D2 pays and sends the invoice to I2, I2 reimburses D2, pays a fee to IA, I2 closes the claim process.

TO BE process
I2 selects a number of body shops around the nation (agreed body shops). The start of the claim process does not change. I2 opens a claim request, in the name of D2, for V2. D2 has a personal account on the information system of I2, on this account can see her claim request, the list of agreed body shops, and instructions on how to proceed. D2 selects a body shop BS from the list and drives D2 there. BS takes charge of D2, accesses the claim request about V2 on the information system of I2. BS evaluates the damage and estimates the value for the repair. All this info, and pictures of the damage, is attached to the claim request. I2 evaluates all and: either agrees, or not. In case of no agreement sends an insurance adjuster IA to evaluate the damage. Also IA accesses all info on the information system of I2, and uploads another estimate for the damage. Finally I2 and BS agree on the amount. BS makes the repair.
When ready BS notifies D2 who can retire the vehicle. I2 pays BS, possibly pays a fee to IA, closes the claim process.

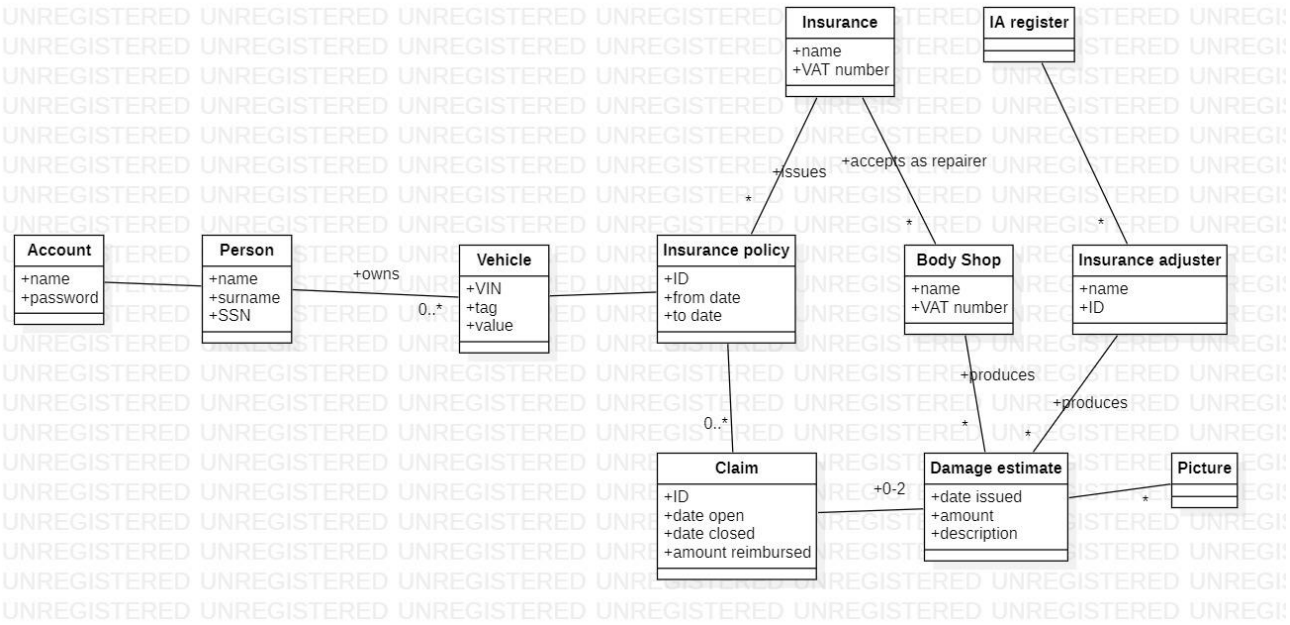
In the following model the TO BE situation.

1 Organizational model: list roles or organizational units involved

Insurance
Driver
Insurance adjuster
Body shop

2 Functional model: Design and model (using BPMN + UML class diagram) the TO BE process

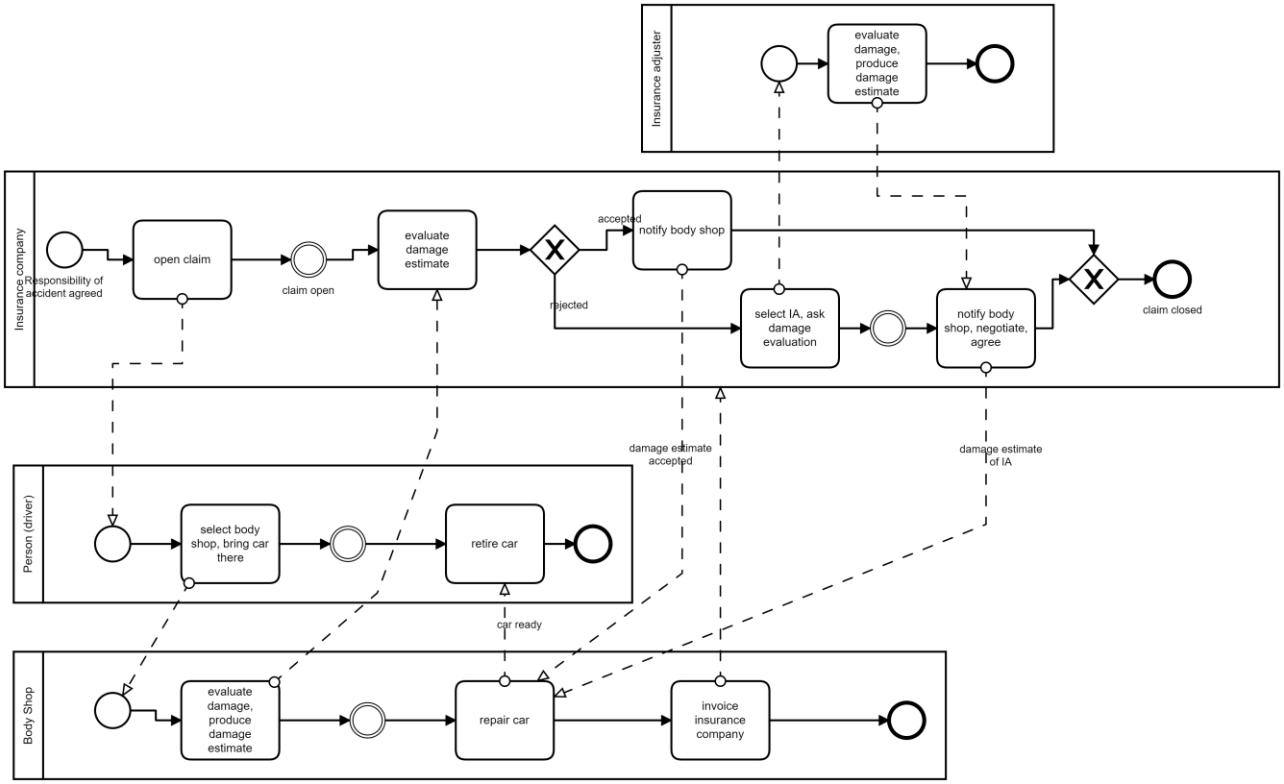
There can be two damage evaluations (one from BS, one from IA), and this is modeled with two relationships (not two classes).
Damage evaluations should be attached to claim (vehicle can have many claims, and same for policy, attaching evaluation to vehicle or policy is ambiguous)



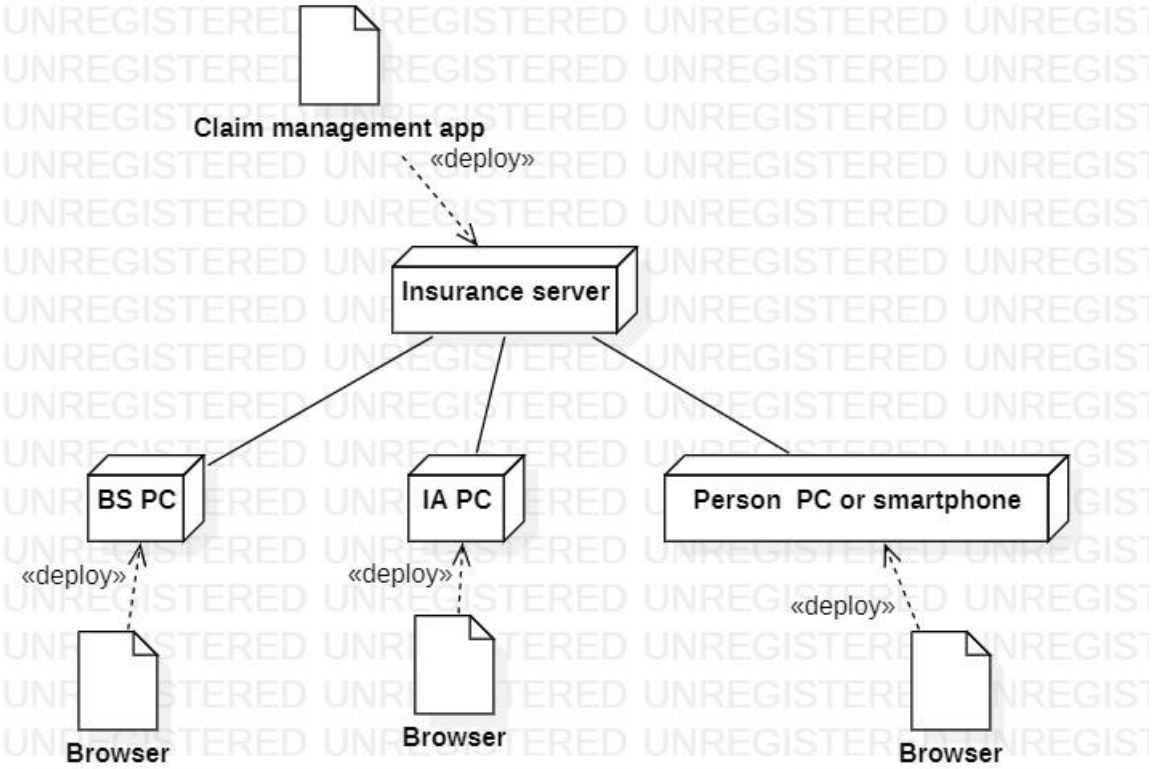
Processes:
Claim management
Selection of agreed body shops by insurance company
Account opening (by customer)
Policy definition and purchase

The process considered is in fact only one (claim management). All of you have written many rows, and each is in fact an activity inside claim management (and not a full process). I have accepted it anyway.

Detail of ‘claim management’


Insurance adjuster
evaluate damage, produce damage estimate
Insurance company
Responsibility of accident agreed
open claim
claim open
evaluate damage estimate
accepted
notify body shop
rejected
select IA, ask damage evaluation
notify body shop, negotiate, agree
claim closed
damage estimate accepted
damage estimate of IA
Person (driver)
select body shop, bring car there
retire car
car ready
Body Shop
evaluate damage, produce damage estimate
repair car
invoice insurance company

3-a IT Model / Technological model: describe the hardware architecture of the system
(use **UML deployment diagram**)



3-b Business rule: define (in English, or formally) at least one business rule for the process

Claim.amount_reimbursed <= Vehicle.value

5 Define the KPIs, considering these high level business goals (or CSF), CSF1 maximum convenience for driver CSF2 decrease cost of claim process.
If needed, define also indicators that are not KPIs.

CSF name	KPI Category (General, cost ..)	KPI Name	KPI Description	Unit of measure
	General / volume	NC	Number of claims per year	
	General	NBS	Number of agreed body shops	
	General	NIA	Number of IA dealt with	
		NE	FTE Employees of insurance company dealing with claims	
		E_NE	Effort of employees dealing with claims	
CSF2	Cost	UC_claim	Unit cost to manage a claim (does not include cost of repair) = (E_NE + cost of IT support)/NC + IA fee	Euro
CSF1	Service	LT_claim	Calendar time from opening claim to closing claim = LT approval + LT repair	time
		LT_approval	Calendar time from opening claim to approval of repair cost	Time
		LT_repair	Calendar time for repair (not under control of Insurance, depends on BS)	Time
CSF1	Quality	CS	Customer satisfaction level (via survey)	

Not a KPI: amount of money employed for the repair by driver (CSF1)
Amount of frauds in repairs (inflated repairs) (CSF2)

6 Compare the previous and the current situation, using the KPIs defined above

KPI	AS IS	TO BE
NC, NE, E_NE		No change
UC_claim		Could be reduced (save IA fee in majority of cases) (E_NE does not change much)
LT_Claim		Could be reduced (because LT approval should be shorter, since IA not involved in most cases)
Amount of money employed by driver	Value of repair	Zero.
Amount of frauds		Could be higher (BS may have interest to inflate cost of repairs) (requires to add some control activity, ex random checks by insurance inspectors)
CS		Should increase

7 Considering the insurance company and the infrastructure they have to build or acquire for the TO BE, define the software functions needed

Process /Activity	**Software function(s) needed**
Open claim	Open claim, close claim, attach claim to policy, modify claim
Produce / evaluate damage estimate (BS, I, IA)	Open damage estimate, attach to claim, attach pictures, insert/modify amount, accept/reject
Select body shop (Driver)	Show list of BS, select BS, attach BS to claim

8 Considering the comparison in point 6, summarize pros and cons for the actors in the TO BE situation (add actors if needed)

	PROS	CONS
Driver D2	Amount of money employed = 0 LT_claim probably shorter	Must choose BS from list (less options than selecting any BS)
Insurance	More satisfied customers	Possible increase in amount of frauds
BS	Tighter relationship with Insurance, possible increase in business	
IA		Decrease in business

9 Describe at least one of the cognitive biases that affect decisions.

10 Describe the PICK chart as used to select processes to improve

11 A company has two full time employees, and one part time (50%) employee. How many FTE does the company have?

(1+1+.05) = 2.5

12 Describe the high level software functions offered by a CRM

13 Write one or more examples of technological innovations that deeply impacted a business domain, and therefore the strategy of companies within the domain

Digital cameras (Fuji vs Kodak)