

Scanner Trolley : a perfect way to cut the line

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I. Problem


Supermarkets in Indonesia always have long lines in front of the cashier specially if there are sales or prices are cheaper and also when it is weekends where Indonesian usually does their grocery shopping.

According to our observation the main problems are first is cashier workers usually take a long time in scanning every item and packaging it, Second one is some buyers' will just buy one or two items but still they have to wait for their turn to pay their bought items, and the third one is sometimes there's no proper line.





After we came up with our alternatives we hope that the system in Indonesia will be more efficient in terms on grocery stores where the customers spend more time on the cashier section, we believe that our idea can help to lessen the long lines in front the cashier section.

We made a simple survey for our Indonesian friends so that we can understand more about their opinion and the current situation in Indonesia, so this is the outcome of our survey:



Understanding Indonesian groceries and supermarkets

1. Do you or any member of your family go to supermarket?				
			Response Percent	Response Total
1	Yes		100.00%	26
2	No		0.00%	0



Analysis	Mean:	1	Std. Deviation:	0	Satisfaction Rate:	0	answered	26
	Variance:	0	Std. Error:	0			skipped	0




2. If yes, how many times in a week?						Response Percent	Response Total
1	1					26.92%	7
2	2					26.92%	7
3	3					26.92%	7
4	4					0.00%	0
5	5					0.00%	0
6	6					0.00%	0
7	7					0.00%	0
8	8					0.00%	0
9	9					0.00%	0
10	10					0.00%	0
11	Other (please specify):					19.23%	5





Analys s	Mean:	3.73	Std. Deviation:	3.62	Satisfaction Rate:	27.31	answered
	Variance:	13.12	Std. Error:	0.71			26
							skipped
							0
Other (please specify): (5)							
1	14/05/18 12:00PM ID: 83603010	0					
2	14/05/18 12:10PM ID: 83604206	Not every week.					
3	14/05/18 1:50PM ID: 83620494	seldom					
4	14/05/18 4:45PM ID: 83657196	Not sure					
5	16/05/18 3:54AM ID: 83904219	Kadang"					



3. What day of the week do you or any member of your family usually go to supermarkets?					Respon se Percent	Respon se Total
1	Monday				15.38%	4
2	Tuesday				0.00%	0
3	Wednesday				15.38%	4

4	Thursday		<div></div>					3.85%	1												
5	Friday		<div></div>					26.92%	7												
6	Saturday		<div></div>					53.85%	14												
7	Sunday		<div></div>					46.15%	12												
<div>Analysiss</div> <table><tr><td>Mean:</td><td>8.58</td><td>Std. Deviation:</td><td>4.75</td><td>Satisfaction Rate:</td><td>116.03</td></tr><tr><td>Variance:</td><td>22.59</td><td>Std. Error:</td><td>0.93</td><td></td><td></td></tr></table>								Mean:	8.58	Std. Deviation:	4.75	Satisfaction Rate:	116.03	Variance:	22.59	Std. Error:	0.93			answered	26
								Mean:	8.58	Std. Deviation:	4.75	Satisfaction Rate:	116.03								
								Variance:	22.59	Std. Error:	0.93										
skipped	0																				

4. How many hours do you or any member of your family usually spend in supermarkets?							
				Response Percent	Response Total		
1	Less than an hour			19.23%	5		
2	1 hour			34.62%	9		

3	2hours		26.92%	7
4	3hours		3.85%	1
5	more than 3 hours		15.38%	4
Analysis			answered	26
			skipped	0

5. Reason why you or any member of your family spend too much time in supermarkets?				
			Response Percent	Response Total
1	I'm always having a hard time finding the item I want to buy.		65.38%	17
2	Undecided what brand should I get.		34.62%	9
3	There is always a long line in front the cashier section.		46.15%	12
4	There are just 3 to 4 cashiers in the supermarket I go to.		3.85%	1

5	Workers are too slow					3.85%	1		
6	Other (please specify):					7.69%	2		
Analys s						answered	26		
						Mean: 3.54 Std. Deviation: 2.39 Satisfaction Rate: 38.46		skipped	0
						Variance: 5.72 Std. Error: 0.47			
Other (please specify): (2)									
1	14/05/18 12:14PM ID: 83599615	Finding discount item							
2	14/05/18 4:40PM ID: 83656335	There are so many things to do and to buy in Indonesia's mall							

THE QUESTIONNAIRE WE MADE:

Understanding Indonesian groceries and supermarkets

1. Do you or any member of your family go to supermarket? *

- ☐ Yes
- ☐ No

2. If yes, how many times in a week? *

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10
- ☐ Other (please specify):

3. What day of the week do you or any member of your family usually go to supermarkets? *

- ☐ Monday
- ☐ Tuesday
- ☐ Wednesday
- ☐ Thursday

- ☐ Friday
- ☐ Saturday
- ☐ Sunday

4. How many hours do you or any member of your family usually spend in supermarkets? *

- ☐ Less than an hour
- ☐ 1 hour
- ☐ 2hours
- ☐ 3hours
- ☐ more than 3 hours

5. Reason why you or any member of your family spend too much time in supermarkets? *

- ☐ I'm always having a hard time finding the item I want to buy.
- ☐ Undecided what brand should I get.
- ☐ There is always a long line in front the cashier section.
- ☐ There are just 3 to 4 cashiers in the supermarket I go to.
- ☐ Workers are too slow
- ☐ Other (please specify):

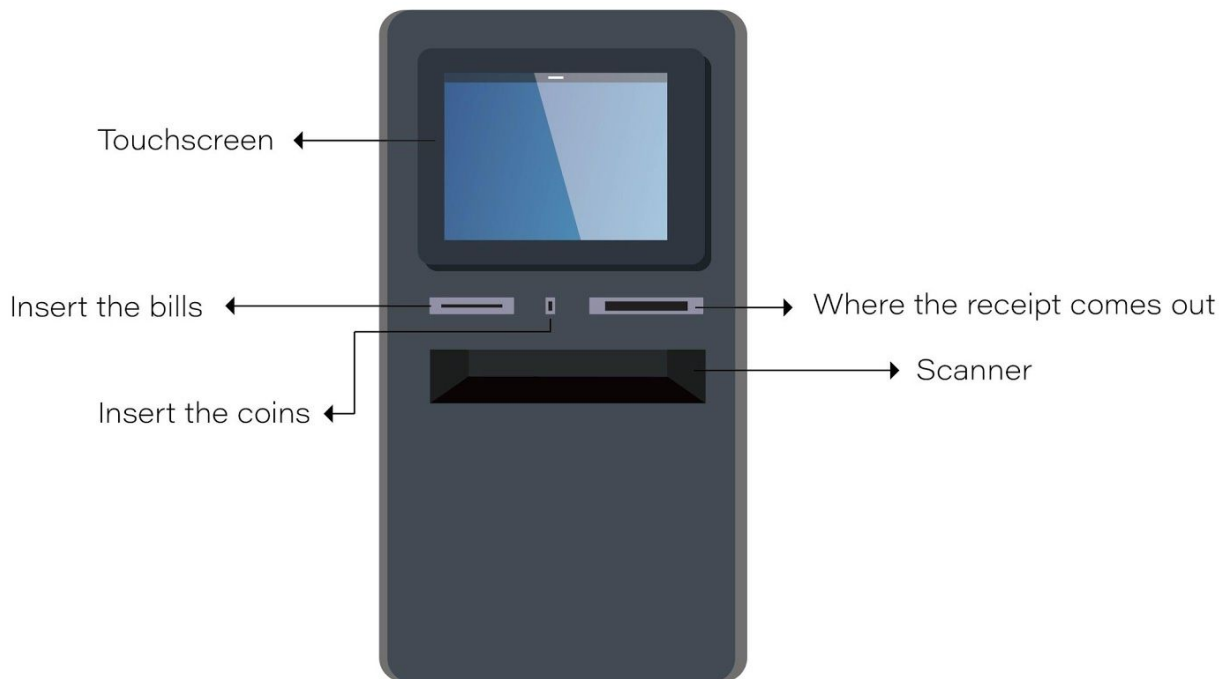
Any suggestions you might want to share to make your shopping more efficient?

II. Idea

We came up with this idea by taking some inspiration from our experience, from what we see or read and for considering some opinions from our professor.

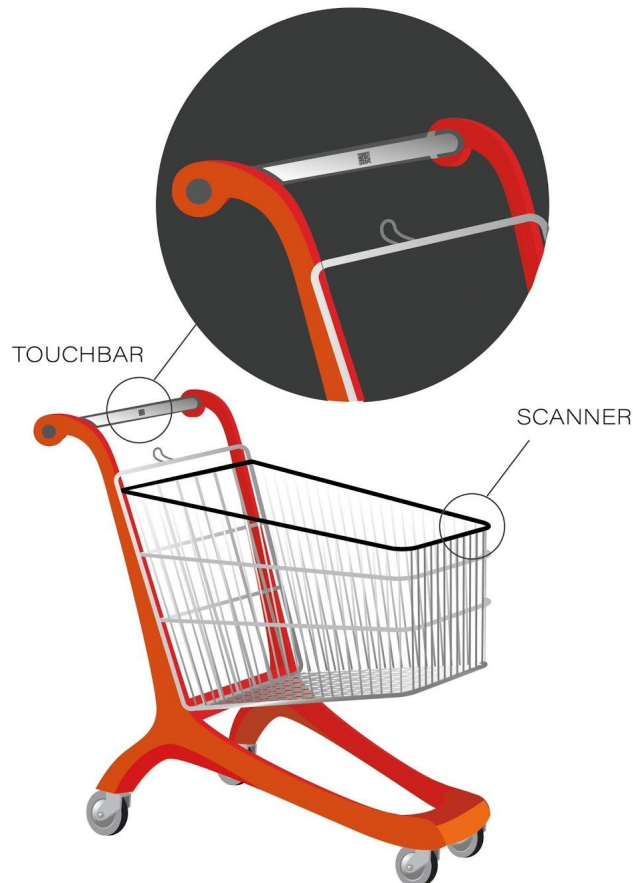
III. Alternatives

1. **Scan and pay your own.** For people who are just going to buy less than 5 items on those supermarkets they can scan their items in a machine and then after that they can give their payment on that machine and then it will print the receipt for them.



2. Scan as you put. We think of a push cart that every time you put the items that you want to buy it will automatically scan that item and if ever you decided to not buy the item that is already scanned by the push cart you can cancel it on the screen that will be put on the handle of the push cart and if you are ready to pay your items you just go to the cashier and the cashier worker will scan the screen on your push cart and the items that you want to buy will be sent on the cashier's computer and then you will give your payment to the cashier worker and the cashier worker will print the receipt for you and after that you can proceed to packaging area where you can package or put your bought items on a box or plastic bags then after that you can go already.

Note: If the push cart is already back on the push cart section the push cart will be reset again and can be use again for the new customer.



- 3. Use your phone as a scanner.** The supermarket can have their own scanning app for their customers where the customers have to use it every time they want to buy an item from that supermarket and after they got their items they can proceed to the cashier section and the cashier can scan their phone so they can get the list of the items that the customer is going to buy and then customer will pay and the cashier worker will print the receipt and another worker is already packaging or putting the items on a box or plastic bags the bought items, then the customer will receive it and he or she(customer/buyer) is ready to go.



IV. Decision Making

Our chosen alternative is the second alternative (**scan as you put**), cause we think it is more effective and efficient alternative among the three alternatives that we came up with and also we think that it's also better if we can mix it with the first alternative (**scan and pay your own**), it will be more less time consuming plus it will help to make the line a little shorter.

V. Application

This is a blue print for our Idea or the best alternatives that we chose:



On this blueprint that we made, we mix the two alternatives (**scan and pay your own and scan as you put**) we have and then we came up of this floor plan, we mix the two alternatives we have because the machines (**scan and pay your own**) is for the customer who just want to buy two to three items, so there is no need for them to fall in line at the cashier. This is just our suggestion that we hope that will be establish on every supermarket in Indonesia in order to lessen the time that consumers consume in the cashier section. Also we came up of this cost chart:

No.	Name	Quantity	Price	QxP
1	Scanner- Omni Directional 1D Panda PRJ-9820 Laser	30	Rp 1.035.000,00	Rp 31.050.000,00
2	Supermarket's Trolley 100 L	25	Rp 1.000.000,00	Rp 25.000.000,00
3	Cashier Kit (Computer, Scanner, Printer, Software)	5	Rp 3.350.000,00	Rp 16.750.000,00
4	Scanner Door	1	Rp 10.638,750,00	Rp 10.638.750,00
5	App Development Cost	1	Rp 14.000.000,00	Rp 14.000.000,00
Total Cost				RP 97.438.000,00

*This chart is just estimation on overall expenses of our idea.