TICT CANVAS SEMESTER 3 DATE March

Fontys IMPACT ON SOCIETY

Intended solution

What is the endgoal of the semester project? (How) is the technology going to solve the problem?
If not, what's next?

The product of this project is to a menu application for restaurants that will automate order processing and payment by allowing customers to order, adding the order to a queue for the bar/kitchen and the serving staff. Once customers are done they can request payment. Sales are tracked and the application can generate overviews for management.
Based on this the endgoal of the project is to automate part of the serving staff's workload – reducing staff requirements – and remove opportunities for errors for both serving staff and the bar/kitchen. By tacking sales and allowing for insight into the data management can reduce waste by adjusting how much they stock.

Possible stakeholders

What are all possible stakeholders or affected groups?

1) Customers of the restaurant
2) Staff – Serving
3) Staff – Kitchen
4) Staff – Bar
5) Restaurant Manager/Owner

Privacy

Are you considering the privacy of all parties involved in your technology/project? If not, what can you do about that?

Privacy can be split into two parts for this project:
1) Customer privacy: A customer's order history can be considered private information – outside the necassity to view it for payment. We store orders linked to tables without a link to the person who sat at the table. Once a customer leaves no data is stored that can link the orders back to the customer and no other customer data is stored ouside the payment system – which is not part of this application.
2) Staff privacy: A possible concern for staff privacy is the tracking of who does what. Is is acceptable to track who carried out every task/order or is that an ovverreach on the employer's part. Legally speaking this kind of tracking is fine (see link) but from a moral perspective it's questionable.

https://autoriteitpersoonsgegevens.nl/nl/onderwerpen/werk-uitkering/controle-van-personeel

Sustainability

Is your technology/project environmentally sustainable? Does it have an acceptable lifespan?

The application should not have significant environmental impact. Restaurants will need a set of tablets for customers and screens for staff but these should last quite a while and replace either paper based tracking or already present digital systems. The energy usage of the necessary systems is an issue but that can be minimized by using energy efficient tablets and screens and something like solar panels.

Bad Actors

What can bad actors do to use your technology/project to break legal, personal or societal bounderies or exclude/attack certain groups/social classes?

If so, what can be done about it?

Misuse on the part of the staff or management is difficult to control. Logging activities that might impact stakeholders negatively – staff changing an order for example – is the best we can do.
Misuse on the part of customers by placing fake order or ordering for another table can be limited by taking control over which table they are ordering for away from customers. We do this by having the tablet be logged into an account which the staff has the credentials for.
As for external actors there aren't many sensitive parts of the application. No personal data is stored and the system doesn't have direct access to payments since those are done externally by the staff. The application is used on tablets provided by the restaurant so it can't impact user devices. The main thing a malicious actor could do would be messing with the menu or the orders. This is mainly a question of security – accounts have to have strong passwords (which we enforce) and the recommended way to deploy the system would be on it's own private network within a restaurant with external access only for the admin application.

Fairness

Is your technology/project fair for everyone? If not, how to go about it?

Fairness in this type of application mainly concens usability and safety for disabled users. We account for colour blindness in our order tracking system by using icons instead of colours to indicate relevant information. For customers we show allergies for each product – but the correctness is dependant the management of the restaurant. We cannot account for disabilities that impact the usage of the menu – such as blindness or conditions that impact the customer's ability to use a tablet – but these issues can be taken care of by staff using the tablet and helping customers.

Data

Is data in your technology properly used?

No external data is used or collected and we don't use data to draw conclusions from.

Human Values

How does your technology/project impact the identity, independance, health and/or wellbeing of users?

By automating part of the serving staff's work we reduce the number of staff needed to run a restaurant. This can lead to staff being fired and means that less jobs are available. Whether this is an issue largely depends on the circumstances at the time: right now many restaurants are struggling to find staff, thus reducing the number required is not an issue because it only reduces the number of unfilled jobs.

This automation also impacts the 'human' element of going to a restaurant. It minimzes human contact for customers and can negatively impact the wellbeing of some customers for who that interaction is important. It also might impact the tips customers give – and thus the income of staff.

Transparency

Are you transparent about how your technology/project and any used algoritms work?

The system is 'dumb' as in no complex algorithms or decision making is used.

Future Impact

Did you consider possible future impact (think of both an utopian and dystopian scenario about 20-50 years into the future)?

Mass adoption of such systems would – as described in Human Values – reduce human interaction in restaurants. This could change the culture around restaurant staff such as tipping and push restaurants more towards the fastfood like "food-factory" environment.