

Group Project

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Context of use: Education
Level of education: Bachelor

Technology Impact Cycle Tool

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Impact on society

What impact is expected from your technology?

What is exactly the problem? Is it really a problem? Are you sure?

The problem we need to improve is how schools go about planning their exams, the exam clashes happen due to human error. Our goal for this project is to create a web based planner tool for scheduling exams. On top of creating exams it should automatically check for the availability of the staff, student, room and equipment involved. Once created, it should send an email notifying the teacher and student.

Are you sure that this technology is solving the RIGHT problem?

Yes because that is what the client is facing right now.

How is this technology going to solve the problem?

By having an exam scheduling system that stores all the necessary data needed to hold an exam.

What negative effects do you expect from this technology?

It is merely an exam scheduling application, there are no possible major negative effects.

In what way is this technology contributing to a world you want to live in?

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Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.

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Hateful and criminal actors

What can bad actors do with your technology?

In which way can the technology be used to break the law or avoid the consequences of breaking the law?

Our app is used to schedule exams for the student body and school staff. While it cannot be used to break the law directly its functionality can be help up for ransom.

Can fakers, thieves or scammers abuse the technology?

Someone with malicious intent could abuse the app to generate as many false exams that would notify parties involved, thus creating a situation where students and teachers email inbox are flooded with spam notifications.

Can the technology be used against certain (ethnic) groups or (social) classes?

Whether certain groups of students or teachers are targeted relies on whether the attacker singles them out specifically.

In which way can bad actors use this technology to pit certain groups against each other? These groups can be, but are not constrained to, ethnic, social, political or religious groups.

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How could bad actors use this technology to subvert or attack the truth?

They could create false exams or override existing ones.

Now that you have thought hard about how bad actors can impact this technology, what improvements would you like to make? List them below.

*Ensure that strictly authorized personnel are given o the creation and scheduling of exams*Reduce the chances of users being unnecessarily spammed with emails regarding exam invitations

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Privacy

Are you considering the privacy & personal data of the users of your technology?

Does the technology register personal data? If yes, what personal data?

This technology does register basic personal data to identify and differentiate a user : Name and email

Do you think the technology invades the privacy of the stakeholders? If yes, in what way?

This tool doesn't really seem to invade the privacy of the stakeholders.

Is the technology is compliant with prevailing privacy and data protection law? Can you indicate why?

The application is compliant with prevailing privacy and data protection law. Due to it only being an exam scheduler there is not much information the application is dealing with the user other than their email and name.

Does the technology mitigate privacy and data protection risks/ concerns (privacy by design)? Please indicate how.

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In which way can you imagine a future impact of the collection of personal data?

It is a simple system created to solve a minor problem, and the information about the users(Students) will be carried with for the duration of their study/work in the company.

Now that you have thought hard about privacy and data protection, what improvements would you like to make? List them below.

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Human values

How does the technology affect your human values?

How is the identity of the (intended) users affected by the technology?

Our technology centralizes and facilitates scheduling exams which takes off from the stressful and messy process of coordinating with everyone involved manually.

How does the technology influence the users' autonomy?

It is in no way an addictive or harmful technology, it is barely a tool to facilitate their tasks.

What is the effect of the technology on the health and/or well-being of users?

The technology has a positive effect on the health and well-being as it takes away messy coordinations thus reducing initial stress, and prevents planning overlaps thus reducing subsequent problematic situation stress.

Now that you have thought hard about the impact of your technology on human values, what improvements would you like to make to the technology? List them below.

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Stakeholders

Have you considered all stakeholders?

Who are the main users/targetgroups/stakeholders for this technology? Think about the intended context by answering these questions.

Name of the stakeholder

Exam moderator

How is this stakeholder affected?

Our app was designed with the intention of streamlining the process of creating an exam and notifying all of the invited members taking part in the exam. Did you consult the stakeholder?

Did you consult the stakeholder?

Yes

Are you going to take this stakeholder into account?

Yes

Name of the stakeholder

Teachers and students

How is this stakeholder affected?

Upon an exams creation, an invitation is automatically sent to the parties involved via email. This ensures that they are informed of when and where the exam takes place. By logging in to our app they can also see an overview of which exams they have been invited to.

Did you consult the stakeholder?

Yes

Are you going to take this stakeholder into account?

Yes

Did you consider all stakeholders, even the ones that might not be a user or target group, but still might be of interest?

Name of the stakeholder

Anyone interested in have an exam scheduling system

How is this stakeholder affected?

Same as the previous ones

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Did you consult the stakeholder?

No

Are you going to take this stakeholder into account?

No

Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.

*Design a more universal application that could be remodeled for any appointment scheduling needs.

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Data

Is data in your technology properly used?

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?

As we do not collect any data from the users and only work with the data provided to us from the users, we do not have a huge amount of data to work with so we are confident in our data management.

How does the technology organize continuous improvement when it comes to the use of data?

As our project does not require us to measure, track or monitor any data, we only use static data we are not expecting our technology to change the way it handles data.

How will the technology keep the insights that it identifies with data sustainable over time?

The data is available to use as long as the users are still associated with the company but when they leave their data is deleted from the database. Same applies for any non-user data.

In what way do you consider the fact that data is collected from the users?

The only data we collect from the users is the ones they share with their company such as their name, email address etc. This data is not sold and used only for the functionality of the technology.

Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.

We might be more clear to the user about what data we keep and collect and let them know we do not intent to sell their data.

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Inclusivity

Is your technology fair for everyone?

This category is not applicable for this technology.

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Transparency

Are you transparent about how your technology works?

Is it explained to the users/stakeholders how the technology works and how the business model works?

The way the technology works is explained to the stakeholder in our sprint reviews as well as various design documents we prepare. It is not fully explained to the end-user how the technology works but only the parts necessary to the user. For example if the technology requires an input to be in a specific format this is relayed to the users.

If the technology makes an (algorithmic) decision, is it explained to the users/stakeholders how the decision was reached?

This is applicable to when the program chooses the best options when creating an exam. This process is created with feedback from the stakeholders and later explained in the sprint reviews.

Is it possible to file a complaint or ask questions/get answers about this technology?

As we are only a small group of 5 and do not intent to maintain the technology after it is completed, only feedback we can receive is from the stakeholders during the development process through sprint reviews.

Is the technology (company) clear about possible negative consequences or shortcomings of the technology?

We are not as it is not something we focused much on. We can focus on it if necessary.

Now that you have thought hard about the transparency of this technology, what improvements would you like to make? List them below.

I think the transparency of our technology is suitable for our project context but one thing we could improve might be taking feedbacks from the stakeholders outside of our sprint reviews.

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Sustainability

Is your technology environmentally sustainable?

In what way is the direct and indirect energy use of this technology taken into account?

There is no effect of direct and indirect energy for the use of this technology

Do you think alternative materials could have been considered in the technology?

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Do you think the lifespan of the technology is realistic?

Our technology does not have a specific lifespan to it but it can be sustained for a long time until a future update is to be added.

What is the hidden impact of the technology in the whole chain?

The hidden impact of this technology is probably overloading the data but to overcome that we would be adding a data storage that could be able to handle all data added to it as well as work smoothly as part of the materials we have supplied our technology with.

Now that you have thought hard about the sustainability of this technology, what improvements would you like to make? List them below.

One of the improvements would be to change a material we used to supply our technology with an alternative material that would be able to take the same if not even more responsibility of the material being replaced.

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Future

Did you consider future impact?

What could possibly happen with this technology in the future?

Could be expanded upon and has room to be more broad and advanced

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one utopian scenario.

The company using the technology have added more than 500,000 data on students and exams and they test it worrying it would get stuck or give an error but they successfully ran the test with no errors as well as the technology working smoothly with no delay.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one dystopian scenario.

The company decided to change the way they add an exam/room or equipment and ended up testing the change thinking it would work fine but the technology crashes due to it not being as flexible to sudden changes in the data.

Would you like to live in one of this scenario's? Why? Why not?

Yes, because seeing my technology work even after some time has passed is satisfying.

What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?

If another party does take over our technology then they would have to know that they can't change the way the technology work unless they start considering the whole technology since the entire technology is connected to every part of itself.

Impact Improvement: Now that you have thought hard about the future impact of the technology, what improvements would you like to make? List them below.

Making sure that our technology could be flexible to change and not have a huge impact on the way it works if a change is added to it.