Exam IBE505: Industriell digitalisering

Kandidatnummer: 26

Task 1

a. I propose a software-based solution for UPS. This software should be designed to enhance the effectivity in delivery, and to have features that are specifically made to make the customer experience better. In this case, I would like UPS to use this technology in every step of the package delivery that they are involved in. This includes all their vehicles and their warehouses. The package would have to be scanned every time it enters a new vehicle or building, so that the company always knows exactly where it is. For the customer of UPS, I propose a new application that they can use to monitor the delivery of their packages. In this application, they should be able to have a live overview of where the package is located, just like the business has. They should also be able to contact the driver, through the app, to notify him/her on where to leave the package should they not be home when it is to be delivered.

b. The emerging technology that will be used in this solution is telematics. Telematics is a technology for monitoring of different assets, and uses both GPS tracking, and on-board diagnostics to do so. This technology is beneficial both for the company and for the customer experience, and it makes sure that we can always be aware of the status of the delivery. Should the delivery truck for example have an engine failure or another issue that requires a stop, both the company and the customer would know immediately, and can work on a quick solution to the problem. In addition to this, the company would gain new insight as to where the potential physical bottlenecks are, such as traffic or similar. They could use this to automatically guide the delivery driver with the quickest possible route according to both previously collected data, and according to live data from the other company vehicles around the area.

c. As Chief Innovation Officer (CIO) of UPS, my role would be to oversee the further advancement of the business. This role means that I am primarily in charge of leading the innovative process withing the company. Personally, I would rather have the title be Chief Technology Innovation Officer (CTIO). This is because that title implies that I would be more involved in the actual creation of new technology. I feel like this is a better way to go, as it can possibly lead to new innovations that can differentiate our company from other similar company.

d. Should there be any existing skill gap within the innovation sector of the company, then it would have to be improved upon quickly. My first thought to better this issue is to remake and improve the training when a new employee starts to work at the business. It could even be beneficial to give a new training period to the existing employees that are working in this field, so that they can understand the requirements and company expectations of their position better. This way of going about it would save the company of having to fire, and re-hire personnel which is both inconvenient and expensive.
e. The Sustainable Development Goals (SDGs) that I will positively impact with my solution is SDGs 8 and 9. SDG 8: "Decent work and economic growth", will be impacted because of the increase in effectivity within the company. This means that the company will earn more money, and so will the people who work there. SDG 9: "Industry, innovation and infrastructure" is probably the goal that is most related to my solution as it is all about innovation, and so is my solution.

Task 2

a. My first thought to make it possible for students to have collaborate lab sessions at home is to introduce video games to the curriculum. Although I say video games, I mean games that are specifically designed to this purpose, so that the students can have a fun and productive learning experience. These games should be a digital representation of for example experiments that they would do in science class or similar for other classes. A possibility for games like this is to use VR (virtual reality) technology, to make it feel more real.
b. I recommend the schools to introduce a new exam form to counter cheating on home-exams. My idea is to have shorter, high-stress exams that does not give the students the time to collaborate. Instead of a 4-hour exam, it could be a one hour or two-hour exam. It will obviously not be possible for the students to write as much, but that would have to be accounted for. Multiple choice could also be a good alternative, because it is faster, and the student is able to answer more questions in a shorter time frame. In addition to this I recommend schools to use exam programs that can place questions in random order as this makes it harder for students to help each other during the exam.

c. Schools could benefit from a new exam software that can customize the exam format in different ways. I think that with varied exam formats, and different question types it becomes more difficult for students to cheat. The software should also have an ability to force students to stay in a locked screen during the exam so that they cannot open other applications while they are taking the exam.
d. There are a lot of issues that comes with online learning. The first I could think of, and perhaps one of the biggest that I have experienced myself is that it is much more difficult to be motivated with online school. When students can work from home, there are many more distractions and more opportunity to do other things. This can be hard, especially for teenagers to tackle. Another big issue can be the lack of instant feedback from a teacher. With online school, it can be much more difficult to get a response quickly from a teacher. This can result with the student perhaps never getting an answer to the question and an opportunity for learning is missed out on.
e. My solution could positively impact SDG 4: quality education. I feel like this goal is impacted because the introduction of video games to the school curriculum can be fun, and perhaps more motivating for the students that are used to do this in their spare time already. This way they might enjoy school more, which can result in students paying more attention.

Task 3

a. Hospitals could develop a new communication type software that can automatically inform the right nurses or doctors on which patient they need to see. They could have a device that shows them a list of patients that needs seeing to, in order of urgency. This system makes everything more effective as only the employee with the right qualification would go to see the patient in question. When they are done with checking up on that specific patient, they would have to register it on the device, and perhaps update it with new information should there be any need to.
b. The technology I would use in this instance is AI. Artificial intelligence could be useful to determine what doctor or nurse is most suited to help the specific patient. The AI would receive information about the patient, and then make a calculated decision based on the patient's needs.

c. A big advantage of implementing this solution to the cloud is that the whole system can be run from the cloud. This means that the hospital does not have any need for local storage of information, it would all be in the cloud. This way, whenever they need any specific information, they can gather it from the cloud in no time. Cloud technology is also more reliable, with most big cloud operators guaranteeing an uptime of around 99.99%. A disadvantage with moving to cloud is that is can be a big process to get all their already existing information onto the cloud, so it might have to be a process that happens in the background while normal operations continue. Also, the staff at the hospital would have to be taught how to use the new systems, and this is bot costly and time consuming. There are four different cloud deployment models: Public cloud, Private cloud, Multicloud and Hybrid cloud. All these models have their advantages and disadvantages, so the hospital would have to weigh pros and cons. However, I would think that a private cloud would be the way to go, purely for security reasons.
d. Public hospitals might not have enough money to always spend on innovation. Usually this is something that only happens when the government sees it as a necessity. One way of making this process go faster would be for a charity to fund such an innovation process. When they have a product or an idea that they think the government might agree with then they could present it. Then they might get some feedback either that the government is not interested at all, or with specific government requirements that they must consider. I think the only way to get a process like this completed is to get the government to agree with it and pay for it.
e. This innovative process will affect SDG 3: “Good health and well-being”. This is because this is an innovation that is focused on giving the hospital patients as good of an experience as possible. I also think that this goal can refer to the hospital employees that might get better workhours, and a less stressful workload.

Task 4

a. The two different strategies to drive and industrial digital transformation in the commercial sector is offensive and defensive strategy. The offensive strategy is a corporate strategy that relies on innovation. Companies that choose this strategy invest a lot of money in research and development of innovations and use this to try and get the better of their competition. These companies might also use these strategies to evaluate their opponents' strengths and weaknesses, and us that against them or to their own advantage. Let's for example say that Nike have been found out giving bad wages and having a bad work environment and then some time later Adidas comes out with a commercial highlighting how happy their employees are with their work environment. This would be a good example of an offensive strategy. A company that is using defensive strategies however are not so bothered with other businesses. These businesses are more focused on defending their own business against others. No need to attack other smaller businesses if you are already on the top for instance. Then it might just be better to protect yourself against incoming attacks and keep working withing their segment that they already know very well.

b. The COVID-19 pandemic has forced a lot of businesses to think outside the box, because of different regulations and policies that have been necessary during this difficult time. This does not have to be all bad from an innovative point of view, though, because when businesses are forced to find alternative ways of giving their product to the consumer or bettering it then innovation is happening. One good example is the emerging of "telehealth". This is a concept where a patient will see their doctor on live chat, with video, instead of physically going to see their doctor. This innovation can be very time effective, and the doctor can digitally determine whether the patient must physically go see the doctor or if it is not needed. Long queues at the doctor have been a problem for a long time, and this is an innovation that can drastically improve this issue.

c. Technical debt can be the result of new transformations. When a company starts using new technology to replace old solutions and that have not been dealt properly with yet, or use fast, cheap solutions that might not be that good in the long run. It can be described as the cost of additional rework. The technical debt should be dealt with fast, if it is not then it can accumulate interest which makes it harder to implement new changes.

d. Not all digital transformations are successful, there can always be hindering's, here are some indicators of failure in a digital transformation.

   1. There can be a mismatch between planning and actually doing. This includes faulty use of MVPs for example.

   2. If the business only focuses on the technology aspect of the transformation and forgets to focus on the possible consequences that might happen because of it, it can cause issues.

   3. Lack of support from the board. This can cause a lack of top-down support.

e. Lights-out manufacturing describes a production line that is fully automated. That means that except for maintenance or repair employees there are no actual people working in the factory. Industrial digital transformation is driving manufacturing in the direction of lights-out manufacturing because this is faster, and cheaper than having a lot of people working at the factory. In addition to this, machines are more precise and consistent and will therefore generally produce a better product than humans can do.