IBE505 exam

Question 1

a) To significantly improve the customer and stakeholder experience, the company needs to have consistent fast delivery and a reliable real time package tracking system. To achieve this, I propose undergoing an industrial digital transformation by changing the culture within the company, changing the processes, and implementing emerging technology to reach the goal. This will both increase efficiency within the company, and it will result in higher revenue. The former will satisfy customers, while the latter will satisfy the stakeholders.

b) I would implement the use of blockchains to reach the transformation's goals. The logistics department of a shipping company consists of a lot of paperwork. Blockchains would reduce and simplify that work, thus making the whole process significantly more efficient. This technology will both make the delivery faster thanks to a much more efficient logistics process and improve the tracking thanks to blockchains being an excellent tracking tool. The customer will be able track the package from the very start until it gets delivered.

c) As a CIO within the company, it is my job to have an overview of the company's IT organization by overseeing the people, technologies, and processes. This will help me ensure that the company delivers outcomes that support the business' goals.

d) If my business lacks certain skills required to implement my solution, I would have the company become a part of a network, like the Global Shipping Business Network (GSBN) for example, since UPS is part of the shipping industry. This would provide us with complimentary skills that will help accelerate our transformation. I would also propose my company to enter a partnership and becoming a part of a partner program. This would also give us extra helping hands which would fill out the field we lack skills in.

e) My digital transformation will reach its goal with the help of a partnership. This means that it will positively impact SDG 17 which is "partnerships to reach a goal".

Question 2

a) If the students cannot meet physically and use physical objects, then I propose implementing digital simulators of lab experiments. The purpose of simulators is to simulate the real experience, in this case via digital counterparts of the physical objects you would use at the lab. This would allow the students to run the experiments from home and get a real feeling of the objects thanks to the digital versions of said objects. It would also provide the students with a deeper understanding thanks to hand on experience rather than just having it explained in theory.

b) The issue with monitoring students' activity during home exams is that it invades their privacy. The best solution for monitoring students' activity while minimizing the breach of privacy is to implement two things. First have the students log in to a remote proctoring platform which will monitor the student's search history while logged in, and then have the student use ProctorExam's mobile phone monitoring which will record the student's environment as they take the exam. Have them place it in a position where it shows the whole student, and that way their activity outside the pc will be monitored.

c) The best way to make a digital simulator that mimics the real experience is by having it inside VR in a room where the students can assemble via an online connection. The issue with this solution is that not everyone has a VR headset, so a solution to that problem would be for the school to hand out headsets which the students borrow from the school. They must give it back to the school once they graduate.

   For the monitoring of students' activity during home exam solution, mobile technologies and connectivity is required. Mobile technology is required for the phone monitoring, and the data collected from the proctoring of the student' computer and their environment need to be transferred to the exam office, thus requiring connectivity.

d) The biggest challenge is slower communication and lack of physical presence of a teacher. This means the student is on their own most of the time which might get demotivating if they get stuck and need help. The lack of a teacher presence means that the student is not supervised, and if they get demotivated, and they have temptations all around them, they can easily become distracted, and their learning process will be dampened. Online learning is dependant on an internet connection, so another challenge is that if there is a connection issue or the internet is down, it will prevent the student from studying.

e) This will positively impact goal 4 "quality education" because the transformation improves learning from home and also makes exams fair for everyone.

Question 3

a) To mitigate healthcare personnel staffing shortages, I would transform the culture by hiring more healthcare professionals and adjusting staff schedules to make the workflow better depending on the current situation. Make the most out of all staff by cancelling the procedures that is not essential and moving the staff in those areas to focus on supporting patients. This gives more attention to the patients which makes it easier to evaluate their needs and give them the treatment they need, avoiding neglecting them.

b) To accelerate this transformation, I will implement cloud computing. This way all the information will be saved in one place where all staff can access it. Information such as staff schedules and inventory management is vital to get an overview of the hospital, and make it easier to allocate staff and resources to required posts.

c) The cloud allows all data to be stored in a location where the information can be stored and collected from multiple locations and units. It consists of 4 different models. Public clouds are available on the internet and housed on public servers. Private clouds are similar in function, but the difference is that these clouds require authorization to access. Community clouds are multi-tenant hosting platforms mostly used by companies in a partnership with shared goals. Lastly there is hybrid clouds, which combines different cloud aspects from the other models according to the company's requirements.

   Advantages of implementing the transformation solution on the cloud is that all information is easy to access and makes sure all staff have the same information to avoid misunderstandings. A disadvantage is the risk of losing data. Since it is one shared location, it would mean that lost data would be lost for everyone. Therefore, having backups is very important.

d)

e) This will positively impact goal 3 "good health and well-being" because it will focus more on the patients needs resulting in more people with good health and well being.

Question 4

a) A defensive strategy is all about protecting the business from competitors and disruptors, while an offensive strategy is all about "attacking" the rest of the industry by disrupting it. Both are about making sure your business stays afloat, but the difference is that the defensive strategy focuses on responding to other business' actions, while the offensive strategy focuses on taking an action for the sake of gaining advantage and growth. Tesla is an example of a business using an offensive strategy where it is disrupting the rest of the industry thanks to its prime focus on high end electric cars with technologies like Over-the-Air and the digital twin. This lead to the rest of the car manufactures responding to Tesla's offensive strategy with a defensive strategy by manufacturing their own electric cars.

b) Thanks to Covid-19, the world locked down, and most people were locked up in their own homes. This meant that a lot of people had to rely on digital technology to for example obtain a building permit, attend home school, work meeting from home, or a video consultation with your doctor. This crisis highlighted the big digital divide where not everyone has access to all the digital technology. The solution to this was to offer both a digital and a physical solution. Covid prevented the physical solution from being available, which is why speeding up the adoption of digital technologies was the only solution.

c) When developing something and the team chooses an easy solution over a better one that will take longer, there is a chance the project will require rework later, and the cost of that rework is what is referred to as technical debt. If that debt is not repaid, it will accumulate interest, which would make it harder to implement changes.

d) Failure happens when projects does not meet expected results, or never gets finished, requiring a restart. Lack of direction, lack of a strategy, inward focus, too much focus on one aspect of the transformation rather than all aspects, and too much planning leading to little time for execution are some of the leading indicators of failure in an industrial digital transformation.

e) Lights-out manufacturing is when the entire production line is automated, and the only job the workers have are maintenance or repair. This is driven by industrial digital transformation because a successful transformation leads to increased efficiency, production, and revenue. Lights-out manufacturing is a solution that leads to all those goals. Another reason is because Moore's law needs to be kept up with. Falling behind will lead to less efficiency.