Exam IBE505

Task 1:

a) Well, in order to improve the customer and stakeholder experiences and enhance efficiencies of company operations we will first need to optimize how packages are registered digitally, so that they instantly know where they are supposed to go, without the need to wait for paperwork.

b) The emerging technology I would like to implement for that solution are databases. When UPS receives information about a package it should be registered on the database through IoT where the package come from, package ID (used in order to identify the package and to make them unique from one another), where it is headed, and to who it is headed. We could also use AI in order to find algorithms that will tell the transport team what the most optimal route to deliver the packages are, in that way we will save time. The AI could also, when the route is accepted by the transport team, register the delivery time in the database. The plan is to make the database transparent so that the customer can find out the delivery time for their package, through UPS's website. We would also need to make a website that is consumer friendly for the customer to be able to track packages easily.
As for the tracking we can put GPS trackers on the transport trucks that will register where the trucks are at the delivery points, for the consumer to know where the package was last registered and to give them a rough estimate to when it will arrive. When the trucks arrive at the delivery points, the GPS will communicate with a receiver at the delivery points through NFC which will then send the information back to the database.

c) My role as chief innovation officer within UPS is to manage the innovation process and to optimize management in the organization. That means that I oversee identifying strategies, opportunities, threats, better business models, our strengths and weaknesses. My role will also be to look out for new technologies and see how I could implement them to improve our business.

d) If there are skill gaps in our business in order to implement the idea, we will educate/hire people with the knowledge to make sure it will be implemented correctly. For example, we need people with IT knowledge in order to implement a database and a website, and to setup the GPS trackers, to make sure they work as intended.

e) The SDG solutions we will positively impact are **Goal 9** (Industry, innovation and infrastructure and **Goal 17** (Partnerships to achieve goals). Why we are impacting **Goal 9** is because we are implementing and upgrading the company's infrastructure by using business digitalization. And **Goal 17** since we need to form partnerships in order to make this work. We will need to form partnership with manufacturers who create GPS trackers, computers and internet service providers.

Task 2:

a) Well, there are some solutions that can help students with running labs at home. For example, if the students all have the required tools to the lab at home, what they can do are that they setup a webcam that will show the students activities, then all the students can come together at a video communication app (such a zoom) so that the students can see each other's activities. The teacher will also be there guiding the students in real-time. This will help and motivate the student to execute the labs. If we want to go for a more futuristic solution, it would be to use VR to perform labs. In the metaverse the students could come together and perform the labs together in a virtual environment, which could provide realistic outcomes, in order to achieve the necessary learning experience. They would also be able to communicate with each other with for example Zoom, Skype or Discord, which are all digital communication platforms.
b) Well, there are ways to monitor a person's activities on a computer, but I doubt anyone of them can be implemented without breaking the **Privacy Act**. If we ignore said act, then a way would be to implement a requirement for the student to use a screen-recorder with a webcam to record the student's actions while also showing the students face to ensure they try not to find a work-around for the screen-recorder (like using a secondary pc, for example). And this file can be zipped together with the exam file and be submitted together.
   Another solution would be to require the students to attend Zoom in breaking rooms with their own personal exam-guard that will monitor the students' activities during the exam, but that would require a lot of resources, if there are many people that are taking the exam.
c) Let's say we go for the first solution then, the emerging technologies I would use to implement said solution would be a screen recorder (for example an open-sourced one) in order to monitor the students' activities under the exam and a webcam in order to monitor the student to make sure he does not find an exploit.
d) I believe the greatest challenge that impact online learning is concentration. It is very easy to get distracted by other things during online education if you lack the necessary discipline, for example by the phone, games, or by everything else, really. Other challenges could be lack of computational skills to perform said learning (by both the teachers and the students), where the teacher may not be able to educate in the optimal way, or the student may not be able to receive the education in an optimal way. Another challenge could be connection issues. Even in 2022 there are people with horrible internet, which makes online learning difficult, if they do not have internet with great enough capacity.
e) The SDG my digital solution will positively impact is **Goal 4** (Quality Education) as we get remote quality education from this solution.

Task 3:

a) A digital transformation strategy to optimize healthcare in general would be to implement technology like **big data**, **IoT**, **AI** and **telecommunication**. Where telecommunication will be used to handle e-prescriptions (which will reduce the workload of doctors), patient monitoring, and communication between Doctor-Patient. Big data can be used for strategy planning, preventing human errors and prediction. IoT can be used for remote monitoring, health prediction and risk assessment. AI can be used for research for medicine.
b) In or to accelerate the proposed transformation we will need to experiment and test it out in an environment whether it is a real-life environment or a virtual one. It is possible with modern technology to simulate how such a transformation would work in a hospital setting, to see the outcome.
c) There are four different cloud models. These are: Public clouds, Private Clouds, Community Clouds (multiclouds) and Hybrid Clouds.
d) They can subsidize money they get from officials to use in research and development for the implementation of the strategy.
e) The SDG this strategy will positively impact is **Goal 3** (Good health and well-being) and **Goal 9** (industry, innovation, and infrastructure). Due to reducing workload and better and more optimal healthcare for patients.

Task 4:

a) Defensive strategies are strategies focused on fending off and protecting from attacks from competitors and disrupters, while offensive strategies are focused on getting competitive advantage. Example between the different strategies can be car manufacturing. Most of the car manufacturers started to make electric vehicles as a defensive strategy, while Tesla for example pursued an offensive strategy with the intention to disrupt the industry.
b) Covid-19 sped up the adoption of digital technologies in the form of cloud computing have come a long way. 3D printing has made its ground, as it was essential to print out necessary masks and ventilators in order to support medical supply. Digital conferencing became the norm under the pandemic, as it was necessary in order to hold meetings / lectures without getting infected. Other examples are contact tracing and collaborative manufacturing.
c) I assume the task asks for technical debt, which refers to backlash cost by implementing an easy solution instead of using a better approach. If said debt is not repaid, it can most likely accumulate interest which will make it harder to implement changes.
d) Leading indications of failure in an industrial digital transformation can be when projects do not reach completion and needs a restart or reach the expected business value. Lack of IDT strategy, not enough focus on industry sector trends, misbalance of planning versus executing, not enough focus on cultural shift, but too much focus on technology. To conclude main factors are factors of both technological and economical issues and misaligned vision.

e) Lights-out manufacturing are a manufacture method where there is no need for human presence, since manufacturing is fully automated. The reason why it is called “lights-out” is because since there are no humans there, there are no need to keep the lights or ventilation on. Industrial digitalization transformation drives lights-out manufacturing in the sense of automation, and by increasing productivity, while keeping costs low.