Eksamen Våren 2022
IBE505 Industriell digitalisering
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1

a) The Global Shipping Business Network can be used, which is a blockchain-based platform that can increase the efficiency of the exchange of logistics and cargo data throughout the supply chain. The goal of this solution is to drive the industrial digital transformation across the entire network of logistics stakeholders by reducing friction, and thus improving the efficiency of the system.

b) By using blockchain technology and blockchain based solutions.

c) A CIO in UPS is responsible for the overall IT strategy in the company, as well as to implement the organization's technological infrastructure. These tasks include designing IT strategies, leading and helping to implement new IT tools and technologies in the organization, as well as being an initiative leader and being responsible for the digital transformation being carried out in a good and efficient way.

d) If the company has a gap in the skills required to implement the new innovative solution, it is required that good training of the employees is performed. One should also consider a streamlined employment for in-demand positions in the organization so that one can bypass much of the employment process for critical jobs where there is a shortage of candidates. You can also hire

employees for a limited period of time using streamlined processes. These conceptual positions can vary from a few months to a few years.

e)

2

a) A digital solution that can help students coordinate laboratory experiments from their own locations can be implemented using virtual reality.

b) Continuous biometric authentication can be used for, for example, face recognition. Then you will be able to make sure that the right person is sitting at the keyboard.

c) In order to be able to complete an examination by means of continuous biometric authentication, the examination candidate must fill in the necessary information on the page where the digital examination is to take place. The name, birthday, age, gender and school institution are filled in there. Then the candidate has to confirm his identity through some form of ID proof, while a camera on the computer scans the person's face. When the exam begins, the web camera on the computer must be on so that the exam candidate stays during the exam.

d) The challenges of online learning can be many. It is not always so easy to sit by yourself and listen to a lecturer through a screen, as opposed to being physically present in the classroom. There may also be a technological gap

between students that means that not everyone learns equally well through digital teaching and homework.

e)

3

a) There are several digital strategies that can be used to streamline hospitals and reduce operating costs. By introducing a mobile patient record and at the same time being able to have remote follow-up of patients. This will save both patient and doctor time and operate more efficiently, while at the same time saving the environment for transport to and from the hospitals.

b) This can be done by using IoT and applications. All necessary information about the patient can be stored in a cloud and can be easily retrieved and updated by the doctor.

c)

d) This can be done by finding a partner who specializes in this field and who can offer, maintain, and improve this system.

e) This transformation solution will contribute positively to goal number 3 Good healed and well-being through patients receiving good follow-up from the hospitals. At the same time, this solution will contribute positively in relation to goal number 13 Climate action since the environment is saved for travel to and from the hospitals.

4

a) A defensive strategy is to protect the business against other competitors. A good example of this is from the car industry where car manufacturers continue to invest in electric cars even though they are losing money on this today. They are doing this to try to challenge Tesla so that they do not take all the customers and the market is also expected to grow by about 20% over the next decade. Tesla uses an offensive strategy where they are the major player trying to be first in the market with new technology. Although Tesla is not a profitable company from early 2020, they reduce aggressive losses due to lifestyle status and innovation that enables them to charge a price premium by differentiating themselves based on becoming a status symbol and offering driver-assisted technology.

b) There are many examples of crises around the world accelerating the use of digital technologies. Especially in the field of health, it became more prevalent after Covid 19 broke out. Examples of this are that 3D prints of masks and respirators were made to increase the speed of production of critically necessary materials and equipment. The medical device manufacturing company Medtronic and Intel worked together to add IoT features to remotely control respirators. In this way, clinics can control and adjust the settings of the ventilators without having to be in contact with the infected

patient. Other examples are that drones have been used to spray virus disinfectant in areas with high levels of infection and rapid delivery of medicines using drones.

c) Technical debit refers to the implied cost of additional rework caused by choosing an easy (limited) solution instead of using a better approach that would take longer. If technical debit is not repaid, it can make it harder to implement changes.

d) Some of the leading indicators of failure in an industrial digital transformation are that there is not enough focus on how the organization works. It is not just about changing the technologies that are used to do the job, but organizational culture is a critical part of a digital transformation and whether it will be a success or not. A digital transformation must permeate throughout the organization and each individual must play on the same team and move in the right direction. There may also be too much focus on technology and too little focus on training employees. Other errors may be that there is a lack of expertise to lead the digital transformation or that the strategy is simply too bad.

e) Light out production is a situation where the entire production line is fully automatic using machines and where the only role of people in the factory is maintenance and repair work. This is done by standardizing the industry through standard wafer dimensions, standard lot size, standard lot carrier etc.

Automated material handling systems and scheduling and simulation based decision making to react to any changes in the factory in real time.