Exam IBE505 - Candidate no. 30

UPS

Experience 2 major problems with customers:
Fast delivery, real-time package tracking.

a.)

In UPS's case, I would proceed with an overall rework of their cloud strategy. Since the cloud ensures information flow, provide an entirety of SaaS (Software-as-a-Service) built in apps for cloud, we could achieve a bimodal IT practice which succeeded in making the company operations more robust, data resiliency and ensure the company's business model for future scale. This is possible through cloud solutions from vendors like Microsoft on their Azure, AWS or perhaps Google Cloud (GCS.) They provide PaaS, SaaS and IaaS (Platform, Software, Infrastructure-as-a-Service) which can tackle majority of large enterprise problems at scale, and drive growth driven companies further - satisfying stakeholders, customers and growth on balance sheet.

b.)The emerging technologies I would use without any doubt - is an updated approach to their cloud architecture plan, if they already have one. If not - the move

would've been to migrate all their transportation workloads which use any key data about packages, customers and routes to the cloud first.

Given that they already have migrated to the cloud, on Azure - you would utilise a SaaS app like *Azure IoT Hub*, together with a lightning fast storage service like Azure Data Factory. Azure Data Factory in particular provides lightning fast AI (Artificial Intelligence) integration for data driven workloads - likewise in UPS' case. We need to have a proper cloud solution with Data Factory connected to IoT sensor management, utilised with Microsoft AI solution for cloud like Azure Machine Learning. UPS would then without any doubt be able to monitor, govern and explore their data in real time with a lightning fast storage solution (Azure Data Factory) and satisfy data integrity, compliance, enterprise throughput on storage and to react to streaming data. They are able to bottlenecks in their business operations likewise *delays* for parcels to both B2B and B2C markets. Making sense of data with scalable AI and Storage solutions are *usually* distributed from vendors like AWS (Amazon Web Services), Microsoft Azure, IBM CloudPak and Google Cloud (GCS.)

The experience the decision makers get in real-time from this solution - gives them an interactive real-time view of their key data from IoT sensor scans upon departure, arrivals of parcels through Azure IoT Hub and exported Microsoft Power BI diagrams on Azure Data Factory - where they will be able to impact their business operations on scale. They achieve true monitoring of their business operations in real-time through Azure Data Factory and Azure IoT Hub and Azure Machine Learning. By implementing a successful AI model on their key data, from Azure Data Factory - which holds their databases and key data - they can mitigate, forecast key bottlenecks in business operations like delays, arrivals, route plans and other factors in delivering parcels to both B2B, and B2C markets. Like mentioned in IBE505, we would achieve a true digital transformation by exercising innovation on technology

that change user experience (Module: Powerpoint IBE505, Chapter 1, Part II, *The impact of industrial digital transformation on business)*

Moreover on the technologies mentioned can be read here: https://azure.microsoft.com/nb-no/services/data-factory/#features (Azure Data Factory)

https://azure.microsoft.com/nb-no/services/iot-hub/ (Azure IoT Hub)

https://azure.microsoft.com/nb-no/blog/getting-started-with-azure-data-factory-and-azure-machine-learning-4/ (Azure Machine Learning with Azure Data Factory, *Getting Started)*

c.) As a *CIO in UPS,* there are multiple key responsibilities in company innovation satisfying business operations at scale. A CIO would typically be responsible in making key decisions for most, if not entire portfolio of technology implementation for UPS's workloads. If the technology is to be outsourced, a CIO's role would be to map their technology workloads, including infrastructure, services, applications from end-to-end. This meaning, designing the IT strategy and architecture for successful bimodal IT practice. Execute, maintain IT strategy with B2B partners and their prospects of for the technology used to satisfy business operations for future driven IT practice. Some of the key mapping may include overseeing the strategy of stateful applications which are crucial for their business operations. Example of that can be an implementation & sustaining business continuity, information workflow through SAP ERP, migrated to another cloud solution likewise AWS.

d.) If my business would have a gap in skills for the technology implemented to satisfy x's, y's, and z's, we would need to plan better for *digital talent development.* Key factors to exercising digital development is to continuously define future demand for skills, their requirements and overall vision / goal we're trying to achieve with the mentioned resources. If my business have a CI / CD (Continuous Integration, Continuous Delivery) pipeline, we would be able to assess the lacking key resources upon maintaining our IT strategy. Digital talent as mentioned in IBE505, ranges from coders, to business and soft skills. In an industry likewise technology, it can be hard to maintain talent if satisfaction for retaining employees is not in place. There are different, modern factors in talent acquisition and retaining employees such as higher compensations, fun and interesting projects for Cloud, AI, IoT, data, comparable staff, WFH (Work-From-Home policies) and stock bonuses. Given that we have some of these implemented in our business, we can possibly achieve retainment of employees and continue exercising bimodal IT practice.

e.) The SDG's satisfied in my proposal of digital transformation would be:
Goal 3 - Good health and well being (automated workload and reducing the amount of staff needed for business continuity at various working times.)

Goal 4 - Quality remote education through resources like Microsoft Learn, Microsoft Docs. Remote learning, at your own pace, sustaining learning from anywhere (i.e during pandemic this can be heavily utilised.)

Goal 8 - Decent work and economic growth. This is a key factor with cloud services. As a company you typically use a *Pay-as-You-Go* model for all your IT infrastructure, apps, software and platform services. In practice, you're scaling your workload towards the demand it needs. There are also other solutions to tackling business continuity and economic growth, cut cost through technology on Microsoft Azure like scalable application orchestration likewise *Microsoft Kubernetes Service*.

Goal 9 - industry, innovation and infrastructure - bimodal IT practice through innovation on Cloud PaaS, SaaS and IaaS implementation. Constantly reaching for

Goal 11 - Sustainable cities and communities. Through IoT sensors we achieve sustainable cities and even more future driven impact through AI applications implemented through IoT.
Decision making.

Goal 12 & 13 - Responsible consumption and production. Scale cloud architecture up and down as the demand is. Resulting in lowering IT infrastructure costs, lowering CO_2 emission at a large scale.

Goal 17 - Partnerships to achieve the goals. Major enterprises usually settle for multi cloud strategies, to exercise “best of breed” technology. With business models exercising this, it is important to have established key partnerships to achieve goals with other vendors.

2.)

a) To enhance the real feeling of object and their learning experience we would need any form of AR/VR (Augmented Reality/ Virtual Reality) assessment and implementation of study plan on equipment like this.
As mentioned in IBE505 - augmented reality is an enhanced version of the real physical world. The VR devices can provide a simulated experience through products that utilise cameras to their advantage, and map the real world for the end-user. It is applied to multiple industries today to enhance learning, likewise medical applications, manufacturing. If learning at school - meaning there’s a Professor, or teacher learning students through soft expression - it could be done through VR / AR

equipment to collaboratively run lab experiments and enhance user experience more than a digital meeting.

b and c) A solution that can monitor students activities during home exams

Real-time feedback to prohibit suspicious actions and enhance credibility and fairness could be achieved through cognitive solutions from i.e Microsoft Azure's Cognitive Services.

The Azure Cognitive Services can be integrated to an exam application facing front-end users (students) to detect browser session activity, user device, user activity. Implementing any type of measure is possible with this application, as it utilises Artificial Intelligence (AI) microservices (distributed, scalable applications) It offers speech to text, text to speech and **speaker recognition.**

Together with Azure Cognitive Services, you could implement Azure Policy to enhance the overall exam security vulnerability to cheating. A school's IT department can deploy their exam applications on Microsoft Azure and customise custom policy presets for a specific exam. They can then have policies such as "Allowed IP inbound", "Allowed IP's", "Allowed Maximum devices per IP's" and others. This would ensure that users can't connect to the exam while hosting the exam on the same IP (let's say in this case - that students collaborate during an exam in an ongoing pandemic.)

Moreover Azure Cognitive Services:
https://azure.microsoft.com/en-us/services/cognitive-services/?&ef_id=Cj0KCQjwg_iTBhDrARIsAD3Ib5gBgANxlO25q12PtFuFWLnFa8DSrN8JOOZk3WBtFJNraV1vEGgJv-YaAqJ_EALw_wcB:G:s&OCID=AID2200230_SEM_Cj0KCQjwg_iTBhDrARIsAD3Ib5gBgA

NxlO25q12PtFuFWLnFa8DSrN8JOOZk3WBtFJNraV1vEGgJv-YaAqJ_EALw_wcB:G:s&gclid=Cj0KCQjwg_iTBhDrARIsAD3Ib5gBgANxlO25q12PtFuFWLnFa8DSrN8JOOZk3WBtFJNraV1vEGgJv-YaAqJ_EALw_wcB#api

Moreover Azure Policy:

https://docs.microsoft.com/en-us/azure/governance/policy/overview

d.) Challenges that may impact online learning may include, but not is limited to:

-Exercising soft skills (presentation skills which may reflect upon CxO communication later on in work life.)

-Collaborating with individuals, learning with a different point of view.

-Openness for further learning, easier to interact, collaborate with others, asking questions. (It can be frightening to ask a question in the middle of a Zoom call.)

-Staying on top of trends (technology & finance applicable.)

e.) Which SDG's may this plan help:

Goal 3 - Good health and well being.

Supporting solutions mitigating spreading of a virus, continuing exercising learning remotely. We can have a presence without actually meeting up and risking spreading of a virus during a pandemic.

Goal 4 - Quality education

Sustaining fair learning, remote education to ensure students follow up on their subjects and cannot exercise cheating.

Goal 8 - Decent work and economic growth - Sustaining school operations and enhancing business continuity through remote learning for both Professors and Students.

Goal 11 - Sustainable cities and communities - practice business continuity through digital technology implemented.

Goal 17 . Partnerships to achieve the goals. Partner with technology vendors like Microsoft to enhance exam proctoring , even during a pandemic.

3.)

a & b) In the case of providing the right care to the right patient at the right time - we can use IBM's strategy towards the medical industry. To manage resources, analyse patients needs, and plan for unplanned shortage in staff they have built a software solutions called *IBM Watson Health*.

As ibm.com/watson-health states:
Watson Health is committed to helping build smarter health ecosystems.

Watson Health is an artificial intelligence solution that can be suited to many different situations where Artificial intelligence (AI) is applicable. The medical sector is and always have crucial components to data flow and analysis of data
.
There are multiple solutions in their Watson Health portfolio but to name a few and discuss them:

Cardiology: "*Improve clinical workflows across cardiology and modalities to make them more efficient"*

Clinical decision support: "*Use solutions powered by AI to obtain fast answers that can support efficient, evidence-based care."*

Performance improvement: "*Drive efficiency in your hospital or healthcare system with analytics and advanced data management."*

c.) Advantages and disadvantages of implementing IBM Watson Health:

Some of the advantages applicable, but not limited to:

-Sustaining decision making in hospital across the entirety of staffing through right data flow, automation incentive workload migrations.

-Give back time, focus to employees through software that resolves bottlenecks and information gathering in one place (customised with customer and implemented by IBM to customer X or Y)

-Artificial intelligence (AI) utilised with right computing power (facilitation) can calculate and resolve patient problems at scale to ensure patient satisfaction and lowering patient case lifespan.

Disadvantages:
-Upfront CapEx (Capital expenses) cost for application purchase, implementation.

-Governing and mapping of healthcare crucial applications can take time.

-Incentive application implementors may need a longer timeframe to understand the environment to properly assess the challenges in the healthcare industry in an operating state.

-Continuous delivery of bug fixed may take time to get used to (developers pushing new application updates, bug fixed, etc.)

-Staff productivity upon implementation (Learning new staff with the skills sets require to operate on new IBM Watson Health systems to continue operating and serving patients.)

d.) Proper system design and application architecture for sustainability and future-driven solutions for healthcare will require monetary aid.

It is assumed not impossible to get a demo, and request a free trial. It is always possible to negotiate OpEx (operating expenses) for individual services provided by i.e IBM Watson.
The move to the cloud is very certain for majority enterprises, including healthcare institutions. Vendors like IBM , Microsoft and AWS will strive to provide many services for free - even on the cloud.

Source: Microsoft Azure (40+ Free Services on Microsoft Cloud: https://azure.microsoft.com/en-us/pricing/free-services/)

e.) Goal 3 - Good health and well-being
Considering this is the health industry; everything that provides business value and gives back time to business ops, it's very fair to say this support good health and well-being of both staff and patients.

Goal 8 - Decent work and economic growth - Utilising software to make better and faster decisions give back in cut expenses and more satisfaction which are *some* of the key aspects in even pursuing a digital transformation.

Goal 9 - Industry, innovation and infrastructure - Well driven by AI applications, combining with infrastructure run on Cloud ☁️ will contribute to cut variable expenses (OpEx) on the bottomline.

Goal 11 - Sustainable cities and communities - Sustainable and more foreseen business actions to be taken upon rare occasions such as pandemic (COVID-19)

Goal 17 - Partnerships to achieve goals - Partner with technology vendors to implement business continuity during rare occasions, but to drive a bimodal IT practice to serve the health industry in a more agile way. Agile practice gives back time and productivity to all seniority levels in the industry through improved overview, business flow. Though - this comes with time and education of staff.

4.)

a.)
Defensive and offensive strategies in the context of industrial digital transformations differentiate from each other:

To compare:
Offensive strategies exercise new practices (bottom-up processes) to bring, surface new ideas to the market and go against the market. Providing new, undiscovered value to gain a high ground in any kind of service or product offering in a market. While this is widely considered for offensive strategies - defensive strategies practice production and development of product, service offering to defend their business model against competitors, disruptors. Well knows industry disruptors can be considered Apple in the telephone communications manufacturing market, and Tesla

in the automotive market. Their counterparts in the defensive market that have yet to catch up in market cap - Nokia phone production, and Volkswagen Group (VG) creating legacy vehicles run on automotive engines running on Diesel, gas.

Offensive strategies often exercise new undiscovered value for their target customers (either B2B or B2C market.) This create curiosity and discovery at scale for target consumers. Scarcity, discovery of success factors at high scale. Whilst defensive strategies often will try to make their own MVP (Minimum Viable Products) to further reach to the new disrupted audience. A minimum viable product (MVP) is used to define a product that can be used, and be satisfactory to meet core requirements of a product , service to be operational.

b.)

With Covid-19 technology architecture have changed paths. This, due to big adoption of cloud migrated workloads. On top of cloud, a company may build and sustain workloads with the newest technology (AI, Cosmos DB databases, IoT management) at scale. It's future driven – and have established new standards for further exercise of technology adoption. How this have occurred – examples have been mentioned earlier in this exam.

c.)

Technical debt can be described as legacy hardware, it practices which are outdated due to the disrupted implementations of Cloud, AI, Data. This can be heavily CapEx (capital expenses) driven infrastructure on-premises. This results in lack of productivity which also after a while will be compromised and not suited for future driven organization / business workloads.

d.)

Failures:

-Failure to innovate

-Sustainability in development

-Not agile (agile methodologies)