**IS 501 – ASSIGNMENT 3**

# **Part 1**

1. The Singapore Sport Institute (SSI) built High Performance Sports (HPS) department in order to increase in analytics for superior sport performance in Singapore. The main goal of the HPS team is to create video management system and video repository related to Singapore athletes and other top athletes from the Southeast Asia region. Thanks to video management system, the goal of SSI is to facilitate and consolidate detecting video image of athletes, analyze their videos and sharing analysis with coaches, athletes and other related people like manager. Moreover, SSI provides the Singapore National Sports Associations to train regarding usage of technology in sports.

The technologies belonging to SSI and their purposes can be discussed as follows:

SSI is Dartfish video platform:

It is designed to capture athletes’ activities during training and contests.

SimulCam and StroMotion:

These are software that have been using for analysis related to athletes’ movements. Its aim is to compare athletes’ performance with others and to point out insufficiencies via the process of tagging that distinguishes sport activities.

Secure Cloud Platform:

It provides to store tagging files and video analysis. It enables athletes and coaches to reach tagging files and video analysis. Also, coaches and athletes can download the videos and watch them that leads them to get better perspective in a way that coaches can reduce their time related to watch game and athletes can prepare better in terms of practice and real game.

Web browser and Dartfish’s mobile app:

Thanks to web browser and Dartfish’s mobile app, coaches and athletes can obtain the processed videos related to athletes’ event after a short period of time. Furthermore, the browser and the app enable the coaches and athletes to reach easy-to-access information.

Qlik:

It is online business intelligence and data visualization platform. The information about Team Singapore’s results and the number of medals can be updated via Qlik. The second purpose of Qlik is that the HPS team produces reports that are daily and end-of-the-day. As I can understand from case study, the reports can be generated via Qlik. Daily reports are about Team Singapore’s performance and end-of-the-day reports provides Team Singapore’s performance against rivals and comparison with previous results. The report plays a significant role in terms of accessing important knowledge about athletes. The coaches have used the reports to understand detailed information regarding athletes.

**2-** In 2013, Singapore could get 35 gold, 28 silver and 45 bronze medals placing Singapore sixth in 27th Southeast Asian (SEA) Games, which were held in Myanmar. While total number of the medals of Singapore is 108 in 27th SEA Games, total number of medals of Singapore is 259 in 28th SEA Games. As it can be inferred from previous data, Singapore has achieved a serious success compared to the previous games. When we have analyzed for success of Singapore, the technology plays an important role for Team Singapore’s success at SEA games since Team Singapore could achieve 151 more medals after adaption of technology thanks to SSI. The significant difference can be explained by significant change. According to all we know, the huge change is the newly technology adaptation of Team Singapore that means video management system, analytics and sharing. Moreover, return on investment of technology is significantly high because Team Singapore had only one game preparation period regarding preparation time between 27th games and 28th and they won 151 more medals in one game period. By the help of data explained before, we can say that huge portion of Team Singapore’s success depends on the new technology. On the other hand, it is hard to say that the success of the team fully rely on the information systems since there are several factors other than information systems play a role in the success. For example, athletes' and coaches' willingness to adopt new technologies and act on technologies’ results made the benefits of the technology visible on the real game as gaining more medals. That means technology is beneficial as long as organizations and people believe in and apply the benefits of technology. Otherwise, technology would be costly and useless.

# **Part 2**

1. Production continuity and reliability play a crucial role in today’s manufacturing factories regarding taking of competitive advantage and customer satisfaction. In order to achieve production continuity, the firms can provide predictable regularity. For instance, the companies in Europe, Japan and the United States have used robots to paint, place objects that lead to improve regularity in manufacturing lines. Robots are used in manufacturing tasks where people are less successful. For example, Renault SA plant uses robots that mount screws to the engine in hard-to-reach places. Also, robots can check that the right part is used and assembled correctly. In addition to robots’ ability to accessibility, robots can work significantly faster than humans, as we can see in the JCB Laboratories example. According to BCG prediction, the proportion of work done by robots will increase from 10% to 25% by 2025 in manufacturing industries. Even in certain sectors, this ratio will be more than 40%. Increase in usage of robots in manufacturing line leads to improve productivity gain in a way that output per worker will increase by 30%. Thus, increase in productivity will increase the competitive power of manufacturing companies. Moreover, to use robots is now easier. Companies do not need the software developer to write code to use robots. Today’s robots require to basic knowledge to perform a given task. For example, operators can use button, turn the robot’s arms or move it to perform task. The robots are learning as it performs given tasks. Furthermore, robots can get spatial knowledge by using sonar or cameras in order to detect where people are.
2. Production continuity, reliability, easy-to-accessibility, ability to control, fastness, increase in productivity gain and easy operation capability are main advantages of robots in manufacturing. Robots can help the workers or do simple manufacturing tasks themselves in order to improve performance of manufacturing factories. On the other hand, we don't think that robots can do all the manufacturing task on the production line yet. Workers flexibility, fine workmanship and insight are not available enough in robots. For example, robot from Rethink have just used for simple tasks like move, hold and pack materials. Robots are not used in slightly more complex tasks where humans use their motor skills. Also, robots are consistent and reliable in well-defined jobs. However, they are not well enough to adapt effectively. To illustrate, robots that could not meet the flexibility arising from the personalized demands of Mercedes-Benz’s customers stopped being used in the production line. While arranging the production line to meet different customer needs takes a week with skilled workers, it takes weeks for robots to recalibrate and meet the new needs. Therefore, in future manufacturing companies, robots will continue to do low-level manufacturing tasks, while people will continue to work in more complex and high-skill manufacturing task. Thus, robots will not replace human workers in manufacturing completely.