

Virtual Learning Environment

Digital Skills and Research Methods

Module code: BMSW4003

Student name: Georgiana Andreea Matache

Student ID: 2111127

Lecturer: Amitave Banik

Table of Contents

1. Introduction	3
2. Literature review	4
3. Methodology.....	4-5
4. Data Findings and Analysis	5-18
5. Conclusion.....	18
6. References	19-20

1. Introduction

A virtual learning environment is an internet-based learning system that uses online communications and content to enhance academic learning. Throughout the 1990s, virtual learning was first introduced to contemporary academic institutions. To investigate the influence of the virtual learning environment on learners, the study will undertake both primary and secondary research. The research will include methodological considerations as well as an analysis of the data obtained in order to reach a conclusion on the research issue.

1.1 Research Aim

- To comprehend the influence of the Virtual Learning Environment (VLE) on academic learners' learning capabilities and procedure.

1.2 Research objectives

- To understand the influence of VLE on academic learners' by reviewing previous studies.
- To understand the limitations and issues faced by students due to VLE by conducting primary and secondary research.
- To investigate the impact of a VLE on students at the University of Wales Trinity Saint David London Campus.

2. Literature review

In educational technology, a virtual learning environment (VLE) is an internet-based platform again for digital parts of university courses, often inside academic institutions (Harasim, 2017). They show how to use resources, exercises, and activities within a course framework, as well as how to assess students at various levels. The National Development Program in the United Kingdom introduced the notion of the Virtual Learning Environment in the year of 1973(Becnel, 2019). The United States, Russia, China, South Korea, and the United Kingdom are the most active users of this site (Herrera, 2017). To preserve social distance, most of the world's best institutions have shifted to online platforms due to the pandemic situation of Covid-19. Numerous famous universities are nowadays launching their own e-learning app for continuing their educational course through online platforms (Torres Martín *et al.*2021). In 2025, the global market for virtual learning is expected to expand by £280 billion.

3. Methodology

Research methodology refers to the certain technique used by the researcher to select, identify, process, and analyse data regarding a specific topic. The researcher has used positivism philosophy as it prioritises only factual information acquired through observation as trustworthy (Intechopen, 2020). The deductive approach is used in this research as it enables the researcher to understand the existing theories and test hypotheses accordingly (BRM, 2020). The researcher

has used a descriptive research design that aims to acquire information for describing a situation or phenomenon in a systematic way (Voxco, 2019). Moreover, both qualitative and quantitative research methods are used by the researcher (Question Pro, 2021). In terms of data collection and analysis, both primary and secondary methods are used. 10 participants were selected randomly from the UWTSD for a survey involving 10 questions. Participants were free to quit the survey and no personal information was revealed.

4. Data Findings and Analysis

4.1 Data findings

4.1.1 Primary data findings

Question 1	Do you think Virtual Learning Environment is more effective compared to traditional learning?		
Response Tone	Yes	No	Maybe
Response	5	3	2
Response %	50	30	20

Table 1: Response of 1st question

Question 2	Do you think that UWTSD is acquiring positive results from VLE?		
Response Tone	Yes	No	Maybe
Response	7	3	0
Response %	70	30	0

Table 2: Response of 2nd question

Question 3	Do you prefer VLE over traditional learning considering the post-pandemic situation?		
Response Tone	Yes	No	Maybe
Response	7	3	0
Response %	70	30	0

Table 3: Response of 3rd question

Question 4	Do you think that the quality of teaching and learning has improved after implementing VLE in UWTSD?		
Response Tone	Yes	No	Maybe
Response	7	3	0
Response %	70	30	0

Table 4: Response of 4th question

Question 5	Do you think the communication and understanding gap is high in VLE?		
Response Tone	Yes	No	Maybe
Response	6	2	2
Response %	60	20	20

Table 5: Response of 5th question

Question 6	Do you think VLE is more reliable than the traditional process in terms of examination?		
Response Tone	Yes	No	Maybe
Response	5	3	2
Response %	20	30	20

Table 6: Response of 6th question

Question 7	Do you think VLE is reducing the interaction of students among themselves and teachers?		
Response Tone	Yes	No	Maybe
Response	7	2	1
Response %	70	20	10

Table 7: Response of 7th question

Question 8	What is the major challenge you face in VLE?
Response	Network issues during classes
	Communication
	It is not as effective as the face-to-face communication
	Critical bandwidth spectrum management for vast and distributed servers.

Table 8: Response of 8th question

Question 9	What do you think is the benefit of VLE?
Response	Time-saving
	Cost-efficient
	Flexibility
	It makes the learning process possible during the covid-19 outbreak
	Teachers are more attentive to individuals and all students

Table 9: Response of 9th question

Question 10	How would you recommend improving VLE in UWTSD?
Response	Giving training before taking classes in VLE
	The university needs to choose a more reliable platform and the network issues must be resolved as soon as possible.
	Proposing personalised lobby for group discussion among students
	More interactive session
	Use of latest technologies for resolving network issues

Table 10: Response of 10th question

4.1.2 Secondary data findings

The total access to enrolment in VLE is about 72%, which is calculated by the total number of students logging in to their provided web page divided by the total enrolled students (Alves *et al.*, 2017). Engagement with VLE is a quantitative way where the number of student page views can be examined for a stipulated time. The access percentage of VLE was 72%, which is less than the suggested 90%. More importantly, the discussed data in the case study is solely related to distance and part-time learners (Davis and Harris, 2016).

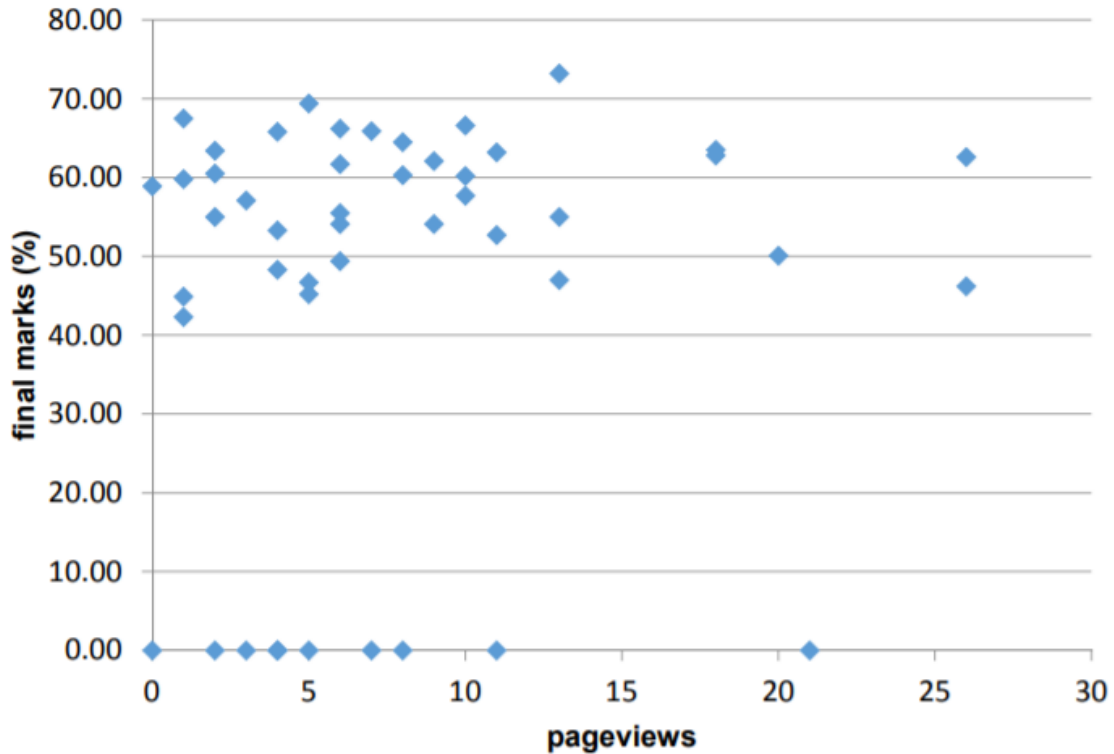


Figure 1: Relationship between the finals marks and page views of students in VLE

(Source: Davies and Harries, 2016)

VLE may significantly improve the engagement and recalling power of students and provide satisfaction. The group of students using the VLE tend to have higher mean scores for retention compared to the university going students' group. The style of students' learning does not get affected by it. Rather it offers a greater scope of learning with ease. These qualitative findings provide three themes- the talk or the interaction is informative, the visuals for virtual presentations are useful and good and another one is the details that are required (Ryan and Poole, 2019). The learners have realised that though they are now a part of the digital period, sometimes this technology becomes a hindrance to their education. Moreover, these findings

suggest that the capacity of computers or other digital devices with internet connectivity can often be the main threat of VLE implementation (Herrera, 2017).

4.2 Data analysis

4.2.1 Primary data analysis

Question 1

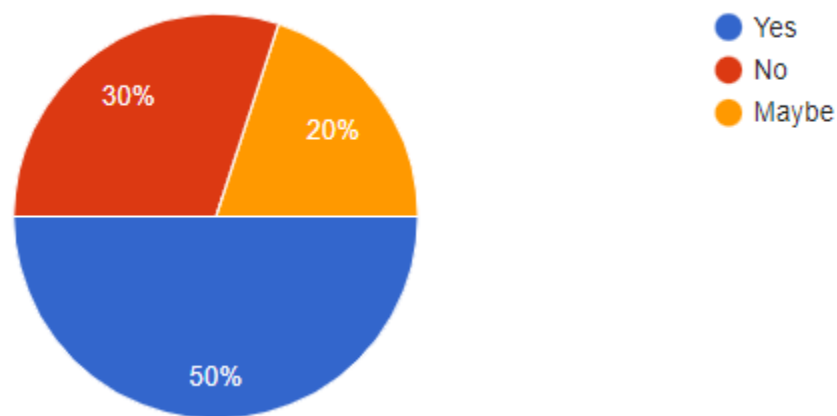
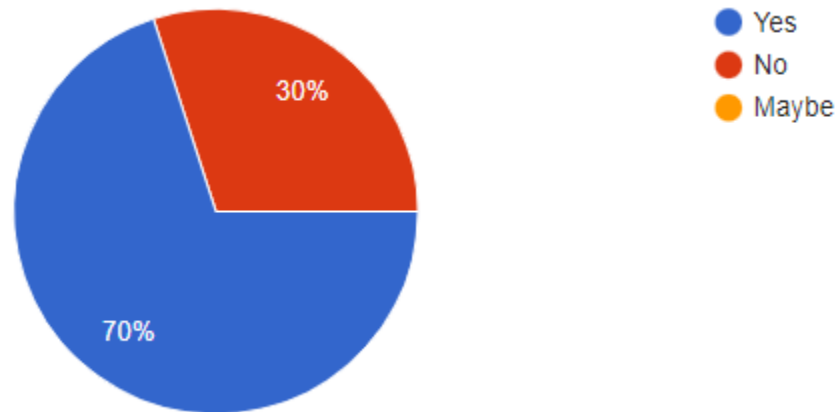
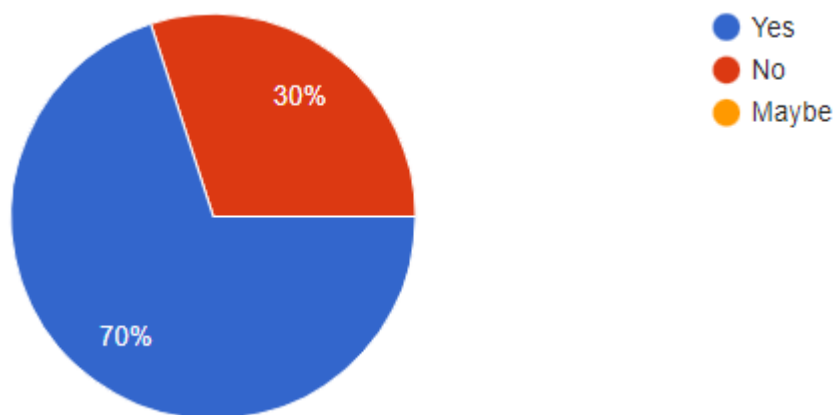


Figure 2: 1st question graphical representation

About 50% of participants consider VLE more effective compared to the traditional learning method and 30% disagree. Only 20% of students are unsure about the effectiveness of virtual learning. This indicates the positive impact of VLE.

Question 2**Figure 3: 2nd question graphical representation**

Considering the result of VLE, about 70% of students agree that positive results are achieved from virtual learning in UWTSD. This indicates the positive impact of VLE on the university. However, 30% of participants disagree that the university has derived a positive result from VLE.

Question 3**Figure 4: 3rd question graphical representation**

During the Covid-19 pandemic, an online method was used in education. The survey revealed that about 70% of students in UWTSD prefer VLE instead of the traditional learning method indicating the positive impact of virtual learning. However, only 30% prefer traditional learning in the post-pandemic situation.

Question 4

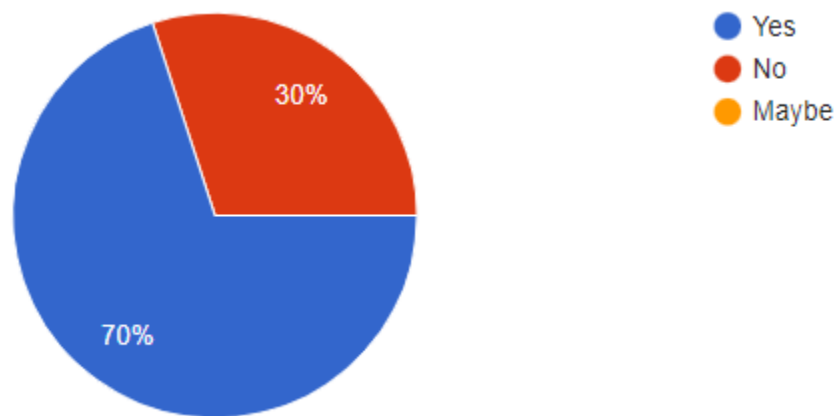
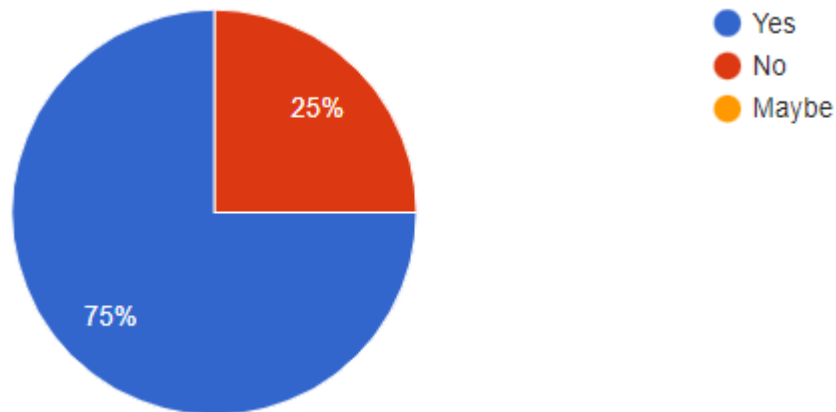
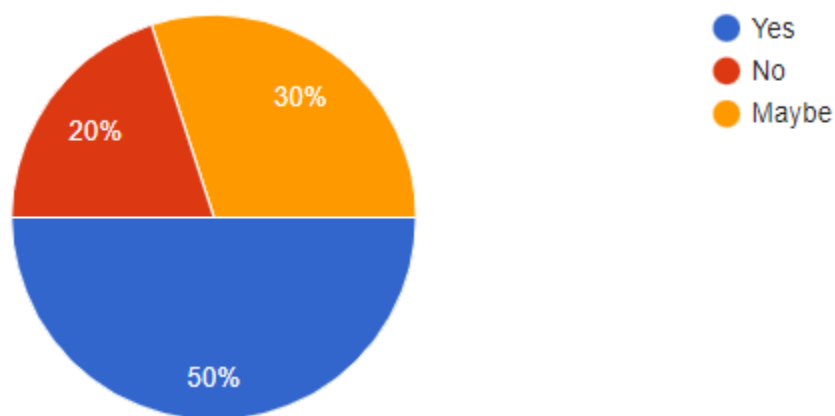


Figure 5: 4th question graphical representation

The survey revealed another positive impact of VLE in the university. Approximately 70% of participants agree that both the teaching and learning qualities have improved significantly by implementing VLE. 30% of students disagree with the survey question.

Question 5**Figure 6: 5th question graphical representation**

The survey result indicates one of the major drawbacks of virtual learning. About 75% of participants agree that virtual learning education creates a significant communication and understanding gap. Students and teachers fail to communicate effectively in VLE. However, 25% of students disagreed with the question and two participants decided not to answer the question.

Question 6**Figure 7: 6th question graphical representation**

In terms of reliability, 50% agreed that VLE is more reliable for the examination process, 20% disagreed, and 30% were unsure regarding the question. This further indicates that VLE has a positive impact on UWTSD during the examination.

Question 7

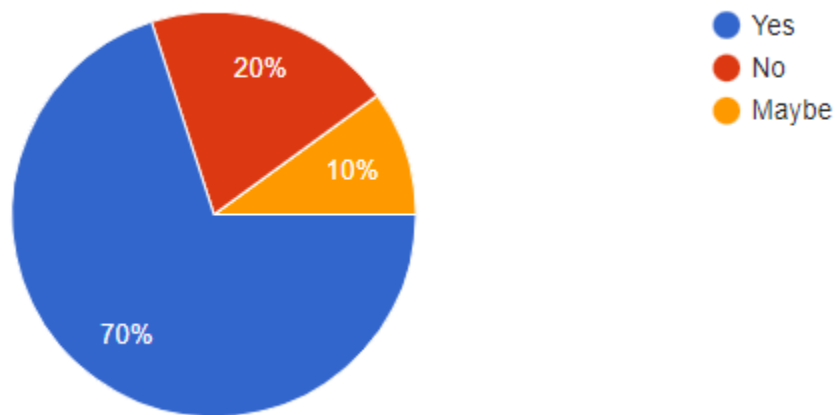


Figure 8: 7th question graphical representation

Since VLC creates a communication gap, it is also revealed that the learning process reduces interaction between learners and teachers. About 70% agreed with this question, 20% disagreed, and 10% were unsure.

Question 8

The major challenge of the VLE method revealed in the survey is the communication problem. Another drawback of VLE analysed through the survey is connectivity or network issues. Other challenges involve effectiveness compared to face-to-face learning and the requirement of critical bandwidth spectrum management.

Question 9

A few major benefits that UWTSD obtains from VLC are flexibility in the learning process and the time-saving characteristic of the method. These two major benefits revealed from the survey indicate the positive impact of VLE.

Question 10

A few recommendations provided in the survey for improving the effectiveness of VLE include providing training regarding the method before implementing it, creating a lobby for group discussion, choosing a reliable platform, mitigating connectivity issues, and introducing interactive sessions.

4.2.2 Secondary data analysis

Virtual learning environment (VLE) acts as a significant source for learners especially for distance learning and part-time learners. There are five aspects of a successful VLE which are easily navigable content, current content, complete content, easy accessibility and responsive teachers. Both the synchronised and asynchronous activities of programmed VLEs along with feedback provide proper value to the learners and their engagement is enhanced with VLE. The engagement of the learners with VLEs is often limited for access to their course materials and assignments uploading (Davis and Harris, 2016).

Due to Covid-19, the use of VLE has increased tremendously with the use of several digital technologies. This offers students a scope to think about the content of studies and provides them with the scope to make necessary changes in the studies depending on satisfactions and dissatisfactions. The information collection method is mostly used in the form of questionnaires that are directly filled by the students online, for knowing their opinion. UWTSD sends the questionnaires to every student's institutional e-mail. The evaluation of those questionnaires was

done through their studies of reliability and validity (Torres *et al.*, 2021). In this 21st century, looking at the current scenario of the world, the future of educational learning will wholly depend on the digital innovations of VLE (Crombie, 2021).

5. Conclusion

In the educational field, the virtual learning environment is not really a new notion. For a long time, the implications of a web platform as an educational learning experience, platform, as well as communication tool were known. Following the worldwide epidemic of Covid-19, the process has become stifling. The UWTSD is among the most prestigious institutions to use Moodle as a learning management system in its online programmes. The study incorporates primary as well as secondary research, as well as analysis, to establish the influence of VLE on university graduates. Inside the analysis section, the researcher has also made some suggestions for improvement.

References

- Alves, P., Miranda, L. and Morais, C. (2017). The influence of virtual learning environments in students' performance. *Universal Journal of Educational Research*, 5(3), pp.517-527
- Becnel, K. ed., 2019. *Emerging technologies in virtual learning environments*. IGI Global.
- BRM (2020) *Deductive research approach* [online] Available from: <https://research-methodology.net/research-methodology/research-approach/deductive-approach-2/> [Accessed 30 Dec 2021]
- Crombie, T. (2021) *An increased appetite for online learning* [online] Available from: <https://gulfnews.com/uae/education/post-pandemic-there-has-been-an-increased-appetite-for-online-learning-1.1639307801315> [Accessed 30 Dec. 2021]
- Davies, C. and Harris, L. (2016). Engaging professional learners using the Virtual Learning Environment (VLE): a case study from social care. *Wales Journal of Learning and Teaching in Higher Education*, 1(1), pp.60-65.
- Davies, C. and Harris, L. (2016). The role of the VLE for distance, work-based learners. *FACE Annual Publication 2016: Closing the Gap: Bridges for Access and Lifelong Learning*
- Harasim, L. (2017). *Learning theory and online technologies*. Routledge.
- Herrera, L. (2017). Impact of implementing a virtual learning environment (VLE) in the EFL classroom. *Ikala*, 22(3), pp.479-498.

- Herrera, L., 2017. *Impact of implementing a virtual learning environment (VLE) in the EFL classroom. Ikala*, 22(3), pp.479-498
- Intechopen (2020) *Research philosophy* [online] Available from: <https://www.intechopen.com/chapters/58890> [Accessed 30 Dec 2021]
- Question Pro (2021) *Qualitative and quantitative research method* [online] Available from: <https://www.questionpro.com/blog/qualitative-research-methods/> [Accessed 30 Dec 2021]
- Ryan, E. and Poole, C. (2019). Impact of virtual learning environment on students' satisfaction, engagement, recall, and retention. *Journal of medical imaging and radiation sciences*, 50(3), pp.408-415
- Torres Martín, C., Acal, C., El Honrani, M. and Mingorance Estrada, Á.C., 2021. Impact on the virtual learning environment due to COVID-19. *Sustainability*, 13(2), p.582
- Voxco (2019) *Descriptive research design* [online] Available from: <https://www.voxco.com/blog/descriptive-research-design/> [Accessed 30 Dec 2021]

Assignment 1 – Group presentation



ROBOTIC TECHNOLOGY – DRONE DELIVERY

Module Code: BMSW4003

SEBASTIAN MARIAN MATEI: 2111128
LOREDANA ANDREEA ZSOFI: 2111130
FLORENTA ALEXANDRA STAN: 1919632
MARINELA ROXANA LICA: 2115486
GEORGIANA ANDREEA MATAACHE: 2111127

LECTURER: AMITAVE BANIK



AMAZON PRIME AIR DELIVERY DRONES BACKGROUND

Loredana Andreea Zsofi – 2111130

DRONE DELIVERY BACKGROUND



- Who is Amazon Prime Air
- The founder
- How they start
- Interesting background facts

WHO IS AMAZON PRIME AIR?

- Prime Air is a drone delivery service.
- The service is also currently in development by Amazon.
- Was revealed in 2013 by the founder but approved for testing in the U.S. in March 2015.
- In 2019 Amazon Prime Air received an Airworthiness Certificate for their research of its MK27 drone.





THE FOUNDER

- Amazon Prime Air was founded by Jeff Bezos
- He is also the Founder of Blue Origin.
- He was born in Albuquerque and raised in Houston and Miami.

HOW THEY START



- Amazon prime air delivery drone has begun as a commercial in Cambridge.
- The first delivery took just 13 minutes from the customer placing the order.

INTERESTING BACKGROUND FACTS

- The Amazon Prime Air team worked with NASA and also Single European Sky ATM on trials.
- For additional safety they decided that the drones will fly at a low altitude somewhere below 400 feet.

THE CHALLENGES BEFORE THE INTRODUCTION OF MODERN TECHNOLOGY

amazon
Prime Air



- Florenta Alexandra Stan -1919632

WHAT ARE THE ADVANTAGES OF DRONE DELIVERIES?

- Prime Air – a future delivery system from Amazon designed to safely get packages to customers in 30 min or less.
- The packages are not confusing, they come correctly to the destination due to the system that the drones have.
- Amazon`s drone technology is a labor-saving / capital-using technology like drones.
- A drone flies above road delays such as construction, detours, accidents, traffic deviated roads, etc.

WHAT ARE THE DISADVANTAGES OF DRONE DELIVERIES?

- Drones are found operating in unauthorized airspace.
- Drones are shot down by civilians
- Drones have trouble operating in moderate rain or thunderstorm condition.
- Drones replace drivers.



IS THIS NEW TECHNOLOGY PROFITABLE OR LOSS FOR THE COMPANY?

- Amazon's drone technology is a labor-saving/capital-using technology.
- Drones replace labor and trucks with more specialized capital.
- One drone operator will monitor multiple drones.
- The lifespan of drone is 5 years.

CONCLUSION

- Amazon is a resilient company
- Delivery by drones increases the number of buyers and brings a good profit to the company.
- Amazon gain a strong competitive advantage over online and physical retailers.



INSIGHTS TO THE MODERN TECHNOLOGY INTRODUCED

GEORGIANA ANDREEA MATAACHE: 2111127

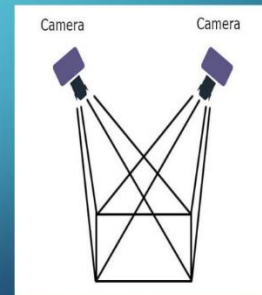
WHAT IS THE STEREO VISION SENSORS TECHNOLOGY?



- Computer vision implementation who use stereoscopic ranging techniques to change the image from 2D to 3D.
- Is a type of camera with two or more lenses with a separate image sensor.
- Is a type of camera that can simulate human binocular vision and have the ability to capture three-dimensional images.
- The distance between lenses is 6.35 cm with a longer base line for more extreme three-dimensionality.

HOW DOES STEREO VISION SENSORS WORK?

- The two cameras capture two images in the same time and after the images are analyzed to see the differences.
- The corners are easy to find in one image.
- The differences between the images helps to get the depth of the point which enables projecting it in a 3D world used for navigation.
- The cameras use 3D vision sensors which scan all angles and make a point cloud.



POSSIBLE APPLICATIONS OF STEREO VISION SENSORS TECHNOLOGY

- Industrial inspection for 3D objects;
- Autonomous vehicles, robotics;
- Transport;
- Medical;
- Scanning electron microscope.

PURPOSE OF STEREO VISION SENSORS AT AMAZON PRIME AIR- DRONE DELIVERY

- The stereo vision helps the drone to analyse the footage for different threats: humans or animals.
- The drone can see the difference between a lawn and a swimming pool.
- To minimize the risk of sending the parcel unsafe to the customer.
- To avoid any obstacles until the destination.



IMPACT OF THE TECHNOLOGY INTRODUCED

MARINELA ROXANA LICA - 2115486



POSITIVE IMPACTS

- Can quickly deliver products to a different location
- Drones conserve energy
- A safer delivery system
- A higher level of efficiency
- Drones could reduce consumption levels
- Drone delivery saves time



NEGATIVE IMPACTS

- Drones are expensive device
- Battery problems during transport
- Risk of defects during in operations
- Drones could be stolen
- Drone delivery can reduce staffing
- Weather dependent



HOW DO CUSTOMERS FEEL ABOUT THIS TECHNOLOGY?

- People used this technology in a pandemic period for delivering medical supplies
- Is used by customers who care about the environment
- Many customers consider this transport to be “A magical experience “
- The customers think that the use of drones requires close monitoring



- Some customers consider drone delivery beneficial especially in food delivery
- Customers consider it a beautiful idea especially for unsafe roads
- The customers supported the use of the drones for military and police applications
- Customers would use drone delivery in search and rescue, crime prevention, disaster response



LESSONS DRAWN FROM THE CASE STUDY

SEBASTIAN MARIAN MATEI - 2111128

LESSONS LEARNED FROM THE CASE STUDY

- Development of this technology will allow the drones to save people's time.
- Camera that uses stereo vision sensors.
- Drones got a very light but powerful and fast engine.
- Most of them are made of thermoplastics as they are cheaper to rebuild in case of a crash.



LESSONS LEARNED FROM THE CASE STUDY

- Best battery for a drone it's called Grepow because of it's energy and very light.
- Lots of sensors as it drives itself, autopilot.
- Design: Quadcopter & Octocopter.



LESSONS LEARNED FROM THE CASE STUDY

- Transport packages, medical supplies, food, or other goods.
- Shooting movies, sports.
- Amazon delivery drones can deliver packages that weigh up to 30kg.
- The longest time a drone can fly is 25minutes.
- Drones can fly up to 62mph(100km/h).

LESSONS LEARNED FROM GROUP WORK

- Organisation skills;
- Communication;
- Teamwork;
- Problem solving;
- Research skills;
- Decision making.

REFERENCES

- Swope, J. (2013). The Economics Behind Amazon's Drone Delivery Service. John Swope, December 4. Web. February 21, 2015. <<http://www.johnswope.com/?p=83>>.
- Keeney, T. (2015). How Can Amazon Charge \$1 for Drone Delivery? Arkinvestcom, May 5.
- Amazon.com (2014). Letter to the FAA: Amazon Petition for Exemption. 9(July) TS.
- R.A. Clothier, D.A. Greer, D.G. Greer, A.M. Mehta **Risk perception and the public acceptance of drones** Risk Anal., 35–6 (2015), pp. 1167-1183 View PDF, [CrossRef](#) [View Record in Scopus](#) [Google Scholar](#)
- M.T. Perks, A.J. Russell, A.R.G. Large **Technical note: advances in flash flood monitoring using unmanned aerial vehicles (UAVs)**, Hydrol Earth Syst. Sci., 20 (2016), pp. 4005-4015 View PDF [CrossRef](#) [View Record in Scopus](#) [Google Scholar](#)
- https://en.m.wikipedia.org/wiki/Stereo_camera
- <https://www.sciencedirect.com/topics/engineering/stereovision>
- <https://www.dronedek.com/news/how-much-weight-can-a-delivery-drone-carry/>
- <https://eMckenzie.com>, H. (2013). Amazon Wants to Use Drones by 2018. An Australian Startup Will Do It by March. Pando Daily, December 2.
- n.m.wikipedia.org/wiki/Amazon_Prime_Air