How much is important to identify and understand problems?

The entire world this year (2020) has been challenged by Covid 19. Everyone has suddenly started adapting their lives to these events while introducing new hygienic measures like washing our hands for more than 20 seconds or cleaning using alcohol-based disinfectants.

During this period, I learned that not everyone is lucky enough to have sanitation services or merely running water. As mentioned in https://unstats.un.org/sdgs/report/2020/goal-06/ three billion people worldwide lack necessary handwashing facilities at home, and this is one of the most significant disadvantages for fighting this pandemic. The most effective method for Covid prevention is washing hands because viruses have membranes surrounding the genetic part made of oily and greasy structures that can be neutralised by soap and water. Therefore, clean water and soup can help a lot to the prevention of such types of diseases, but unfortunately, two in five health care facilities don't have soap and water or alcohol-based hand rub. I already knew that some countries were facing challenges harder than other nations since I always followed the data from the news when the pandemic rises the most. What I didn't know is that sanitation was one of the issues requiring urgent action presented from the United Nations as part of the critical global challenges of our world. During my daily routine, I always tried to maximise my hygiene from typical actions like washing hands for about twice the time of the "happy birthday" song to non-ordinary ones like bringing with me sanitising gel.

These unprecedented times have not only shaped our lives, but also inspired brilliant minds to come up with innovative solutions to help prevent the spread of germs. One outstanding example is a self-disinfecting pad for hospital doors designed collaboratively by Nonwovens Innovation, Research Institute Ltd and industrial designers Adam Walker and Simon Scott-Harden. In reality, research for this design, called Surfaceskins (https://surfaceskins.com/), lasted seven years, meaning it began long before Covid started spreading, but the current situation hugely boosted worldwide demand for the product. We know that a 2014 report by the National Institute for Health and Care Excellence said that around 300,000 patients developed an infection in England every year while they were being treated by the NHS, and, according to the BBC (https://www.bbc.co.uk/news/uk-england-leeds-41505729), independent tests showed the pad "can reduce bacteria that commonly caused hospital-acquired infections by more than 90%". This clearly shows the NHS would have had interest in purchasing these pads regardless of Covid and given that it was designed to be replaced after seven days, the product could be easily commercialised throughout a long period of time even in case of a low number of clients. However, Covid has had a major impact on the commercial reach of the product, resulting in worldwide growth of demand and its implementation outside of hospitals. It is the perfect example of how a very real problem like the spread of infections in hospitals and care homes, can be drastically reduced thanks to a marketable product.

Part 1: Reflective log

However, just sanitising hand and surfaces is not enough, so I tried to sensitise relatives, friends and colleagues to use face masks and at extend their hygiene routine. In order to take wider actions involving a broader part of the population, I read that there are events organised to talk about and tackle these goals. It is vital for everybody to commit and do their part, but to have life-changing results governments and organisations must take action, like the meeting for 'Accelerating implementation of the 2030 Agenda through water, sanitation and climate action' organised some time ago. This made me research into these topics, and I discovered that researchers at Newcastle University are developing solutions to global challenges and that it is possible to take part in such activities or to read publications from Newcastle Scientists. There is also the possibility to know which Newcastle University partners are if you want to get in touch with them. I am glad I researched about sanitation all around the world because I discovered that it is strictly connected to water-related issues like the lack of freshwater that increase risks for poorest countries to develop problems. This made me realise how important it is for us to save water to prevent this. So, starting from reflecting on how to improve people's hygiene for Covid I managed to deeply rethink about all the small bad habits we have that make us waste resources like water and what we can do to help improve the situation.

Part 1: Reflective log

Am I getting ready for the future while it's changing so fast?

Companies track trends to know where to invest dollars, to spot grows, as shown in https://youtu.be/7boVGRUJ0w0. Some trends are more predictable than others, and for this reason, companies use professionals to help focus on the right things.

Megatrend, the art and science of trend tracking, is like a surfer trying to catch a wave. The first period it is hard to find the wave then after putting energy in monitoring and waiting there will be the opportunity to catch the wave. IT is where most of the new trends are rising, from Robotics, Artificial Intelligence to e-commerce and all the web industry. To win in today's world, you not only need to spot a trend, but you also need to lead on it. Amazon, for example, started as e-commerce, and it is still one of the leaders in this industry, but at the moment it is also leading in web and cloud services. It has also been leading mobile device trends with Kindle devices, and now it is pioneering in mechanical advantage. These are four of the 14 significant Megatrends that Amazon spotted.

Being a Computer Scientist made me interact with Amazon Web Services since their products are one of the three main alternatives with Microsoft Azure and Google Cloud. I personally didn't use them because when I needed a host, I gave priority to other providers offering a wide range of similar solutions. When I first run into Amazon as a server services provider I was amazed, since I discovered it on my first year of university when all these advanced topics seemed like sort of magic to me. Still, I was not surprised at all knowing that Amazon - famous for its e-commerce - was also one of the prominent companies offering services for the web. I already knew about Google offering the same services and to me looked more obvious since Google was born as a search engine. I discovered that Amazon not only got this trend in time but also that is leading in mobile device trend.

When talking about mobile devices, the first thought is always the phone, usually an android/iPhone, but amazon is leading this wave as well with their Kindle. Kindle is a tablet to read eBooks (electronic versions of books) that uses a new kind of technology to have an effect that makes the screen looks like paper since it is not using a backlit screen. Megatrends also spotted that Amazon is leading in robotic advantage. I knew very little about this so since I was curious, I started researching and I discovered amazonrobotics.com. On that website, I read that they are creating machinery both for industries, for storages and for deliveries using new technologies (https://www.therobotreport.com/the-technology-gap-left-by-amazons-acquisition-of-kiva-systems/).

With the new safety measures like work from home, social distancing measures and lockdowns, firms are inadequate to get sufficient workers to operate to their best abilities. For this reason, the growing use of automation technology, Artificial Intelligence (AI) and the Internet of Things (IoT) in businesses are making companies rethink plans for the future while taking into consideration negative economic forecasts due to recent events.

Part 1: Reflective log

Furthermore, I learnt that it is probably right to get prepared for a future that we cannot even imagine now, for jobs that do not exist at the moment with technologies that will be discovered soon. Since my field of study is computer science, I realised that I should expand my mind and be ready to accept new inventions and new programming languages for new devices.

Part 1: Reflective log

How am I approaching big and serious problems in relation to the society?

Over the last year we witnessed multiple events that have showed the world just how serious climate change and the consequent problems are, like the forest fires that devastated Australia.

Issues related to climate are very complex and have deep roots in several causes - from pollution to excessive use of non-clean energy, deforestation and desertification. Climate action is one of the 17 key global challenges of the United Nations. It's one of the sustainable development goals that require urgent action.

As we can see, climate issues have an impact on multiple aspects of the ecosystem like atmosphere, oceans, islands. The most evident change is the temperature change - 2019 has been the second warmest year on record, and if we carefully examine data, we can see that global temperatures are projected to rise by up to 3.2 degrees by 2100, data from https://sdgs.un.org/goals/goal13.

The most famous plan taken from governments known worldwide is the Kyoto Protocol (1992) which is the first considering serious strategies for the health of our planet. While researching on this topic, I learnt that Covid has also impacted climate change-related issues. Coronavirus resulted in a 6% drop in greenhouse gas emission for 2020, which, unfortunately, is still short of 7.6% annual reduction required to limit global warming to 1.5 Centigrade. Climate change matters to me a lot since I am already trying to fight for better recycling. Coming from Italy, I noticed that the UK recycling is still a big issue. As we can read from www.propertyguides.com/italy/news/italy-top-for-recycling, Italy is top in the European Union for waste recycling at 76.9% of urban, industrial and other waste. According to the latest Eurostat figures this compared very well with the EU average of 37%, and the UK at 44%. I realised that good recycling is one of the first basic goals that every nation should achieve to reduce pollution and waste. I also noticed that in the UK most supermarkets sell fresh food packed in plastic, e.g. vegetables that could be sold individually. This year I planned to change my habits and pay more attention to reducing the use of plastic, for example, using a filter jug rather than buying bottles. I also signed a Greenpeace petition to reduce plastic from supermarkets https://secure.greenpeace.org.uk/plastic-free-supermarket-ef. Learning about these planet challenges made me deeply understand how every single person is important to make a difference, but also that the greatest impact is made by nations and governments: consider that investment in fossil fuels still continues to be higher than investment in climate activities!

Part 1: Reflective log

Portfolio:

I chose the following options mainly because my learning aims for the portfolio are the same related to the module:
boosting my creativity and create a solid base knowledge in market research.
My portfolio options are all different types of items to challenge my originality and to go outside my comfort zone.

- **Reflective Essay** (500 words) **:** My usual coursework type are software based or mostly practical so I decided to try with an item in which I had to write some paragraphs. I am challenging myself writing in my second language using the reflective methods tested above using academic vocabulary. When working within Computer Science I use some jargons mostly related to IT or sciences in general and I know that this time I must focus more on economic/business terminology. Since one of my learning goals is to develop a commercial view for ideas, challenges and researches, I am sure that this kind of essay would help me to engage better with a different kind of audience to my usual one.

- **Website** (Homepage +2 or more link pages) **:** A website is more my usual kind of delivery. Still, I want to challenge myself creating something that would engage my creativity and innovation trying new features and new approaches. Websites are more engaging to users because they are interactive. I will use bootstrap to deliver the user a professional, well-structured message but still full of imagination and art. This item will make me engage with the users through images and text, but I will also do my best to use computer graphic allowing me to experience new fields like business communication and advertisement for products and customer services.

- **Presentation** (10 minutes) **:** My last item is a presentation because after writing an essay and creating a website I want to realise something different, something which I can show directly myself. Therefore, I will present what I learnt throughout this module making a video of about 10 minutes in which I will show how I boosted my skills. I haven't done a presentation from a lot of time, but this will be useful since next semester I will be asked to present my ideas for my final year dissertation. Presenting for this module will be hard because the topic and the language related to it are not usual to me but still talking about a challenge or a research for an idea or a product in a critical way attracted me.

Part 2: Portfolio Proposal