W01 Hindsight and Foresight: predicting the social impact of an emerging technology

Over this teaching block you will be encouraged to think critically about the legal, ethical, and digital security issues that can arise when working as a professional on any project in industry. In this workshop, we will explore the inherent difficulty of predicting how an emerging technology might evolve and how it might subsequently impact upon society.

# Instructions

Complete this workbook and submit at the end of the workshop to the “*Workshop 1 - Hindsight and Foresight: predicting the social impact of an emerging technology*” submission box in the “Weekly Workshop submission” panel in Assignments on the module’s Canvas page.

# 

# Task 1 – Working in pairs

*Task duration: 10 minutes*

|  |  |
| --- | --- |
| Image result for students working in pairs | Image result for university working in pairs |

This week the tasks should be undertaken in pairs. Find a partner and record their name below.

|  |  |
| --- | --- |
| Partner’s name | Asish |
| Partner’s KUID | K1910546 |

You will both need to submit this workbook at the end of the workshop so decide now if you intend to keep separate workbooks or whether you will submit the same workbook after changing the name above.

# Task 2 – The benefit of hindsight: assessing the social impact of older technologies

*Task duration: 60 minutes (Four steps)*

## Step 1 – Choose an old emerging technology

|  |  |
| --- | --- |
| http://www2.technologyreview.com/global/i/logo-tr10.png | Every year the [MIT Technology Review](https://www.technologyreview.com/lists/technologies/2019/) identifies ten emerging technologies it believes will change the world for the better. Look through the 2001, 2002 and 2004 lists (there’s no 2003!) to identify two or three technologies that you recognise have had an impact on some aspect of our lives. |

As listed in the MIT Technical Review, list the name and year of the technology below:

|  |  |  |
| --- | --- | --- |
| **Technology** | | **Year** |
| 1. | Biometrics | 2001 |
| 2. | Nano Solar Cells | 2003 |
| 3. | Distributed Storage | 2004 |

## Step 2 – Review the technology’s trajectory

For each of the chosen technologies, identify how the emerging technology was eventually used to create a product or service. Was the technology deployed on its own or was it combined with other technologies? How accurate were the original predictions in the MIT Technology Review?

|  |  |
| --- | --- |
| 1. | Identify how the emerging technology was eventually used to create a product or service.  The first biometrics is the signature that was came into use first when writing matured in human civilisation. Thereafter use of the science of fingerprint came into use – now used by government for crime prevention areas.  Now you have scanning devices such as iPhone that scan faces, fingerprints, use voice recognition, and retinal scan to identify people.  They are used on devices to secure them so only that person can get access to the device who has the specific biometric. |
| Was the technology deployed on its own or was it combined with other technologies?  These technology mostly combined with other technology such as iPhone used biometrics technology to secure the phone and only give the user the power to access their phone with their unique features such as their fingerprint of facial alignment |
| How accurate were the original predictions in the MIT Technology Review?  MIT Tech predicted correctly. |

|  |  |
| --- | --- |
| 2. | Identify how the emerging technology was eventually used to create a product or service  This technology is used to crate product to crate renewable energy source for home and building where using sun light it will produce electricity that can be supplied to homes |
| Was the technology deployed on its own or was it combined with other technologies?  This technology used by itself and combined with other technology such as in calculator there is a Nano solar cells that will charge the battery using the sunlight, and other time there are buildings that uses Nano solar cells to provide electricity. |
| How accurate were the original predictions in the MIT Technology Review? |

|  |  |
| --- | --- |
| 3. | Identify how the emerging technology was eventually used to create a product or service  Distributed storage allowed music and other large files to be stored in server and allows users to access via the internet or directly. |
| Was the technology deployed on its own or was it combined with other technologies?  This technology is mixed with other technology where it is used in computer to provide storage and allow business such as amazon or Netflix to store their videos and other files related to their business, which can be accessed by the users. |
| How accurate were the original predictions in the MIT Technology Review? |

## Step 3 – Identify areas of concern

For each of the chosen technologies, identify what issues of concern subsequently arose; who was impacted and in what way?

|  |  |
| --- | --- |
| 1.Bio | First issue  Abuse of privacy  If someone could hold of their biometric data then this can be used to access their locks that contain sensitive information. |
| Second issue  Data protection  If these data are sold to terrorist then they can use this to commit crimes and enter into |
| Third issue  Civil Liberties |

|  |  |
| --- | --- |
| 2.Nano | First issue  You need more area  People could left without land |
| Second issue  Inhale Nano particle  This could cause problem to people |
| Third issue |

|  |  |
| --- | --- |
| 3.Sto | First issue  Need large area |
| Second issue  Need a suitable environment |
| Third issue |

## Step 4 – Mitigating negative impacts

In hindsight, were the issues of concern predictable? If not, why not? If we assume the issues were predictable, what might have been done as the technology was being developed to mitigate the subsequent negative impacts?

|  |  |
| --- | --- |
| 1. | First issue  Privacy law has been tightened to ensure a person privacy is protected. |
| Second issue  Privacy law has been tightened to ensure a person privacy is protected. |
| Third issue  Civil Liberties - are being compromised in order to ensure better security and the prevention of criminal activities including terrorism. |

|  |  |
| --- | --- |
| 2. | First issue |
| Second issue |
| Third issue |

|  |  |
| --- | --- |
| 3. | First issue |
| Second issue |
| Third issue |

# Task 3 – Foresight: assessing the social impact of emerging technologies

*Task duration: 30 minutes (Four steps)*

## Step 1 – Choose a new emerging technology

|  |  |
| --- | --- |
| http://www2.technologyreview.com/global/i/logo-tr10.png | Look through the “breakthrough” technologies listed in the [MIT Technology Review](https://www.technologyreview.com/lists/technologies/2019/) for 2018 and 2019. Choose one technology that you believe could have an impact on some aspect of our lives. |

As listed in the MIT Technical Review, list the name and year of the technology below:

|  |  |
| --- | --- |
| **Technology** | **Year** |
| AI | 2019 |
|  |  |

## Step 2 – Identify the benefits

What might be the benefits of the technology?

|  |
| --- |
| Benefit 1  Reduce manual work |
| Benefit 2  Reduce cost of processing, provided the capital outlay has been made. |
| Benefit 3  Increased speed of processing and decision making. |

## Step 3 – Identify areas of concern

Identify what legal, moral or other social impact issues might arise with the technology, application or service; who will be impacted and in what way?

|  |
| --- |
| First issue  No jobs |
| Second issue  Singularity – Late Doctor Stephen Hawking – Threat human race |
| Third issue  Ultron – Huge advances in robotics that could replace humans. |

## Step 4 – Mitigating negative impacts

What might have been done now as this emerging technology is being developed to mitigate the negative impacts you have identified? These remedies might be changes to the technology, developing new law and rules governing its use, or even education programmes to prepare those impacted by its deployment.

|  |
| --- |
| First remedy  Retraining of individual whose work has been replaced by AI |
| Second remedy  Regulation and restriction through legislation |
| Third remedy  More Control programming robots to avoid the “Blade Runner” syndrome |