Abstract

Forecasting is an inaccurate science. Revolution are almost impossible to predict but it happens. Revolutions take place suddenly and often violently. The industrial revolution leads to paradigm shifts for economist, and right in this current decades we are going through a new, unprecedented industrial revolution. This shift eliminates jobs, displace people and poised to create imbalance of power: economic, social, military and especially intellectual wealth. This article argues a few technological issues which are the seed to this apparently non-violent revolution. The economics, as a discipline of study requires to address the philosophical dilemma where new schools of thought. There is a high probability that the current process of model of development and its study will pivot on developed countries, but the developing economies will be the engine of growth and hub for the intellectual evolution.

“Man is an anxious animal”, stated Adam Smith¹. Attempts to look in the future is normal. However, the distance of Future from Now, has always been a question and the answer will depend on the visibility of the fortune teller and the life expectancy of the subject. Until the nineteenth century, academics considered Economics as a branch of philosophy. Economics branched out from “moral science” in Cambridge in 1903. Despite a fast growth of Economics as an academic discipline, the roots must remain in communal sense of ethics, psychology, logic and religion. The life expectancy of these inner human issues is infinitive, or matching to the life expectancy of whole human race vis-à-vis a finite life span of individual economists and the wealth of the nations. The bumpy and curvy roads of human economic life give us a vision very limited to new modes of production and

[Page 1 of 10]
consumption. The evolving definition of moral must increase further the anxieties of economists.

Today’s capitalist society, which is centring on limited liability transnational companies, appear to be very futuristic. Craftily worded vision statements always indicate perpetuity. However, desperate capitalists look at quarterly (1/4 of One year) corporate data and share prices largely depend on that data. Corporate CEOs are hyper to increase the value of share at the earliest, prepared for any blue-moon chance to make profit. Postponement of immediate harvest visualising a greater future is not any corporate mission. For a longer vision, a longer history has to be evaluated. Companies ignore this logic.

Future prediction depends on the past and the present facts whose impacts are known. Tsunami warnings are issued after an earthquake in the ocean. The shaking event of the current world is undoubtedly the fourth industrial revolution ushering the age of Internet of Things (IoT) and Big Data. The drivers of the future include autonomous vehicles, 3D printing, advanced robotics and new materials\(^2\). Advent of these almost miraculous technology in the greatly divided world is full of uncertainty one may think of, especially in the light of ethics. A disaster warning may be issued now.

In an interview with Bloomberg, Google Ventures' president Bill Maris said he thought it was possible to live to 500 years old\(^3\). Maris himself is not a health scientist nor he is talking to a health institution, but to Bloomberg, a major commercial news maker. This news is yet to stimulate the health economists. More reliable are the journals of the scientists. The Lancet published that there is more than 50% probability that by 2030, national (UK) female life expectancy will break the 90-year barrier, a level that was deemed unattainable by some at the turn of the 21st century. Projections show continued increases in longevity, and the need for careful planning for health and social services and pensions\(^4\). Google’s 500-year vison is a commercial dream. But an economic fortune-teller can believably predict human lives to extend to 150 years or so, in next 50 years.
The escalation of median age followed by reduced fertility rate in, for example the US, Europe, Korea and Japan may be focused in the light of another fact in the other parts of the world. The population of many countries are getting younger. Human morbidity is compressed. A great number of chronic diseases are postponed and prevented. Nevertheless, the vitality of population has not been elongated significantly as yet. Performance of athletes hardly continue beyond 30 years. Desk workers can contribute for almost four decades after completion of education and training. While ability to work can be extended for some few years, the willingness to work is decreasing spectacularly. The French has a weekly working hour of 35 hours and a reduction of working days to 4 days are under consideration by left wing politicians. There are mainly two rationales. First is that reduction of working hour of existing workforce will create new jobs for younger population, especially when new generation is receiving very focussed skills, precious division of labour is inevitable. Second logic is that the lesser working hour will provide the ageing population with better quality of life and more time to serve the societal purposes. Both are humanitarian morals. Maintenance of this moral obligation may not be simple and easy for the policy-makers.

The mode of production and consumption pattern do need a discussion. the 4th industrial has changed the mode of production unpretendingly. In the post computer era, this age is termed as the age of Industrial Internet of Things (IIoT) by General Electric. Cisco termed it as the Internet of Everything (IoE). World Economic Forum popularised the term Fourth Industrial revolution. The first Industrial Revolution (18th and 19th century) created steam engine for fast production cycle and transportation. It facilitated urbanisation of civilisation in Europe and US. The Second revolution (1870 to 1920) produced electric bulb, combustion engines and numbers of electronics and ushered more time to spend out of work and comfort at home. The Third revolution (the 80s) replaced analogue calculation to digital method. Internet, Emails are gift of the third revolution. But the fourth revolution is machine learning and the supremacy of mathematics. Machines
create machines, the result is invention of cure for many critical diseases, fast transportation of information. Digital money gave rise to the concept of private money.

The earlier revolutions took longer time. The later ones are quick. We can expect the tsunami of changes in no time. This changes will affect different classes of people in different ways.

The middle class, that is the class of people with tertiary education and modern skills work hard, practices delayed gratification, is going to face a paradigm shift in the job market. Frey and Osborne\(^6\) predicted 10 jobs which may die in the IoT age that includes: Telemarketer, Tax preparers, insurance appraisers, umpires, legal secretaries, restaurant hosts, brokers, labour contractors, administrative executives and couriers. This reference is made for the countries who are excited about “robotonomics”. However, this is significant for the population of countries like Bangladesh where young people are the most important asset, both as producers and consumers. A foresight to the death of the above mentioned jobs must change the education and skill development schemes in Bangladesh, proactively to the change internationally. There is no sense in debating on the ethical issues asking on replacement of human power by robot. This is happening and the ethics recognising the superiority and dignity of artful skill of human being is under grave threat.

It is believed by many that Robotics and Internet of Things will change human job nature only. There will be a greater need for skills to develop robots and artificial intelligence. However, in February 2015, DeepMind scientists revealed how a computer had taught itself to play almost 50 video games\(^7\). Human intervention is hardly required. Young
middle-class brainpower has to be hired by aged upper-class, will face tremendous ethical questions. If the human moral is not refined in favour of the human being, peace and conflict will take an unmanageable shape.

Peace and conflict in Economic context have always been integral part of the human history. We may hate wars and invasions. But the history is full of horrendous wars. No space in history is available without war. Warfare is an integral part of states. Men fight and give life for independence, for conquering other’s land out of the taught belief that they are superior thus deserve more resources. Except warriors own tribe, all others are “barbarians”. People fight as mercenaries as it is one of the job that pays high premium and bonus in exchange of life risk. Booty includes cash, tangible property and women. The concept of war crime evolved only a modern day. War itself is not a crime. A few supplementary actions are declared war crime and individual general and statesmen. The Geneva Conventions are 60 years old while the history of war does not have a beginning date. Ethics are evolving. This time it will be faster.

Battle results depend on investment. Horses, chariots, swords, canons, missiles, chemical weapons and everything are expensive. Military workforce often are more expensive than civilian workforce. Military training, practice and motivation have always costed money. But in money terms, it was never more than what it is now. However, war result also significantly depends of the intangible motivation of the soldiers.

Globalisation had been a very well touted term that was accepted by many of us in the last decades. Small countries with numerous problems welcomed the concept of globalisation, possibly thinking of a wider liberty of movement without war. Post 2nd World War led the traumatised policy-makers to think of growth and development of wealth without war. The 2nd world war had proved that the world was far from the morality to understand the value of peace. Trans-national businesses welcomed the theory as a blessing as the markets could be elongated beyond borders. Many politicians
thought of ‘national houses’ in the ‘global village’ of the 21st century. The global peace and the conflict free trade has been a hope since the Bretton Wood. In the concluding remarks in the UN conference in Bretton Wood, Keynes hoped and advised to the subjugated nations by saying that “It has been our task to find a common measure, a common standard, a common rule applicable to each and not irksome to any”. IMF and World bank thus were created.

The beginning of the end of the Bretton Woods was triggered by Richard Nixon. Nixon Shock came on 22 July 1971 when US unliterary severed their currency from Gold. Like US President Donald Trump, Richard Nixon was a nationalist. While most of the world policy makers think, very wrongfully though, that US is the sovereign power on earth. However, Nixon, Trump et al clearly mentioned that all their actions do hinge on their own country’s interest. Nixon and Trump, both overladen by scams, are laudable for their transparency. It is very clearly seen how the American presidents openly throw away moral and ethics. Human rights, respect to others and their very own commitments often have been cancelled in the name of God and People.

Donald Trump and his lady plagiarised speeches among applauds of the US citizens. News makers and news casters alike, the CNN news anchor Fareed Zakaria caught 24 times (as of March 2017) for plagiarism. He keeps his job and earns millions of dollar from CNN, one of the movers and shakers of the modern world. The creativity of the scholars is undermined, stolen and thus, the whole innovative world in the 4th Industrial revolution is at stake. This is an ethical attack on the economic revolution.

The USA, however is the largest financier of the international organisation who are supposed to help the world for sustainable development. These organisations include the United Nations, WTO, IMF and the World Bank.

The WTO, along with IMF and World Bank has dramatically failed in implementing globalisation. The process they followed earned the Trio a name as bad as “unholy
trinity”\textsuperscript{10}. The Trinity although spends billions of dollars, have miserable failed to eliminate hunger from the destitute countries. It is suggested that this Trinity must come out of the influence of big countries and big corporations and above all they have to shun the “unrealistic mathematical elegance”.

Within nations’ boundary, the stock exchanges and the trading activities in the light of perfect competition is one keystone for financial capitalism. Stock exchanges manage significant amount of the nation’s wealth. However, governance in the stock markets have always been a question. Among the crimes in the market, Insider Trading is the most mischievous. However, Larry Sayler\textsuperscript{11} challenges if Insider Trading is unethical at all. He argues in the debate – if insider trading is acceptable ethically? Or we have to refute it? Sayler finds it to be a dilemma, not a straight forward refusal or acceptance of Insider trading. He examined the “dilemma” by Kant’s two Categorical imperatives and four distributive justice models. This challenge is supported by few other moral economists too. This is a sign of paradigm shift in the ethical thinking process of the economists. Definition of Competition has to be rewritten in the light of new definition of ethics.

The ethics that says of equal flow of information as a precondition of successful perfect competition, is already been challenged when all SECs and other regulators are fighting tooth and nail against insider trading.

The time the 4\textsuperscript{th} Industrial revolution has come in the age of democracy and free market economy. Democracy is the most lobbied political form of the era. Hardly any academics or media talk about any alternative of democracy. It is believed that democracy includes everyone in governance. Nevertheless, democracy gave way to the rise of political elites finely mutilating democracy. The economic Intelligence Unit proclaims that a popular revolt took place in 2016 against the political elites. EIU refers to UK and USA have been successfully upholding the Greek-styled democracy for decades. EIU suggests that democracy is in peril as they surveyed 167 countries. 19 countries have full democracy, 57
have flawed democracy, 40 have hybrid and 51 have authoritarian regime\textsuperscript{12}. Without democracy, the 4\textsuperscript{th} industrial revolution will have a fragile platform.

The fast decline of Greek-style democracy which is a pre-requisite for the success of Keynesian economics clubbed with the decline of financial capitalism obviously indicate change in the definition of ethics. The ethical norms are changing in the western hemisphere more visibly. It will raise the conflicts between the civilisations. And each civilisation will call others the barbarians, as always.

Financial Capitalism and nationalism are bound to face another shock – massive migration wave. The reason is not only the demographic imbalance, but also it is due to the impact of 4\textsuperscript{th} Industrial revolution. Nabil Al-Kho waiter wrote in Al Jazeera that Artificial Intelligence will delete nationalism\textsuperscript{13}. Al-Khowaiter opined. “even as social and political scientists struggle to understand the impact of internet and the social media platforms it has spawned on human societies around the world, a vast new communication revolution is about to burst on humanity within five to 10 years”. Language is a barrier for the migrants and their receiving countries for absorbing and naturalisation of migrants. Al-Khowaiter argued, if an Albanian is able to understand the most obscure German phrase and reply to it in perfect German, what power on earth will stop him leaving a job paying an average wage of less than $ 3,200 a year, when he can travel to Germany and potentially qualify for a job with an average wage of 32,000 a year”? The example of Albanian migrant to Germany is not random. Germany is planning well ahead for the adverse impact of his population decrease. Piketty\textsuperscript{14} opines that “the drama of the refuses in an opportunity for Europeans to restart the continent’s economy. Germany’s attitude makes it a model to emulate”.

We, at the middle of the fourth industrial revolution, continue to have basic primitive crisis. There are 900 million people are going to bed hungry. UN estimates that there are 27 to 30 million slaves in modern days and the slavery industry fetches 35 billion dollars.
Global defence budget amounted to 1.57 trillion dollars. 1.2 billion people are without electricity, meaning no telephone or TV. Many hi-tech and chemical weapons are gift of the fourth industrial revolution. A bit chemical dash can kill a person within minutes without giving the killer any moral stress, because she does not know at all that she is a killer. Military labour force will have less trauma because most of them will operate keyboard to kill people as trained by the video games. Moral and ethical hazards will thus be less visible, camouflaged by technology. An epidemic like Ebola in the west coast in Africa might have been originated from US Bio-warfare laboratories. Economic science will hence take a new shape in light of new ethical demonstration.

Nevertheless, what is obvious is obviously wrong, proclaimed Joseph Granville, a most famous technical analyst. No forecast can be obviously made. It is not any smoothened trend. The always changing technology for production and demography that consume the products determine the leaps and bounds of the ensuing decades. Every day is a new day. Human race has been living in uncertainty from the beginning of time. We can only hope and pray and the uncertainty will not turn unreasonable.

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1 Adam Smith, Lectures on Justice, Police, Revenue and Arms, ed. Edwin Cannan, Oxford, 1896
11 Sayler Larry; Ethical Analysis of Insider Trading. Greenville College, Illinois. (accessed 5th February www.semanticsholar.org)
13 Nabil Al-Khowaiter is a Saudi business development consultant living in Riyadh. The article is published and viewed 17 March 2017 http://aje.io/e283