

# Mass Migration as a Complex Adaptive System

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## Abstract

Our research shows that the mass migration from Africa and Asia into Western Europe and US is likely to increase considerably, unless a positive action is undertaken to improve life conditions at locations where potential migrant live. Attempts to prevent entry into the UK at the border are futile.

Since the actions required to reduce the flow of immigrant are too complex to be implemented in the near future, the UK should *start planning large immigrant reception and processing facilities as well as transportation for those that will be rejected.*

The report shows that the mass migration is a complex system in which participant use digital communication technology to establish and maintain connectivity.

Organised criminals exploit migrants. The system for smuggling immigrants into the UK is highly lucrative, flexible and adaptive. It needs to be broken using the same methods as those used to deter terrorists.

## Introduction

We argue here that mass migration is a complex adaptive system. Observing migration through the lenses of Complexity Science, helps to determine its properties and to discover which, if any, intervention could lead to a desirable outcome.

Mass migration from Asia and Africa to Europe and, particularly to the UK, is likely to accelerate and therefore represents a threat. Nail Ferguson (Sunday Times, 6 January 2019) cites a Gallup survey in 2017, according to which more than 700 million adults around the world would like to move permanently to another country. 23% would prefer to move to a country within the EU, or UK, and 21% to the USA.

It is not surprising that in the target countries there is a strong opposition to the increase in the flow of immigrants. Recent polling by the Pew Research Centre shows that only 16% of the UK population would welcome more immigrants.

In the same article, Ferguson writes “if the choice is between open borders and defensive walls, history suggests walls – and those who build them – will win”.

This statement can be considered as sensible only if we give it a charitable interpretation that “defensive wall” is a metaphor covering all interventions, which could prevent undesirable visitors crossing open borders, rather than literally building physical walls.

This report attempts to answer the following questions on migration:

1. What are the factors that trigger and drive mass migration?
2. Does UK need immigrants?
3. What are the key issues caused by mass immigration?
4. What should be the elements of a comprehensive UK immigration strategy?
5. Which, if any, intervention could affect current mass migration from Asia and Africa to Europe and, particularly, to the UK?

Let's first establish that mass migration is indeed a complex adaptive system.

## Mass migration as a complex adaptive system

A complex adaptive system (or a complex group) is open (interacts with its environment), consists of a large number of diverse components, called agents, which are richly connected with each other and engaged in intensive interaction, has no central control and behaves unpredictably, but not random – it follows recognisable patterns.

The representative examples are epidemic, mass migration, global warming, terrorist networks, military conflicts, natural ecosystems (forests, grasslands, rivers, oceans), human brain, the internet-based global market, democracies, communes.

Mass migration has all the characteristics of a complex adaptive system.

- It is open – it feeds on information on where is best to migrate and on availability of clandestine support for illegal entry into target countries, including hiring of transport
- It consists of wide variety of constituent migrants connected using latest communication technology and engaged in continuous interaction – sharing latest news, gossip and opportunities
- It has organisers, leaders, but *no central control*
- It behaves opportunistically, adapting to ever-changing, hostile environment and its overall behaviour is therefore unpredictable but not random

In the 21<sup>st</sup> century we have built a complex, connected world in which individuals and communities have access to advanced communication technologies (data streaming, smart phones, emails, the Internet, search engines and social websites) and thus can exchange news and gossip and conduct business among themselves with (almost) the speed of light.

In such a world, all global issues are interconnected - geopolitical conflicts, trading alliances, tariffs, migration, poverty, crime, terrorism – and therefore any unilateral political, military or economic intervention is likely to cause unpredictable consequences.

Highly connected individuals, communities, movements (such as mass migration) and nations are capable of rapidly reacting to any disruption or attack with a view to eliminating, or at least reducing, consequences.

The best evidence is the fact that no nation, or military block, that recently initiated a military conflict, achieved its objective – nations on the receiving end managed to rapidly selforganise into guerrilla resistance, capable of prolonging a conflict, fighting until the attacker gives up and goes home.

Here is an example closer to home. When efforts were intensified to prevent migrants to be smuggled from France to the UK in lorries, they rapidly discovered a new route across the Channel – using stolen French fishing boats.

We live and work in a true *global village*. And in a global village, very much like in any village, positive results are easier to achieve by *negotiations and conflict resolution* than by aggressive posturing and threats.

## Factors that trigger and drive mass migration

Current Migration from Asia and Africa to Europe and, particularly, to the UK appears to be triggered and driven by many related factors. Here are some:

1. Local military conflicts often caused or made worse by military interventions by big Western and/or Eastern Powers (The Russian invasion of Ukraine, within first few days, created estimated 500,000 migrants).
2. Very low living standards.
3. Very high unemployment.
4. Sense of adventure and curiosity, the very same that drove early British explorers to discover wonders of the world and early British empire builders to conquer new territories.
5. Information reaching potential migrants that in Europe living standards are much higher and that there are no military conflicts (potential migrants have access to modern communication technology).
6. Information that the UK offers the best chance to find employment; British employment laws and regulations are the most liberal in the West, which is why migrants rarely stay in France – they try to get across the Channel by all possible and impossible means.
7. Availability of a clandestine network of resources supporting practical aspects of mass migration such as transport and support for illegal entry into target countries.

All factors identified here are long term. Local military conflicts, low living standards and high unemployment are likely to persist, unless concerted efforts are made to help, and illegal networks of smugglers will make sure that flow of migrants does not dry up.

After Brexit, presumably, free flow of immigrants from other European countries into the UK will not continue and the same, or similar, entry criteria will be applied to all immigrants.

## Does UK need immigrants?

Yes, we do

1. The UK economy is in transition from industrial to knowledge-based service economy (see Appendix 1). Knowledge services skills and, in particular, Digital Technology skills will be increasingly in demand and this demand is easy to meet by immigrants with appropriate profiles.
2. Our healthcare industry needs additional doctors, nurses and supporting staff (see Appendix 2).

3. The UK economy requires a steady supply of workers with *simple manual skills* for agriculture, catering and hospitality industries (farm workers, waiters, cleaners) and for support of households (domestic help, gardeners, plumbers, electricians).
4. After Brexit, it will be essential to maintain image of an open society, ready to work together with the world.
5. British universities are among the very best in the world and they attract international talent; talented staff and students are required to maintain high quality teaching and research and diversity promotes tolerance of foreign cultures among British students and encourages acceptance of British values by foreign youth.

### But we have to be careful

Additional resources are required for selecting and then absorbing large numbers of immigrants.

We must learn how to help immigrants to integrate into British culture and avoid resentment towards immigrants in the country.

All above considerations must take into account that within next 10 years Artificial Intelligence (AI) is likely to take over about 50% of current full-time jobs (see Appendix 2) and create many more new jobs for which we shall need new skills and we know very little if anything about these new skills.

In the context of how to select immigrants one should not forget that productivity, as calculated under industrial conditions, is not a good criterion since the UK is, primarily, a service providing economy.

In service industries low productivity is required to provide excellence (high quality service requires larger number of workers per customer).

Here are two examples,

Elite universities have a high staff-to-student ratios (low productivity of staff members per student), an essential feature for providing high quality education.

In a restaurant aspiring to provide high quality experience one needs guest receptionists, food servers, sommeliers, chefs, sou-chefs, desert-chefs, etc., in other words, high staff-to-customer ratio (low productivity of staff members per customer).

## Issues caused by mass migration

### Integration

One of the key problems with immigration is the conflict between cultures – the host country culture and the immigrant’s culture. Using parlance of Complexity Science, *culture limits freedom of behaviour of its members*; it imposes norms on how people dress, marry, worship, eat, and therefore emphasises differences between the hosts and the immigrants.

In all complex groups, there is a propensity for members with similar features to cluster. The UK immigrants are not exceptions, for example, in London we have prominent immigrant clusters - Polish in Ealing, Indian in Southall, French in South Kensington and so on. Clusters of foreign culture, once formed, is almost impossible to disperse. They prevent, or slow down, the integration of immigrants into the host culture.

### Resources required to absorb immigrant

The increase in population of the UK caused by immigration requires proportional increase in resources for housing, feeding, watering, heating, cooling, dressing, refuse removal, education, healthcare, transport and entertainment. Which, of course, reduces green areas (fields and forests), increases pollution, consumes energy, generates CO2, endangers water supply, which may, or may not be compensated by the potential increase in wealth creation.

## Resources required for receiving and processing immigrants

Since it is very likely that the number of potential immigrants who will attempt to reach the UK by hiding in containers, crossing the Channel in a variety of boats, or by any other way, will considerably increase, there will be a need to organise very large immigrant reception and processing facilities as well as return transport for those rejected.

## Elements of a strategy for managing immigration to the UK

Mass migration is too complex to be regulated by ad hoc unilateral actions.

To control the flow of immigrant into the UK, it will be necessary to devise a comprehensive immigration strategy, which would

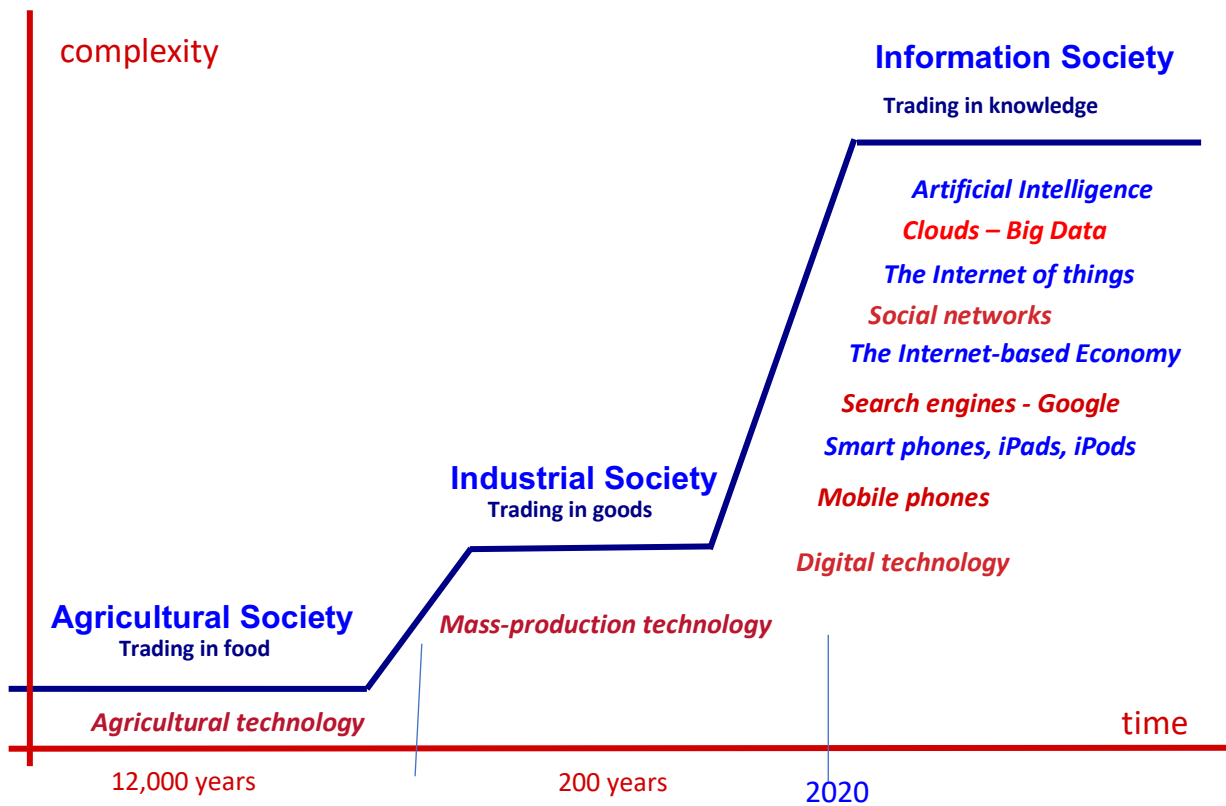
1. Determine the number of immigrants with skills required by the UK economy, taking into account the fact that our economy is undergoing a major transition from trading in mass-produced goods (industrial economy) to transacting in knowledge-based services (information economy).
2. Find financial resources and build required infrastructure needed for receiving, processing, transporting back those who are rejected and absorbing those who are accepted .
3. Plan how to initiate and manage interventions aimed at controlling the flow of migrants, as identified below.

If factors that trigger and drive flow of immigrants from Asia and Africa to the UK have been identified correctly, we can reduce the propensity to migrate in the long run by

1. Stopping all military interventions, which are fundamentally cruel and useless; remember that *no nation that recently started a war, won it.*
2. Investing into the infrastructure and businesses in regions that represent major sources of migration with a view to improving living standards and increasing employment opportunities; *an additional benefit would be the creation of new markets.*
3. Acting to prevent operation of clandestine migration support networks employing methods similar to those used in antiterrorist defence.

The immigration strategy will have to coevolve with the global geopolitical and economic environment within which the UK will operate after Brexit.

# APPENDIX 1 - Coevolution of Technology and Society



We are in the middle of a major transition from industrial to information society, which is driven by unprecedented growth in the use of digital technology for computation (digital computing), communication (digital communication) and, most importantly, for decision making (digital artificial intelligence).

## Appendix 2 - Division of Labour between Human & Artificial Intelligence

TASKS	HUMAN INTELLIGENCE	ARTIFICIAL INTELLIGENCE
High cognitive intelligence	Scientists, researchers, strategists, philosophers, designers,	Not capable of competing
High emotional intelligence	Team coordinators, politicians, customer service providers, nurses, teachers	Not capable of competing
High artistic intelligence	Architects, painters, composers, novelists, actors, fashion designers	Not capable of competing
High money-making intelligence	Investors, bankers, entrepreneurs	Not capable of competing
High dexterity	Plumbers, electricians, builders, decorators; footballers	Not capable of competing
Moderate intelligence, high speed & precision (approx. 50% of all full-time jobs)	Not capable of competing	<b>Digital banking, digital insurance, supply chains, production, distribution, vacuum cleaning, car parking, healthcare scheduling</b>
Narrowly specialised complex decisions	Not capable of competing	<b>Medical diagnosis, business analytics, extracting knowledge from data, pattern recognition</b>