"The path to the future"

International migration has always been an important process leading to the population redistribution. There are 2 types of migrations the voluntary and the forced migration. Due to the current situations impacting communities and countries resulting of noticeable tensions due to the migration, this document has the objectives to get a better understanding on the challenges the world is going to face within the coming decades by mapping together:

- World economy model
- Population trends
- Demographic forecasts
- Population Migration
- Environmental, political and social risk due Climate change and countries stability.
- Welcoming capabilities and welcome wiliness
- Urbanization & cities challenges

The dangers will come from the combination of the many factors and inevitable events such as

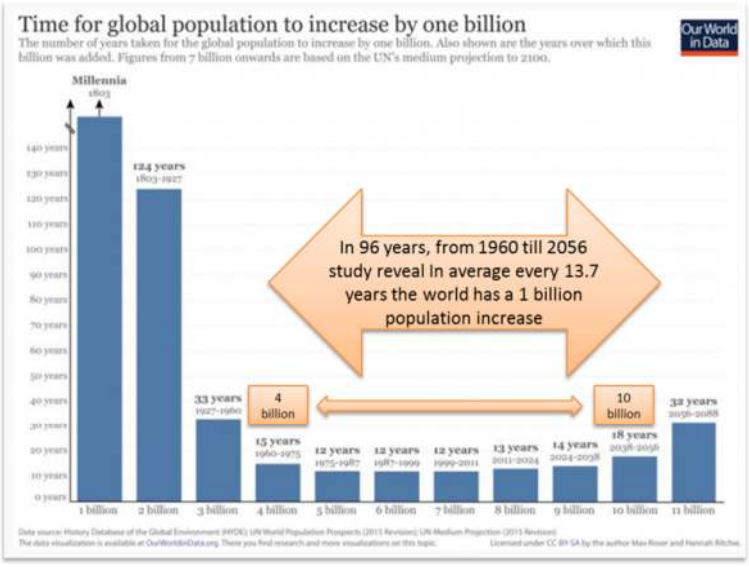
- Food and water shortage
- resources scarcity and security
- Climate disasters
- Political instability, wars, conflicts, poverty
- Natural disasters such as earthquakes, floods, hurricanes, volcanic eruptions,…
- Temperature & water raises
- Biodiversity loss

The world as we know will be impacted. From the viewpoint of a world divided into a developing "South" and a developed "North", having an understanding of where will be the international migration preferences can facilitate acceptance true pre preparation as well as developing a model based values sharing the value chain which will limit the population move.

I – DEMOGRAPHICS - United Nations projects world population world population projections

FACTS –

- **TODAY 1st Feb 2019** World population - In 2019 today we are **7.681.387.815 and growing**
- **Current average population increase per year -** Estimated at **82 million people per year.**



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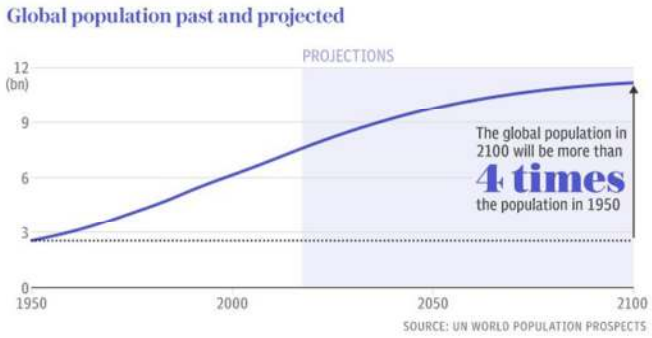
Previous Milestones

- 1804 - 1 Billion
- 1930 - 2 Billion
- 1960 - 3 Billion
- 1974 - 4 Billion
- 1987 - 5 Billion

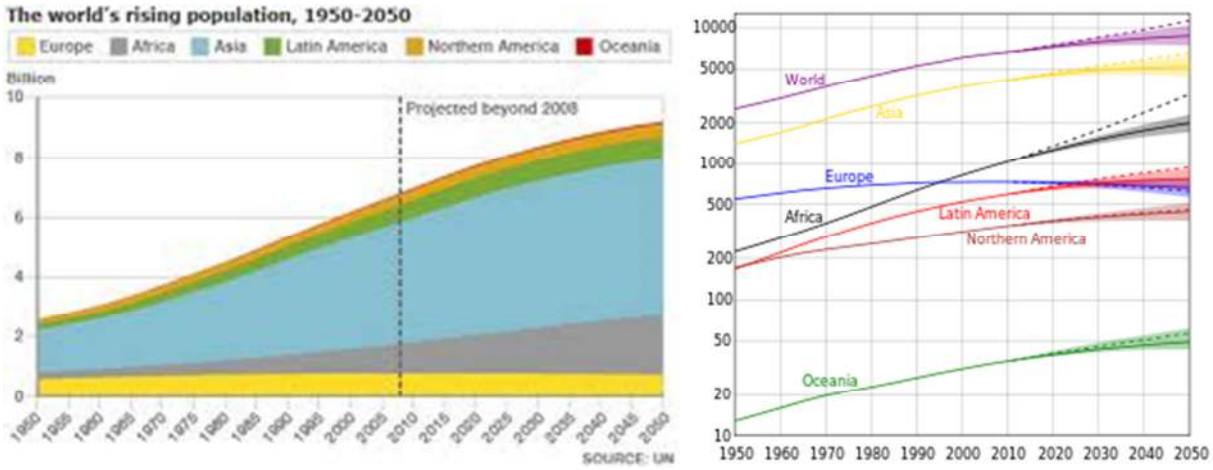
- **20th century population growth** - During the 20th century alone, the population in the world has grown **from 1.65 billion to 6 billion.**
- **World population growth from 1959 to 1999 -** World population has doubled (100% increase) in 40 years **from 1959 (3 billion) to 1999 (6 billion).**
- **World population growing rate** - Population in the world is
  - currently (2018-2019) around 1**.07% / per year**
  - 2018 1.09% / year
  - 2017 1.12% / year
  - 2016 1.14% / year

PROJECTION & FORECASTS – Populations are exponentially growing & on the move



As well as variations between countries, population growth is uneven within borders too. An important ongoing trend is the mass movement of people out of rural areas into cities. The United Nations says that many countries will struggle to meet the needs of their growing urban populations when it comes to housing, transportation, energy, jobs and basic services such as education and health care unless governments step up to the challenge now.

Meanwhile we are at a turning point. Birth rates in much of developed world are falling fast, leaving many countries with too few young workers to support rapidly aging populations.



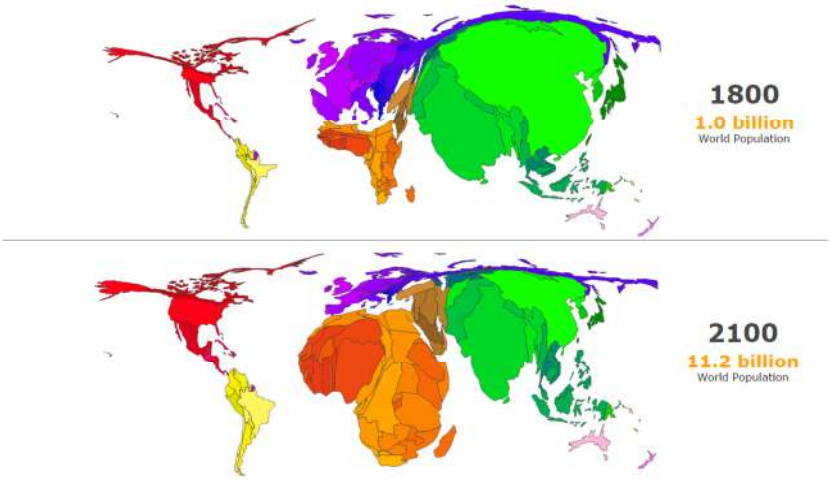
Population growing rate - World population will therefore continue to grow in the 21st century, but at a much slower rate compared to the recent past. China and India together already account for over 3 billion.

- **2013 Forecast – 8 billion people**
- **2037 Forecast -** It is now estimated that it will take another nearly 40 years to increase by another 50% to become **9 billion people**
- **2055 forecast – 10 billion people**
- **2088 forecast - 11 billion people**

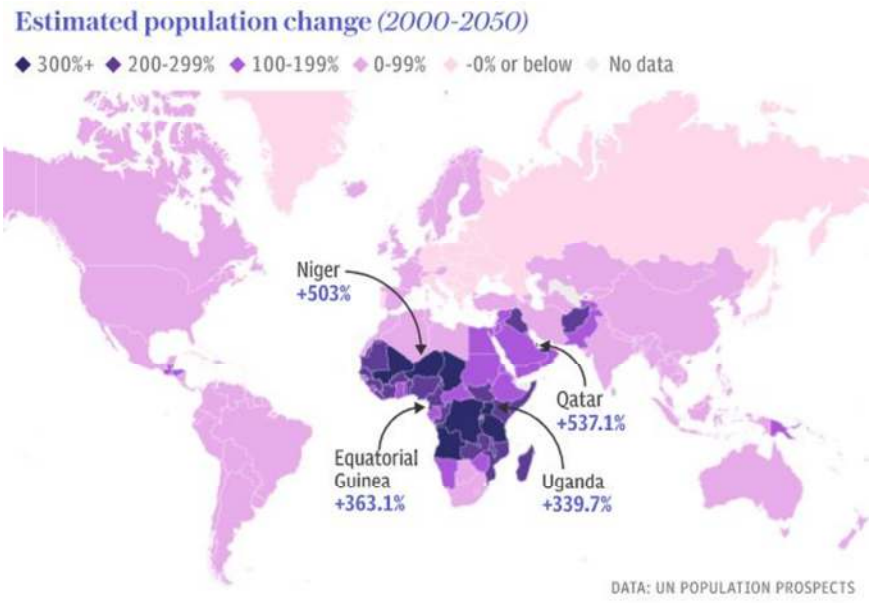
The link below is a real time counter of the world population making clear evidence

http://www.worldometers.info/world-population/population-by-country/

By 2100, the population of Africa is expected to catch up with Asia.



The U.N. attributes this change to two factors: Africa's high fertility rates (African women have on average 4.7 children vs. a global average of 2.5) and its young population, many of whom will be reaching adulthood in the coming years and having children of their own. The population of Africa will exponentially grow during the next 85 years, doubling to 2.5 billion by 2050 and quadrupling in size by 2100.

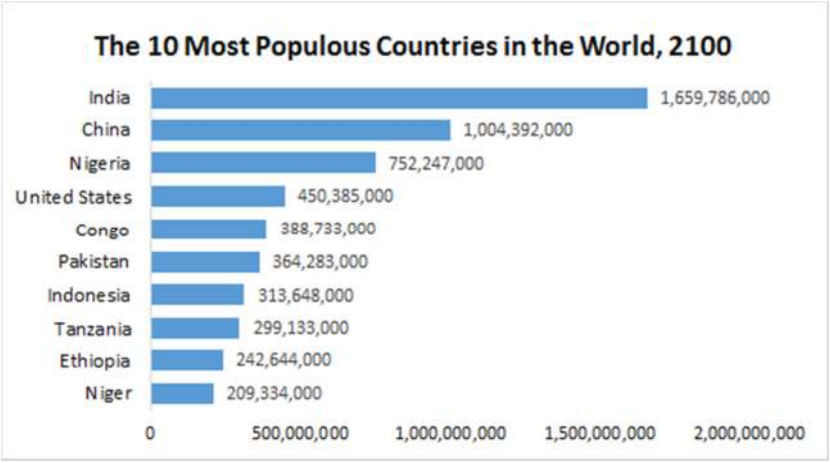


In order to account for uncertainties in estimating future fertility rates, the U.N. produces a range of population projections using different assumptions. The low and high fertility variants represent a 95% confidence interval. That is to say, the U.N. believes that there is a 95% probability that each region's true population in 2100 will be somewhere between the low and high estimates.

Population by region, 2015 / 2100 – The rate of growth, Africa's will be growing strong

While the populations of Asia, Europe, and the Americas are likely to have leveled out or be shrinking by 2100, Africa's will be growing strong as 60 % of Africa's population today is under the age of 25.

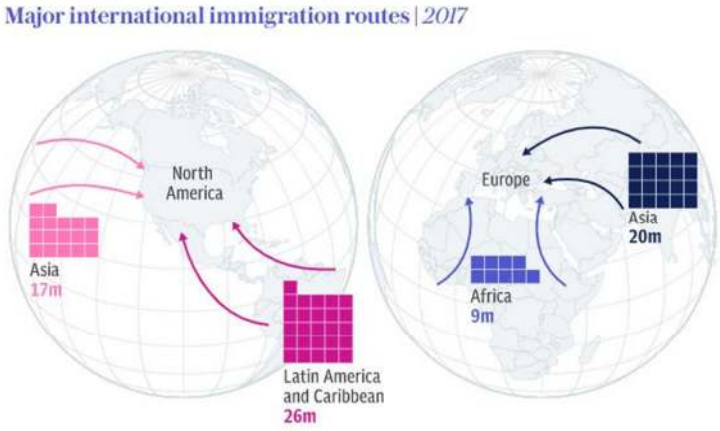
If U.N. estimates prove correct, Nigeria, Congo, Tanzania, Ethiopia, and Niger will be among the most populous countries in the world by 2100.



II - TRENDS IN INTERNATIONAL MIGRATION

Between 2000 and 2017, the largest relative increase in the number of international migrants who had originated in that region

- Africa (+68%),
- Asia (+62%),
- Latin America and the Caribbean (+52%)
- Oceania (+51%)



On a global scale the world is going to be impacted by population migrations. For a certain period of time some regions will not be concerned due to their low urban density, small population compared to their landmass, natural ocean border which will assists in preventing undocumented migration. They will act as natural buffers in place that inhibit irregular migration but most of the world is not is such situation.

Migration populations - India has the largest number of persons born in the country who are now living outside its orders.

- The number of Indian-born persons residing abroad numbered 17 million in 2017,
- The number of Mexican-born persons living outside Mexico (13 million).
- The Russian Federation, China, Bangladesh, Syrian Arab Republic and Pakistan and Ukraine also have large migrant populations living abroad, ranging from 6 to 11 million each.

High income countries - In 2017, high-income countries hosted 64%, or nearly 165 million, of the total number of international migrants worldwide. Moreover, most of the growth in the global population of international migrants has been caused by movements toward high-income countries, which host 64 million of the 85 million migrants added since 2000.

WORLD POPULATION MIGRATION – 3 MAJOR CAUSES & INFLUENCES

To understand causes, influences outside of the data need to be determined including political instability, income at the destination country acting as a pull for migrants, and environmental factors. Migration & Environmental refugees: Transnational environmental migration is an issue from a domestic to an international, global scale. The causes of migration are complex and, to a large degree, context-specific. The true impact of climate on the world's movement is underplayed by poor data. He called for more investment in quality research and said governments need to better prepare for the political implications of a doubling or more of global migration.

This can be segmented within 3 categories

- **Climate change -** Climate change doesn't just warm the air and melt glaciers. It acts as a "threat multiplier," playing on the vulnerabilities of ecosystems and communities. The increases in temperature are strongly associated with emigration and will place additional stress on socioeconomic and physical systems. The climate change will forces individuals leaving countries and emphasizes that climate-induced migration is, in fact, a global phenomenon. Within origin countries, temperature shocks lead to a declining gross domestic product as well as increased disease, water scarcity, and conflict. Climate change will increasingly have strong effect on less-developed country, particularly in countries that don't have good social security and limited mobility within their country. Climate change is predicted to result in more droughts, floods, heatwaves, and other extreme weather, as well as more intense storms and rising sea levels. These effects are likely to render agriculture more difficult, if not impossible, across swathes of the globe, including sub-Saharan Africa and parts of Asia. Resource scarcity combine with desertification creates huge pressures on populations.
- **Political –** Political stability avoiding financial crisis and recessions which crippled economies and capacity to maintain a certain acceptable level of quality of life will avoid population migration.
- **Economic factors –** Poverty, unemployment, lack of opportunity / future

III - CLIMATE CHANGE - The 20C shifting paradigm

The data showed that the more temperatures in a country's key agricultural regions rose above 20C in the growing season, the more people left their homes for another country. However, immigration from colder countries fell when temperatures rose towards 20C.

- "On average, 26 million people are displaced by disasters such as floods and storms every year. That's one person forced to flee every second." See: Climate Victims – Every Second, One Person Is Displaced by Disaster
- **2009** - 36 million people were displayed by natural disasters (United Nations High Commissioner for Refugees (UNHCR)).
- **EU from 2000 till 2014** – Asylum applications averaged more than 350,000 / year
- **2015 -** More than 19.2 million people fled disasters in 113 countries. "Disasters displace three to ten times more people than conflict and war worldwide."
- **2017 -** There are now an estimated 258 million people living in a country other than their country of birth. An increase of 49% since 2000

According to a 2015 study carried out by the Institute for Environment and Human Security of the United Nations University, 200 million being estimated. Between 2000 and 2015, migration contributed 42% of the population growth in Northern America and 31% in Oceania. In Europe, the size of the total population would have declined during the period 2000-2015 in the absence of migration.

IV - CLIMATE REFUGEES, MIGRANTS – WARNING, FORECAST and MIGRATION RISK – Political tension which will be visible in urban areas

The huge potential costs of migration-related conflict are usually omitted from economic models of climate change impacts in the future.

Knowing that 90% of the world population is leaving near the coast line, hundreds of millions, perhaps billions, of people will be exposed to sea level rise and shifts in extreme weather that will cause mass migrations away from the most vulnerable locations. Human history shows that migrations often lead to conflict and war, with devastating consequences.

- **By 2045 –** 135 million people may be displaced by 2045 as a result of desertification asper the United Nations Convention to Combat Desertification (UNCCD),
- **By 2050** - Currently, forecasts vary from 25 million to 1 billion environmental migrants by 2050, moving either within their countries or across borders, on a permanent or temporary basis,
- **By 2100** - 660,000 additional asylum seekers per year toward Europe

Migration owing to climate change could exacerbate political tensions further, though poorer countries in hotter regions are most vulnerable to climate change. The relative prosperity and advanced infrastructure mean the damage could be contained, and makes an attractive destination for migrants..

REFUGEES vs MIGRANTS - DRAMA & LEGAL STATUS RECOGNITION

On the surface, the problem is bureaucratic. There is a difference leading to a different consideration depending on the "migrant profile".

- **Migrants** - Environmental Migrant fleeing natural disasters
  - Environmental migrants are not covered by the 1951 Geneva Convention Relating to the Status of Refugees. The UN agencies most involved in refugee rights, the UN Refugee Agency (UNHCR) and the UN Development Program, agree that the term "climate refugee" should not be used to describe those displaced for environmental reasons.
- **Refugees** - Migrant escaping war zone
  - Conflict migrants - The 1951 Geneva Convention Relating to the Status of Refugees is designed to protect those fleeing persecution, war or violence. The UNHCR already struggles to provide adequate support for the world's 22.5m refugees (from war and persecution). During the Syrian refugee crisis, it admitted to being "stretched to the limit". If the UNHCR broadens its definition of "refugee" to support an entirely new category, it is unclear if the political appetite exists to provide the necessary funding.

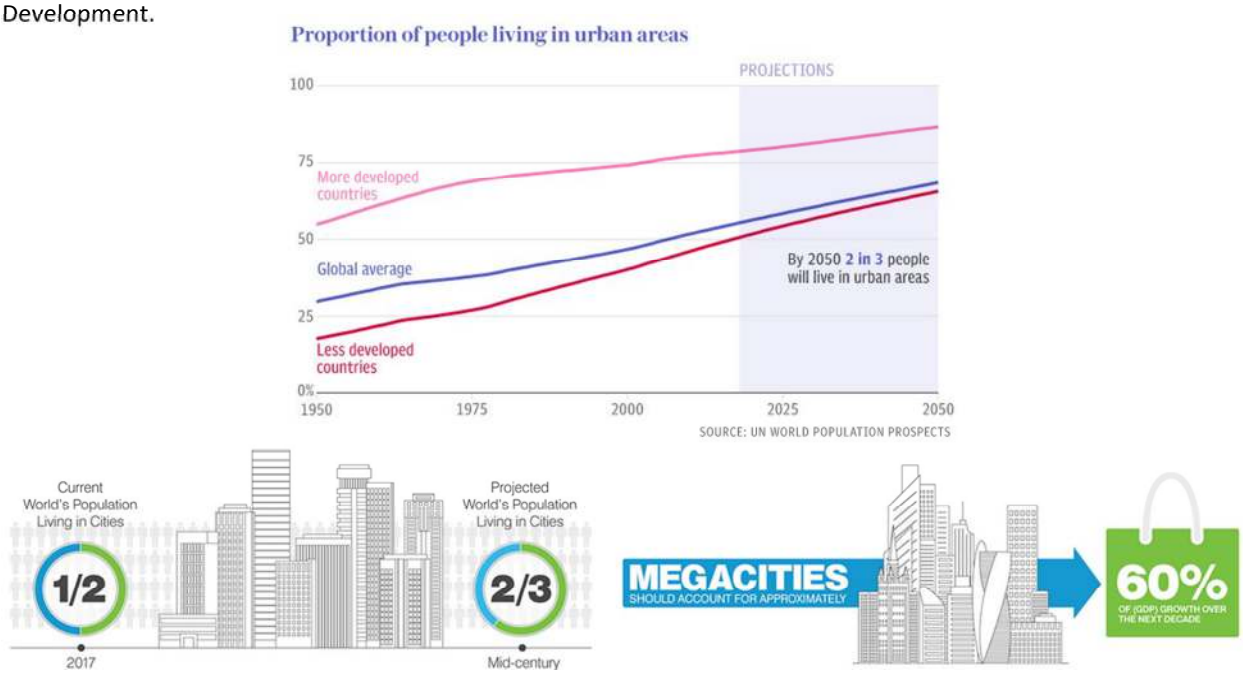
IMPACT ON THE WORLD, MUNICIPALITIES & COMMUNITIES

All Ecosystems will be impacted with a major loss on biodiversity which will by rebound create major stress on URBAN AREAS & CITIES.

According to McKinsey Global Institute research, an estimated 5.2 billion people, more than half the world's population, will be living in urban centers in emerging markets by mid-century. The significance of urbanization is a structural change in resource distribution. As urban populations rise, the share of resources for rural populations falls. Electricity, food, water, and housing are redirected to centralized locations. Cities and informal settlements continue to sprawl and there is less agricultural labor compared to the number of urban residents.

Undocumented migration will rises, fueling inequality and subsequently leading to the creation of high population density slums. A lack of a well-developed industrial sector due to the current economic model then stands to stagnate growth while resource consumption, population and related pollution will all rise.

International migration is a critical concern for the implementation of the 2030 Agenda for Sustainable Development.



Urbanization and GDP Growth goes together

Cities are the heart of the global economy, accounting for more than 80 percent of world GDP. What used to contribute to higher Quality of Life, throughout history, population shifts from rural to urban areas have driven increased productivity, consumption, and higher standards of living. Population concentrations into centralized urban centers have helped produce an ample work force while allowing for more efficient uses of energy and resources. This concentration also eases the distribution of goods and services among a growing consumer class. The Industrial Revolution in Europe and the U.S. in the mid-eighteenth century would have been impossible without such migration.

In the past, city economies expanded largely because their populations were increasing due to high birthrates and mass migration from rural areas. Today, the world's cities are facing more challenging demographics. The days of easy growth are over. What used to be good still we ended up to be 7 billion plus people with an increase quality of life based on mobility and goods acquisition is also a factor of increased pollution due the massive used of fossil energy. Our entire economy has been built based on circular and local economy. The cost of good we are spending doesn't take into account the carbon cost which started to impact our daily life since the late 1990.

Climate change challenges – Living in a world CO2 / GHG "free" – Urban area are the challenge

The smart cities of the future will be those that embrace the concept of less is more. Creating sustainable intelligent communities where the citizens, employers and the government work together constructively to produce regional energy that can be either consumed or supplied to local networks, using local resources and consumed on an as needs basis.

We have to rethink the organization of our society and he way it works. City aka Smart cities start with people not technology and in that process acceptance is key. As urbanization, industrialization, and consumption grow, environmental pressures multiply. Eco conservation and environmental conservation principles by any means must be applied. Urbanization in developing nations have the advantage of an absence of legacy infrastructure and can then be handle differently with a special focus on preserving biodiversity and Quality of Life because it is different from urbanization of most developed nations.

It is then become obvious that one of the biggest challenges will be the metropolitan urban area. The significance of urbanization is a structural change in resource distribution and the way to live in urban area. As urban populations rise, the share of resources for rural populations falls. Electricity, food, water, and housing are redirected to centralized locations increasing the move to those locations.

The globalization model based on the assumption of an endless supply of raw materials and (relatively) cheap energy has demonstrated that it is not sustainable. Urban area are going to be the nodal point were all those trends converged creating a huge stress on existing city infrastructures and services with a huge risk to challenge the social order in place.

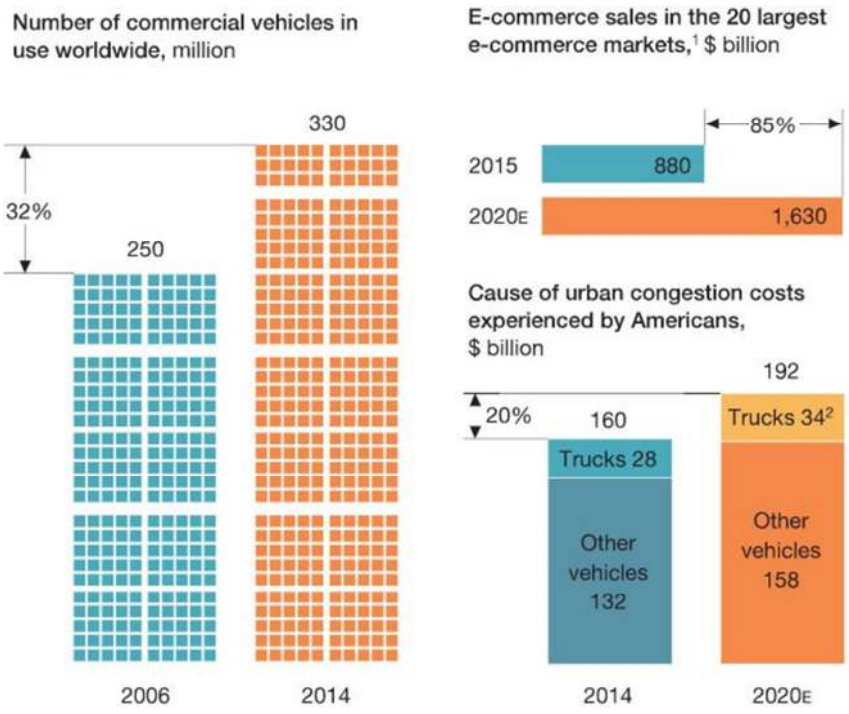
SMART CITIES CHALLENGE, RESPONSES & TREND – CITY DEMATERIALIZATION & MULTI-POLARISATION

Smart-city technologies help cities get more out of their assets, whether they have extensive legacy systems or are building from scratch. There is no getting around the need to invest in physical assets and maintenance, but smart technologies can add new capabilities as core components are upgraded. Through the actual tender process, infrastructure investment once locked cities into capital-intensive and extremely long-term plans. Using the right combination of traditional construction and smart solutions, they can respond more dynamically to how demand is changing.

- **Cities dematerialization & Multi-polarization** - Reversing the urbanization trend by decentralizing the population and redirecting investment to regional areas are key initiatives that can tackle this problem.
- **Local, virtuous & circular economy enhancement** - Investing in development in regions outside of the cities and considering greater infrastructure with a triple focus
    - **F**ood & Water security as the global population grows
    - All types of Pollution reduction

- This will allow to reduce through:
  - **DataCenterFree program – Connectivity & DATA hostel -** Traffic transportation reduction which are getting worse and costly in term of pollution, fuel, labor cost, time and competitiveness loss and inefficiency due to congestion.
  - The way we produce and deliver goods in less resource/intensive manner
  - **Circular Economy – Enhancing quality of Life by involving local population based on Eco conservation** - Localizing manufacturing and reduce physical inventory by sourcing component locally

One of the greatest incalculable impacts by doing "Cities dematerialization & Multi-polarization" cannot be done on metrics. It is giving people freedom of movement and peace of mind.



How?

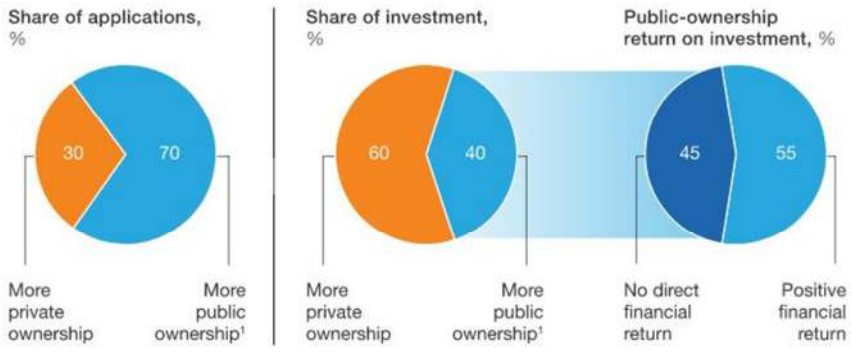
Financing – A 'Mixt & Smart" financing combination for smart cities

This will be a combination between technology and financing solutions coming from the public but also the private sector.

City government does not have to be the sole funder and operator of every type of service and infrastructure system. While implementing most of the examined applications would fall to the public sector, the majority of the initial investment could come from the private sector. Public financing may be reserved for only those public goods that must be provided by the government. Furthermore, more than half of the initial investment that needs to be made by the public sector would generate a positive financial return, which opens the door to partnerships. In that model, the public sector will still remain the natural owner but rooms will be left to private actors especially on the service side. Then the role of government and municipalities may involve regulating, convening key actors, offering

subsidies, or changing purchasing decisions. Rather than taking a master-planning approach, some cities position themselves as ecosystems, creating consortia and even physical collaboration spaces.

In a meantime we will have to create local economy all around the world to slow down the migration trends and reduce the stress on urban areas.



[1]Energy, water, waste utilities, public-transport operators, and hospitals assumed public for this quantification, although this differs around the world.

Note: Autonomous vehicles excluded; technology has not been deployed at scale, and required investment by 2025 not yet clear.

Technology - Digital solutions for a more livable future.

With the help of enablers such as 5G & fiber optic connectivity, distributed EDGE datacenters, the DIGITALIZATION will play a societal/ economics / carbon pollution reduction key role, dematerializing cities still in preserving and creating job opportunities. Quality of Life has many dimensions, from the breathing air (Heath), shorter commutes (Time efficiency and increased work quality) to the people safety. The local economy services industries should expand and deliver the proximity services to people and employees reducing by the same way travel time and CO2 emissions while increasing quality of life using technology and data to make better decisions and deliver a better Quality of Life.

Smart cities put data and digital technology to work to make better decisions and improve the quality of life. Smart-city applications could affect various quality-of-life dimensions: safety, time and convenience, health, environmental quality, social connectedness and civic participation, jobs, and the cost of living (see interactive). The wide range of outcomes reflects the fact that applications perform differently from city to city, depending on factors such as legacy infrastructure systems and on baseline starting points.

The underlying concept behind smart cities is going to be more and more important. The ongoing migration to cities will put increased pressure on cities be dematerialized through innovation & multi-polarization in order to become more efficient with financial and natural resources while becoming more attractive to entrepreneurs and innovators. The leaving communities will have increased access to real-time information on their cities and are already increasing their individual and collective pressure on cities to meet their infrastructure, housing, economic and cultural needs.

Mobile, ICT, Data collection & Access, and new transit technologies will become more ubiquitous around the globe.

“The path to the future”

Immersion4 Ecosystem infrastructure contribution - Datacenter is one piece of the puzzle which should be fixed - “Because everything “Smart” starts & ends in the datacenter”

Immersion4 DTM™ technology addresses many of today’s current concern. At the highest levels of government, data & energy independence is recognized as crucial to maintaining a nation’s economic and political security. Data is expected to be THE Great Natural Resource while data centers are the most energy consuming buildings on the planet, which drives the drastic increase in demand for cloud services and thus data center energy consumption.

Immersion4 is based on Eco Conservation built on 4 pillars:

- No Water consumption
- No CO2 emission
- No GHG (Greenhouse Gas) emission
- Ethics

Data Center Free

**For Immersion4 the planet matters & drives the way we do business.
Integrity & independence are our watchwords. When clients turn to us for services, we don't just add value, we add values in allowing Immersion4 DTM technology to be built locally using the local industry enhancing the local economy.**

Immersion4 contribute to solving the nation’s need for energy & data independence in a climate of greater demand and diminishing resources. It is used to improve an inefficient industrial model by bringing a new revolutionary approach to the datacenter market. By franchising its technology, Immersion4 enhance and retain most of the benefits within the local economy. To maintain the internet growth, the world will need 4,000 data centers over the next 4 to 5 years. Virtual & augmented reality, machine learning and the Internet of Things will require unprecedented levels of computing horsepower (GPU, Asics, FPGA, etc.), connectivity and data storage.

As these technologies move toward the mainstream, they will drive major changes in IT infrastructure leading with unprecedented levels of electricity consumption if we keep using Air or Water cooled solutions.

In 2016, 5% of the world's electricity is consumed by datacenters. Immersion4 is tackling this challenge of transforming the digital wasted heat into a new & growing economy.

Immersion4 DTM™ Systems solutions help corporate and government customers assess, optimize & manage the life cycle of resource utilization for greater efficiency and offer more reliability with a lower environmental impact. The DTM™ design is a "building block" based part of a broader rethinking of the data center and how we bring computing power to the edge of the network. This answers many risk categories such as GRID load, urban area density, and drastically reduces electricity & water consumption, allows data to stay "In country" by reducing and distributing the country's datacenter footprint. It also minimizes impact on the GRID and answers the need for National security.

Immersion4 DTM™ technology simplifies the complexity of implementing data centers through a distributed architecture. This helps to prevent the "unknown" aspects of cybersecurity to achieve realistic governance.

With Immersion4, for the first time, data storage, computing power, accessibility and connectivity become independent of their energy sources and can be built locally contributing to local economies and the communities' Quality of Life.

Data centers are the foundation of the new economy and the infrastructure has to keep pace and match that growth. Immersion4 contributes to country leaders & city mayors who are constantly trying to balance the challenge of resource constraints and financial profitability against environmental sustainability concerns and community Quality of Life.

CONCLUSION – Global profound changes on our way of living must be applied

According to the demographics and our current life style all initiative are just time savior hoping we will find the needed path to stability and balance between all ecosystems so we can live in Harmony. Profound changes on our way of living based on Eco Conservation and Environmental conservation must be applied. The negative consequences of land pollution can be greatly reduced with the cooperation of everyone. By making a conscious effort to contribute to a safer environment, the health and well-being of all can be protected.

If we can manage these trends along with:

- **Eco conservation**–
  - Eco conservation way of living
  - Energy spending model based on it
  - Reducing the usage of non-biodegradable materials
- **Environmental conservation** – To preserve and trying to recover what is left of the biodiversity
- **Recycling** – to reuse materials to reduce the need for harvesting of resources
- **E-Waste & "X" waste** – Transformation back in energy
- **e-waste** - Proper waste disposal that focuses on treating waste and disposing it in the safest manner possible
- **Circular & local economy prioritized** - Facilitating local economy & reducing daily life carbon footprint still in easing transportation.
  - Reducing land pollution doing organic agriculture & gardening which can reduce the usage of pesticides and insecticides preserving water and human health

This could leave the world with decades of improved living standards and sustained economic growth. But if handled badly growing discontent, uncontrolled migration and conflict will occur at our detriment knowing the resulting famine and conflict are drivers of migration.

Increase temperature, water scarcity, sea-level rises,… as a consequence of global warming, will turn refugees seeking safe haven on sparsely populated northern coastline. Based on the migration forecast we soon will not have the manpower, the means, even the moral right to intercept, detain or repatriate the thousands who will come in peace, in search of a better life.

Reducing the Impact of Human Migration on Biodiversity is a huge challenge. According to a report issued by the WWF in 2014, animal populations living in freshwater have declined by 75% over the last 40 years largely due to pollution. Migration has impacted natural resources for centuries, and will continue to do so causing species and genetic loss, habitat fragmentation, loss of ecological connectivity and disruption of evolutionary processes.

THIS IS UP TO US! OLD MEN WHO HAVE THE ANSWER

WE HAVE NO MORE TIME TO BUILD AN ECO CONSERVATION & ENVIRONNEMENTAL CONSERVATION BASED SOCIETY.

OUR CHILDREN ON THE STREET ARE CALLING FOR HELP.. NOW!