MEMTEC
2019

Considerations for developing simulations models for possible future conflict in the Middle East

FRANK BELONUS

President & CEO
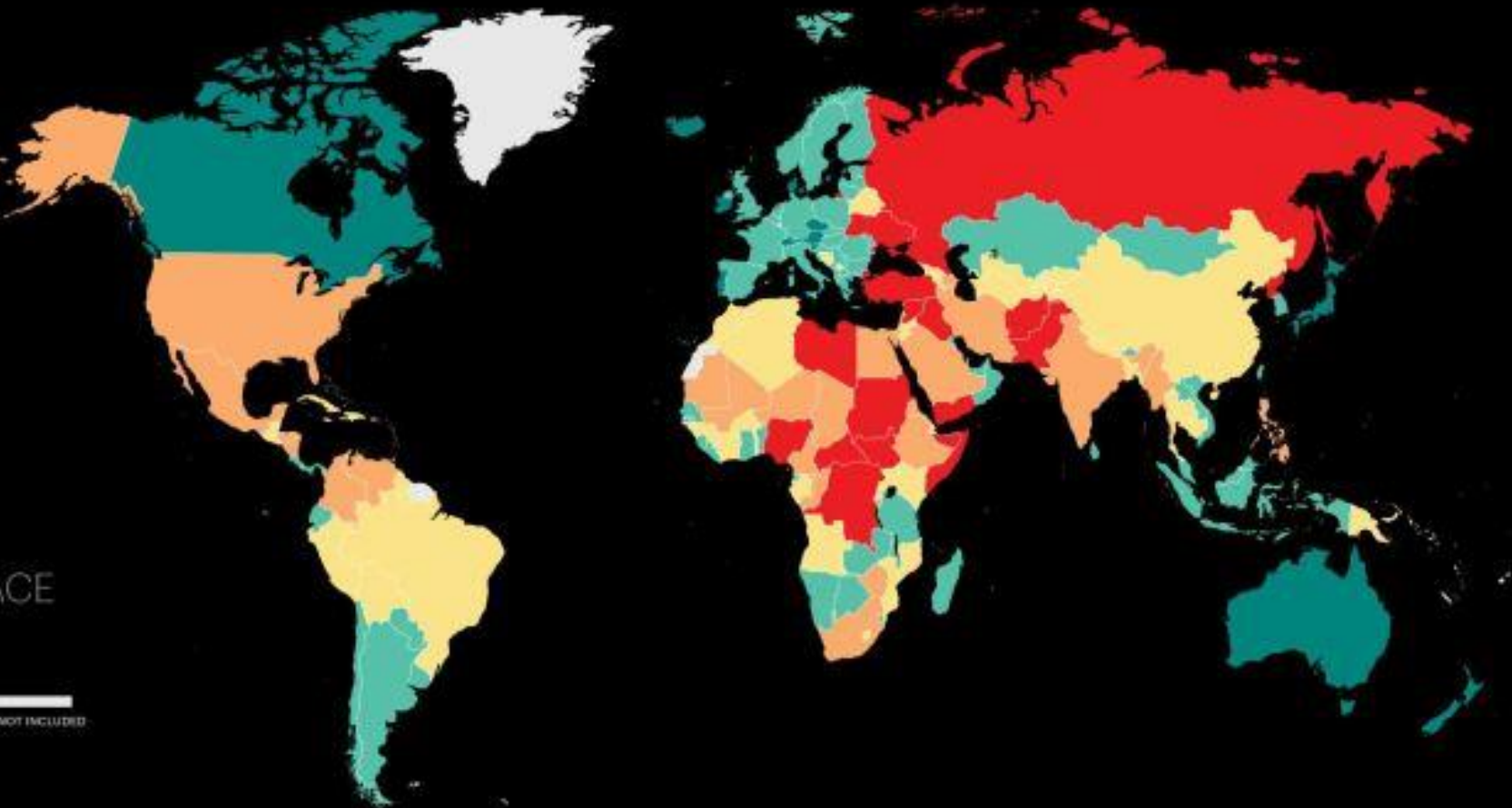*Falcon Desert International*
(State of Kuwait)

Global insecurity has not improved much over the last few years

Future threats

Top 10 risks in terms of
Likelihood

1. Extreme weather events
2. Large-scale involuntary migration
3. Natural disasters
4. Terrorist attacks
5. Data fraud or theft
6. Cyberattacks
7. Illicit trade
8. Man-made environmental disasters
9. Interstate conflict
10. Failure of national governance

Top 10 risks in terms of
Impact

1. Weapons of mass destruction
2. Extreme weather events
3. Water crises
4. Natural disasters
5. Failure of climate-change mitigation and adaptation
6. Large-scale involuntary migration
7. Food crises
8. Terrorist attacks
9. Interstate conflict
10. Unemployment or underemployment

Common Natural Disasters

Earthquakes Volcanoes Tsunamis Landslides
Hurricanes Tornadoes Blizzards Dust Storms
Floods Droughts Wildfires Sink Holes

Middle East emerges as the most vulnerable region to cyber-threats

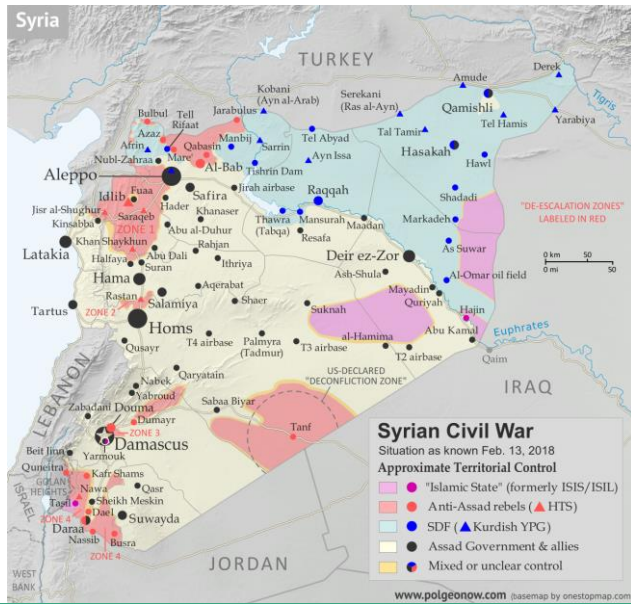Region ranks bottom in this year's FM Global Resilience Index

THE MIDDLE East has emerged as the most vulnerable region to cyber-attacks and associated risks, notes the latest 2017 FM Global Resilience Index.
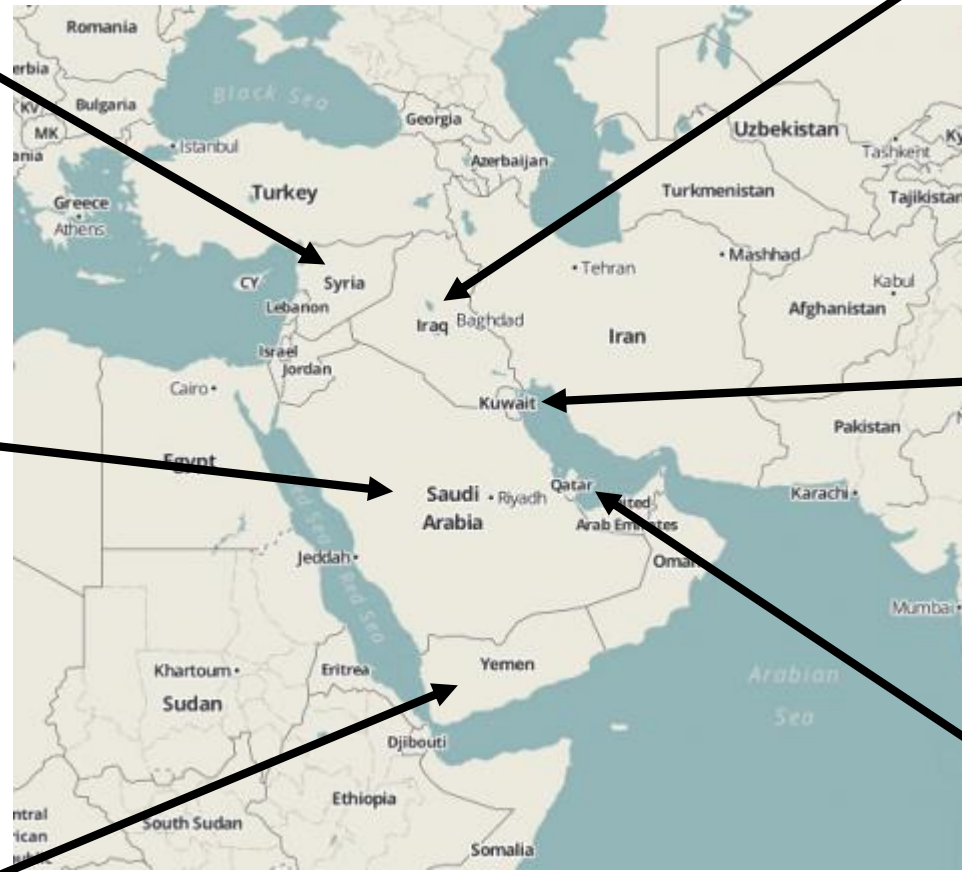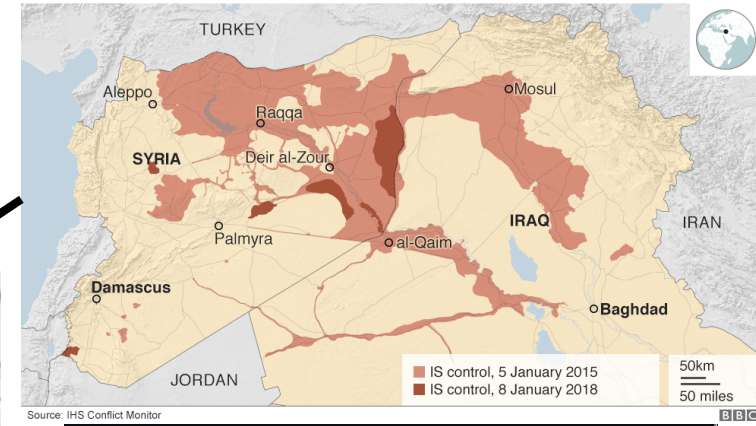
High internet penetration in the Middle East makes the region highly vulnerable to cyber-attacks thanks to a limited

INFECTIOUS DISEASE

Regional events today and near-future

Syria — Syrian Civil War
Situation as known Feb. 13, 2018
Approximate Territorial Control
- "Islamic State" (formerly ISIS/ISIL)
- Anti-Assad rebels (▲ HTS)
- SDF (▲ Kurdish YPG)
- Assad Government & allies
- Mixed or unclear control
www.polgeonow.com (basemap by onestopmap.com)

How much territory IS has lost since January 2015
- IS control, 5 January 2015
- IS control, 8 January 2018
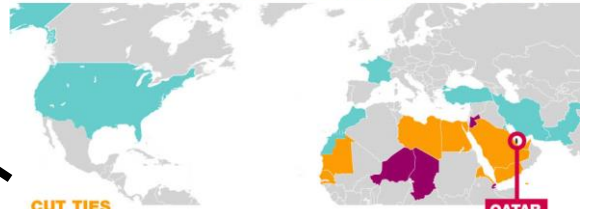Source: IHS Conflict Monitor

More than 840 Terrorist Attacks Targeted Saudi Arabia Between 1979 and 2017

During the same period, security forces thwarted 223 of these assaults against the Kingdom, according to key Saudi security agency

The Kingdom of Saudi Arabia was the target of a total of 841 terrorist attacks from 1979 through 2017

During the same period of time, security forces successfully thwarted 223 of these attacks

These operations claimed 3,007 victims, including 333 security personnel. A total of 695 terrorists were killed and 346 injured.

BREAKING NEWS
TERROR ATTACKS IN TUNISIA, FRANCE AND KUWAIT
Attackers target Tunisian hotel, factory in France, mosque in Kuwait
SUSPECT HAS BEEN ARRESTED AND IS IN POLICE CUSTODY

Yemen
Approximate Territorial Control
Situation as known Jan 06, 2018
- Pro-Hadi coalition and allies
- Houthis and allies
- Al Qaeda (AQAP) and allies
- Mixed or unclear control
www.polgeonow.com (basemap by onestopmap.com)

GCC rift: Where do countries stand?

QATAR

CUT TIES
Bahrain, Comoros, Egypt, Eritrea, UAE, Maldives, Mauritania, Libya*, Saudi Arabia, Senegal and Yemen*

*Libya: House of Representatives based in the eastern city Tobruk
*Yemen: the government of President Abd-Rabbu Mansour Hadi

DOWNGRADED TIES
Chad, Djibouti, Jordan and Niger

OFFERED MEDIATION
France, Iran, Kuwait, Morocco, Pakistan, Turkey and USA

June 2017 | SOURCE: Al Jazeera   ALJAZEERA

Security risks will likely continue into the near-future on many fronts

Understanding middle eastern threats to create simulation models and various scenarios for possible future conflicts
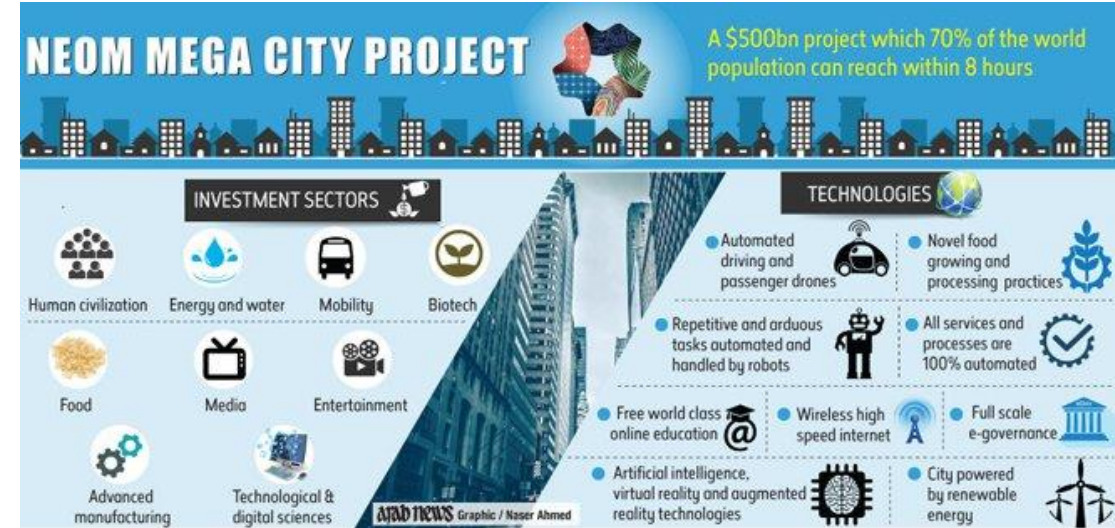
- In the Middle East these can be quite complex and change rapidly.

- **External threats** range from conventional forces and attacks, terrorist groups/organizations to lone attacks from individuals. There is also concern of spill-over from regional events, cyber-attacks, and the use of social media to recruit, create destabilization, incite attacks, or even for command and control of threats from external locations.

- **Internal threats** may include terrorist organizations already operating in the country, "sleeper cells," extremist political groups, events or marginalized/disenfranchised members of the population causing protests and riots, "lone wolf" attackers, returning experienced fighters, and perceived government instability to name a few.

- **Environmental threats** should also be considered, such as the impact from local or regional environmental/industrial accidents or attacks, epidemics and pandemics. In the Middle East, sand storms, flash floods, and oil spills are also major environmental concerns.

- Ongoing Middle Eastern geo-political issues, Syria and Yemen highlight the need for "traditional" conventional forces training, but in the more stable countries the threat continues to be smaller, decentralized attacks, many using niche technology such as car bombs, suicide vests and the latest threat of weaponized drones.

- Concern is also exacerbated by the potential proliferation of advanced weapons, chemicals and even radioactive materials.

- Terrorist attacks are usually conducted by individuals or squad-sized forces, but there remains a concern of "sleeper cells" with caches of arms and explosives operating within some countries.

- Peaceful protests always run the risk of turning violent, and may be hijacked and manipulated to meet other objectives, such as creating destabilization and reducing trust and confidence in governments and governmental entities.

- All of these potential threats must be understood and used to drive predictability and preparedness.
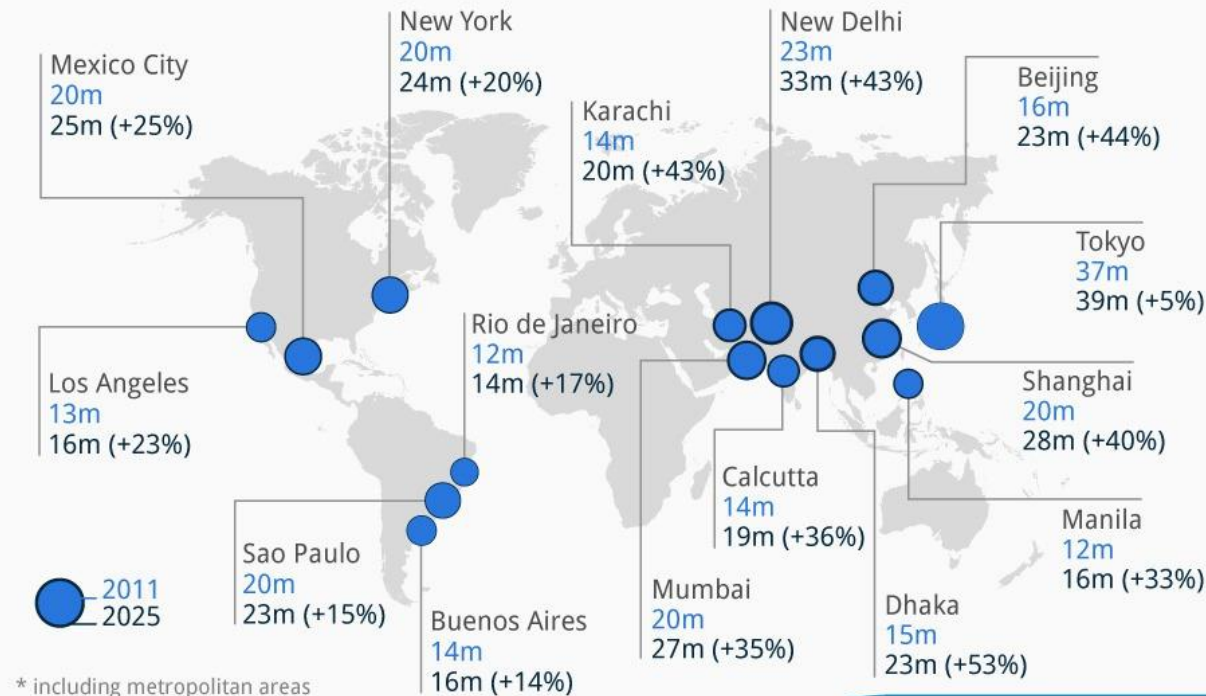
Diversification and Modernization

EXPO 2020 DUBAI, UAE

"33 times the size of New York City"

"Neom will have its own judicial system and government designed to attract international investors"

NEOM MEGA CITY PROJECT — A $500bn project which 70% of the world population can reach within 8 hours

INVESTMENT SECTORS: Human civilization, Energy and water, Mobility, Biotech, Food, Media, Entertainment, Advanced manufacturing, Technological & digital sciences

TECHNOLOGIES: Automated driving and passenger drones; Novel food growing and processing practices; Repetitive and arduous tasks automated and handled by robots; All services and processes are 100% automated; Free world class online education; Wireless high speed internet; Full scale e-governance; Artificial intelligence, virtual reality and augmented reality technologies; City powered by renewable energy

Kuwait "Silk City"

55% of the word's population lives in urban areas today, and is estimated to jump to nearly 70% by 2050 -UN

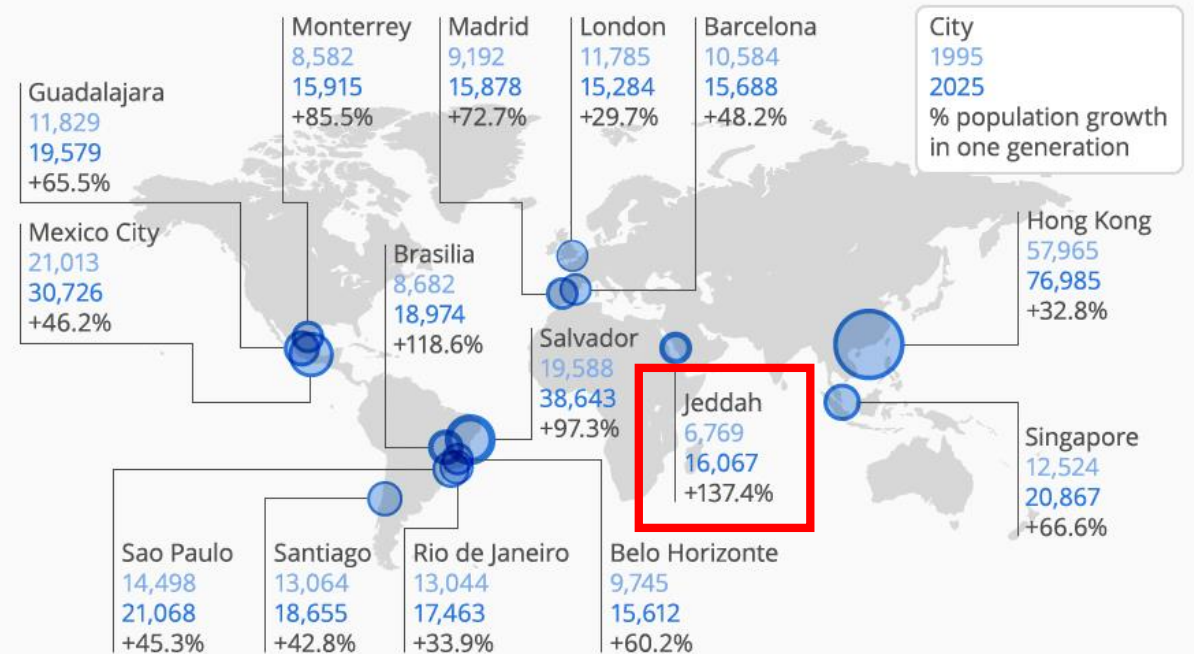## The 15 Fastest Growing Megacities
Population growth of the world's fastest growing megacities* (millions, 2011-2025)

Mexico City 20m 25m (+25%)
New York 20m 24m (+20%)
New Delhi 23m 33m (+43%)
Beijing 16m 23m (+44%)
Karachi 14m 20m (+43%)
Tokyo 37m 39m (+5%)
Rio de Janeiro 12m 14m (+17%)
Los Angeles 13m 16m (+23%)
Shanghai 20m 28m (+40%)
Calcutta 14m 19m (+36%)
Manila 12m 16m (+33%)
Sao Paulo 20m 23m (+15%)
Mumbai 20m 27m (+35%)
Dhaka 15m 23m (+53%)
Buenos Aires 14m 16m (+14%)

2011 / 2025

* including metropolitan areas

Source: UN Population Division, World Economic Forum

Mashable statista

The World's Most Crowded Cities In 2025
Population per square mile in 1995 and 2025

Monterrey 8,582 15,915 +85.5%
Madrid 9,192 15,878 +72.7%
London 11,785 15,284 +29.7%
Barcelona 10,584 15,688 +48.2%
City 1995 2025 % population growth in one generation
Guadalajara 11,829 19,579 +65.5%
Mexico City 21,013 30,726 +46.2%
Brasilia 8,682 18,974 +118.6%
Hong Kong 57,965 76,985 +32.8%
Salvador 19,588 38,643 +97.3%
Jeddah 6,769 16,067 +137.4%
Singapore 12,524 20,867 +66.6%
Sao Paulo 14,498 21,068 +45.3%
Santiago 13,064 18,655 +42.8%
Rio de Janeiro 13,044 17,463 +33.9%
Belo Horizonte 9,745 15,612 +60.2%

Sources: Bloomberg, Demographia, International Monetary Fund, United Nations
@StatistaCharts

statista

Where they will fight (Cities)

Difficult to model in simulations and why "smart power" is crucial

Subterranean

New routes
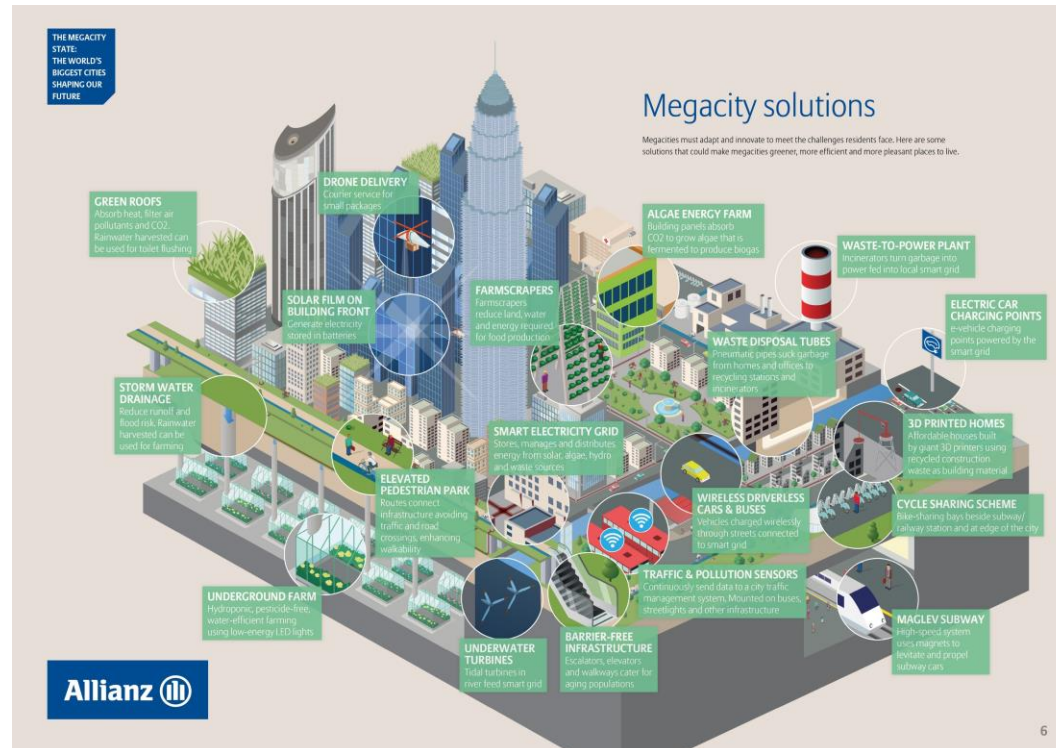
Mosul, Iraq

Mosul's historic Al-Nuri mosque in November 2015, left, and July 2017, right.
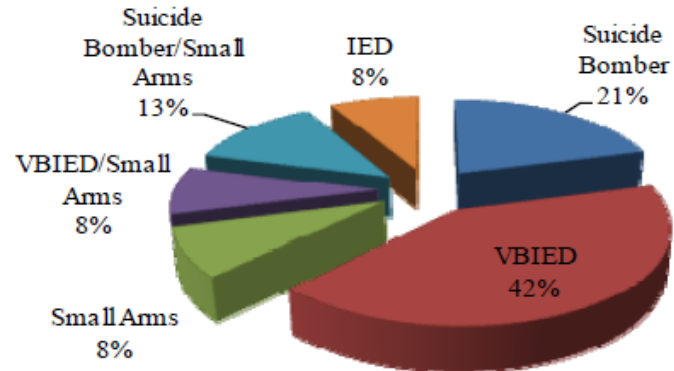SATELLITE IMAGE ©2017 DIGITALGLOBE
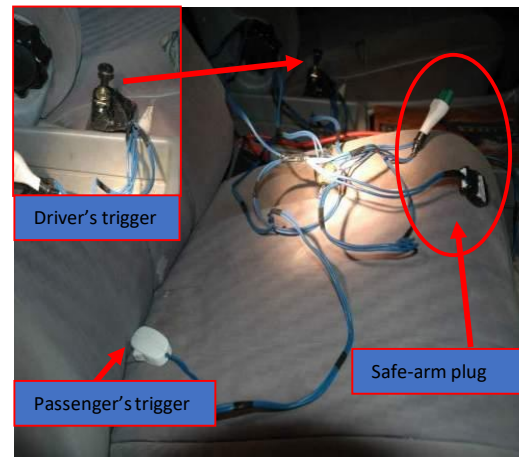

Aleppo, Syria

The X Factor

Improvised Explosive Device (IED)


Percentage of Type of Attack per Target

- Suicide Bomber/Small Arms 13%
- IED 8%
- Suicide Bomber 21%
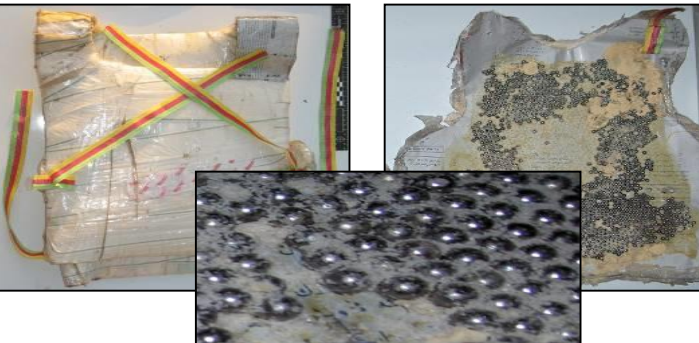- VBIED/Small Arms 8%
- Small Arms 8%
- VBIED 42%

Drones

The use of commercial drones to conduct attacks, reconnaissance and surveillance continues to increase. It is expected that there will be 12 million drones operating by 2020.

Vehicle Borne IED (Car Bomb)

Driver's trigger
Passenger's trigger
Safe-arm plug
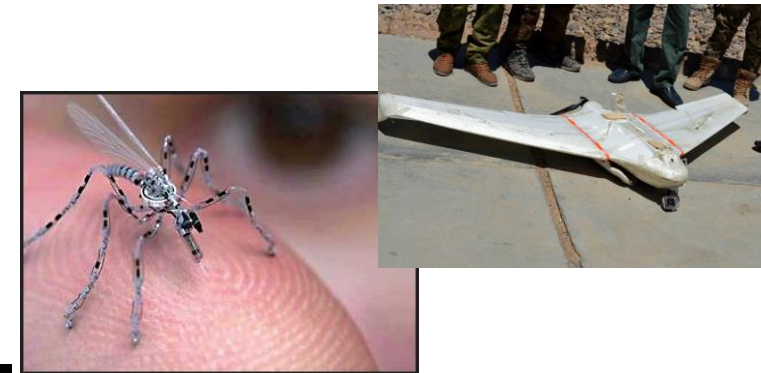
Suicide Vests

Weaponized UAV with customized IED

Emerging Middle East interests from Simulations

Macro- diverse threats, mitigation focused, niche technology enabled, joint efforts

Micro- agile and adaptive junior leaders, realistic training in known environment

- Autonomous, robotic systems
- Virtual, fully immersive training
- Artificial Intelligence (AI)
- Realistic, 3D geo-specific databases
- Multi-system integration
- Multi-role, interchangeable systems
- Increased realism and feedback
- Online/distance learning and online pre-courses
- Outsourcing exercise developers, trainers and consultants

THANK YOU