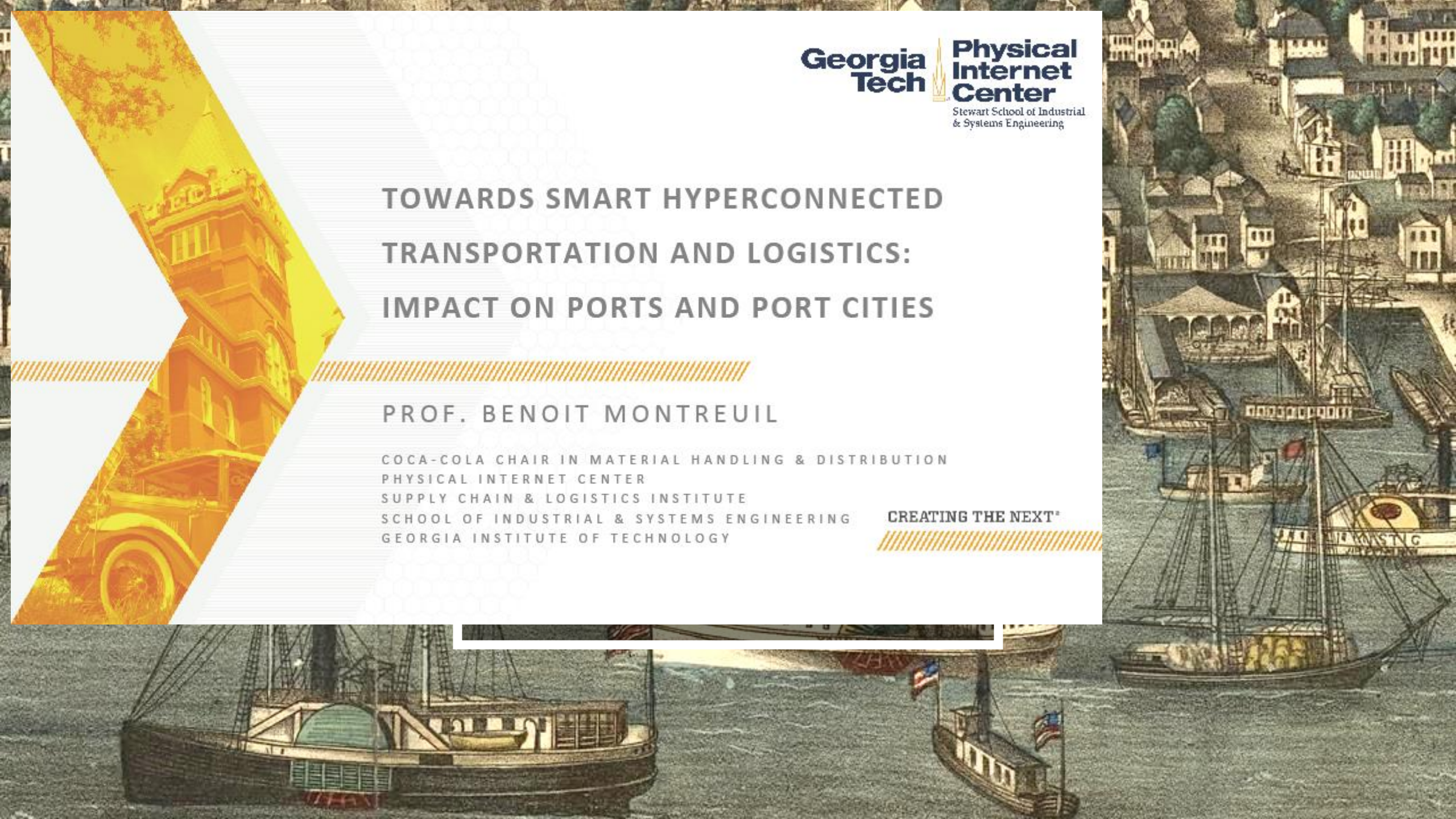


TOWARDS SMART HYPERCONNECTED TRANSPORTATION AND LOGISTICS: IMPACT ON PORTS AND PORT CITIES

PROF. BENOIT MONTREUIL

COCA-COLA CHAIR IN MATERIAL HANDLING & DISTRIBUTION
PHYSICAL INTERNET CENTER
SUPPLY CHAIN & LOGISTICS INSTITUTE
SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING
GEORGIA INSTITUTE OF TECHNOLOGY

CREATING THE NEXT*





LE MONDE *WORLD*

Un monde de contrastes
Un monde urbain
Un monde mobile
Plusieurs réfugiés
Des acteurs mondiaux
Des crises mondiales
Des inégalités mondiales

TENDANCES *TRENDS*

Géopolitiques
Globalisation
Digital
Génétique
Ecologie

CONSEQUENCES *CONSEQUENCES*

Mobilité
Identité – Culture
Vie

LEÇONS ? *LESSONS ?*

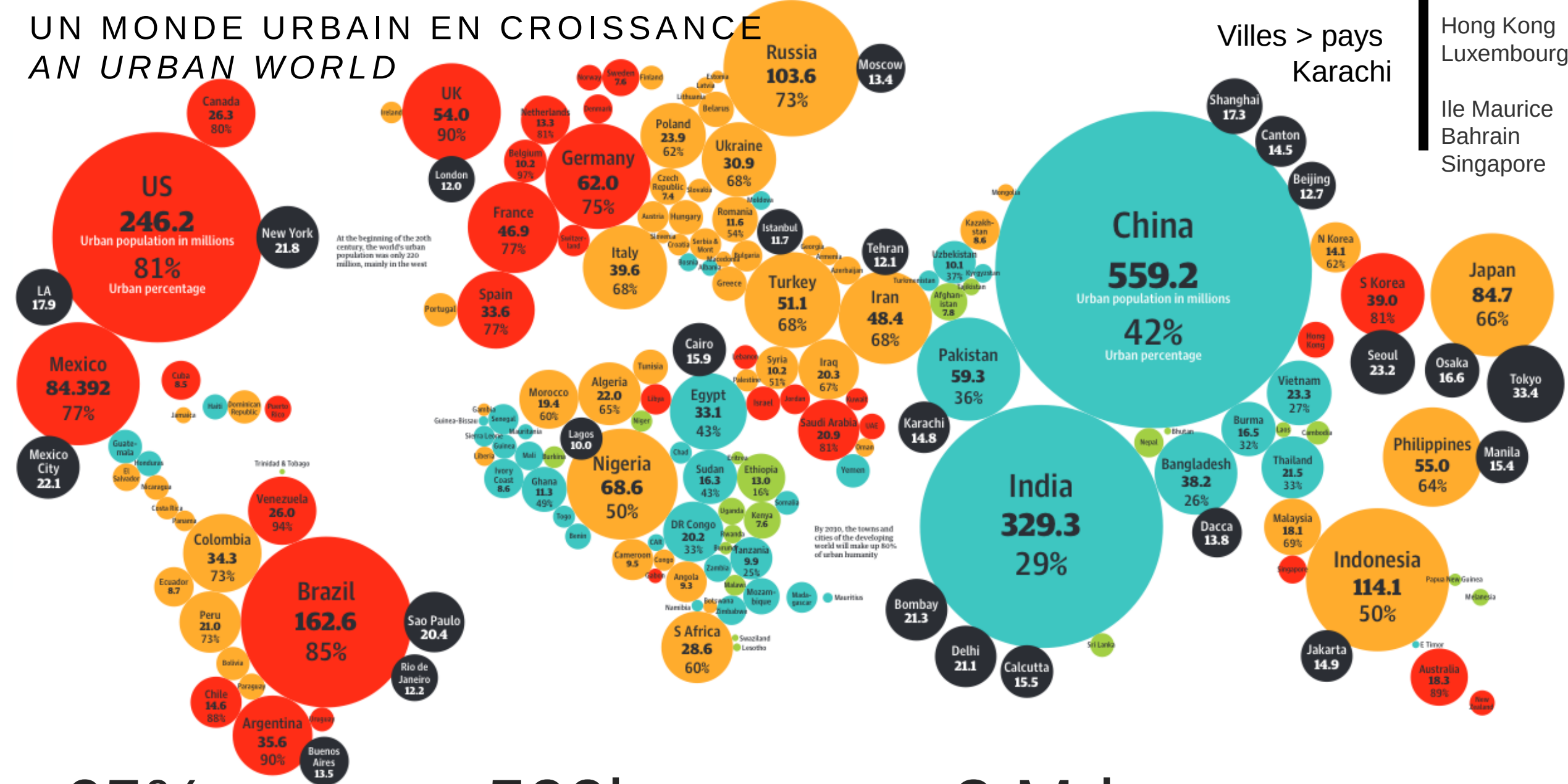
Innover
Intégrer
Inspirer

UN MONDE URBAIN EN CROISSANCE AN URBAN WORLD

Villes > pays
Karachi

Hong Kong
Luxembourg

Ile Maurice
Bahrain
Singapore



65%

Population Urbaine (2020)

500k

Habitants de bidonville par mois

3 Mds

Personnes dans les villes du sud d'ici 2050

UN MONDE MOBILE *A MOBILE WORLD*



TOURISME

2020: 1.6 Bn touristes

Identité - Globalisation

Venise

Rise of Middle class

In – Cn – Africa (300m)



MIGRATION

Work – War – Climate

Expats

Retired

Students



TRANSPORTS

Produits: Air – terre - mer

Villes polluées

Jakarta – Jusqu'à 10h/jour

Inde - \$6b/an



FLUX DES CAPITAUX

GAFAM > Pays

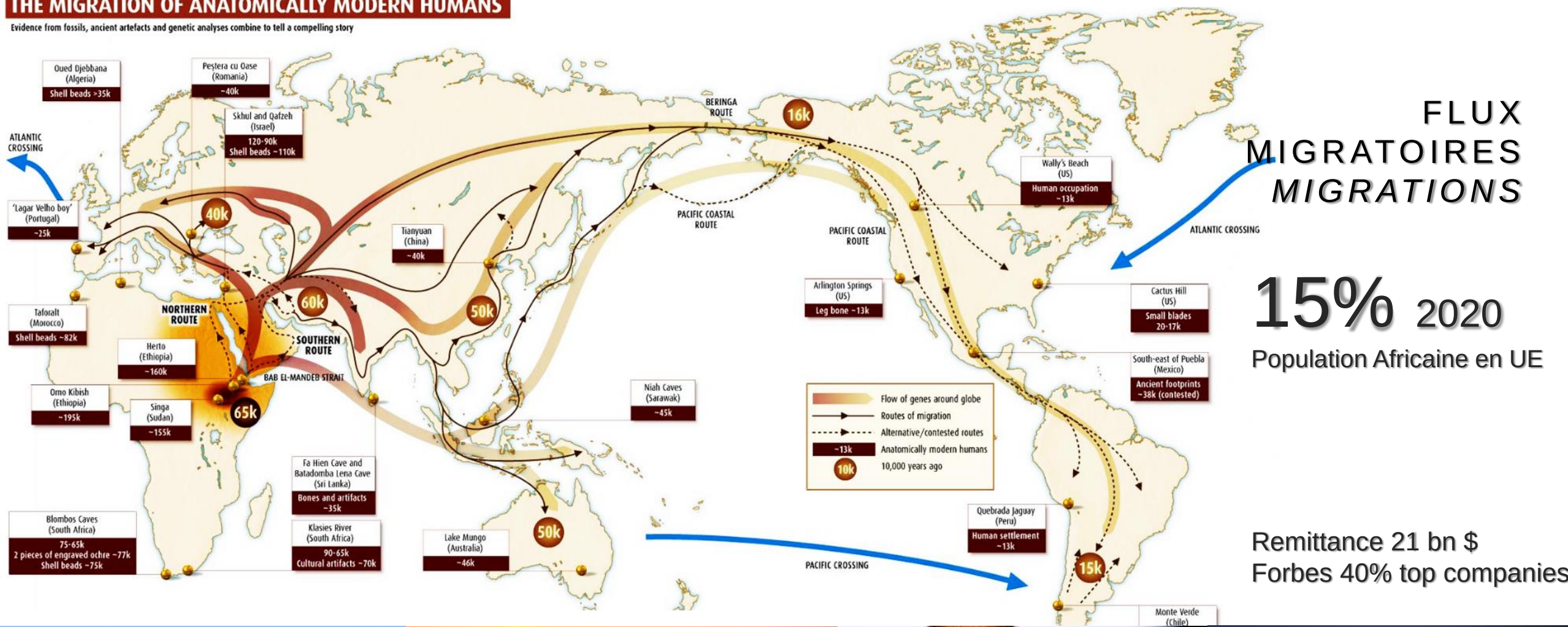
+ Xiaomi + Alibaba

Amazon – 2^e HQ – 50k jobs

Affaiblissement des gouvernements

THE MIGRATION OF ANATOMICALLY MODERN HUMANS

Evidence from fossils, ancient artefacts and genetic analyses combine to tell a compelling story





DIVERSITY

DIVERSITÉ

- COMMERCE
- LANGUAGE
- FOOD
- MUSIC
- RELIGION
- ART



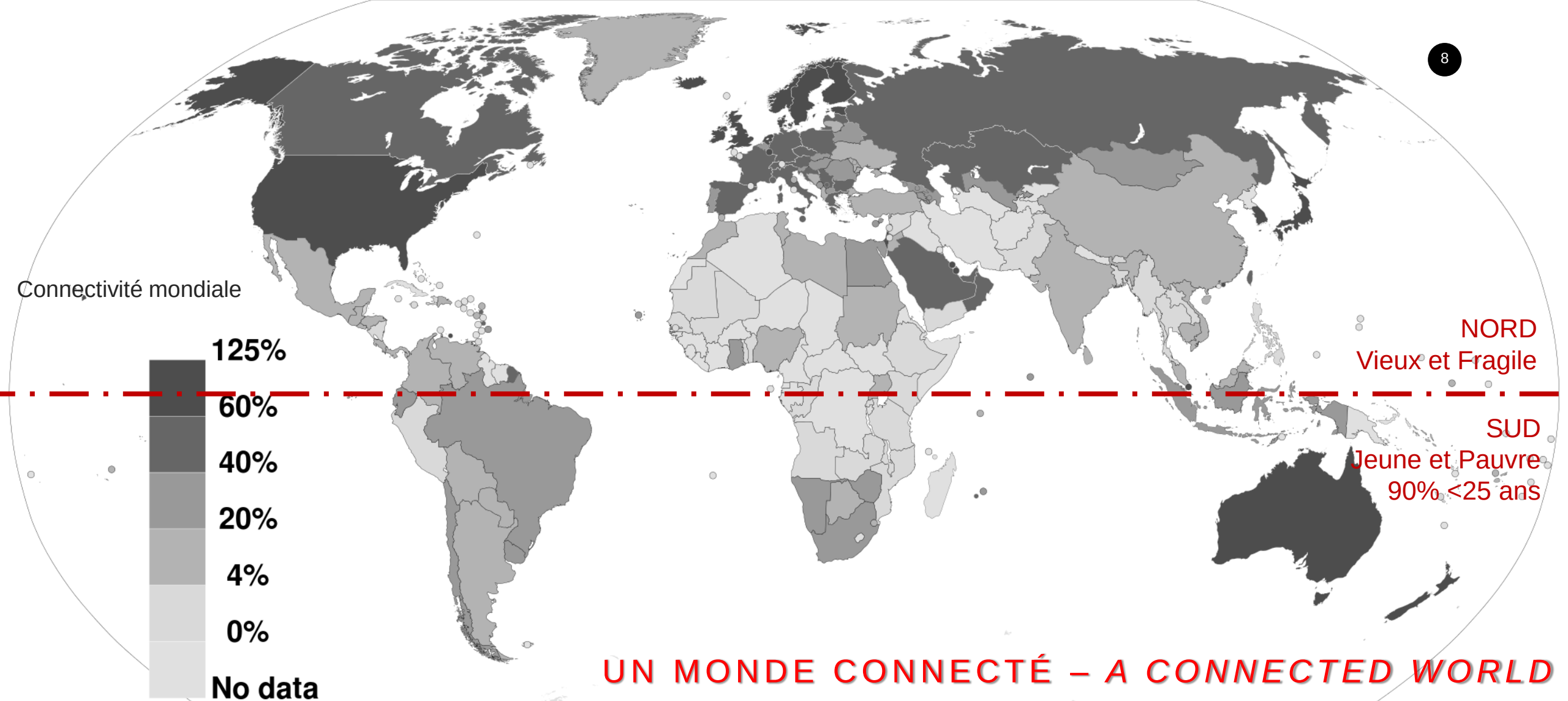
IDENTITE & CULTURE



MARCHÉ GLOBAL DE LA CULTURE

2250 Md \$

29m Emplois



7.6 Bn Population	4.8 Bn Téléphone mobile	1.6 Bn Télévision	3.8 Bn Connexion Internet	1.9 Bn Facebook
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TAMBORA VOLCANO

Indonesia / 5 April, 1815

60,000

Dead from the eruption

90,000

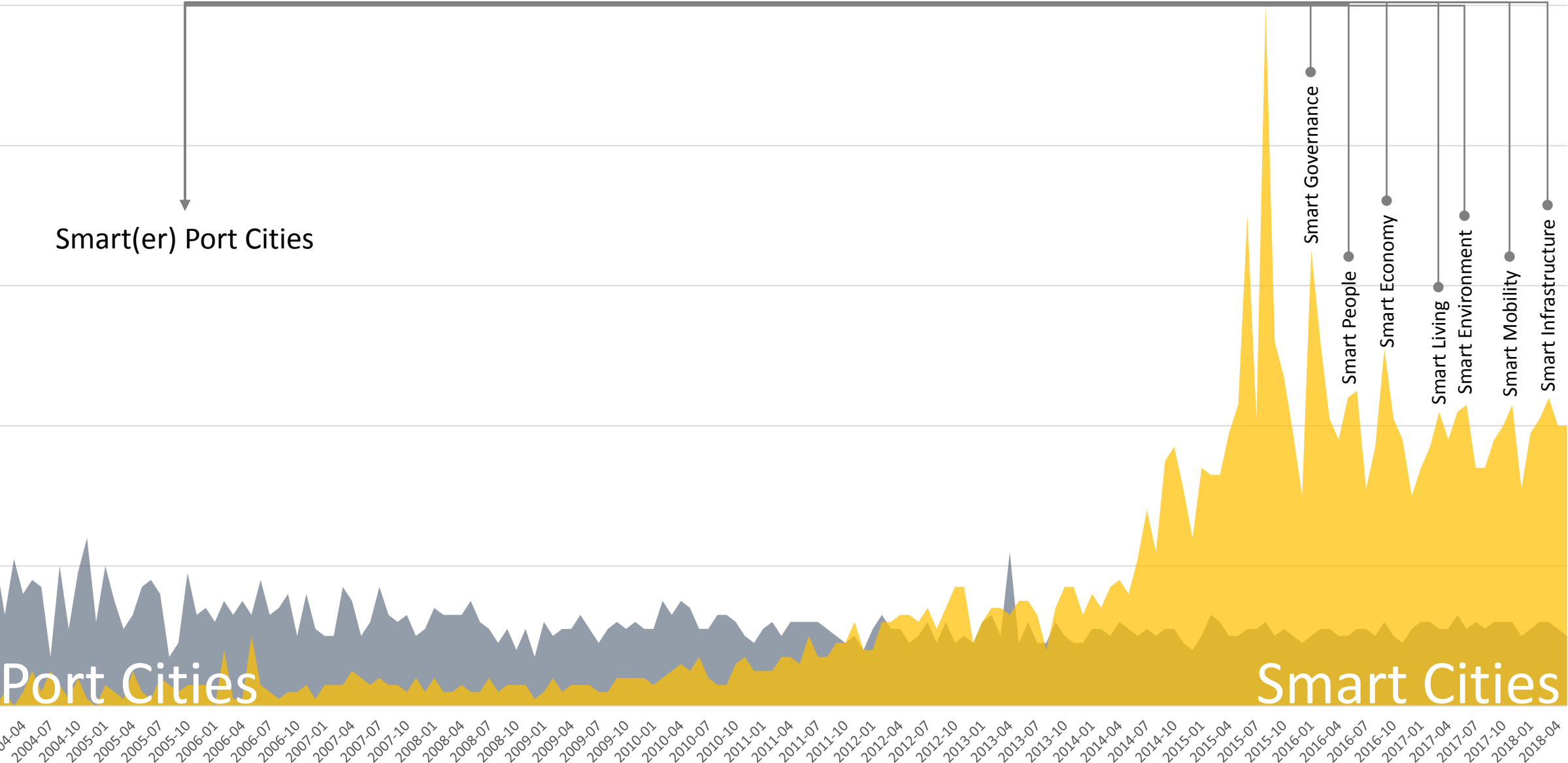
Dead from climate impacts

1816 'The year without Summer'



POPULARITY TREND ANALYSIS

2004-2018



AIR / SEA T

4.3 BN

EXPECTED AIRPLANE PASSENGERS (2018)

16 BN

EXPECTED AIRPLANE PASSENGERS (2050)

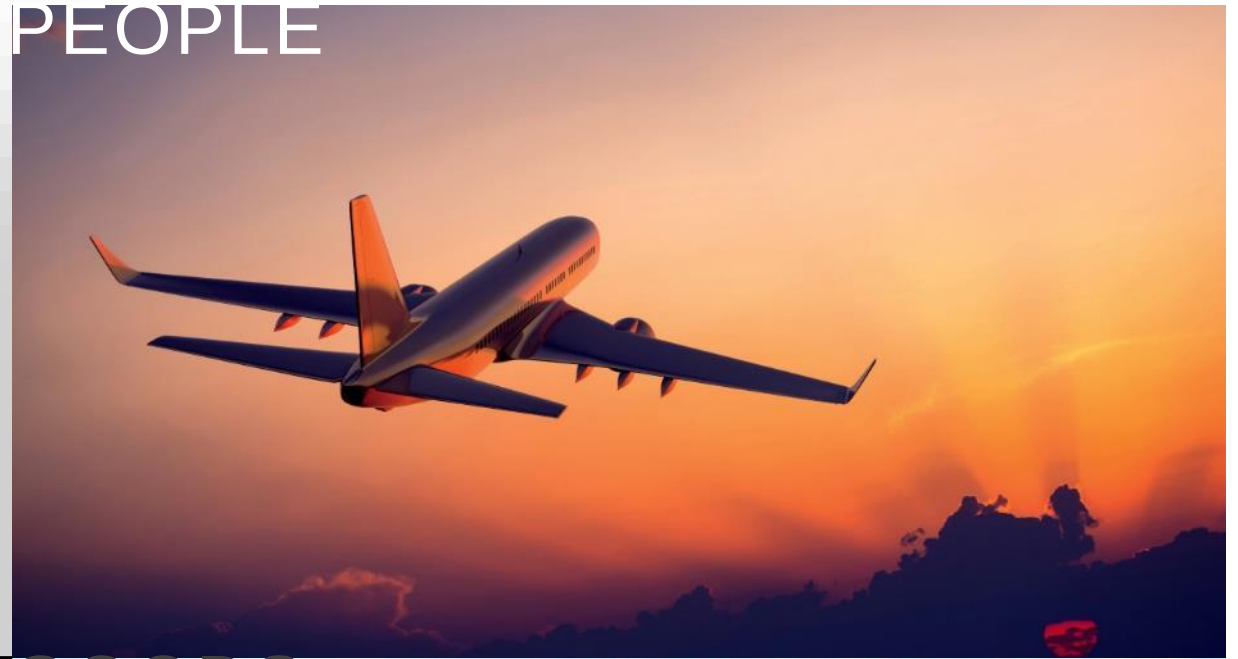
80%

EXTERNAL TRADE VOLUME BY SHIP (UNCTAD, 2017)

10%

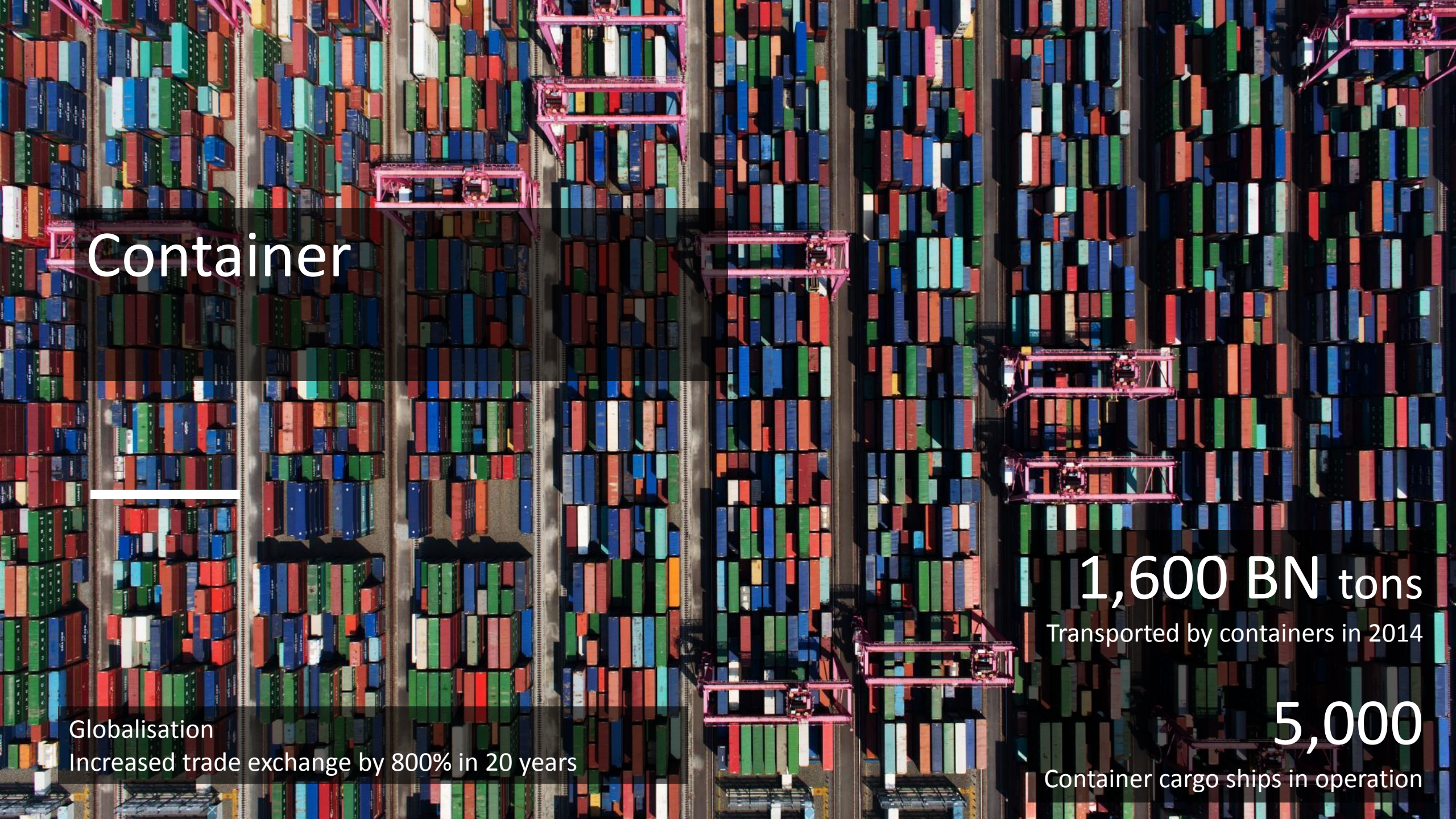
TRADE VOLUME THROUGH RAILWAYS
BUT EXPECTED TO RISE BY 400% UP TO 2050

PEOPLE



GOODS



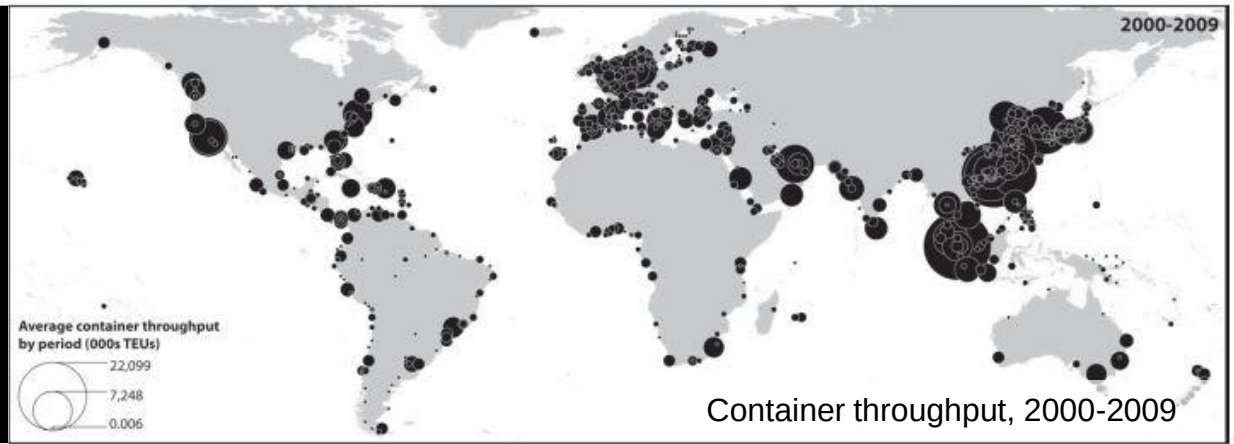
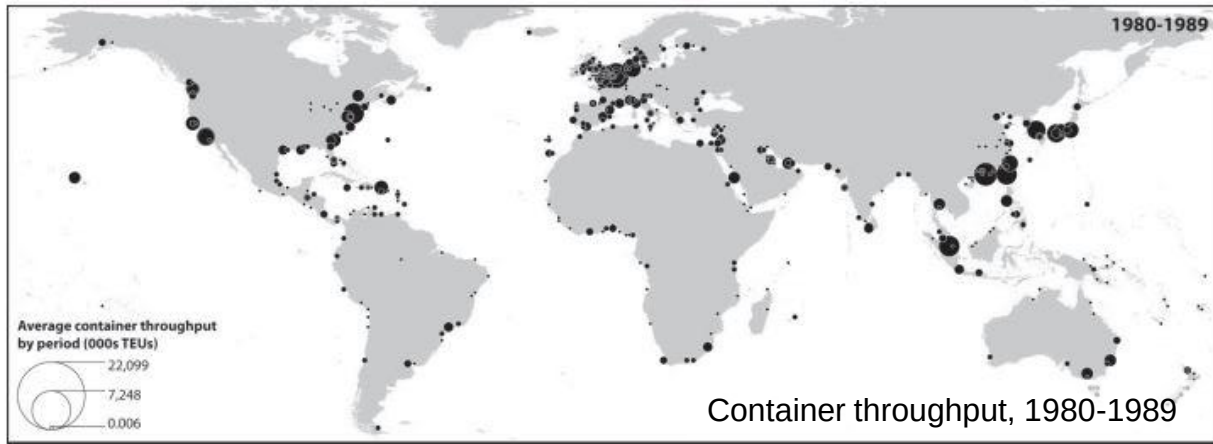
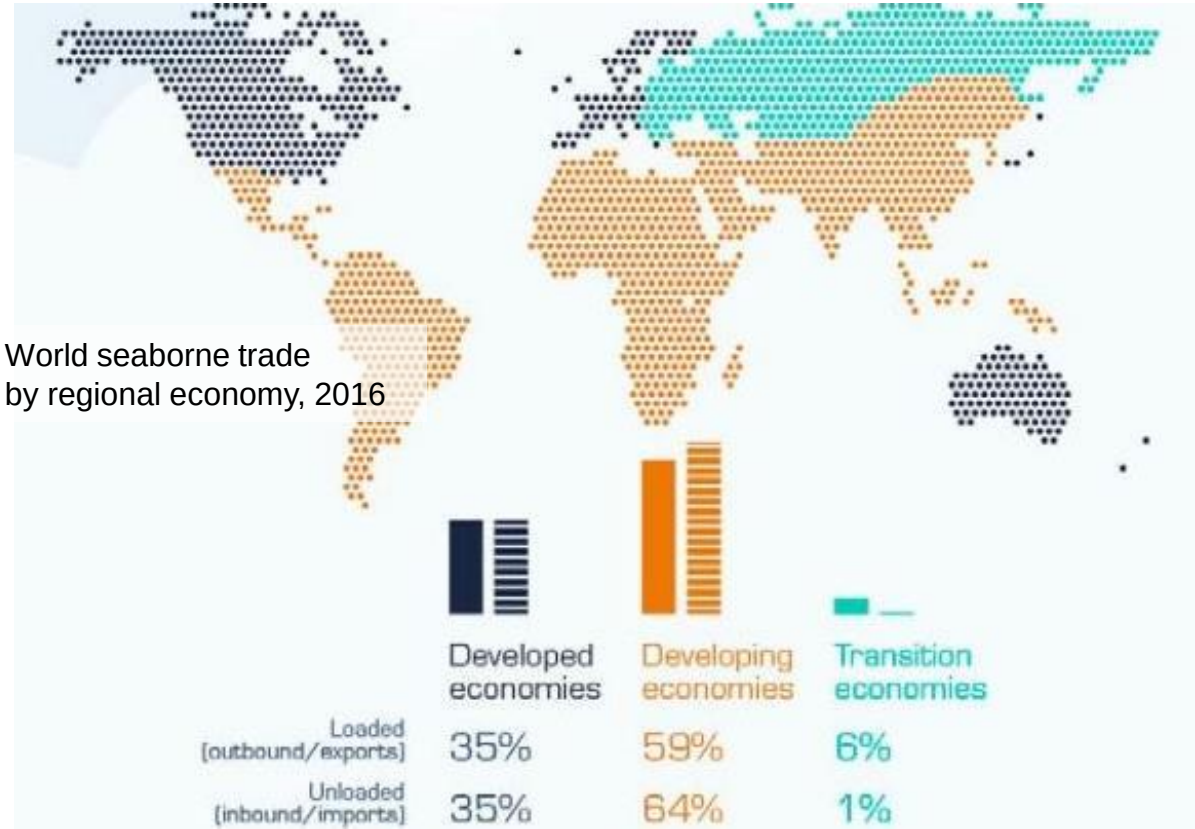


Container

Globalisation
Increased trade exchange by 800% in 20 years

1,600 BN tons
Transported by containers in 2014

5,000
Container cargo ships in operation



ENERGY & EMISSIONS



20%

TOTAL ENERGY CONSUMPTION BY TRANSPORT 2040

33%

OF TRANSPORT CO2 IS THROUGH SHIPPING

75%

REDUCTION IN CO2 EMISSIONS POSSIBLE

Smart Technology
Automation
High Efficiency
Low carbon emissions
Minimal risk of oil/fuel leakage

1 NO
POVERTY



2 ZERO
HUNGER



3 GOOD HEALTH
AND WELL-BEING



4 QUALITY
EDUCATION



5 GENDER
EQUALITY



6 CLEAN WATER
AND SANITATION



7 AFFORDABLE AND
CLEAN ENERGY



8 DECENT WORK AND
ECONOMIC GROWTH



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



10 REDUCED
INEQUALITIES



11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



13 CLIMATE
ACTION



14 LIFE BELOW
WATER



15 LIFE
ON LAND



16 PEACE AND JUSTICE
STRONG INSTITUTIONS



17 PARTNERSHIPS
FOR THE GOALS



THE GLOBAL GOALS
For Sustainable Development

A New Geography

Une Nouvelle Géographie



500,000 Km frontières

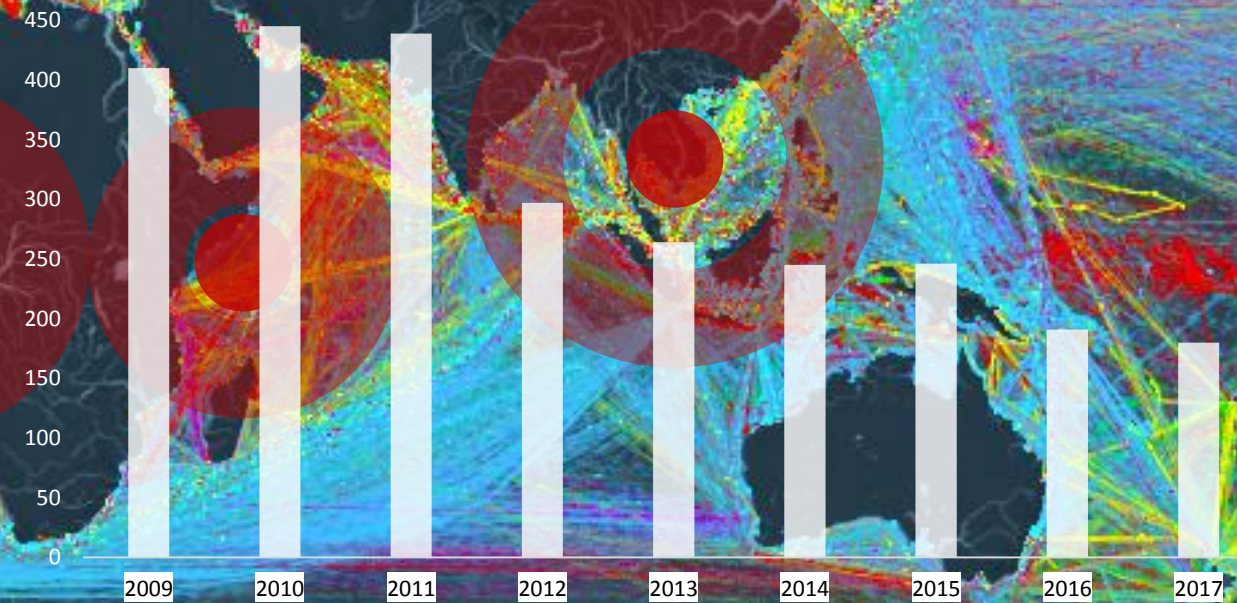
64 m km de routes

4 m km de voies ferrées

2 m km de pipelines

1 m km de câbles internet

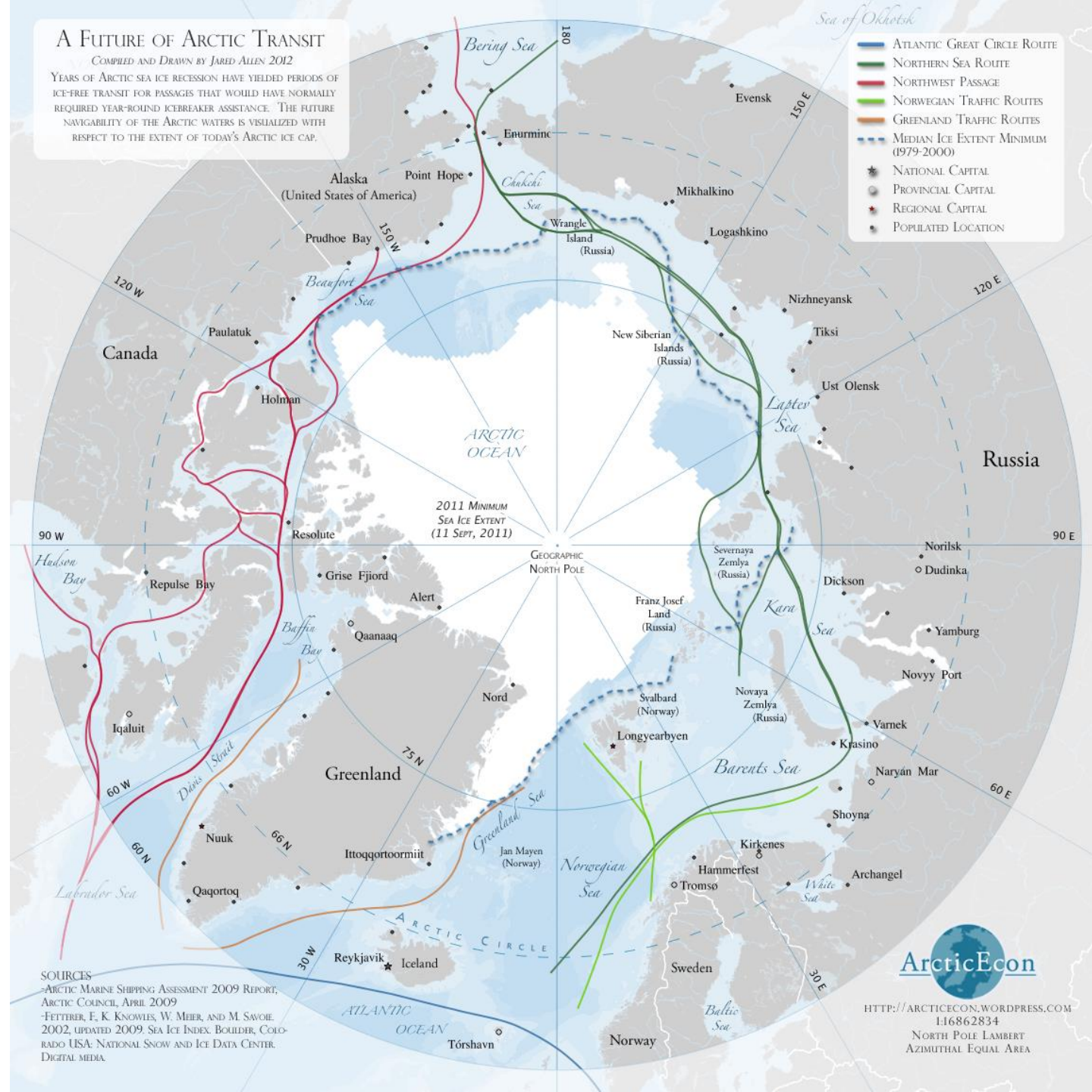
GLOBAL SHIPPING ROUTES



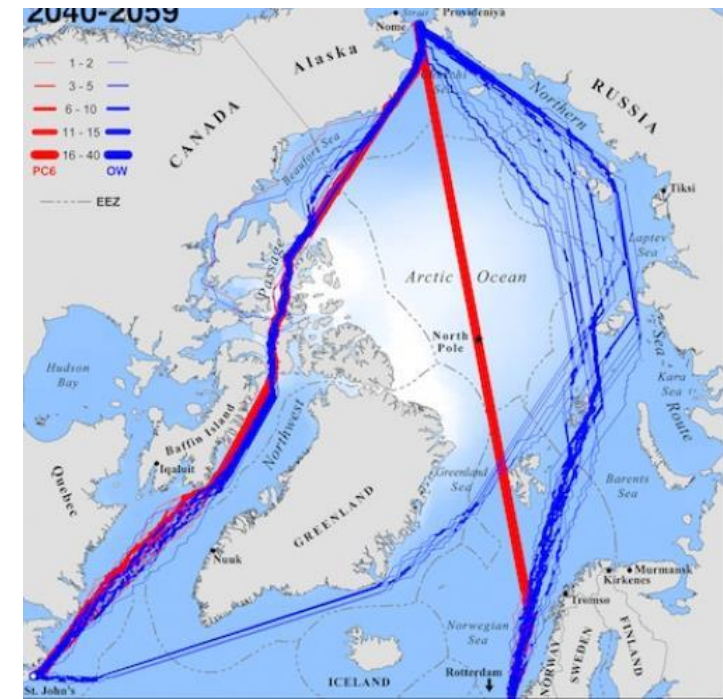
MARITIME PIRACY

ARCTIC TRANSIT

ICE 'SILK ROAD' connecting Shanghai & Europe



Climate Change Arctic shipping route modelling



A nighttime photograph of a city skyline, likely New York City, with numerous skyscrapers illuminated. Overlaid on the sky are several diagonal beams of light, alternating between blue and white, creating a dynamic, futuristic atmosphere.

CITIES GOT ★ TALENT

FINTECH / CREATIVITY / DIGITAL / ECONOMICS

The background is a stylized painting of a harbor scene. It features various buildings in shades of green, yellow, and brown. A large, reddish-brown fish is depicted in the upper right, and a yellow circle with a face is in the top right corner. A crescent moon is in the top left. In the foreground, there are more buildings and a body of water. A sign on one of the buildings reads "CA DE FIDELO3".

“Dans le port d’Amsterdam ,
y a des marins qui chantent...”

Jacques Brel

Gaetan Siew
gsiew@gcli.foundation

Merci/Thank you.