UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

SUSTAINABLE DEVELOPMENT GOAL 9
INDUSTRY, INNOVATION AND INFRASTRUCTURE

SESSION 2: SMART PRODUCTION, ARTIFICIAL INTELLIGENCE AND INDUSTRY 4.0

1st Forum on Artificial Intelligence and the Internet of Things in Smart Sustainable Cities in Latin America

Buenos Aires, Argentina, 29-30 May 2018

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Rapid urbanization taking place worldwide

PEOPLE: INCREASING POPULATIONS

Cities occupy around 2% of land mass and host 51% of the world's population.

By 2050 approximately 80% of the global population will live in urban areas.

By 2030, the urban population of developing countries will double

PLANET: RESOURCE USAGE

Cities consume around 80 % of planet's resources; 75 % of global primary energy

Cites emit between 50 - 60 % of the world's total greenhouse gases.

PROSPERITY: ECONOMIC GROWTH

Cities account on average for 75 % of a country's GDP and are the main engines of global economic growth.

Top 600 cities, with 1/5th of the world's population, produce 60 % of global GDP.

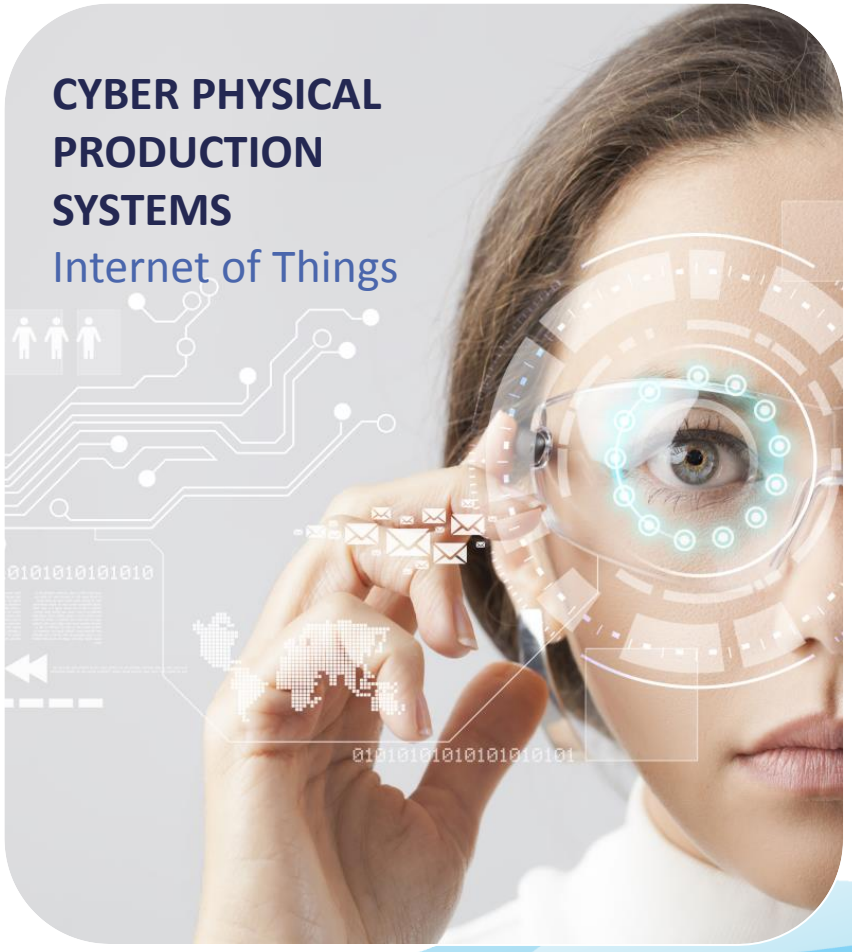
The 4th Industrial Revolution: Characteristics

INFORMATION TRANSPARENCY & DATA
Data collection, big data and sensor data lets systems build virtual copy of the physical world

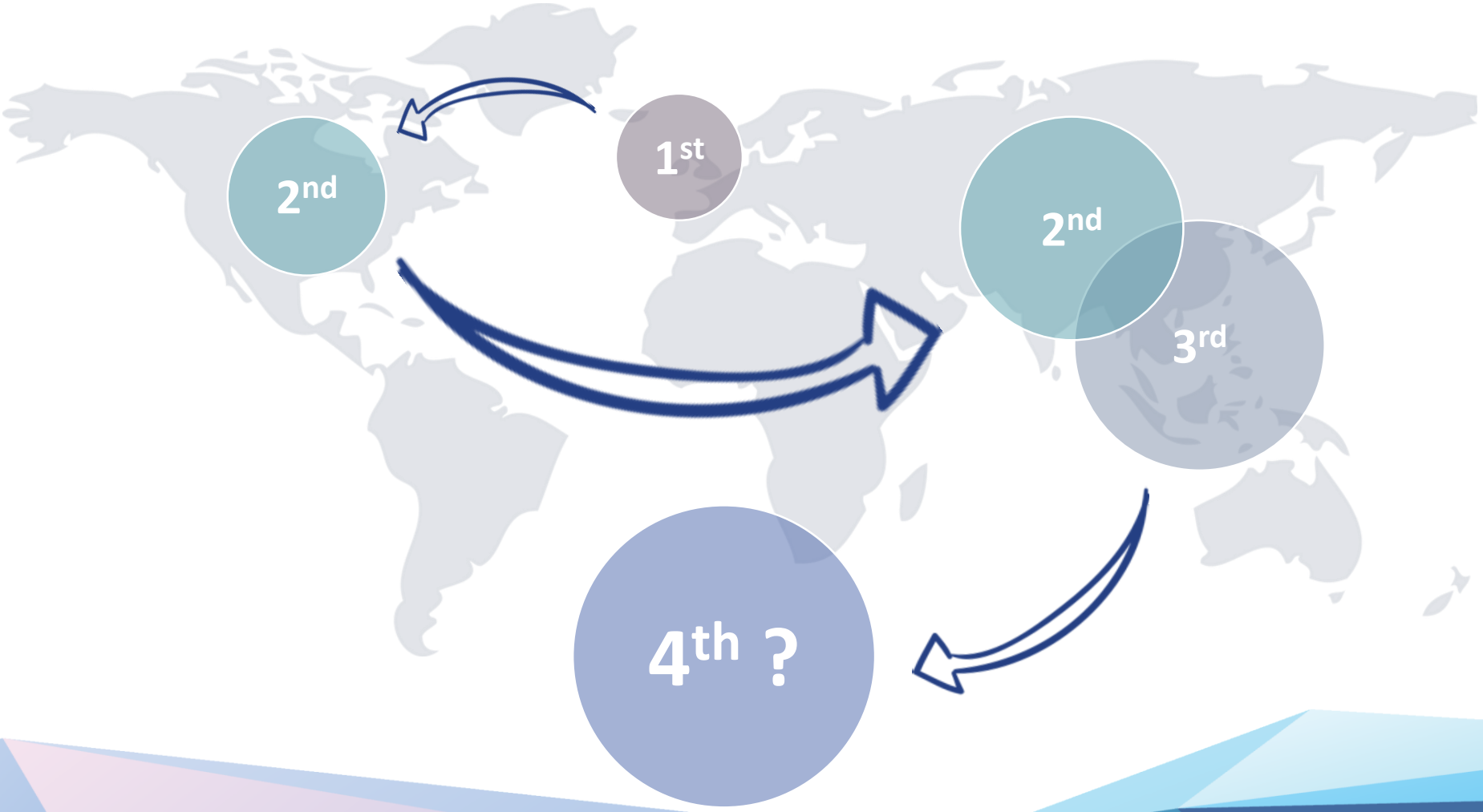
TECHNICAL ASSISTANCE
Systems aid humans in problem-solving and decision-making, assist them with unsafe, dangerous tasks

ARTIFICIAL INTELLIGENCE
Cyber-physical systems are independent and make uncomplicated decision on their own

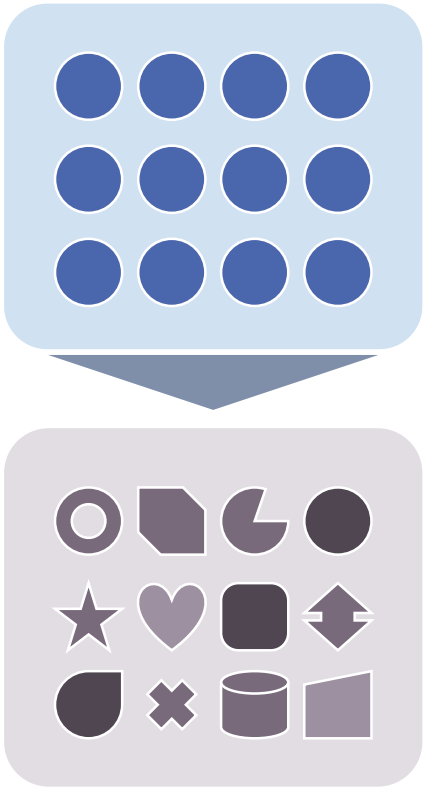
INTEROPERABILITY
Devices, sensors, machines and people connect and communicate, thereby working together

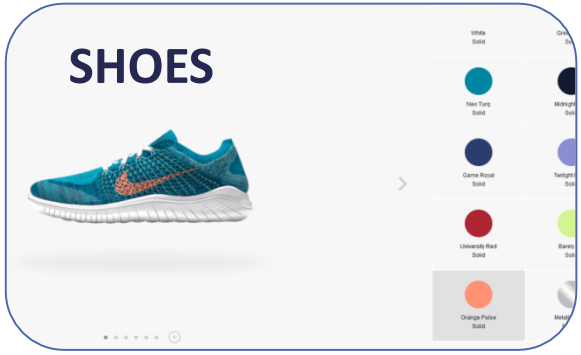


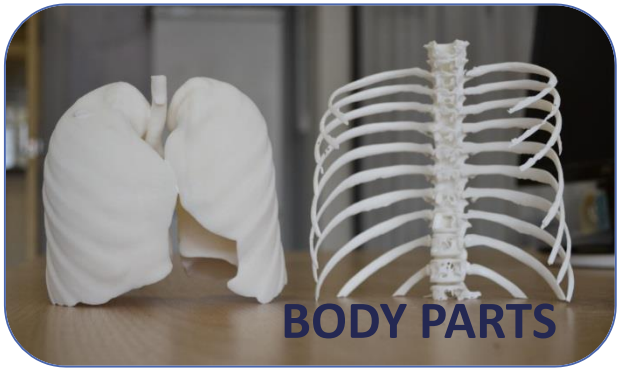
Changes in the Geography of Production



From Standardized to Customized Products



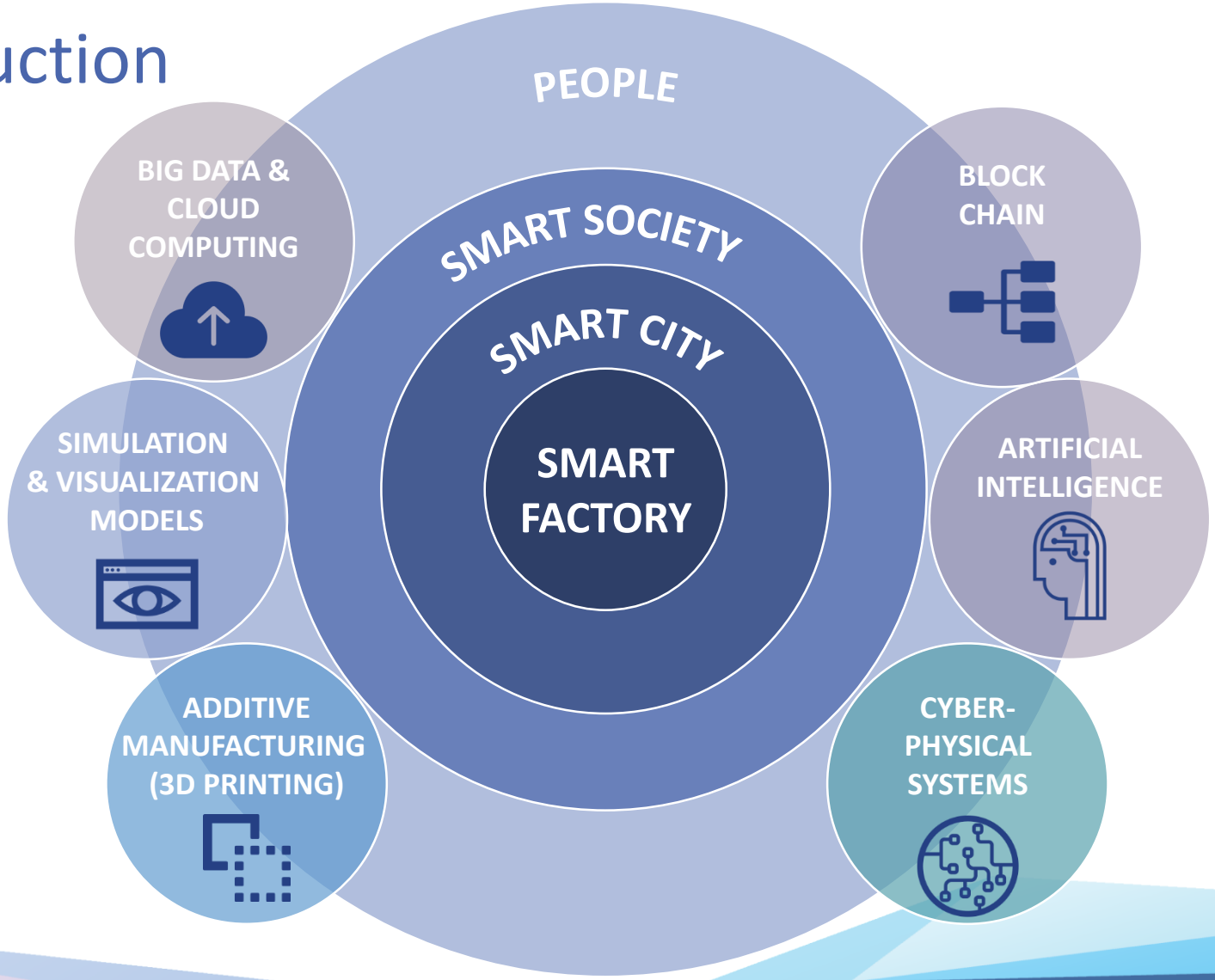




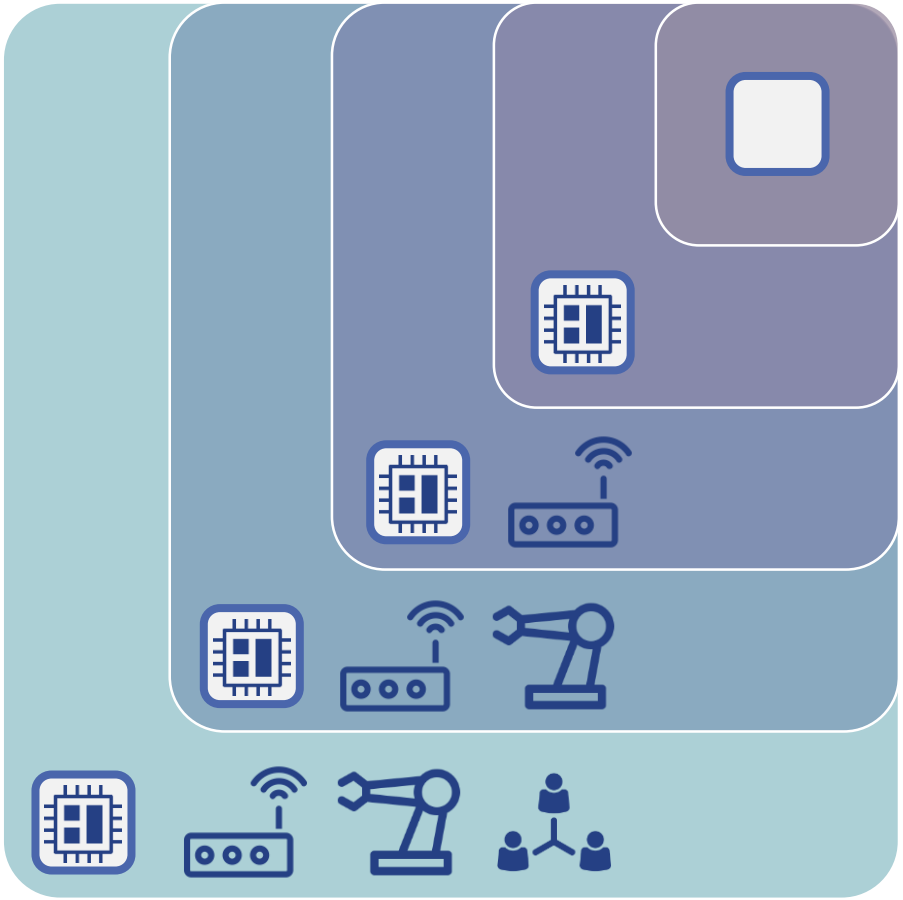
EVERYTHING
(3D PRINT)

Smart Production

The **smart city** integrates information and communication technology (ICT), and various physical devices connected to the network (the Internet of things or IoT) to optimize the efficiency of city operations, services, resources and connect to citizens.



Industry 4.0: Smart Factory



Source: Fraunhofer Austria

Technical System

Technical machinery

Embedded System

Hardware & software

Cyber-Physical System

Merging of physical + virtual

Cyber-Physical-Production System

Application to manufacturing

Smart Factory

Network of people, machinery and resources

Benefits of a Smart Factory

DRIVER FOR INNOVATION

Smart factories are drivers for innovation, digitalization allows for new business models, products and processes

INCREASED (RESOURCE) EFFICIENCY

- Products can be designed and produced faster
- Machines can be repaired quicker
- Procurement processes are faster
- Resource usage is optimized

CUSTOMIZATION

Producers are directly linked to consumers, this allows for individual production and customization

Smart Cities are Sustainable

PEOPLE

measures social performance including quality of life

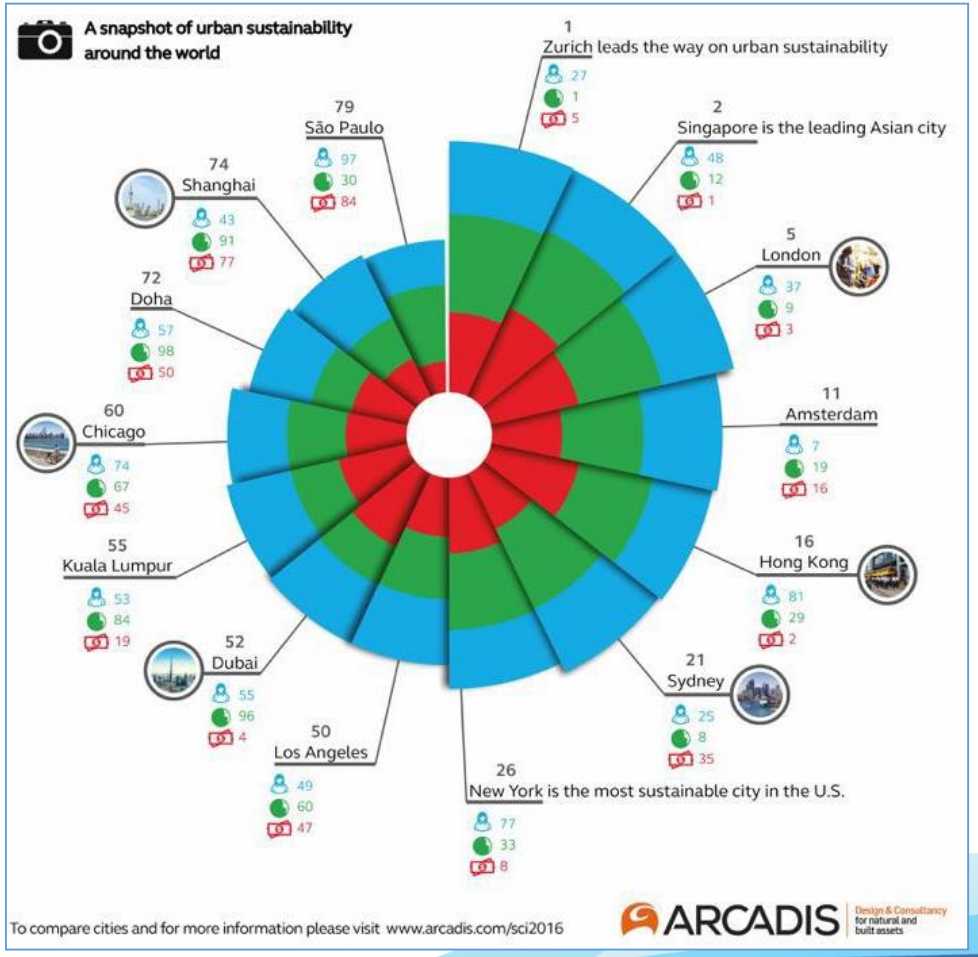
PLANET

Captures ”green” factors like energy, pollution and emissions

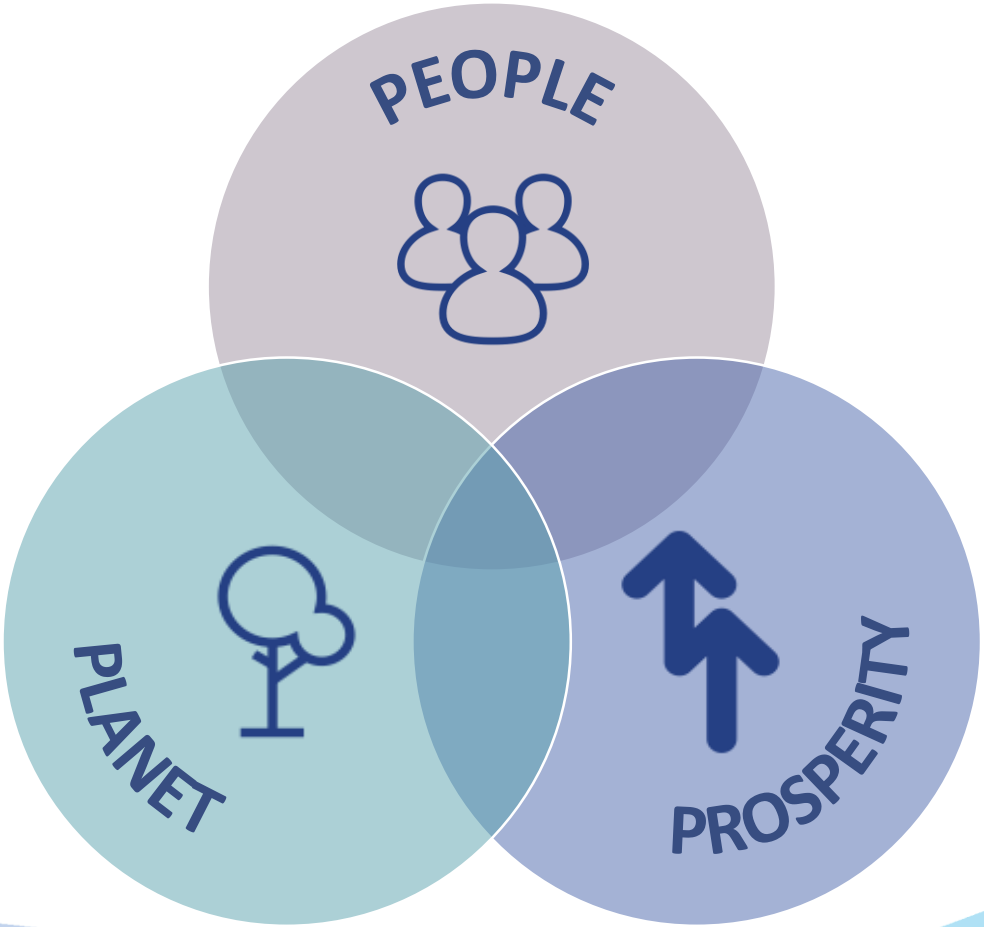
PROFIT

Assesses business environment and economic health

ISO 37100 Sustainable Development in Communities



For Cities to be “smart” they need to consider …



THANK YOU.

TRADE
INVESTMENT
INNOVATION