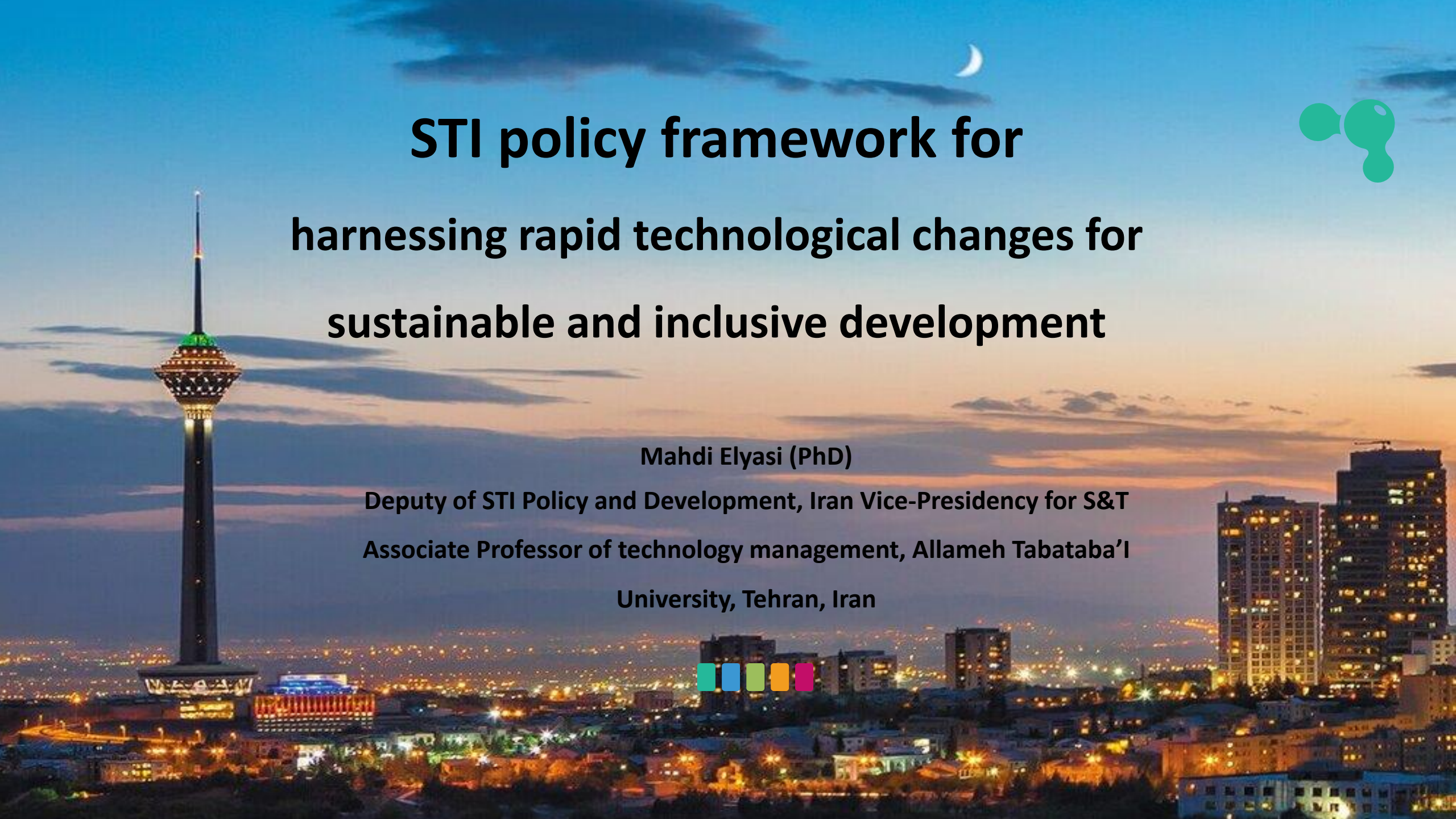

STI policy framework for

harnessing rapid technological changes for sustainable and inclusive development

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Harnessing Rapid Technological Change
(The need for Policy framework)

In most theories of the growth from Schumpeter to Solow and Romer technological change is "the engine of growth". But this change lead to:

Positive effects

- Improves our well-being and life expectancy
- Reduce cost and affordability
- New product and service
- Increases living standards

Negative effects

- **Destroys the environment**
- Increases technology gap between youth and old, male and female
- Causes the Job loss and automation
- unequal access to new tech

Theoretical Background For Policy Framework

Focusing on Learning

DUI

STI

Focusing on R&D and **endogenous capability**

Technological Learning

From imitation to innovation and development of innovation capabilities

Improve competitive local capabilities

Local content

Technology Transfer

Human capital, R&D, Design & engineering, Maintenance, Supply and support

NTBFs capabilities in Identification, Absorption and utilization of external knowledge

Absorptive capacity

Three building blocks of policy framework for Harnessing rapid technological changes ….

1ST Sustainable development oriented national foresight program

The expected results of Iran national foresight program is Setting priorities and promoting innovative technological start- ups as a cultural change.

2ND Restructuring and enhancing innovation ecosystem

- Transition from government related and funded STI system to sustainable development oriented innovation ecosystem is necessary.

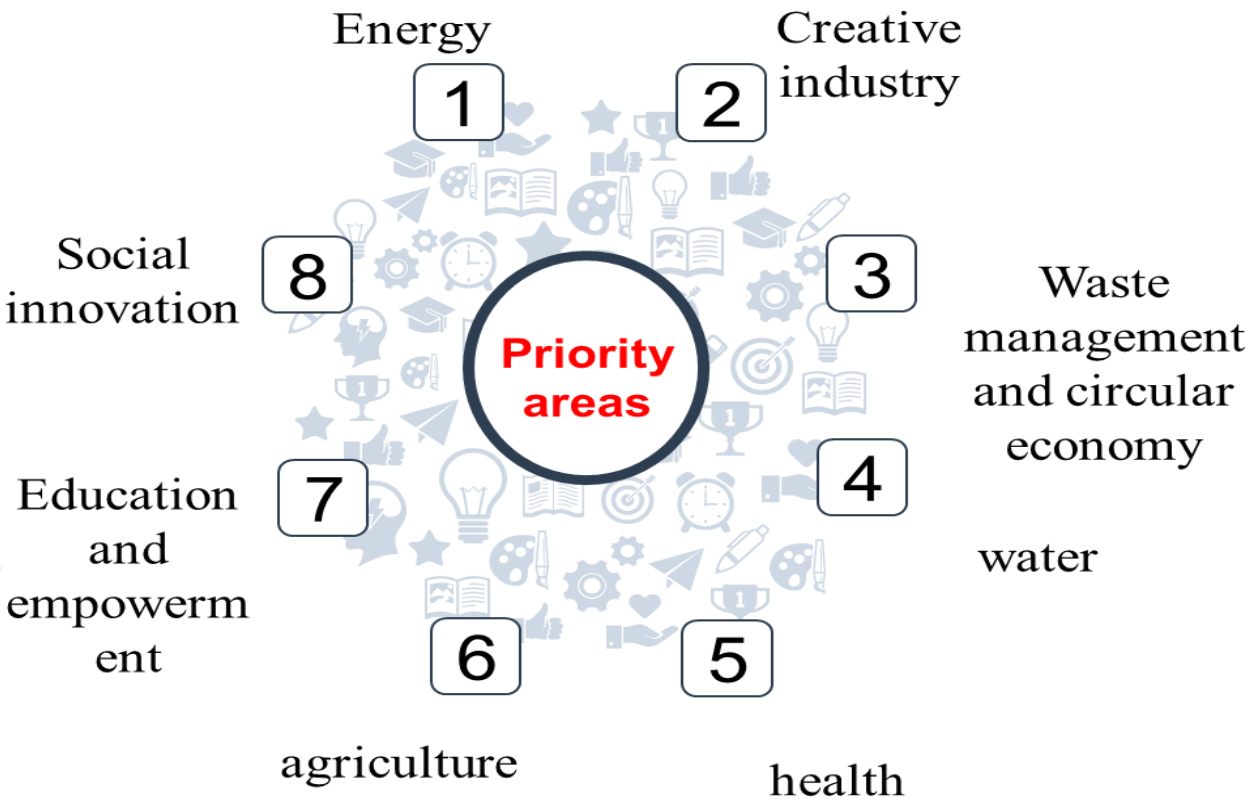
3RD Harnessing new technologies through regulation

- The regulatory system role is supporting startups to diffuse innovation in society and encouraging or forcing conventional industries to innovate: e-health, waste,….

1st approach: Sustainable development oriented national foresight program

- I.R Iran's national foresight program has focused on sustainable development challenges such as social innovation, education, water, waste management, energy, health along with food security.

- The expected results of Iran national foresight program is Setting priorities and promoting innovative technological start- ups as a cultural change (business model learning).



DUI

1st Approach: approach: Sustainable development oriented national foresight program

(Analyzing and promoting new business models and core technologies in global experience of startups)

1

The global experiences of startup companies

in the waste management sector

(Business areas, Core technologies and Business models)

Report series: the Frontier startups and technology based Firms

3

The global experiences of Startup companies

in the Air Pollution sector

(Business areas, Core technologies and Business models)

Report series: the Frontier startups and technology based Firms

4

The global experiences of Startup companies

in the Agriculture sector

(Business areas, Core technologies and Business models)

Report series: the Frontier startups and technology based Firms

5

The global experiences of Startup companies

in the Water Resources and drought sector

(Business areas, Core technologies and Business models)

Report series: the Frontier startups and technology based Firms

7

The global experiences of Startup companies

in the Social innovation sector

(Business areas, Core technologies and Business models)

Report series: the Frontier startups and technology based Firms

9

The global experiences of Startup companies

in the Energy sector

(Business areas, Core technologies and Business models)

Report series: the Frontier startups and technology based Firms

1st Approach: Iran National Foresight Program for SDGs

(Example: International Business Model Learning of digital health)

1

Citizens / Patients

Fitness and lifestyle	Mango Health, moov, MOTIV, geopalz, myfitnesspal, Sporty app, CHRONO THERAPEUTICS, Aaptiv, sharecare
Home care	cohero health, Sleepace, proteus DIGITAL HEALTH, AliveCor, bloomlife, Livongo, Athelas
Social networks and e-commerce (marketplaces)	talkspace, NavigatingCancer & Blood Disorders, one medical, Dr DOCTOR ON DEMAND, patientslikeme, conversa BETTER CONVERSATION. BETTER CARE.™, babylon, patientory stiftung, Z

1st Approach: Iran National Foresight Program for SDGs

(Evaluation of global experiences of startups in the field of digital health: Business Model Learning)

2 **Health service providers**

Advanced diagnostics and care

VitalConnect, echopixel, flatiron, VIOME, BenevolentAI, HeartFlow, AKILI

knowledge management

healthverity, TRUVEN HEALTH ANALYTICS, CareCloud, d, SERMO talk real world medicine, AUGMEDIX, xealth

3 **Health education system**

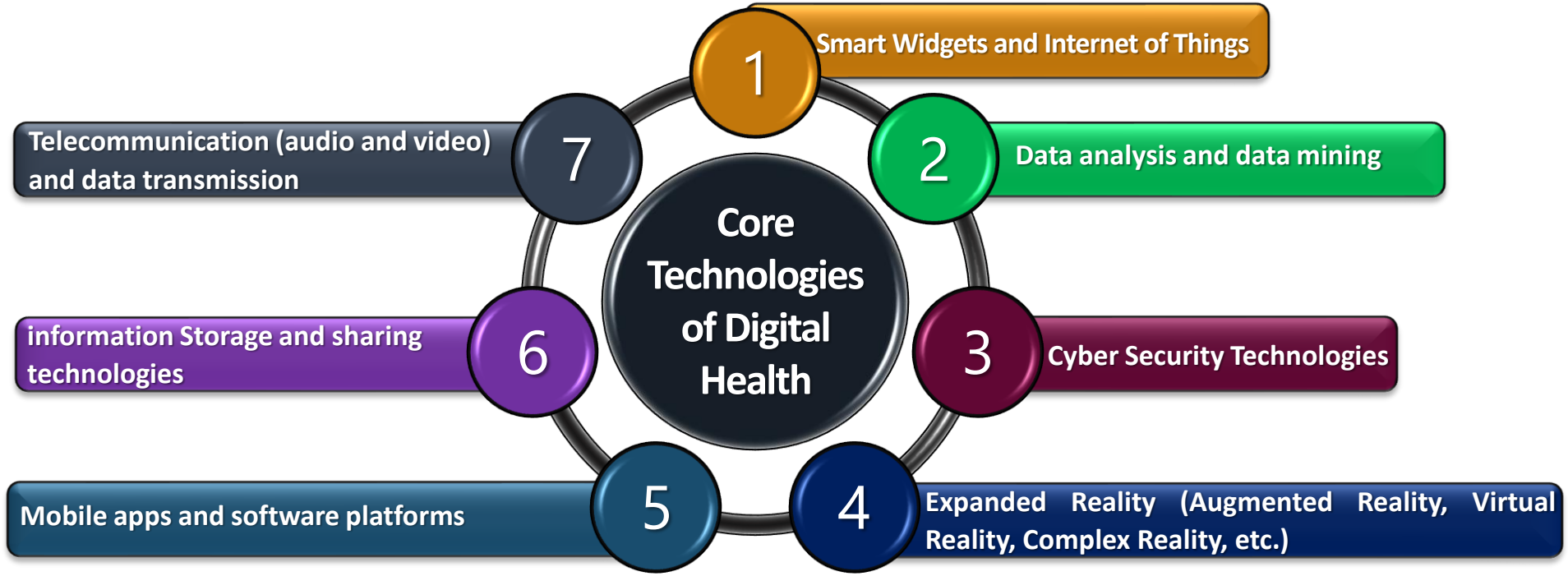
Educational services

Medical Realities, OSSOVR, zSpace, REELDx

1st Approach: Iran National Foresight Program for SDGs

(Evaluation of global experiences of startups in the field of digital health: Business Model Learning)

Core Technologies of Digital Health based on bencchmarking



2nd Approach: Restructuring and enhancing innovation ecosystem:
Government related and funded STI system

The main idea

•Import of technology and equipment

•Higher Education development

The role of government:

a rent distributor

FINANCE

- Government R&D expenditure
- Lack of business sector and venture capital

UNIVERSITY

- Separated from society
- Relying on the state budget

FACTORY

(NO INDUSTRY)

- No tech development
- No need for experts

import of equipment and Turn key manufacturing

Resource-based economy

- Brain drain
- Low added value products
- Recourse based economy

2nd Approach: Restructuring and enhancing innovation ecosystem

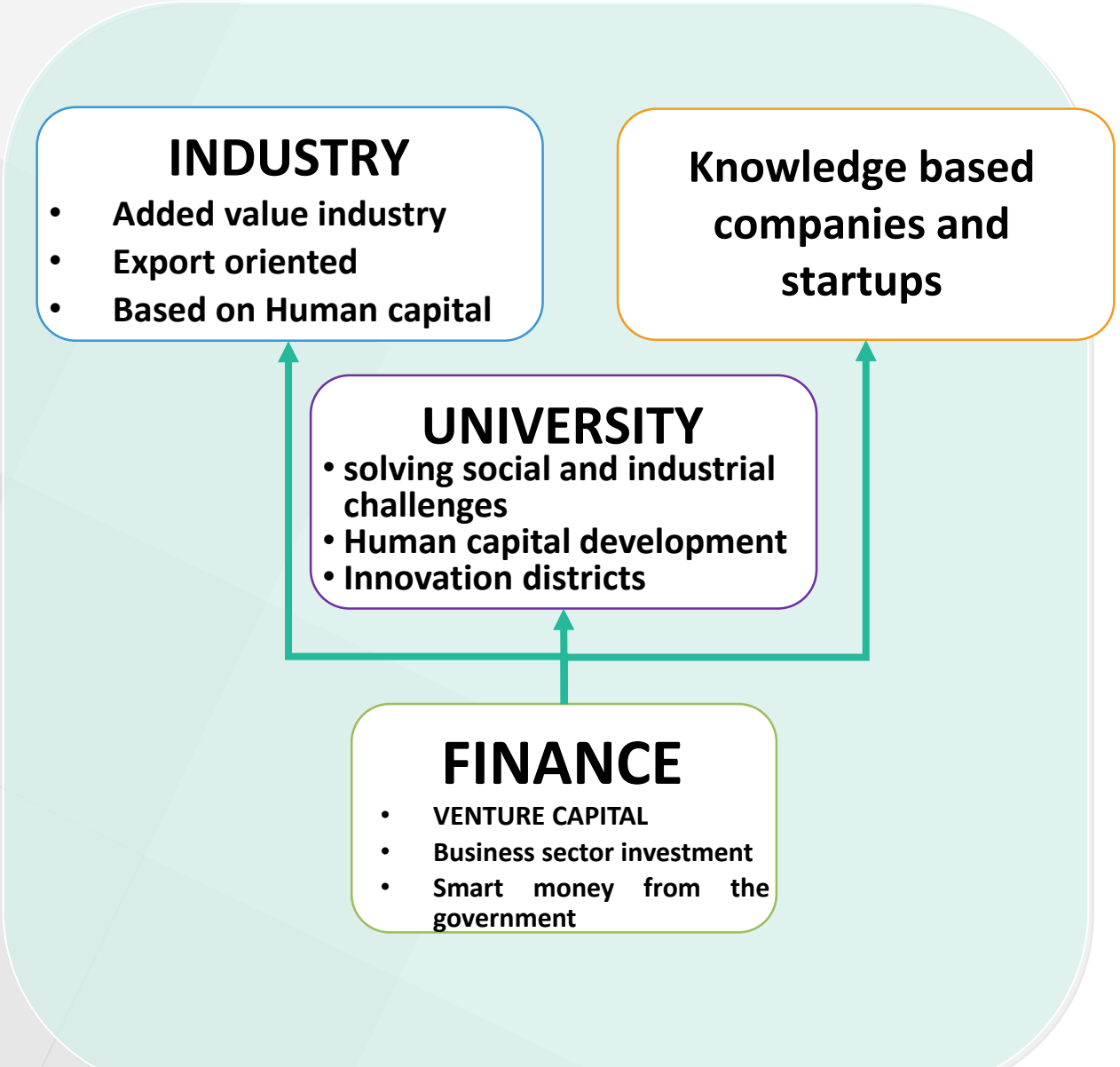
The main idea

Innovation ecosystem

The role of government:

Entrprenurial state

Facilitator



OUTCOME

- Knowledge based economy
- Development
- Competitiveness
- Brain Circulation

2nd approach: Restructuring and enhancing innovation ecosystem

- **The first pillar of the knowledge-based economy is human capital development in innovation centers and accelerators.**
- **Second pillar of the ecosystem is financial resources through VC mechanisms.**
- **SDGs oriented VCs and accelerators to support entrepreneurship in priority areas**

مرکز نوآوری و فناوری آب، محیط زیست و انرژی

WAtech

Interdisciplinary Center for NANOTOXICITY

AZADI INNOVATION FACTORY

HAMAVA

EXPORT EXHIBITION

ADMINISTRATION

COWORKING SPACE

ZAVIE

CAFE

LUKH

FIT CLUB

IFITPRO

KARA

VCAST

PLANT

DIGINEXT

PHARMAD

HONAM PHARMED

DIBA

DIBA GROUP

ALIBABA

alibaba.ir

DIGITAL HEALTH

CREATIVE INDSUTRY

FINTECH

IOT AND AI

NANO& BIO PHARMA

ENVIRONMENT

TOURISM

1 و ی ی ي ي ب ب آ هو

AZADI INNOVATION FACTORY

9 Acceleratore

500 Team

2500 new jobs

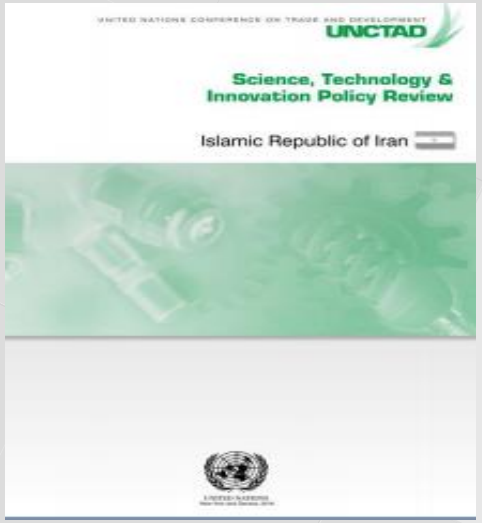
18500 SM

✓Innovation Factory is the biggest accelerator (infrastructure) in Iran in area of 18 500 square meters to provide start-ups with a variety of incentives to facilitate the innovation process.

✓At the moment, more the 2500 entrepreneurs are innovating in the Innovation Factory!

2nd approach: Building innovation ecosystem

(the case of health technology ecosystem:Bio tech)



universities and public research organization

Technology trends

11 health technology accelerators created by private sectors

Corporate accelerator

vpst

ministry of health

ministry of industry

business environment, supports tech development, regulation

vcs

innovation prosperity fund

national development fund

more than 100 NTBF

Big firms

startups and technology firms

LOW CIST PRODUCTS and SERVICES INCLUSIVNESS AND AFFORDIBILITY

3rd approach: harnessing new technologies through regulation

(regulation of Iranian Transportation Network Companies (TNCs):Iranian Uber's!!!)

- **Policymakers should understand the pros and cons of new technologies**
- **update the regulation in favor of sustainable development and innovation.**

+

- Low cost services
- JOB CREATION
- Smart services including pricing

-

- the impact of these platforms on traffic
- the rights of drivers
- the quality of jobs created and promoted
- companies that do not classify their drivers as employees.
- the case of competition and trust

3rd approach: harnessing new technologies through regulation

(regulation of Iranian Transportation Network Companies (TNCs))

- A unique aspect of this process is the close collaboration of VPST and TNCs to develop an innovation ecosystem
- Planning to leverage the capacity and market of TNCs to shape a green transportation and electronic vehicles industry in Iran.
- In this case TNCs provide incentives for the riders who use e-vehicles

NEMA MOTOR

OLD SCHOOL CURB SIDE COLLECTION

VS

WITH THE HELP OF STARTUPS

Unique Applications

- Waste separation from source
- Collection and transfer to segregation centers
- Washing and separating
- Transfer to industries as raw materials

Sustainable income for both citizens and local governments

جارو
JAROOAPP

شرکت گلکاران خوش طریق
بازیافت من

Iranian startups and tech companies related to waste treatment

recycling

recycling

disposal

incineration

compost

Educational and cultural issues and waste collection

Screening and segregation

Thank you