

18th EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020

12>16 OCTOBER 2020

19>22 OCTOBER 2020

RESTART
EUROPE
Together

#EURegionsWeek

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Smart City Solution in turbulent times



Welcome

Věra-Karin Brázová, Head of Urban Policy and Strategy Unit, Ministry of Regional Development, Czechia

Building resilient cities of the future

Michal Postránecký, Head of City of the Future, Center of City of the Future - Czech Institute of Informatics, Robotics and Cybernetics, Czechia

Smart Cities concept at national level

Marie Zezůlková, Head of Regional Policy Department, Ministry of Regional Development, Czechia

Introducing a Systematic Approach to Financing Smart Solutions in the Czech Republic – Presentation of a joint NL and CZ project

Jarik Stollenga, Project Manager, VNG International, The Netherlands

SMART Cities concept - resilience through SMART solutions for municipalities, cities and regions

Rut Bízková, Consultant, ISFOR, Institut pro Společnost 4.0, Czechia

Discussion session, End of workshop (16:00)

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SMART CITY SOLUTION IN TURBULENT TIMES

BUILDING RESILIENT CITIES OF THE FUTURE

ING. ARCH MICHAL POSTRANECKY

Founder and Head of Center of City of the Future
Czech Institute of Informatics, Robotics and Cybernetics
CTU Prague, Czechia

BRUSSELS, OCTOBER 13, 2020



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CCF CIIRC CTU PRAGUE

CENTER OF CITY OF THE FUTURE



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COVID -19

We live for several long months in the midst of a pandemic situation that has affected the whole world in a previously unknown way, including countries with advanced economies. The invisible and insidious virus has brought with it some aspects that have already changed and will continue to change the behavior of entire societies and life in urban areas. The view of the structure and functioning of urban structures began to change overnight! What part of this change can "smart" technologies play?



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SMART CITY
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INFINITE FORMS AND
TYPES OF URBAN
SYSTEMS

& CREATE
UNREPEATABLE
URBAN ARCHETYPES
PROVIDING SPACE FOR
A VIRTUALLY INFINITE
NUMBER OF
INTERACTIONS,
ACTIVITIES AND
TRANSACTIONS



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Commission

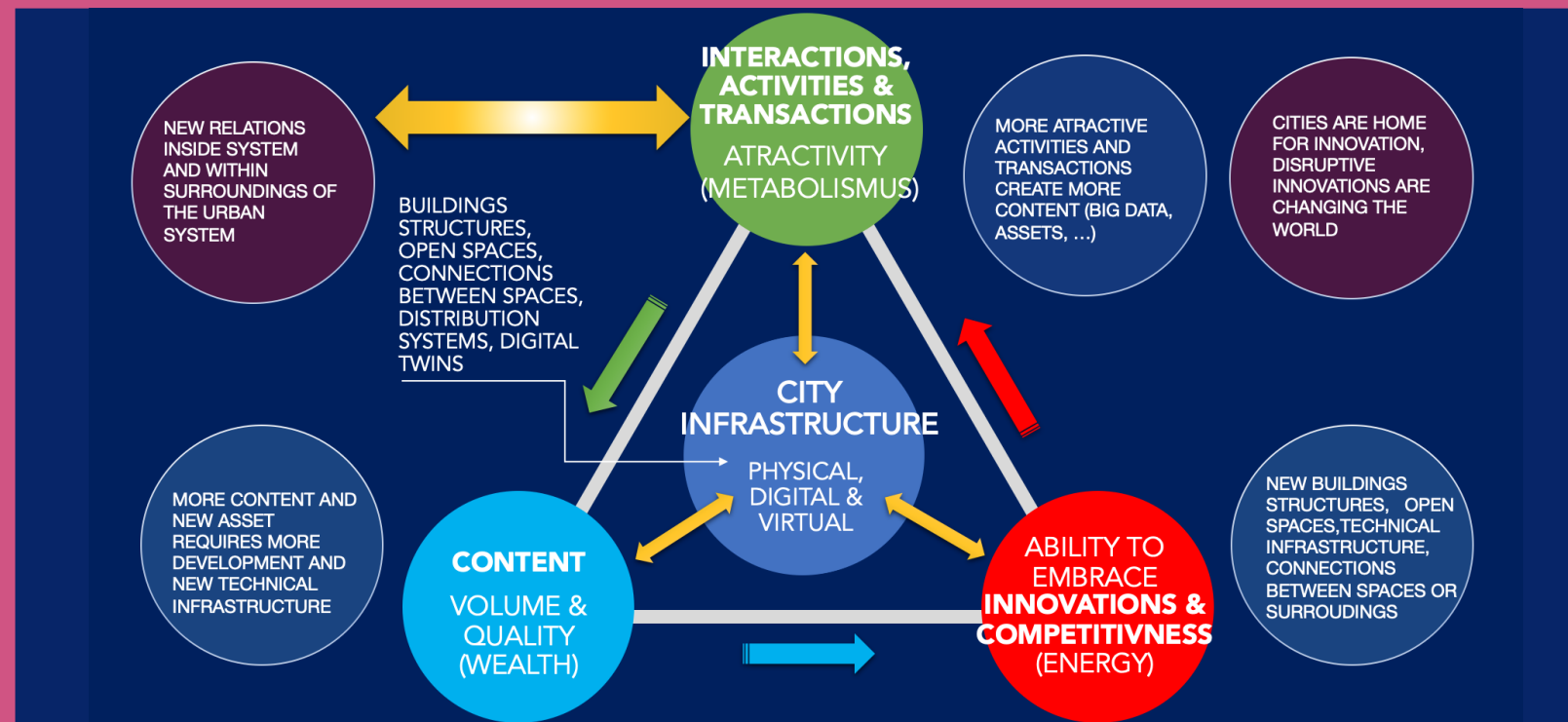
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BASIC PRINCIPLES OF DEVELOPMENT OF URBAN SYSTEMS

DEVELOPMENT
PROCESS OF URBAN
INFRASTRUCTURE IN
SPIRAL ABOVE THE
BASIS OF THREE
ELEMENTARY
FACTORS



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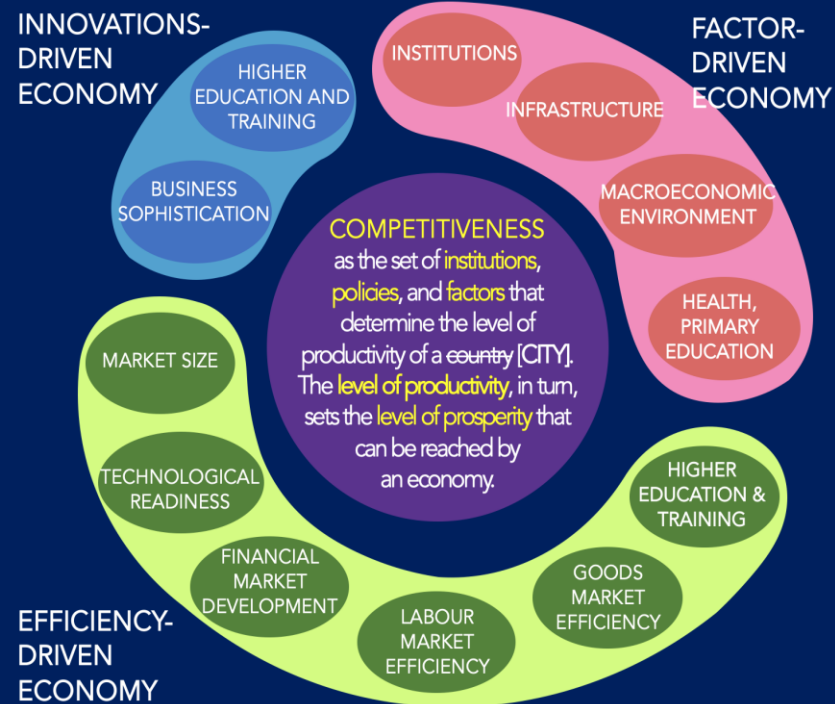
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**COMPETITIVENESS
AS A FUNDAMENTAL
PRINCIPLE AND
ENGINE FOR THE
SURVIVAL AND
GROWTH OF URBAN
SYSTEMS
INNOVATION BASED
ON KNOWLEDGE
DETERMINES THE
RESULTS OF SYSTEM
GROWTH**

12 PILLARS OF COMPETITIVENESS

BY **COMPETITIVENESS**, WE
MEAN THE ATTRIBUTES AND
QUALITIES OF AN ECONOMY
THAT ALLOW FOR A MORE
EFFICIENT USE OF FACTORS
OF PRODUCTION.



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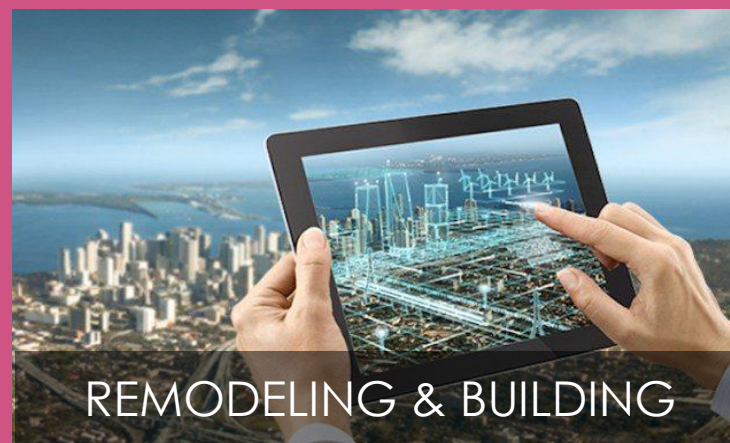
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SMART CITY

THE CONCEPT OF POSITIVE DIGITAL INCLUSION IN OUR LIVES



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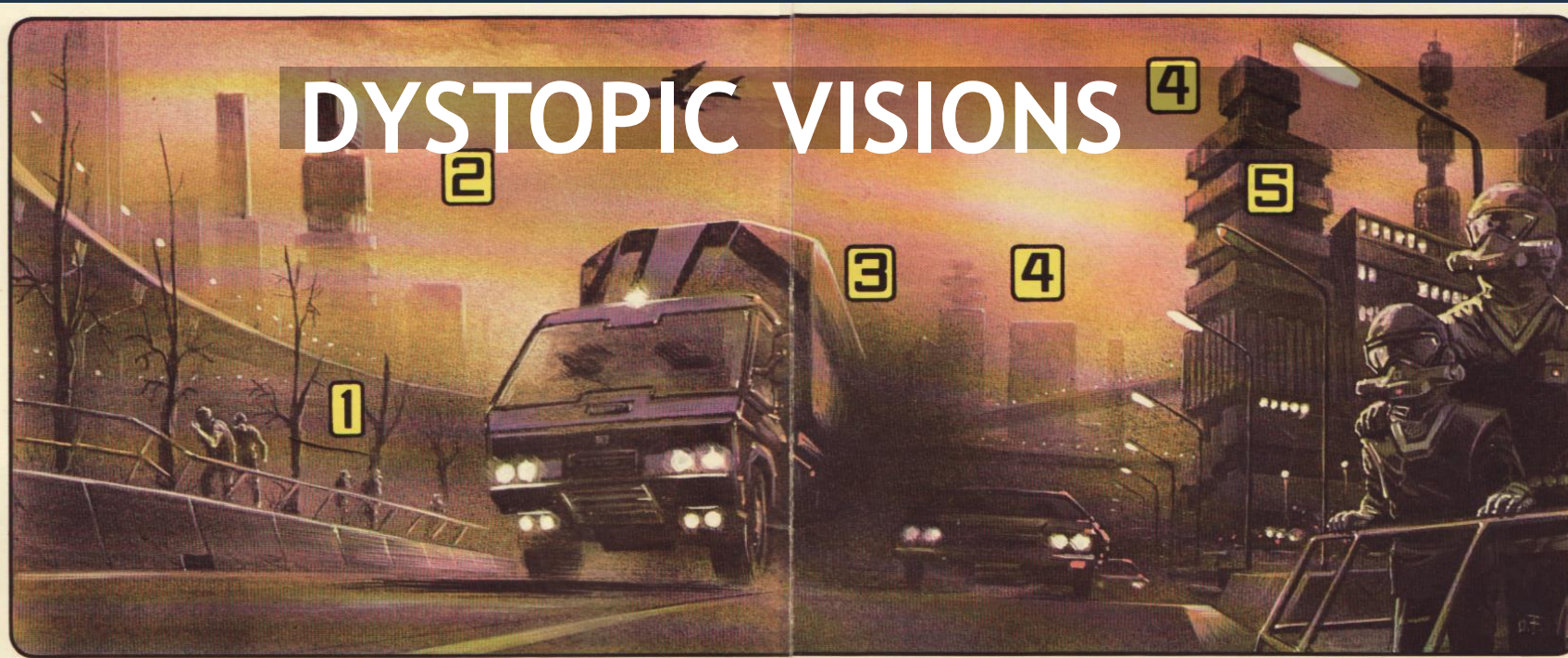
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On these pages, you can see two sorts of city. The top one, a polluted pest-hole, already exists in at least one respect – traffic cops in the Tokyo of today have to wear smog masks. The bottom picture, a fairly clean, moderately attractive place, is possible if planners and people strive to make it so.

Some help is already at hand. People are at least aware of many of the problems of city life and are trying to solve them; and space satellites can be used for pollution control. The picture below showing northern Europe and its weather is a typical example of the clear pictures possible using 'sky-spies'.



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Garden city on a cared-for planet

This scene, though not pretending to show that a perfect world is possible, nevertheless indicates that tomorrow's towns could be pleasant places to live, work and play in.

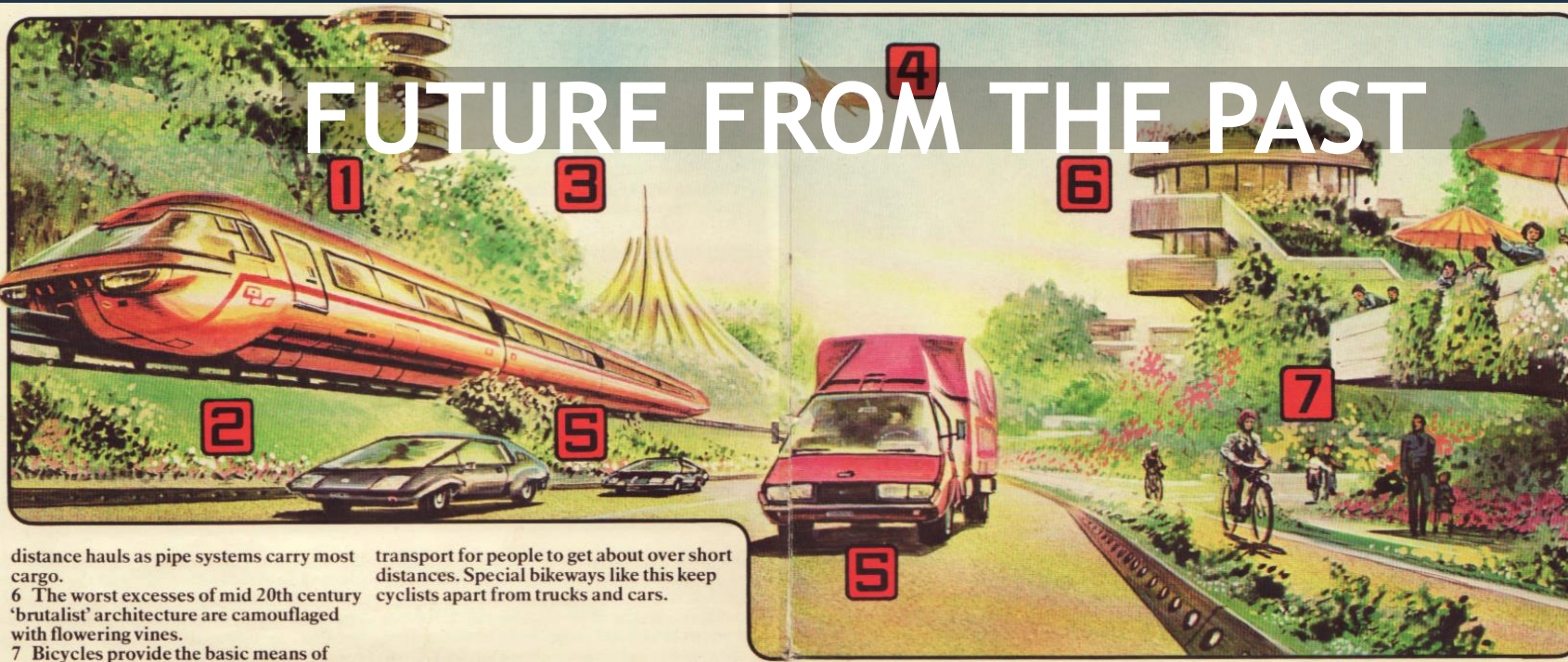
1 Electric monorail train provides an effective though not especially elegant solution to the problem of high speed travel.

2 Below the line runs a pipe network through which most bulk cargo (such as fuel, water, grain) is pumped, silently and efficiently.

3 The city is green all over, the result of a massive world-wide tree-planting scheme started in the 1980s. It is estimated by present-day researchers that every man, woman and child on Earth needs to plant a tree a day in order to keep a balance with those that are removed or killed. The world's main oxygen-producing area is, at present, the Brazilian rain-forest. This is being chopped down, slowly but surely. A balance must be kept.

4 Non-polluting jet, powered by hydrogen fuel (whose waste is water) flies quietly across the sky.

5 Fumeless electric vehicles used for local travel. Trucks are only needed for short-



distance hauls as pipe systems carry most cargo.

6 The worst excesses of mid 20th century 'brutalist' architecture are camouflaged with flowering vines.

7 Bicycles provide the basic means of

transport for people to get about over short distances. Special bikeways like this keep cyclists apart from trucks and cars.

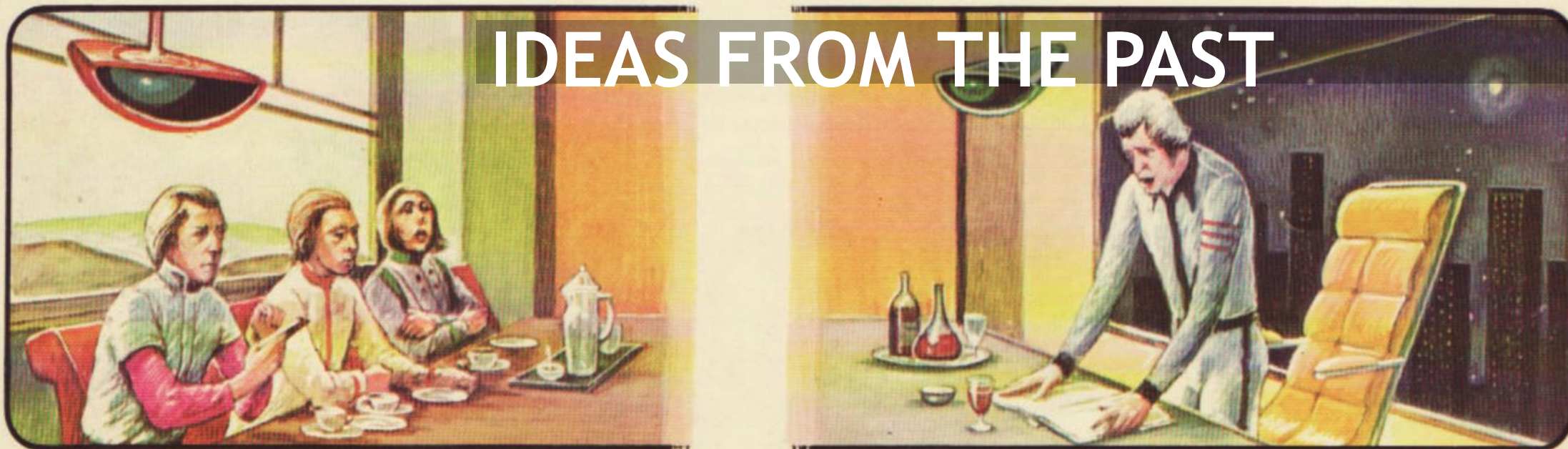


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IDEAS FROM THE PAST



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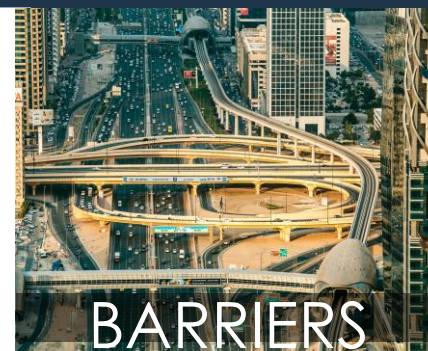
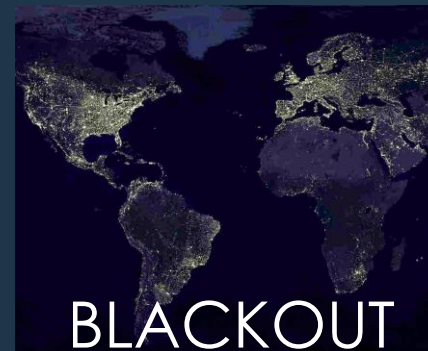
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DISASTERS AND
EXTREME SHOCKS
ATTACKING CITY
SYSTEMS MAY BE
CAUSED BY NATURAL
PROCESSES, HUMAN
ACTIVITY, OR A
COMBINATION OF BOTH

ABILITY TO PREDICT!



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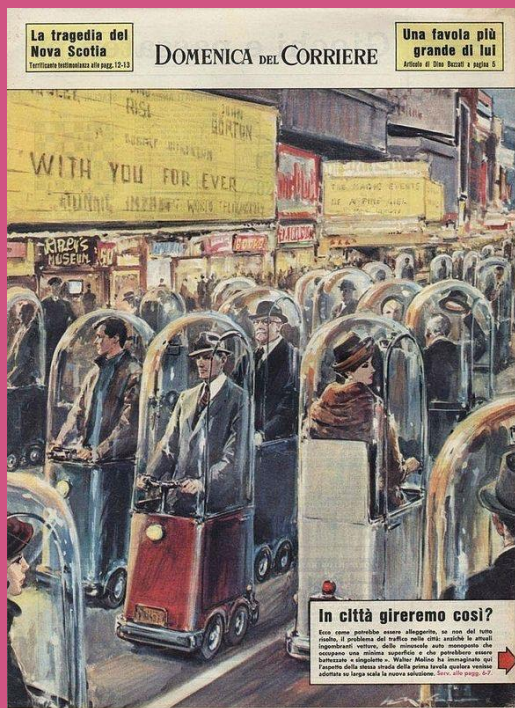
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SOLUTION
IN
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TIMES

WHY RESILIENT?

THE LAST SIX MONTHS HAS PROVED THAT A CONCEPT OF SMART CITY IS NOT GREAT ENOUGH!

URBAN SYSTEMS (CITIES, TOWNS VILLAGES, REGIONS, AND ALL TECHNICAL INFRASTRUCTURE INTERCONNECTING THEM TOGETHER) MUST BE RESILIENT READY!

DIGITAL TECHNOLOGIES CAN HELP BE URBAN RESILIENT!



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URBAN RESILIENCE

RESILIENCE IS THE ABILITY OF A CITY'S SUB-SYSTEMS TO WITHSTAND, RESPOND TO, AND ADAPT READILY TO ANY KIND OF ADVERSITY, SO THAT PEOPLE LIVING AND WORKING THERE CAN SURVIVE AND THRIVE.

(HARRIS & ASSOCIATES)



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PROPERTIES OF RESILIENT CITY

CONNECTED SMART INFRASTRUCTURE ORGANIZED IN GRIDS, READY
FOR LOCKDOWN, ISLAND SYSTEMS & CRITICAL INFRASTRUCTURE
KNOWLEDGE BASED ON DATA, ANALYTICS ABILITY TO PREDICT!
LOCAL **STRATEGY** INCLUDED IN DYNAMIC PLANNING DOCUMENTS
URBAN SYSTEM WELL **NETWORKED** TO THE HIGHER URBAN SYSTEMS
ICT WITH ALL LEVELS OF DIGITAL INTELLIGENCE
INFORMED AND EDUCATED **CITIZEN** – NEIGHBORHOOD NETWORKS



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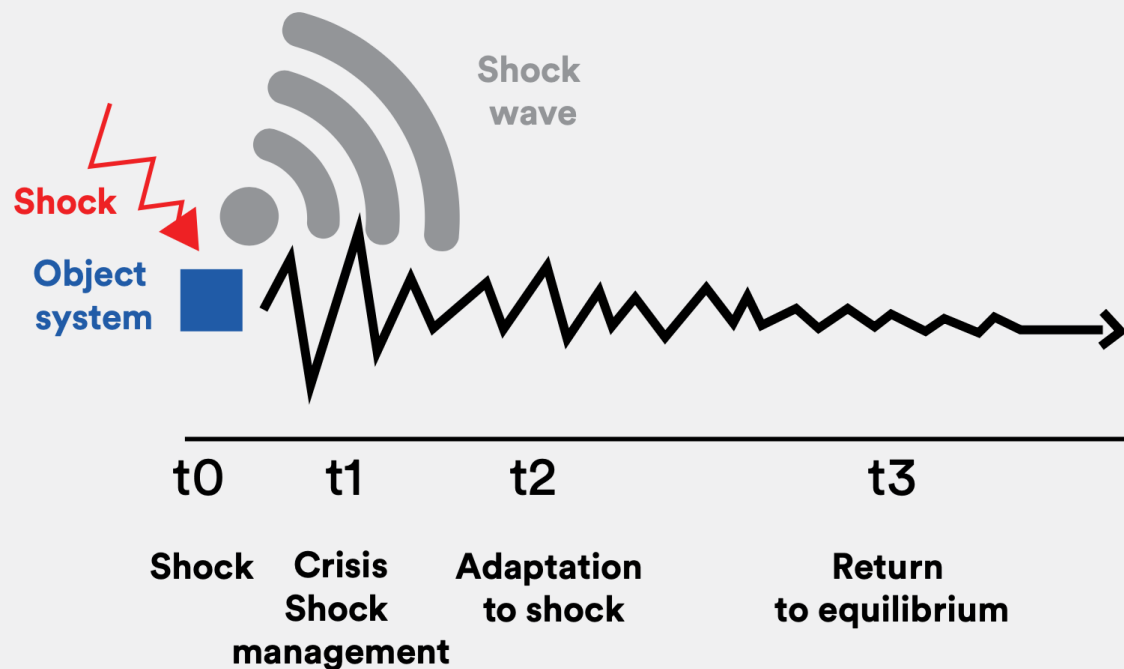
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READY FOR
UNKNOWN

SHOCKS
WAVES &

ADAPTATION
IN PHASES

LESSONS
LEARNED &
STRATEGY
CORRECTION



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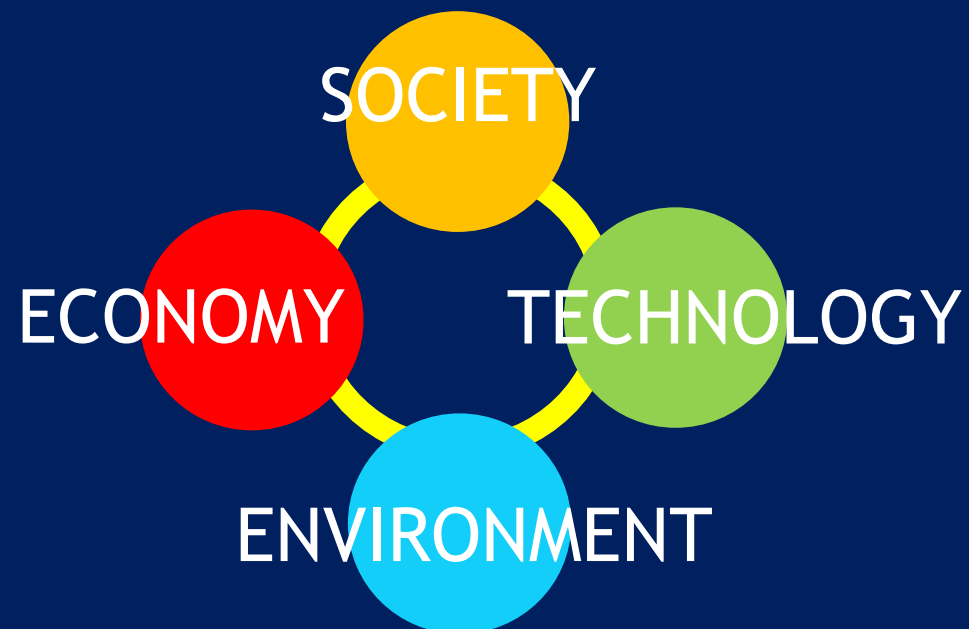
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**FOUR DOMAINS TO
BUILD THE RESILIENT
COMMUNITIES AND
URBAN SYSTEMS**

**BALANCE IN
RELATIONS WITHIN
URBAN SUBSYSTEMS
IS THE BASIS OF
QUALITY OF LOCAL
URBAN RESILIENCE**



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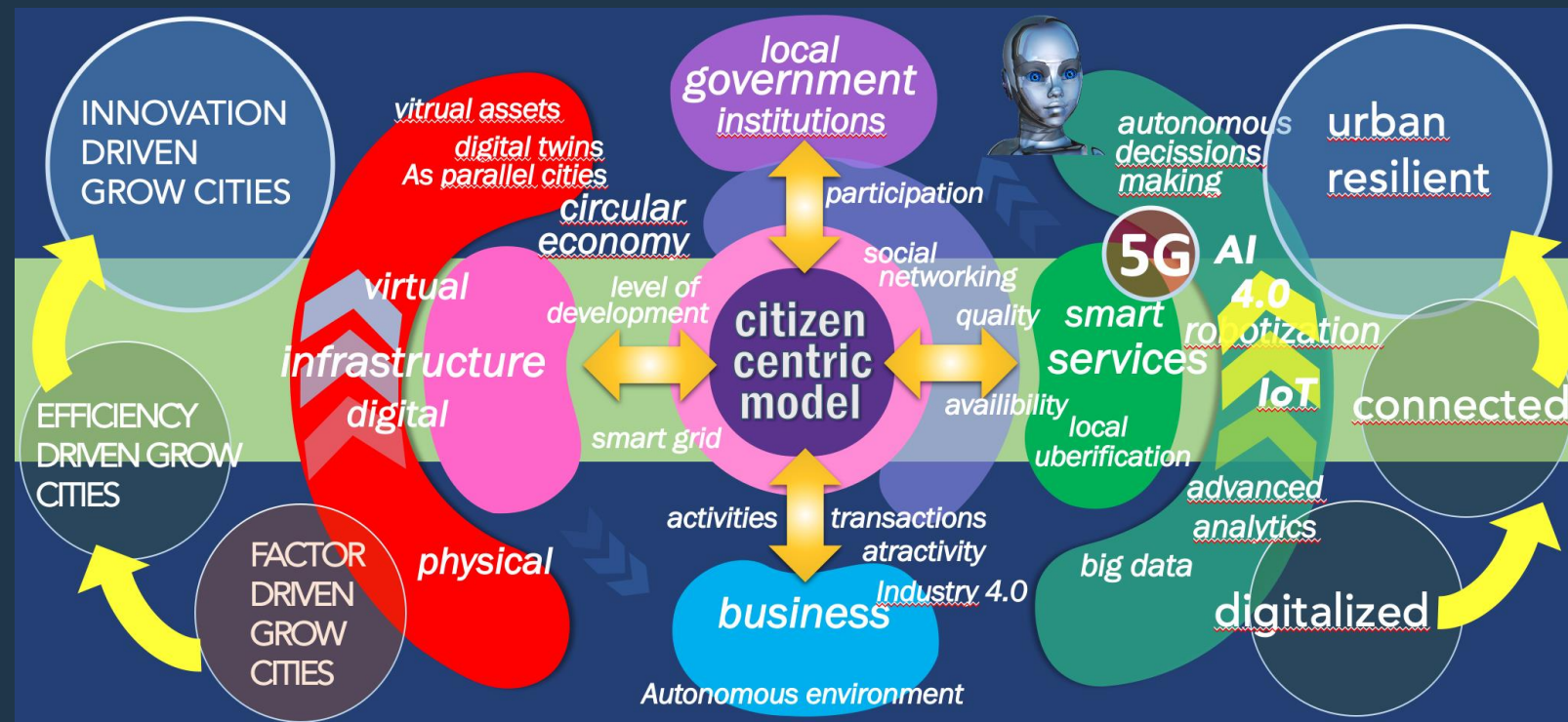


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PREREQUISITES TO
DEVELOPMENT OF
RESILIENT URBAN
SYSTEM (CITY, TOWN,
VILLAGE,
MICROREGION,
REGION...)



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TIMES

COOPERATION
BETWEEN TOWNS,
CITIES AND VILLAGES
WITHIN MICRO-
REGIONS

DYNAMIC RELATIONS
BETWEEN PARTNERS
BASED ON COMMON
NEEDS



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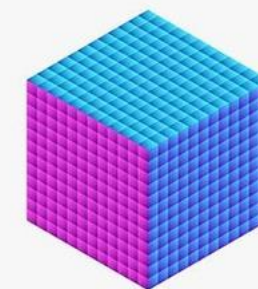
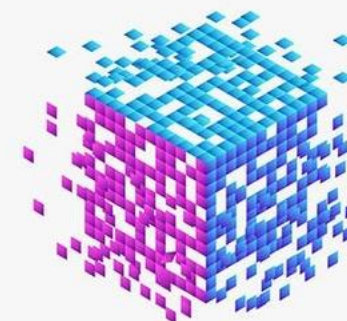
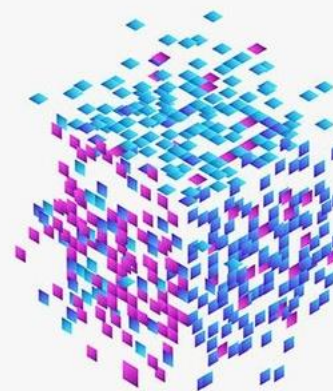
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AI & BIG DATA

ANALYTICS

DECISIONS



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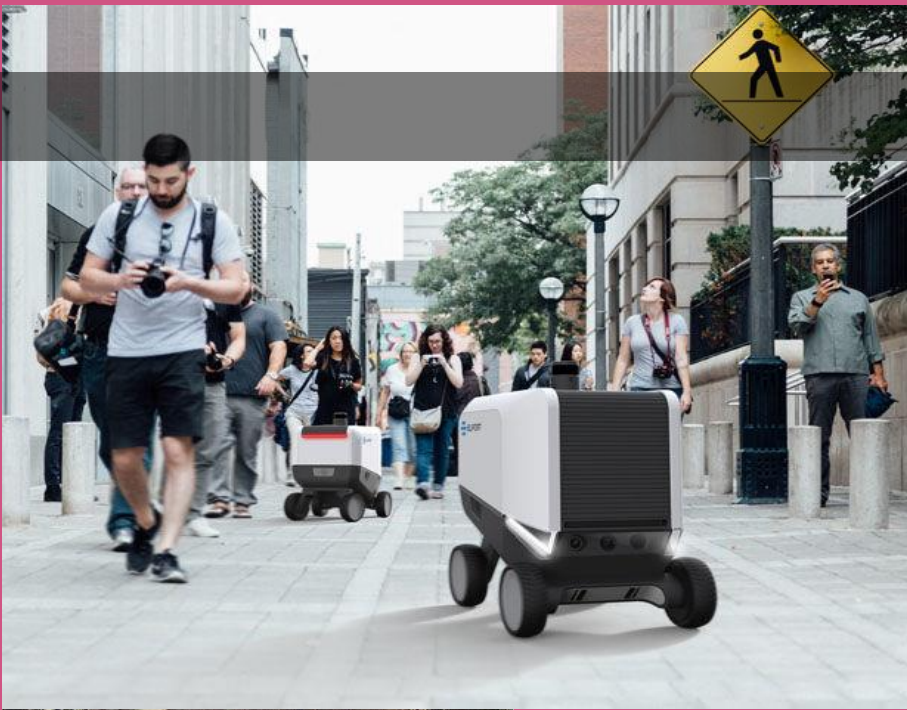
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ROBOTS



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DRONES AND MORE...



THE END

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Smart Cities concept at national level

Marie ZEZULKOVA

Head of Regional Policy Department

The Ministry of Regional Development of the Czech Republic

Smart Cities concept



SMART concept = Smart City, Smart Village, Smart Region

The involvement of modern technologies in urban management to improve the quality of life of the population and streamline and optimize governance, including resource efficiency, risk management, better communication and getting feedback from the public.

Two levels of the concept

Procedural : Governance, strategy and cooperation with key actors and the public

Technological : Added value of specific projects, technologies, new processes and solutions





Role of the Ministry

Implementation of Smart Cities concepts

Coordination of national and local actors

Methodological guidance (implementation, identification of barriers, impact assessment...)

Pilot projects (innovation features, testing of new processes and technologies, PPP projects)

Collaboration on research projects ...



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Activities of the Ministry



Methodological support : Smart Cities methodology

Smart Cities Working Group

Minister's board

Funding of Smart Cities activities

International cooperation

Seminars and conferences

Sharing of good practice and capacity building

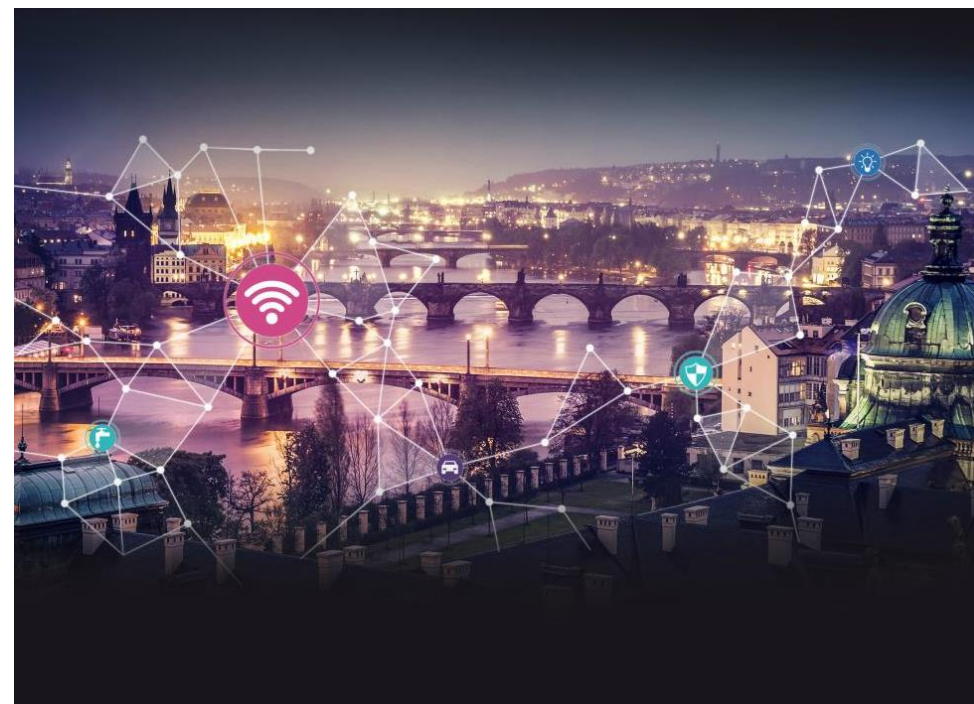
Current tasks and priorities

Involvement in the Czech Republic's Innovation Strategy through the Smart Cities concept

Implementation of a pilot project Supporting 5G networks in Smart Cities

Marketing, PR and other activities to increase impact e.g. promoting the Smart Cities for the Future competition

SRSP project Setting a Systematic Approach to Financing Smart Solutions in the Czech Republic



Barriers to overcome

Underutilization of open data in public administration

Low awareness of the potential benefits of the Smart Cities concept and the benefits of innovative projects

Lack of funding for pilot projects to test the benefits of specific smart solutions in municipalities



Supporting 5G networks



Project goals :

Pilot testing and
verification of readiness

Promotion of
cooperation between
key actors



5 pilot Cities :

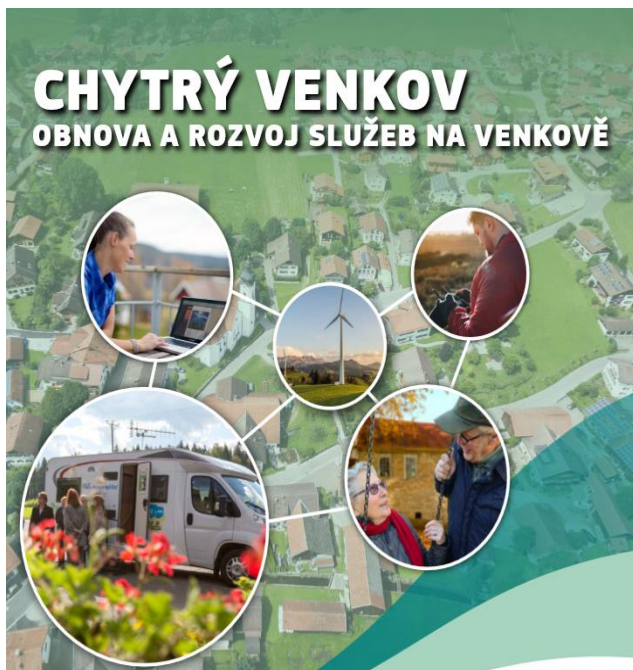
Bílina

Jeseník

Karlovy Vary

Plzeň

Ústí n. Labem



Smart Villages

2018 : Introduction of the Smart Villages concept

2019: Creation of the Smart Villages Task Force

2020 : Smart Cities methodology addresses smaller municipalities

Cooperation with National Network of Local Action Groups in the Czech Republic

National meetings, working groups, concepts, ...

Smart Regions



Focus on all 14 Czech regions

Taking into account regional specificities

Building partner networks

Promoting smart approaches and introducing innovations

Various regional development priorities :

Energy, transport, environment, smart governance, health, smart accelerators, smart specialisation and more



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Thank you for your attention

Marie ZEZULKOVA

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**Introducing a Systematic Approach
to
Financing Smart Solutions in the
Czech Republic**

**A Project Introduction
Jarik Stollenga & Dirk van
Brederode, VNG
13 October 2020**



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International



Goal: A Stronger Governance Framework to promote and facilitate smart investments

Main Beneficiary: Ministry of Regional Development and eventually all Czech regions, cities and municipalities.

Implementing partnership: The Association of Netherlands Municipalities (VNG) & the Union of Towns and Municipalities of the Czech Republic (SMO)



Project is funded by the European Union

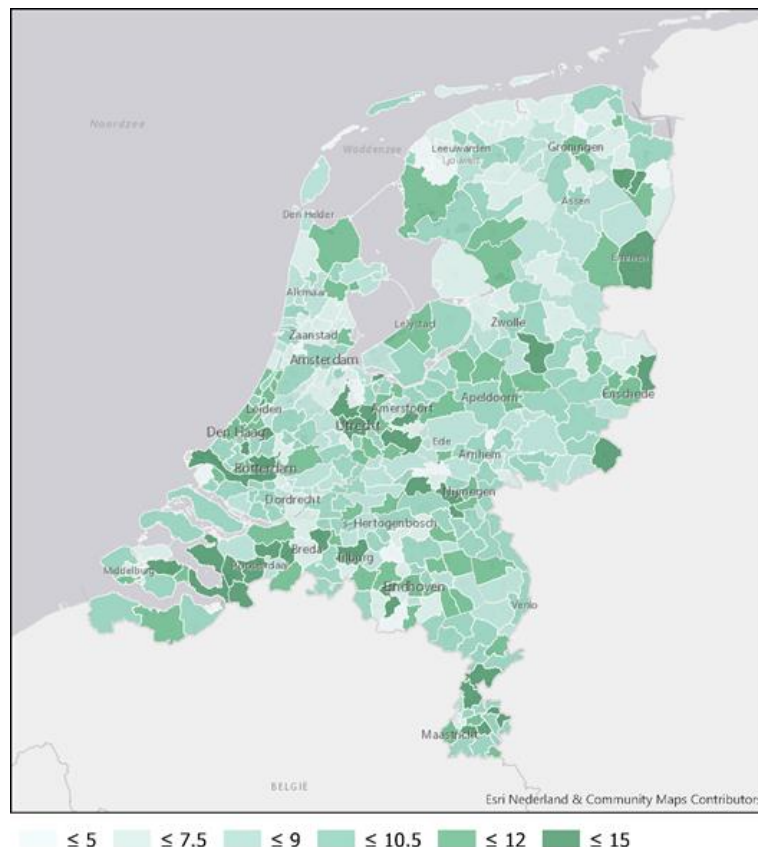


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International





Municipalities of The Netherlands ranked to their quality of 'digital services'

The Association of Netherlands Municipalities

- Represents 355 municipalities (100%)
- Brokers relations (and funding (!!)) between national government and municipalities
- Procures grouped services and goods
- **Offers in-house expertise, inc. on digitalization and Smart Cities**



The Project: Addressing the gaps in the financing model

The Main Gap:

Smart City Projects & Governance often on local level, but funding on (inter)national level

>>>

Small, specific projects vs. large, general financing models

What VNG will contribute to bridge the gap:

1. JOIN TOGETHER



The Project: Addressing the gaps in the financing model

What VNG will contribute to bridge the gap:

2. COLLABORATE



The Project: Addressing the gaps in the financing model

What VNG will contribute to bridge the gap:

3. BE OPEN

1 Privacy first

First and foremost, the privacy of the users and citizens should be guaranteed.

People should be given insight into the data that is collected and control over the way it is and will be used. Ethical aspects should be taken into account.

2 Open data and interfaces

We facilitate innovation by making data publicly available and enabling access to IoT & data systems through open interfaces.

We stimulate new business models and emerging services that rely on generating added value, rather than exploiting licenses on data or exclusive rights.

3 Embrace open standards

Wherever available, the IoT infrastructure, connectivity, platforms, devices and services should be built on open or broadly agreed de-facto standards.

Using established standards will facilitate evolution of infrastructure and services, sustain a competitive market and prevent vendor lock-in. Where standards are lacking, they should be developed.

4 Share where possible

We expect all IoT and Data developments to provide well-defined, easily accessible stable interfaces for sharing and reusing existing assets.

Shared use of grids, sensor networks, connectivity and software components will lower the barriers for their adoption, increase connectivity and stimulate innovation.

5 Support modularity

We recommend adopting a modular architecture with well-defined open interfaces as the core of any IoT or data-driven development.

Modularity helps to ensure interoperability between platforms, services and applications and facilitates re-use and cooperation between partners.

6 Maintain security

The reliability of components, platforms, solutions and services must be constantly safeguarded.

Ensuring confidentiality, integrity and availability is vital to essential services and core parts of the infrastructure, which need to be safeguarded to the highest level.

7 Accept social responsibility

Providing new technologies and services, and collecting and combining data may result in unforeseen effects on society or individuals.

We cannot predict the future. We encourage experimentation, provided responsibility is taken for the consequences.

Data residing in the public space:

*Eindhoven
municipality 7
principles of
Open Data Usage*

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Thank You for your attention!

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International



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RESTART
EUROPE
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#EURegionsWeek



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MINISTRY
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DEVELOPMENT CZ



SMART Cities concept - resilience through SMART solutions for municipalities, cities and regions

Rut Bizkova
ISFOR, Institute for Society 4.0

All images used are from the websites of the organizations mentioned in this presentation
or from the Internet in general



SMART concept:

- Jobs and services follow people, not vice versa
- Local solutions – short distance principle
- Resilient communities – in digital era

....with regard to climate protection

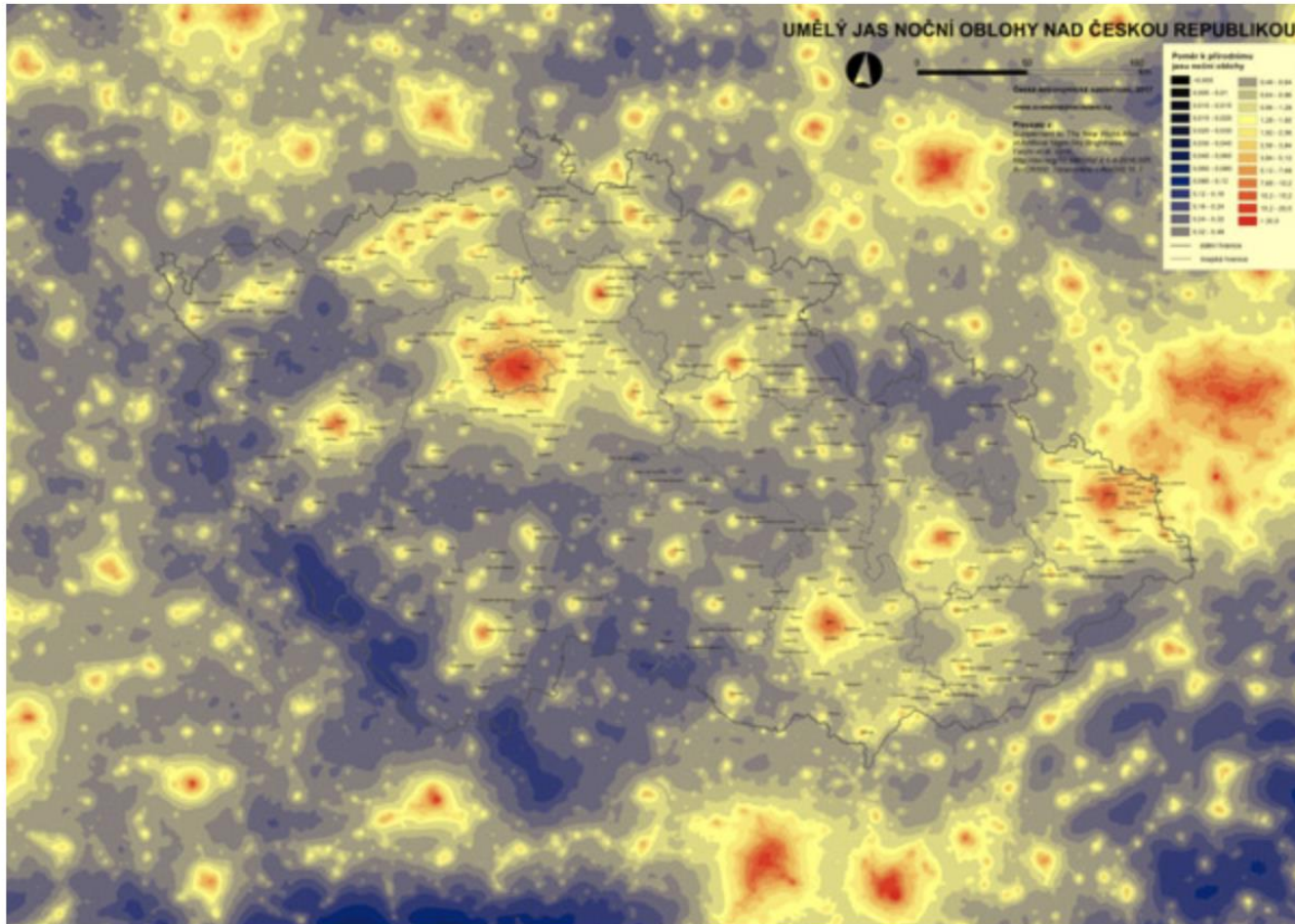


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CR – country of small villages, more than 6250 municipalities and expensive infrastructure

SMART solutions are possible with support of the Union of Towns and Municipalities of the Czech Republic



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▲ Kde se v Česku nejvíce svítí?

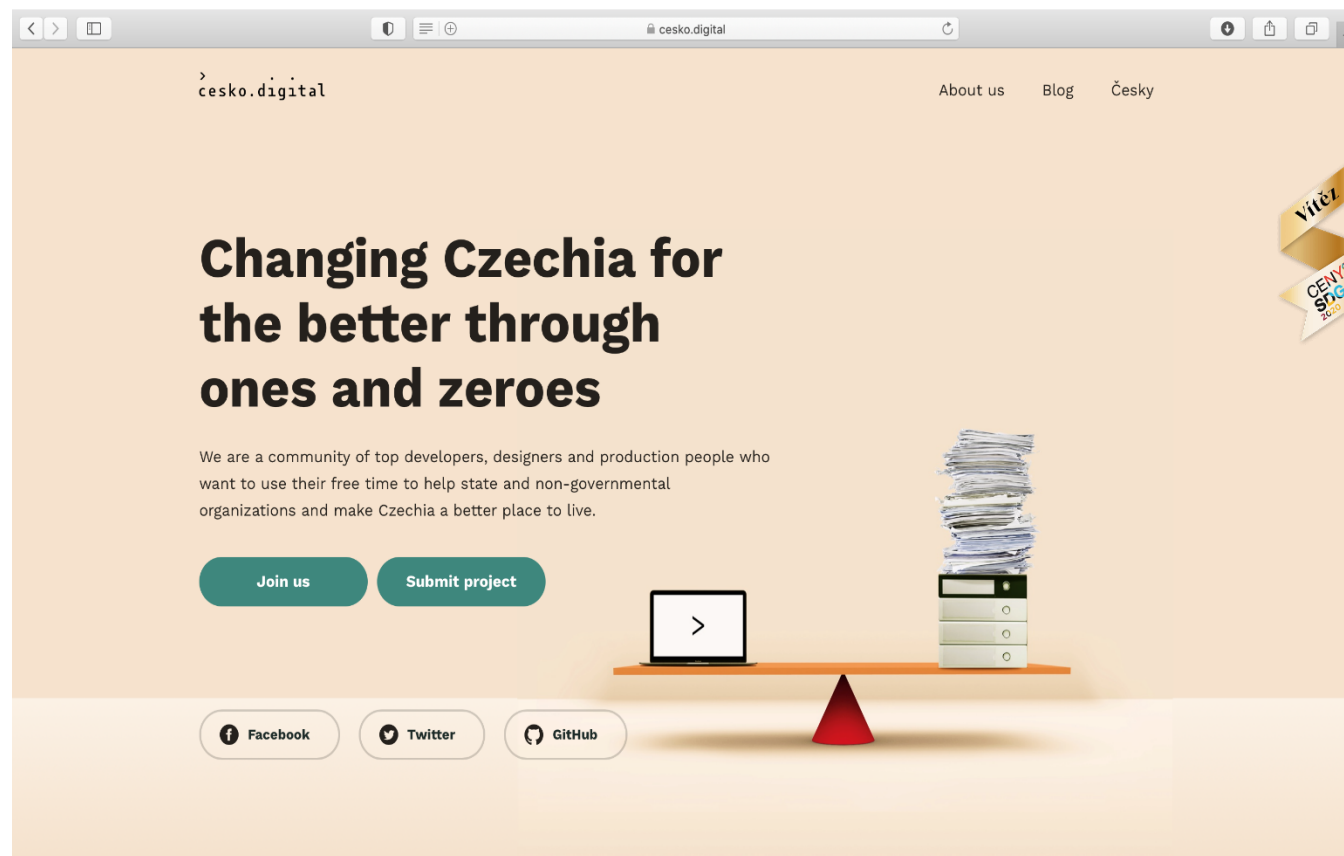


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Lessons learned from COVID-19

SMART solutions
through digitalisation
and activity of young
skilled people

cesko.digital



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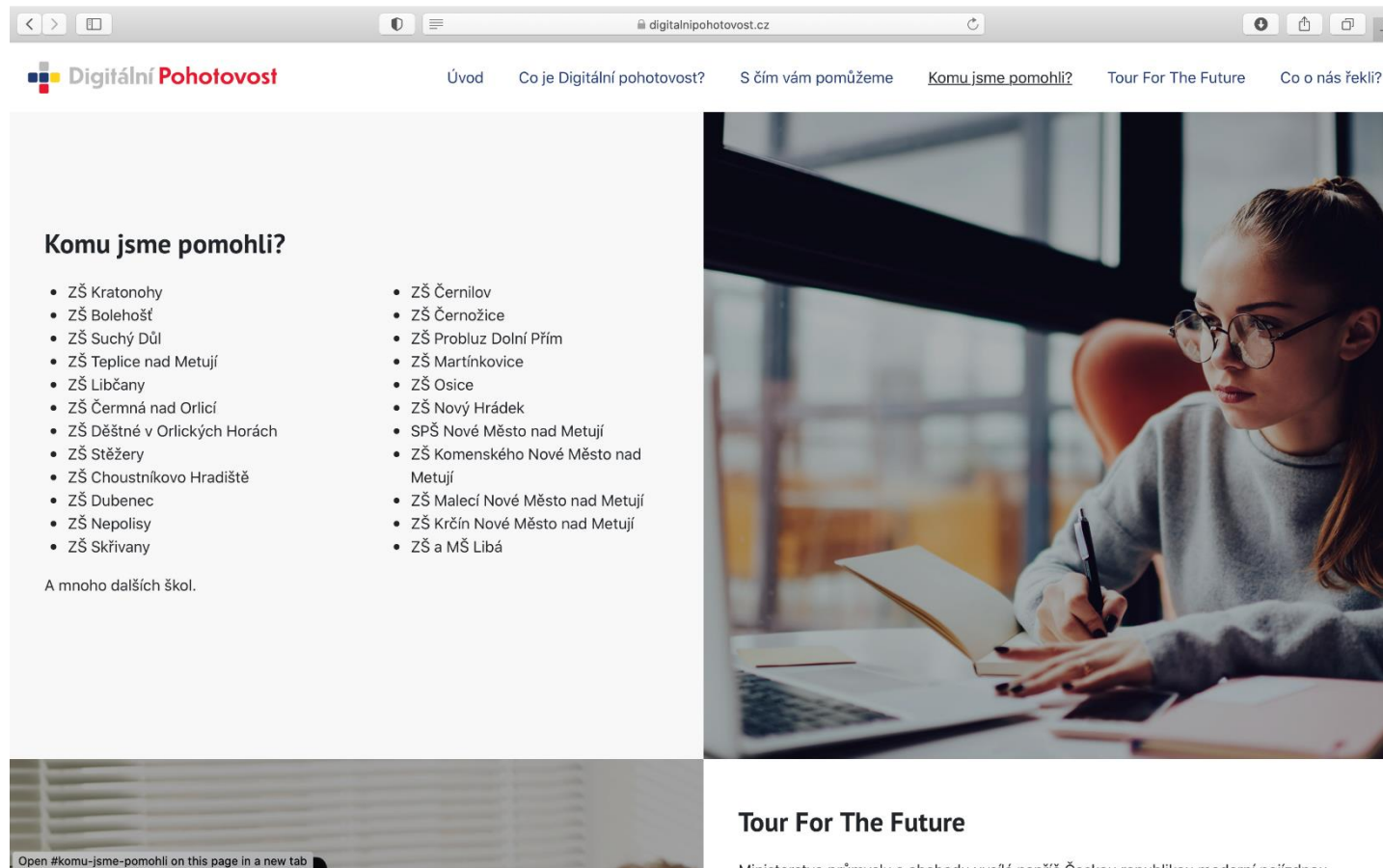


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Digitální Pohotovost

Úvod Co je Digitální pohotovost? S čím vám pomůžeme Komu jsme pomohli? Tour For The Future Co o nás řekli?

Komu jsme pomohli?

- ZŠ Kratonohy
- ZŠ Bolehošť
- ZŠ Suchý Důl
- ZŠ Teplice nad Metují
- ZŠ Libčany
- ZŠ Čermná nad Orlicí
- ZŠ Děštné v Orlických Horách
- ZŠ Stěžery
- ZŠ Choustníkovo Hradiště
- ZŠ Dubenec
- ZŠ Nepolisy
- ZŠ Skřivany
- ZŠ Černilov
- ZŠ Černožice
- ZŠ Probluz Dolní Přím
- ZŠ Martínkovice
- ZŠ Osice
- ZŠ Nový Hrádek
- SPŠ Nové Město nad Metují
- ZŠ Komenského Nové Město nad Metují
- ZŠ Malecí Nové Město nad Metují
- ZŠ Krčín Nové Město nad Metují
- ZŠ a MŠ Libá

A mnoho dalších škol.

Open #komu-jsem-pomohli on this page in a new tab

Tour For The Future

Ministerstvo průmyslu a obchodu vsílá napříč Českou republikou moderní nořizdnou

Lessons learned from COVID-19

Remote learning
– prepared by
teachers

digitalnipohtovost.cz
(digital emergency)



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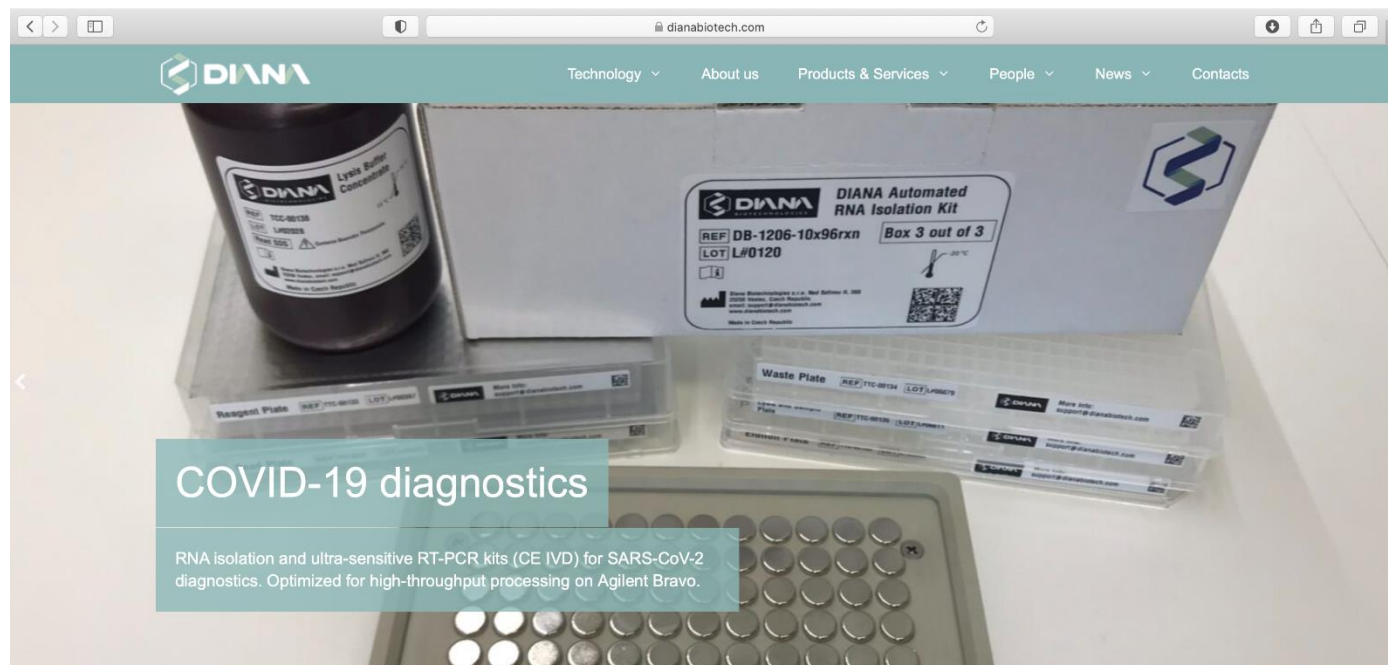


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News: DIANA COVID-19 diagnostic products

DIANA Biotechnologies has developed series of ultra-sensitive diagnostic solutions to fight the COVID-19 epidemic. These are optimized to be run in diagnostic labs in high-throughput format using available open system liquid handler instrument.

Our COVID-19 testing solution has been already installed and running at 4 major diagnostic labs in the Czech republic, including largest private diagnostic center in Prague (where it allowed upscale of throughput from ~150 to ~800 samples per day), major Czech hospital treating infectious

Open #covid on this page in a new tab

Lessons learned from COVID-19

The results of the research
were quickly translated
into practical solutions
by young scientists

COVID-19 diagnostic
method from Diana
Biotechnologies start up



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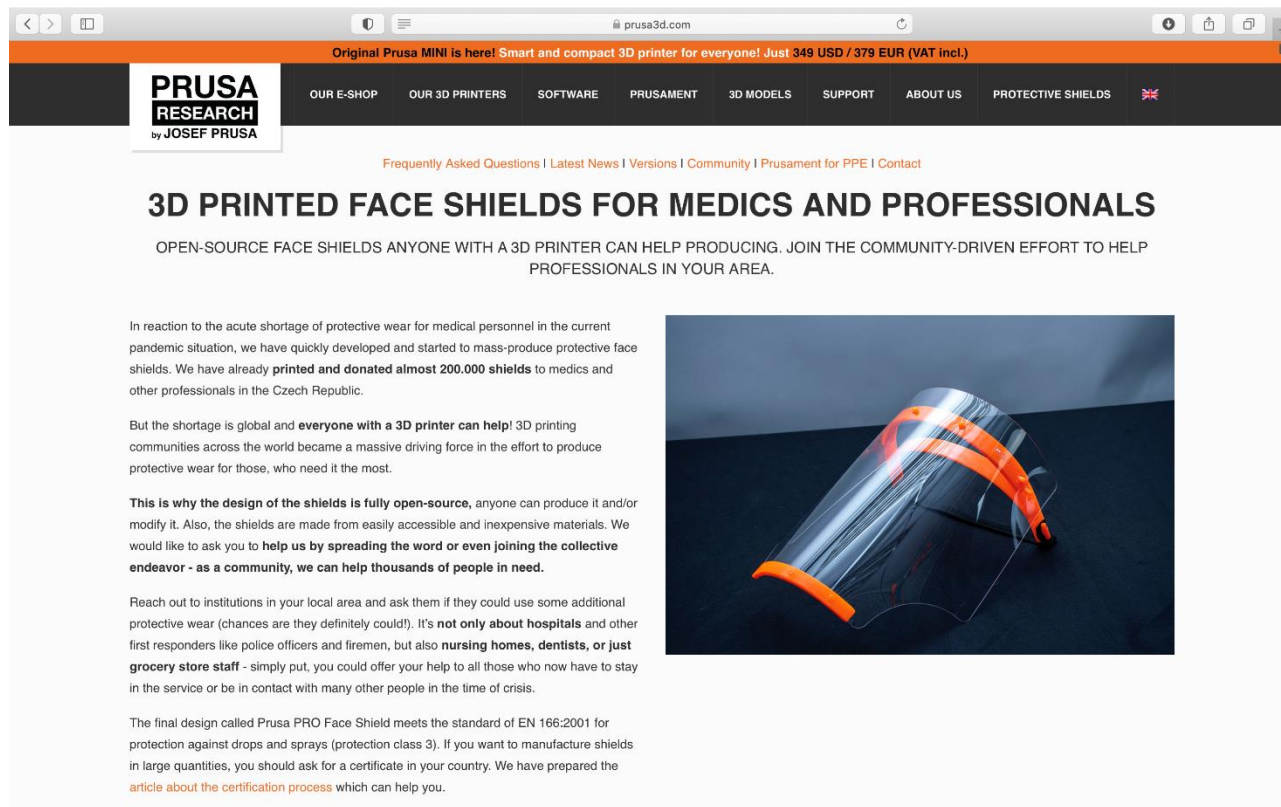


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The screenshot shows the Prusa Research website. The header includes the Prusa Research logo and a navigation menu with links to 'OUR E-SHOP', 'OUR 3D PRINTERS', 'SOFTWARE', 'PRUSAMENT', '3D MODELS', 'SUPPORT', 'ABOUT US', and 'PROTECTIVE SHIELDS'. Below the header, there is a banner for the 'Original Prusa MINI' 3D printer. The main content area features a blog post titled '3D PRINTED FACE SHIELDS FOR MEDICS AND PROFESSIONALS'. The post text describes the development of open-source face shields to address the shortage of protective wear during the COVID-19 pandemic. It mentions that they have already printed and donated almost 200,000 shields. The post also includes a photograph of a 3D printed face shield with orange straps.

Original Prusa MINI is here! Smart and compact 3D printer for everyone! Just 349 USD / 379 EUR (VAT incl.)

PRUSA RESEARCH
by JOSEF PRUSA

[Frequently Asked Questions](#) | [Latest News](#) | [Versions](#) | [Community](#) | [Prusament for PPE](#) | [Contact](#)

3D PRINTED FACE SHIELDS FOR MEDICS AND PROFESSIONALS

OPEN-SOURCE FACE SHIELDS ANYONE WITH A 3D PRINTER CAN HELP PRODUCING. JOIN THE COMMUNITY-DRIVEN EFFORT TO HELP PROFESSIONALS IN YOUR AREA.

In reaction to the acute shortage of protective wear for medical personnel in the current pandemic situation, we have quickly developed and started to mass-produce protective face shields. We have already **printed and donated almost 200.000 shields** to medics and other professionals in the Czech Republic.

But the shortage is global and **everyone with a 3D printer can help!** 3D printing communities across the world became a massive driving force in the effort to produce protective wear for those, who need it the most.

This is why the design of the shields is fully open-source, anyone can produce it and/or modify it. Also, the shields are made from easily accessible and inexpensive materials. We would like to ask you to **help us by spreading the word or even joining the collective endeavor - as a community, we can help thousands of people in need.**

Reach out to institutions in your local area and ask them if they could use some additional protective wear (chances are they definitely could!). It's **not only about hospitals** and other first responders like police officers and firemen, but also **nursing homes, dentists, or just grocery store staff** - simply put, you could offer your help to all those who now have to stay in the service or be in contact with many other people in the time of crisis.

The final design called Prusa PRO Face Shield meets the standard of EN 166:2001 for protection against drops and sprays (protection class 3). If you want to manufacture shields in large quantities, you should ask for a certificate in your country. We have prepared the [article about the certification process](#) which can help you.

Lessons learned from COVID-19

New challenges, new solutions, new businesses

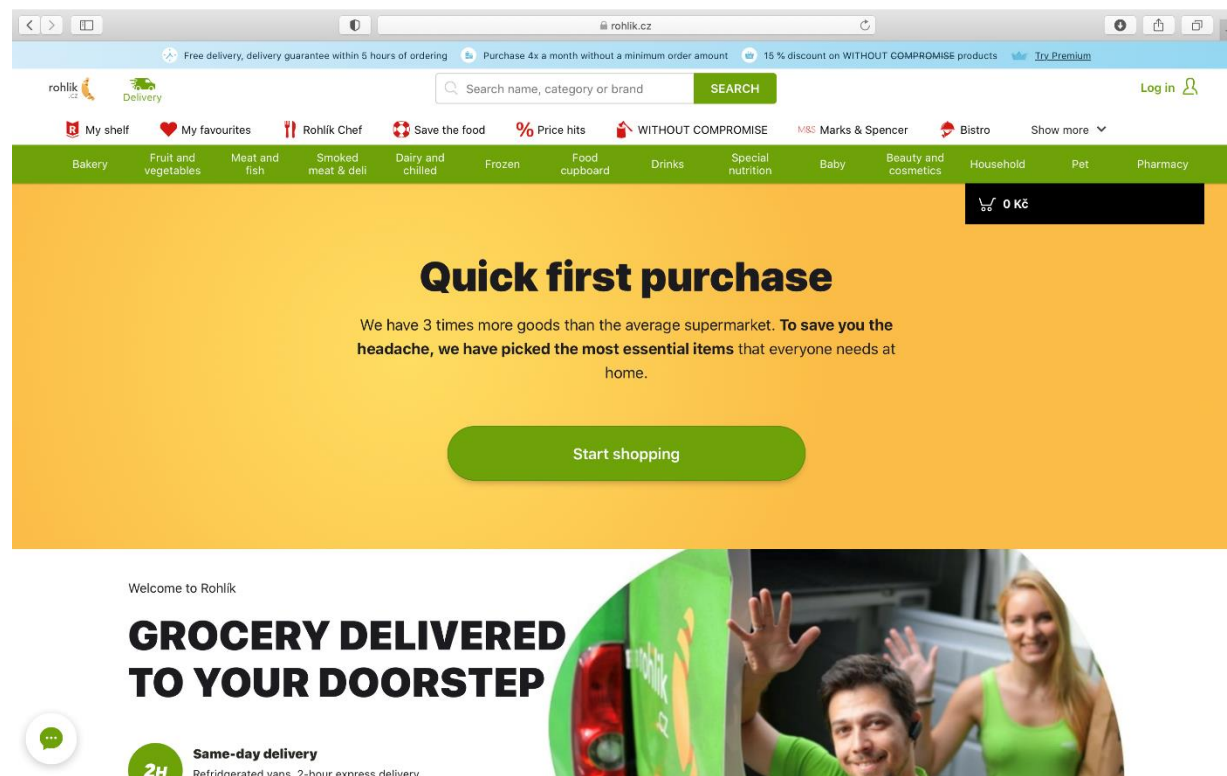
Prusa Research company, 3D printed products

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Lessons learned from COVID-19

Services follow people –
seniors are at home and
shopping is delivered to
them

E-shops as a social
service in the
countryside



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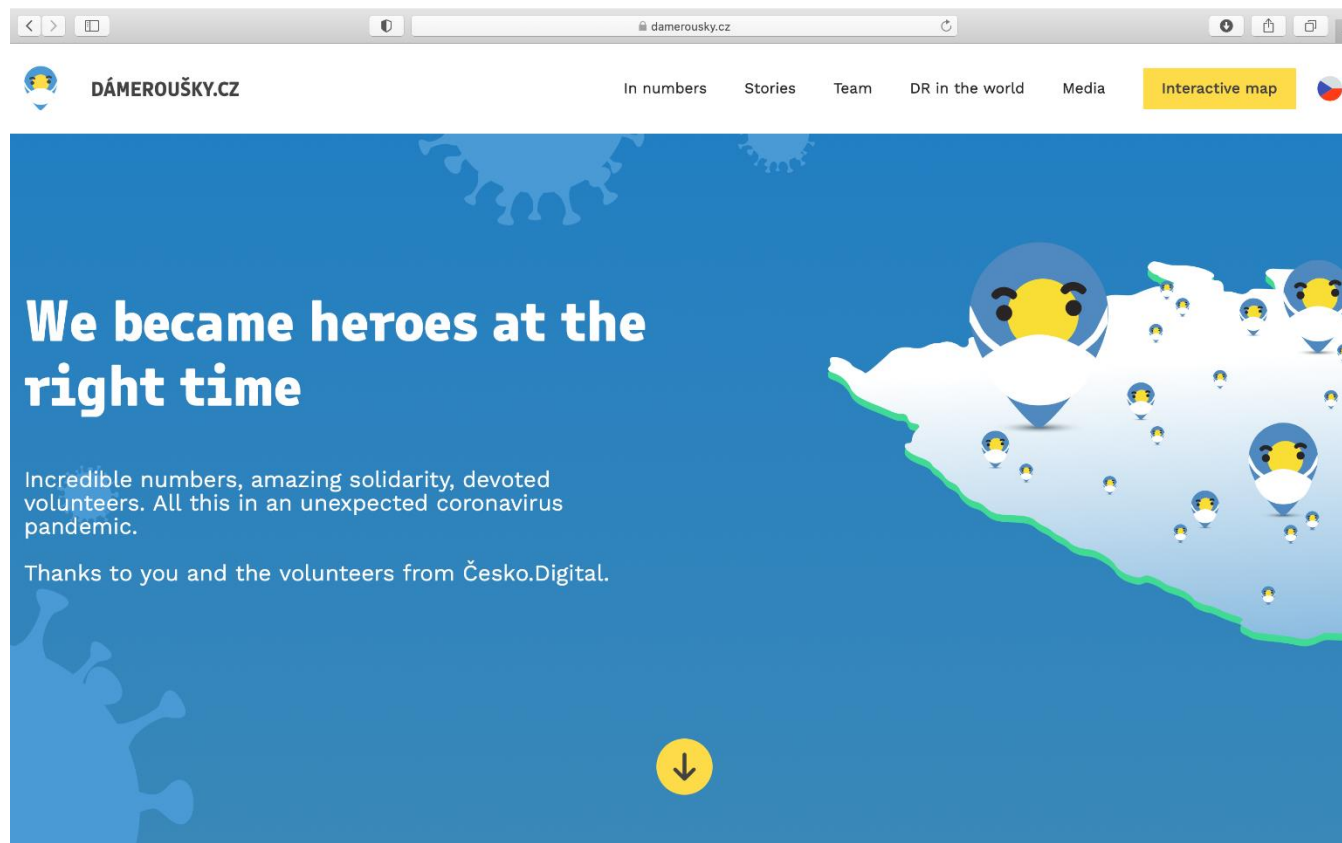


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Lessons learned from COVID-19

The new solutions
created in the CR are used
also in other European
countries

www.damerousky.cz
(we provide veils)



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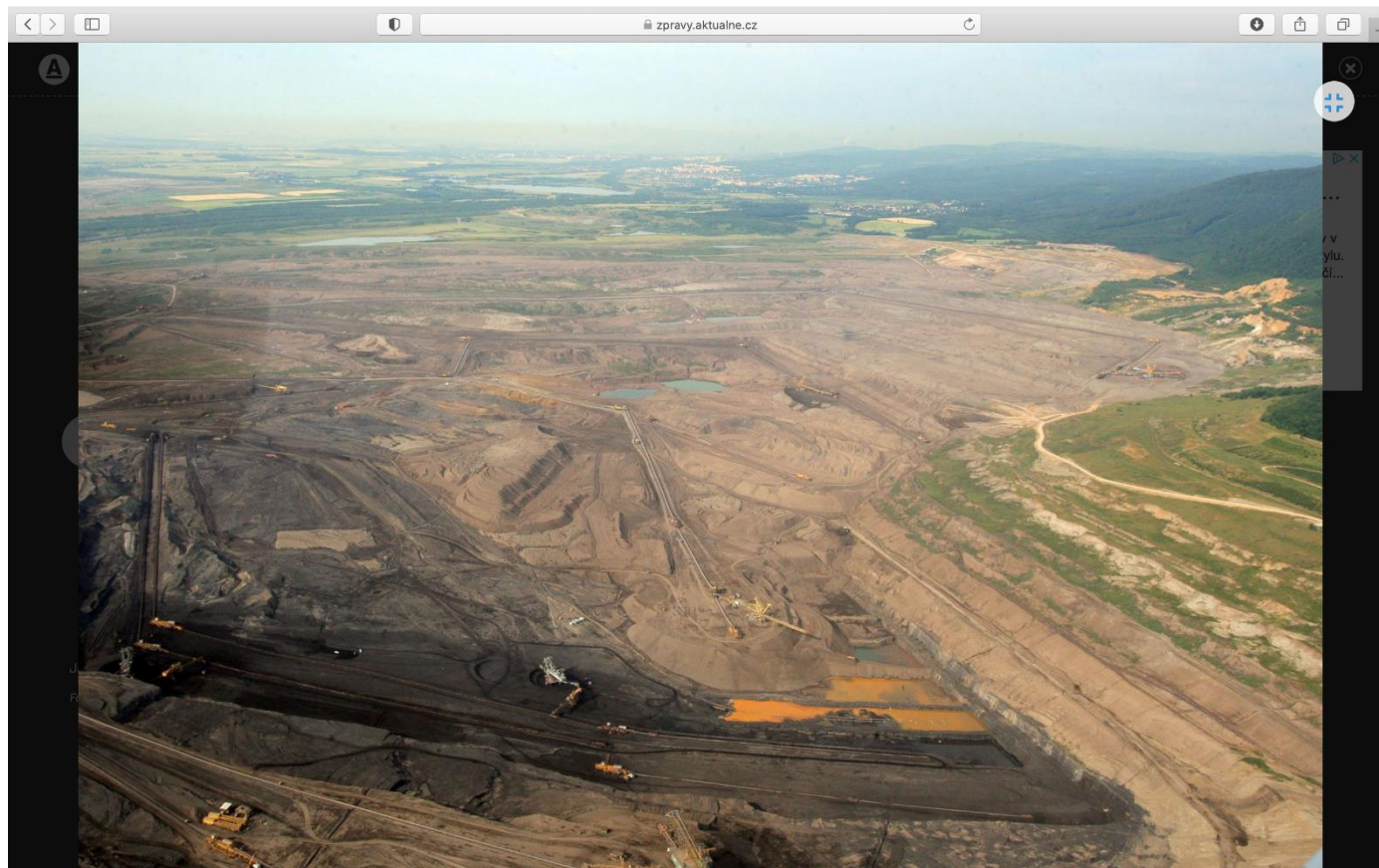


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North Bohemian
region – looking
for new solutions
in coal mining region

How does
the resilient territory
look like?



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“Most Lake” – 2020
reconstruction
of the mining area - what
kind of activities will be
here?

Resilient territory:

- biodiversity
- territorial systems of ecological stability
- services of ecosystems



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Domů

O svazku

O jezeře

Aktuality

Stezky

Projekty

Kontakt



Lake Milada – voluntary union of cities and villages Ústí nad Labem, Chabařovice, Trmice, Řehlovice

- revitalization
- building infrastructure for tourism,
- development of recreation and tourism,
- joint activities in nature and environmental protection, joint promotion of member municipalities and marketing activities



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Resilience is an imperative! – lesson learned from COVID-19

- resilient population– educated people, resilient to “fake news”, creating communities
- resilient economy – based on endogenous Czech companies, esp. digital ones and start ups
- resilient environment, territory and nature – not only floods, but also wind and water erosion, adaptation to climate change – necessity of biodiversity conservation, territorial systems of ecological stability, landscape creation



Thank you

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