

# **'Spotlight 2030'**

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## **BOOK OF ABSTRACTS**



Bucharest  
2020

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PhD. Diana - Camelia IANCU, SNSPA, Bucharest, Romania

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# Business based on smart city open data

Milena YORDANOVA-KRUMOVA

*Technical University of Sofia, Bulgaria*

*E-mail address: mkrumova@tu-sofia.bg*

## **Abstract**

For the last two decades many changes have been made regarding the business models using open data. Smart city generates enormous amount of data and opens many opportunities for business value creation. The paper aims to identify the open data generated by Smart city used for business. The research question is “What are the smart city open data used for business?”. The paper is structured in four sections. The first one analyse the trends of smart city open data, the second one is making an overview of business created based on smart city open data, the 3rd one is analysing the business models. The fourth section is the developing of a matrix of smart city open data usability and barriers for development of business. The paper concludes with the research contributions and the future research steps.

**Keywords:** smart city, open data, business models.

# Governance and e-governance in authoritarian regimes

Assem KALKAMANOVA

*Faculty of Law and Political Sciences, University of Szeged, Szeged, Hungary*

*E-mail address: a.kalkaman@gmail.com, assemk@irsi.u-szeged.hu*

## **Abstract**

This paper focuses on the patterns of governance in authoritarian regimes. Scholars observe that democratic recession started to show its signs since 2006: number of electoral and liberal democracies started to decline and then halted. These trends automatically imply the rise of authoritarianism. Once authoritarian, a regime will experience poor quality of governance regardless of the degree of non-freedom. However, economically rich regimes attempt to invest in improving the quality of governance, particularly e-governance. E-governance and, online services in particular, mean public goods with high public visibility. That's why some strong autocracies put a lot of efforts to develop information and communication technologies and online services. On the one hand, the purpose is to acquire legitimacy. On the other hand, these technologies are developed with the purpose of further surveillance and control like in China, Saudi Arabia. Also, there is a strong opposite correlation between e-government effectiveness and infant mortality under five among nondemocratic regimes. The same tendency is present between e-governance and infant mortality. Using cluster analysis, I attempt to find common patterns in modern authoritarian regimes. This exploratory study sets the stage for further research on the causes of poor governance in authoritarian regimes.

**Keywords:** cluster analysis, autocracy, quality of governance.

# Overview of smart governance: a new approach to Jambi city policy innovation

Rio Yusri MAULANA

*University of Ljubljana, Ljubljana, Slovenia*

*E-mail address: rr3526@student.uni-lj.si*

## **Abstract**

The concept of the smart city established as a solution of the urban complex problem. The goal of the smart city concept is modern urban management using technical tools that offer state-of-the-art technologies, considering the applicable ecological standards while saving resources and achieving the expected results. In line with this, the government needs to build integrated information, communication and technology services. Therefore, the government has legalized a regulation relating to smart city policy. In 2019, Indonesia introduce The Movement Towards 100 Smart Cities as the joint programs implemented by Ministry of Communication and Information, Ministry of Home Affairs, Ministry of Public Works & Housing, National Development Planning Agency and the Presidential Staff Office. The program aims to guide districts / cities in formulating Smart City master plans in order to further maximize the use of technology through digital transformation, both in improving community services and accelerating the potential resources that exists in each local government. Governments need to step up their efforts to fulfil the basic infrastructure needs of citizens, raise more revenue, construct clear regulatory frameworks to mitigate the technological risks involved, develop human capital, ensure digital inclusivity, and promote environmental sustainability. This article use qualitative with descriptive approach to examines the state of smart city development in Indonesian local government especially in the aspect of smart governance that have been implemented through 2017-2020, which includes understanding the conceptualisations, motivations, and unique drivers behind (and barriers to) smart city implementation, which so far contributed to the development of 50 innovation-based applications in the City of Jambi.

**Keywords:** smart governance, public services, digital transformation.

# ”Tale of two smart cities” – Poveste despre două orașe inteligente

Iulia-Maria C. TOADER  
UAUIM, București, România  
E-mail address: arhiuliatoader@yahoo.ro

## Abstract

*Ante-scriptum: Orice salt de dezvoltare sau revoluție în istoria civilizației umane a avut ca preambul o perioadă de căutări și confruntări teoretice, care au fost catalizatoarele respectivelor shift-uri în paradigma istorică. Teoretizarea are rostul ei, și se dorește prin lucrarea de față a se deschide drumul unei adaptări a teoriei de arhitectură la noile concepte legate de modelul smart city. Deasemenea, investigăm predictibilitatea destinului organismului smart city și posibilele direcții de morfogeneză.*

Studiul are la bază revizitarea conceptelor de loc și limită cu noi conotații dezvoltate de tehnologia care are un rol de mediere vizavi de individ și comunități. Prin redefinirea lor, conceptele capătă caracteristici de variabile sau funcții matematice, care pot studia sau genera eficient modele de comportament viitor ale orașelor inteligente, aceste entități teritoriale duale, cu corp și, iată, o inteligență artificială IA (IoT, aplicații, cloud, softuri). Unul dintre aceste modele este teoria catastrofei, care poate prevedea limitele acceptării saturării fenomenologice (în sensul filozofic al lui Jean Luc Marion) de către individ, sau în extremis, de către societate. Vom descrie modul în care poate fi aplicată teoria catastrofei utilizând noțiuni de teoria arhitecturii cuantificate, și modul în care sistemul filozofic al donației descris de Marion poate ajuta la trasarea limitelor existenței orasului inteligent.

Abordarea este de tip teoretic folosind inferența, observația și exemplificarea prin studii de caz. Metodele de cercetare pot fi doar de natură eclectică și interdisciplinară, care să lege teoriile atmosferelor arhitecturale, ale donației din filozofia fenomenologică și ale matematicii aplicate. Metoda traducerii în variabile cuantificabile a valorilor de loc și limită, are la bază încărcarea noțiunii de loc a lui Christian Norbert-Schultz, cu valențe conectate la specificitatea dată de medierea tehnologiei între individ și loc.

Rezultatele sunt modele de comportament de natură bivalentă, filozofico-matematică, pentru a descrie o nouă teorie a arhitecturii, o teorie a locului inteligent. Acest nou tip de loc arhitectural cu setul lui de parametri, este un element nou de studiu, în continuarea studiilor din domeniul arhitecturii și tehnologiei, având ca obiectiv diminuarea riscului și prevenirea pierderilor la hazardurile ce amenință acest oraș inteligent, fie ele antropice sau naturale.

**Cuvinte cheie:** loc inteligent, limita inteligenta, fenomen saturat, teoria catastrofei.

# Performance assessment of public funded school food gardens projects in the Sedibeng District Municipality

Zola Innocentia MANTENTA

*Public Administration, School of Government Studies, Faculty of Humanities, North-West University,  
Vanderbijlpark, South Africa*

*E-mail address: z.i.mantenta@gmail.com*

Loraine Boitumelo MZINI

*Prof., Public Administration, School of Government Studies, Faculty of Humanities, North-West University,  
Vanderbijlpark, South Africa*

*E-mail address: Tumi.Mzini@nwu.ac.za/ tumi.mzini@gmail.com (Corresponding author)*

## **Abstract**

The context of this study focused on school food gardens and performance assessment. School food gardens forms part of the food security programmes initiated by government towards poverty alleviation. Performance assessment forms part of the performance management function in organisations. This research study was aimed at assessing the performance of public funded school food garden projects to determine their relevance and fulfilment of project objectives in Sedibeng District Municipality (SDM). This study is prompted by the poor performance of some public funded community projects aimed to alleviate poverty and the creation of income earning opportunities. Some established projects are discontinued due to lack of participation. This study assesses the performance of school gardens projects in the selected schools. It also analyse the impact of these projects towards improving the lives of the community and for enhancing food security. A qualitative research approach was preferred in this study. A set of questionnaires containing open ended questions were designed and issued to the six selected schools in the SMD respectively to collect data. Literature review was considered to understand the concepts and a content of the study. The article concludes with a set of recommendations for implementing and monitoring performance measures of school gardens.

# Galati – smart city? Desideratum or reality

Manuela PANAITESCU

*Danubius University of Galati, Romania*

*E-mail address: manuelapanaiteescu@univ-danubius.ro*

## **Abstract**

**Objectives** We all want to live in a smart and innovative city. In Galati, a few steps have been taken towards its development and transformation into a Smart City. The purpose of the research is to analyze the steps taken to achieve this goal. The objectives of the article aim at drawing up a SWOT analysis for the city of Galati and the guidelines for medium and long term development strategies. **Prior work** The paper is a continuation of previous research conducted in the field of funding from the European Union and it is based on personal experience as a practitioner in public administration domain, in the management of European funds. **Approach** The chosen research method is case study, which will present some successful projects in Galati, whose implementation contributes to the economic and social development of the municipality. **Results** The study highlights both the results of the projects and the degree of fulfillment of the desideratum of transforming Galati into a Smart City. **The implications** of the study for the local public administration and for the Galati community are to be considered, for practitioners in the sense of using the information from the presented strategies, and also for the inhabitants - awareness of the positive and negative aspects of the city, of potential opportunities. **Value** The paper highlights the current status of Galati compared to other county seat cities in Romania and the desire of its inhabitants to live in a true Smart City.

**Keywords:** project management, development strategy, public administration.

# Smart living in an ageing society - two active and assisted living ICT-based solutions for a better life

Ileana CIOBANU

*Biologist, Researcher, The Rehabilitation Medicine Department, Elias University Hospital, Bucharest, Romania*

*E-mail address: ileanacuk@yahoo.co.uk*

Andreea MARIN

*Clinical Psychologist, The Rehabilitation Medicine Department, Elias University Hospital, Bucharest, Romania*

*E-mail address: andreea.budrica@gmail.com*

Mihaela ZAMFIR

*Lecturer PhD Architect, Synthesis of Architectural Design Department, Faculty of Architecture, Ion Mincu University of Architecture and Urbanism; MMZ- Individual Architecture Studio, Bucharest, Romania*

*E-mail address: mihaela.zamfir@uauim.ro ; mmg\_architecturestudio@yahoo.com*

Mihai ZAMFIR

*Assist. Prof. PhD, MD, Physiology-Neurosciences Division, Faculty of Medicine, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania*

*E-mail address: mihai.zamfir@umfcd.ro ; mihaivzamfir@gmail.com*

Rozeta DRAGHICI

*Scientific Researcher II - Senior Psychologist, "Ana Aslan" National Institute of Gerontology and Geriatrics, Bucharest, Romania*

*E-mail address: rozetadraghici@gmail.com*

Mihai BERTEANU

*Professor in Physical and Rehabilitation Medicine, Carol Davila University of Medicine and Pharmacy, Discipline of Rehabilitation Medicine - Elias University Hospital, Bucharest, Romania*

*E-mail address: mberteanu@gmail.com*

## Abstract

**Objective:** The paper presents two approaches in age-friendly smart technologies, developed to help the elderly to age in place, stay healthier in body and mind and enable them to manage an active and independent life as long as possible. **Prior work:** The authors are part of the multinational multidisciplinary teams developing the two technological solutions: SENSE-GARDEN and CoachMyLife. The teams thoroughly analysed the needs and the limitations of the target population – elderly people with neurocognitive disorders, in order to define the requirements for the new technologies. **Results:** SENSE-GARDEN is a ICT-based system developed to provide the user with reminiscence therapy intervention applying multimodal sensory stimulation. It offers a series of personalized experiences aiming to reconnect the user, through senses, memory and emotions with his own history, his own coherence and motivations, his beloved and reality. The sensors and ICT based system of CoachMyLife offers support, in assist-as-needed manner, for the activities of daily living by providing the user with well-timed reminders and errorless-learning based coaching. It is designed and prepared for testing its functionality and usability with real users as we speak. The target population is people with subjective and objective neurocognitive disorders. **Implications and value:** To reconnect and to actively assist provide to complementary means to enable the elderly, as well, as their communities, to live a better life. SENSE-GARDEN and CoachMyLife, both, can be implemented in real life, as stand-alone or integrated in a smart age-friendly city approach. An individually tailored adaptable approach will offer most benefits, in terms of a better independent life.

**Keywords:** quality of life, interdisciplinarity, age-friendly, active assisted living.

**Acknowledgement:** This work was performed with the support of AAL Programme, co-funded by the European Commission and of the Romanian National Authority for Scientific Research, UEFISCDI, projects SENSE-GARDEN AAL/Call2016 and CoachMyLife AAL/Call2018.

# Să trăim inteligent într-o societate care îmbătrânește – două soluții pentru o viață mai bună (Activă și Asistată) bazate pe TIC

Ileana CIOBANU

*Biolog, Cercetător, Clinica de Recuperare Neurologică a Spitalului Universitar de Urgență Elias, București, România*

*Adresa de e-mail: ileanacuk@yahoo.co.uk*

Andreea MARIN

*Psiholog Clinician, Clinica de Recuperare Neurologică a Spitalului Universitar de Urgență Elias, București, România*

*Adresa de e-mail: andreea.budrica@gmail.com*

Mihaela ZAMFIR

*Șef de Lucrări Dr. Arhitect, Departamentul Sinteza Proiectării de Arhitectură, Facultatea de Arhitectură, Universitatea de Arhitectură și Urbanism Ion Mincu;*

*MMZ- Birou Individual de Arhitectură, București, România*

*Adresă de e-mail: mihaela.zamfir@uauim.ro ; mmg\_architecturestudio@yahoo.com*

Mihai-Viorel ZAMFIR

*Asist. Univ. Dr., Disciplina Fiziologie II-Neuroștiințe, Facultatea de Medicină, Universitatea de Medicină și Farmacie Carol Davila, București, România*

*Adresă de e-mail: mihai.zamfir@umfcd.ro ; mihaivzamfir@gmail.com*

Rozeta DRAGHICI

*Psiholog Clinician, Cercetător Științific II, Institutul Național de Gerontologie și Geriatrie Ana Aslan, Otopeni, România*

*Adresă de e-mail: rozetadraghici@gmail.com*

Mihai BERTEANU

*Profesor Universitar, Universitatea de Medicină și Farmacie Carol Davila, Disciplina Medicina Fizică și de Rehabilitare - Spitalul Universitar de Urgență Elias, București, România*

*Adresă de e-mail: mberteanu@gmail.com*

## Abstract

**Obiectiv:** Lucrarea prezintă două modalități de abordare din domeniul tehnologiilor inteligente prietenoase cu vârstele avansate, tehnologii create pentru a ajuta oamenii să avanseze în vârstă la domiciliu, să rămână sănătoși și să își gestioneze existența în mod activ și independent. **Studii preliminare:** Autorii fac parte din echipele multinaționale pluridisciplinare care dezvoltă două soluții tehnologice: SENSE-GARDEN și CoachMyLife. Echipele au analizat cu minuțiozitate necesitățile și limitările populației țintă – persoanele vârstnice cu tulburări neurocognitive - pentru a defini cerințele noilor tehnologii. **Rezultate:** SENSE-GARDEN este un sistem bazat pe TIC, care furnizează utilizatorului intervenții de terapie prin reamintire, aplicând stimulare senzorială multimodală. Oferă o serie de experiențe personalizate având ca scop reconectarea utilizatorului, prin simțuri, reamintire și emoții, cu propria sa istorie, cu cei dragi și cu realitatea. Sistemul CoachMyLife, bazat pe TIC și senzori, oferă suport pentru activitățile vieții zilnice, furnizând utilizatorului mesaje de reamintire la momentul potrivit și instruire bazată pe învățare fără erori. Populația țintă este reprezentată de persoanele vârstnice cu tulburare neurocognitivă subiectivă sau obiectivă. **Implicații și valoare:** Intervenția pentru reconectare și asistența activă oferă modalități complementare de a ajuta persoanele vârstnice să ducă o viață mai bună. Atât SENSE-GARDEN și CoachMyLife, pot fi implementate în viața reală, atât ca tehnologii și intervenții de sine stătătoare, dar și ca părți integrate într-o abordare de tip oraș inteligent. O abordare adaptabilă, personalizată va oferi cele mai importante beneficii, în termenii unei vieți independente și calitativ superioară.

**Cuvinte cheie:** calitatea vieții, interdisciplinaritate, prietenos cu vârsta, existența activă asistată.

Acknowledgement. Această lucrare s-a realizat cu suportul Programului European Active and Assisted Living - AAL și al Autorității Naționale Române pentru finanțarea activităților de cercetare – dezvoltare, UEFISCDI, proiectele SENSE-GARDEN AAL/Call2016 CoachMyLife AAL/Call2018.

# The Corona Warning App of the German Federal Government – How perceived data protection issues hindered any effectiveness

Robert MÜLLER-TÖRÖK

*University of Public Administration and Finance Ludwigsburg, Germany  
E-mail address: Robert.mueller-toeroek@hs-ludwigsburg.de*

Alexander PROSSER

*University of Economics and Business Administration Vienna, Austria  
E-mail address: alexander.proesser@wu.ac.at*

## Abstract

Since June 17<sup>th</sup>, 2020 the Corona Warn App of the German Federal Government is available for download. After a sharp initial increase downloads stagnate around a total of 18 million, which is roughly one fifth of the population. Whether everyone who downloaded it actually uses it, is questionable.

**Objectives:** We want to show that the underlying concept of the app is misguided, even if each inhabitant with a smartphone downloads and uses it,<sup>1</sup> it would cover barely half of each encounter where COVID-19 could actually be transmitted. In the current situation it covers about 4% of all social encounters at best. Also, we discuss the underlying cryptographic framework of the app and its limitations. This underlying framework is not specific to the German app, but a general framework provided by Google and Apple.

**Approach:** We use statistical methods to show that, even in the very best case with a perfectly working app the coverage would have been roughly half of all relevant encounters (i) and that the voluntarily usage of this app as well as the free decision of the infected individual to publish its (anonymized) data to warn others de facto reduces any effectiveness to zero (ii). In addition, we show that due to the design of the app there is a likely limit where the app will not be able to warn its users for mathematical and cryptographical reasons (iii).

**Results:** We demonstrate by statistical means that this app could never have achieved its declared objectives and why similar apps neither would work, let aside probably the “Trace Together” initiative of Singapore, which is based on a combination of an app plus physical tokens for those who do not own nor use smartphones (<https://www.tracetgether.gov.sg/>)

**Implications:** We show that such apps are not a solution for the problem, rather an obstacle to a real solution, because they keep their (few) users in a belief of safety which is obviously wrong, based on real figures.

**Value:** The paper contributes to transparency of government action during the COVID-19 pandemy. We show that other ways of contact tracing, e.g. those pursued in South Korea and Singapore are far more effective than the German solution.

**Keywords:** COVID-19, contract tracing, bluetooth.

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<sup>1</sup> According to official statistics 57.7 million inhabitants of Germany use a Smartphone, which is 70 %, 0.7 times 0.7 is 0.49. Source: <https://de.statista.com/statistik/daten/studie/198959/umfrage/anzahl-der-smartphonenuutzer-in-deutschland-seit-2010/> (as per 12 October 2020).

# Activities of public administration institutions in Poland in the times of COVID'19 – social media analysis

Jacek MAŚLANKOWSKI

*University of Gdańsk, Gdańsk, Poland*

*E-mail address: jacek.maslankowski@ug.edu.pl*

Patrycja KRAUZE-MAŚLANKOWSKA

*University of Gdańsk, Gdańsk, Poland*

*E-mail address: patrycja.krauze-maslankowska@ug.edu.pl*

## **Abstract**

The goal of this paper is to detect the scale of the use of social media by public administration institutions in Poland to inform citizens about its activities in the pandemic era. The article analyzes selected cases where social media was used to inform about changes in the current services of public administration in the times of COVID'19. Among others, we analysed the degree of the use of social media and the type of information posted. The research is based on the Big Data approach, i.e. data from social media was retrieved and then, using text mining, information on Covid'19 was analyzed to detect the purpose of the use of social media. For instance, it was used to update information about the cases or to inform on the specific rules regarding the office functioning. We have also used unsupervised machine learning to identify different clusters of tweets. It allows us formulating the main conclusion on the topics discussed within the social media profiles used by public administration. Data was mostly collected from Twitter accounts in Poland. It includes city halls, cultural institutions, ministries and others. Our original research shows that social media was widely used by public institutions to inform citizens about cases in the office (e.g., we are closed due to coronavirus cases within the office) and to update about changes in activities (e.g. selected services are available online only). Selected public institutions used the social media to inform on the scale of coronavirus in the region. This type of information was based on the official information from the Ministry of Health.

**Keywords:** big data, twitter, e-government.

# Smart dwellings

## Architectural perspectives opened by COVID-19 pandemic

Mihaela ZAMFIR

*Lecturer PhD Architect, Synthesis of Architectural Design Department, Faculty of Architecture, Ion Mincu University of Architecture and Urbanism; MMZ- Individual Architecture Studio, Bucharest, Romania  
E-mail address: mihaela.zamfir@uauim.ro; mmg\_architecturestudio@yahoo.com*

Ileana CIOBANU

*Scientific Researcher III, PhD Biol., Department of Neuro-Rehabilitation, „Elias” University Emergency Hospital, Bucharest, Romania  
E-mail address: ileanacuk@yahoo.co.uk*

Andreea GEORGIANA MARIN

*Cl. Psych. PhD, Department of Neuro-Rehabilitation, „Elias” University Emergency Hospital, Bucharest, Romania  
E-mail address: andreea.budrica@gmail.com*

Mihai-Viorel ZAMFIR

*Assist. Prof. PhD, MD, Physiology-Neurosciences Division, Faculty of Medicine, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania  
E-mail address: mihai.zamfir@umfcd.ro; mihaivzamfir@gmail.com*

### Abstract

**Preamble:** The pandemic with COVID-19 that we have been experiencing globally for 9 months now brings continuous challenges on many levels, the built environment being an important one. Social distancing has meant that during this period housing has been requested differently, at first as a shelter, now as a space in which we have to work or learn. **Objectives:** The research aims to identify dwellings parameters that need reconsideration from the pandemic experience with COVID-19, how they can be adjusted to meet safety and comfort requirements to ultimately maintain well-being. **Prior work:** The paper investigates the latest written documents on the influence of the pandemic with COVID-19 on the built environment, including published articles, peer-reviewed articles, digital blog posts, expert opinions. **Approach:** The research is of systematic review type and interdisciplinary investigation of the specialized literature but at the same time it is also a reflection of the personal experience of the authors. The following parameters of the home are analyzed: surfaces, dimensions, functions, finishes, accesses, lighting, relationship with the outdoor. **Results:** Health, safety and comfort are 3 aspects that were tested during the quarantine period and are essential when we talk about housing and pandemic dwellings. It is estimated that there will be changes in the design of new homes, collective and individual. Homes will need versatility, more generous spaces, functional expansions so as to cover both living areas and work or learning areas. There is talk of a living architecture but at the same time of touchless technology. The post-pandemic COVID-19 architecture will emphasize the user's well-being, but with much more emphasis on safety issues. **Implications:** The challenges of the pandemic will influence the design process with possible changes in regulations, with an impact on architects, verification requirements, contractors but also costs for the beneficiary. The architecture of post-pandemic housing will be an interdisciplinary collaboration between architect and specialists such as medical doctor, biologist, psychologist, engineers. **Value:** The paper highlights the importance of the need for an interdisciplinary approach in the design of housing, a new aspect catalyzed by the pandemic with COVID-19.

**Keywords:** COVID-19 pandemic, architecture, dwelling, social distancing, interdisciplinarity.

# Locuințe inteligente.

## Perspective arhitecturale deschise de pandemia cu COVID-19

Mihaela ZAMFIR

*Șef de Lucrări Dr. Arhitect, Departamentul Sinteza Proiectării de Arhitectură, Facultatea de Arhitectură, Universitatea de Arhitectură și Urbanism Ion Mincu; MMZ- Birou Individual de Arhitectură, București, România*

*Adresă de e-mail: mihaela.zamfir@uauim.ro ; mmg\_architecturestudio@yahoo.com*

Ileana CIOBANU

*Cercetător științific III, Dr. Biol., Departamentul de Neuro-Reabilitare, Spitalul Universitar de Urgență „Elias”, București, România*

*Adresă de e-mail: ileanacuk@yahoo.co.uk*

Andreea Georgiana MARIN

*Psih. Cl. Dr., Departamentul de Neuro-Reabilitare, Spitalul Universitar de Urgență „Elias”, București, România*

*Adresă de e-mail: andreea.budrica@gmail.com*

Mihai-Viorel ZAMFIR

*Asist. Univ. Dr., Disciplina Fiziologie II-Neuroștiințe, Facultatea de Medicină, Universitatea de Medicină și Farmacie Carol Davila, București, România*

*Adresă de e-mail: mihai.zamfir@umfcd.ro ; mihaivzamfir@uauim.ro*

### Abstract

**Preambul:** Pandemia cu COVID-19 pe care o experimentăm la nivel global deja de 9 luni aduce provocări continue pe foarte multe paliere, mediul construit fiind unul important. Distanțarea socială a făcut ca în această perioadă locuințele să fie solicitate diferit, la început ca adăpost, în prezent ca spațiu în care trebuie să lucrăm sau să învățăm. **Obiective:** Cercetarea urmărește să identifice parametrii locuințelor care necesită reconsiderare din experiența pandemiei cu COVID-19, modul în care aceștia pot fi ajustați ca să răspundă exigențelor legate de siguranță și confort pentru păstrarea până la urmă a unei stări de bine.

**Studii prealabile:** Lucrarea investighează cele mai recente documente scrise pe tema influenței pandemiei cu COVID-19 asupra mediului construit, incluzând articole publicate, articole evaluate, postări digitale pe blog-uri, opinii ale experților. **Abordare:** Cercetarea este de tip *review* sistematic și investighează interdisciplinar literatura de specialitate dar în același timp este și o reflecție a experienței personale a autorilor. Sunt analizați următorii parametri ai locuinței: suprafețe, dimensiuni, funcțiuni, finisaje, accesuri, iluminat, relația cu exteriorul. **Rezultate:** Sănătatea, siguranța și confortul sunt 3 aspecte care au fost testate pe perioada carantinei și sunt esențiale atunci când vorbim despre locuințe și locuire în perioada de pandemie. Se estimează că vor apărea schimbări în proiectarea noilor locuințe, colective și individuale. Locuințele vor avea nevoie de versatilitate, de spații mai generoase, de expansiuni funcționale, atât zone de locuire cât și zone de lucru sau învățat. Se vorbește despre o arhitectură care trăiește dar în același timp și de tehnologie *touchless*. Arhitectura post-pandemică COVID-19 va pune accent pe starea de bine a utilizatorului insistând însă mult mai mult pe aspectele legate de siguranță. **Implicații:** Provocările pandemiei vor influența procesul de proiectare cu posibile schimbări în normative, cu impact asupra arhitecților, antreprenorilor, exigențelor de verificare dar și a costurilor pentru beneficiar. Arhitectura locuirii în post-pandemie va fi o conlucrare interdisciplinară între arhitect și specialiști precum medic, biolog, psiholog, ingineri. **Valoare:** Lucrarea evidențiază importanța necesității unei abordări interdisciplinare în cazul proiectării de locuințe, un aspect nou catalizat de pandemia cu COVID-19.

**Cuvinte cheie:** pandemia COVID-19, arhitectură, locuire, distanțare socială, interdisciplinaritate.

# Smart redevelopment of slums prevent epidemics

Amitava BASU

*Member, Governing Council, Centre for Environmental Management & Participatory Development  
New Delhi, India*

## **Abstract**

**Objectives:** Novel corona virus pandemic has placed the slum dwellers at high risk.. This necessitates re-development of slums. This paper discusses the priority for slum can be re-development under Smart City Program, and the way forward in India. **Prior Work:** A study was carried out on early lessons from public administration measures to address the corona pandemic in India. This paper is based on a research following the earlier study. **Approach:** The process involved –

- Study and analyze health survey reports of various municipalities;
- Sample field surveys;
- Discussions with limited number of municipal officials; and
- Comparative analysis of other similar studies.

**Results:** Slums are characterized by congested space, lack of adequate water supply, unhygienic sanitation conditions. Almost 8 to 10 persons live in a cramped space. Majority of the slum dwellers are daily wage earners and poor. Congested space and insufficient water do not allow social distancing and hand wash, which are essential to fight novel corona virus infection. Further, exposure outside home for daily earning makes the slum dwellers vulnerable to corona infection. Dharavi slum of Mumbai metropolitan in India, and some of the informal settlements of New York are unique examples. To address the present pandemic and improve the quality of life of the slum residents, re-development of slums and local economic development assume significance. It calls for re-oriented approach in urban planning, infrastructure development and creation of local employment opportunities under Smart City program.

## **Implications**

- Urban planners need to research for effective redevelopment of slums, and
- Practitioners are familiarized with the urgent need to improve slums and are provided with options to re-orient area-based development as part of Smart City.

**Value:** The study findings are relevant for most developing countries. It provides a way forward in redefine the priorities of “Smart Cities”.

**Keywords:** pandemic, slum, social distancing, hand-wash, smart city program.

# Adapting fiscal policies for the Covid 19 pandemic. Setting up a fiscal system appropriate for the digital world

Lilian ONESCU

*General Secretariat of the Government, Bucharest, Romania  
E-mail address: onescul@yahoo.com*

Daniela FLORESCU

*National Agency for Fiscal Administration, Bucharest, Romania  
E-mail address: danaflorescu70@gmail.com*

## **Abstract**

In the current context generated by the Covid 19 pandemic, Member States need secure tax revenues to invest in people and businesses affected by the health crisis. At the same time, we need to remove the tax barriers and make it easier for EU businesses to innovate, invest and grow. To achieve this, in July 2020, the EU Commission adopted the Action Plan, which includes measures to reduce the administrative burdens, improve tax compliance and combat fraud. Action plan who helping to make creating a fairer, easier tax system to be used and more adapted to our digital world. In case of this article there were used tools like as: classification, synthesis, comparative analysis, induction and deduction methods, graphic representation of events and investigated phenomenons. The article is addressed to the university and the academic world, as well as to fiscal administration officials and to the decision-making factors for correcting inequalities, created by the Covid 19 pandemic.

**Keywords:** digital world, reduce the administrative burdens, tax system.

# Adaptarea politicilor fiscale la Pandemia Covid 19. Crearea unui sistem fiscal adaptat la lumea digitală

Lilian ONESCU

*Secretariatul General al Guvernului, București, România  
E-mail address: onescul@yahoo.com*

Daniela FLORESCU

*Agenția Națională de Administrare Fiscală, București, România  
E-mail address: danaflorescu70@gmail.com*

## **Abstract**

În actualul context generat de Pandemia Covid 19, statele membre au nevoie de venituri fiscale sigure pentru a investi în oamenii și întreprinderile afectate de criza sanitară. În același timp, trebuie eliminate obstacolele fiscale și stimulate întreprinderile din UE să inoveze, să investească și să se dezvolte. Având în vedere cele de mai sus, în iulie 2020, CE a adoptat Planul de acțiune, ce cuprine măsuri în vederea reducerii sarcinii administrative, a îmbunătățirii gradului de conformare fiscală și combaterii evaziunii fiscale. Plan de acțiune care vizează crearea unui sistem de impozitare mai echitabil, mai ușor de utilizat și mai adaptat la lumea noastră digitală. În cadrul articolului au fost utilizate instrumente specifice precum: clasificarea, sinteza, analiza comparativă, metodele inducției și deducției, reprezentarea grafică a evenimentelor și fenomenelor investigate. Articolul se adresează deopotrivă mediului universitar, celui academic, cât mai ales reprezentanților administrației fiscal și factorilor cu putere de decizie în corectarea inegalităților create de Pandemia Covid 19.

**Cuvinte cheie:** lumea digitală, reducerea sarcinii administrative, sistem de impozitare.

# The effect of adding corporate environmental reports in the annual financial reports on corporate governance and sustainable development of companies in Jordan

Mamoun Walid ARIDAH

*Ph.D. Student Accounting/Academy of Economic Studies of Bucharest (ASE), Aqaba, Jordan*  
*E-mail address: aridahmamoun19@stud.ase.ro*

Ghanim Ahmed KAMIL

*Ph.D. Student Management/Academy of Economic Studies of Bucharest (ASE), MOSUL, IRAQ*  
*E-mail address: kamilghanim18@stud.ase.ro*

Areej Ahmad HAMAD

*MBA, Jordan University, Amman, Jordan*  
*E-mail address: areej.hamad@ju.edu.jo*

## **Abstract**

During the last two decades of the last century, the pressures demanding companies to take responsibility for all stakeholders increased, and they demanded to disclose the effects of operations they carry out on the environment, employees, and society, and these pressures were in two directions, first being internal to adopt technologies aimed at reducing waste costs which improving the image of the company locally and globally, that will classify it as a (green company), and on the other hand pressures it was external by increasing the environmental audit process, this led companies to think seriously about improving their environmental and economic performance to preserve the environment, and then support sustainable development.

The definition of sustainability has become widespread and can be applied locally and globally level, and over different periods and this requires a massive team effort. Also, sustainable development takes multiple patterns, starting with reorganization of living conditions (such as environmental villages, environmental towns, and sustainable cities), reassessment of economic sectors (perennial agriculture, green buildings, and sustainable agriculture), or business practices (sustainable architecture), and that Using of science to develop new technology (environmental technology, renewable energy), with modifications to individual lifestyles that conserve natural resources. Achieving sustainable development requires reconciling social, environmental, and economic demands, which are the “three pillars” of sustainability (Social, environmental, and economic demands).

This paper aims to review the impact of adding environmental Corporate Reports in the Annual Financial Reports on Corporate Governance and Sustainable Development in Jordanian companies and a reflection of this on the obligations of companies to achieve sustainable development and its corporate governance.

We expected that we would find weak interest from various companies in environmental reports which effect on achieving sustainable development, with greater attention to the economic aspects because they are reflected in the financial capacity of companies, and increase their revenues and continuity, but the Jordanian government continues to pressure companies by adopting many laws to include environmental reports of companies as an appendix with annual financial reports of Jordanian companies.

**Keywords:** corporate culture, environmental accounts and accounting, auditing, government policy.

Jel: M14, Q56, M42, Q58

# Improving risk management in (SMEs) insurance companies and adapting them to the Corona crisis

Hasan MAKKAWI

*Ph.D. Student Business Administration (The Academy of Economic Studies of Bucharest) Bethlehem, Palestine.*

*E-mail address: hasan.makkawi93@gmail.com*

Mamoun Walid ARIDAH

*Ph.D. Student Accounting/Academy of Economic Studies of Bucharest (ASE), Aqaba, Jordan*

*E-mail address: mamounaridah2004@yahoo.com*

## **Abstract**

The organizations' interest is to avoid the failure and collapse by keeping up with technological. Improving risk management is important for insurance companies (SMEs) because it improves technology recognition, measurement, and risk handling, even with the continuous development in technology, risk management has become a state of uncertainty that we can measure through knowing the potential losses and gains, trying to reduce losses and trying to increase the gains, Which leads to more adaptation to technological development. Through "The Impact of Uncertainty on Objectives" that illustrates the lack of future information (Borghesi, and, Gaudenzi, 2013).

Note that (SMEs) insurers face many risks as the continued survival of small enterprises with low financial and non-financial resources are highly vulnerable to threats (Adina, et al., 2020).

The use of a scientifically descriptive-analytical approach shows how insurance companies (SMEs) deal with the threat of the Coronavirus and how their risk management has evolved to confront Virus Corona using technology.

The results show a statistically significant relationship, whether between risk management and keeping pace with technological development or between applying risk management steps. The results are expected to help increase the (SMEs) insurance companies' knowledge of the concepts of risk, risk management, and insurance industries, and increase business performance, evaluate and discuss the concepts and steps of risk management and link them to the practical results of the sector.

The conclusion is that applying risk management steps and keeping pace with technological development reduces all risks, helps the institution to sustain itself, and helps the economy to develop.

**Keywords:** risk management, insurance industries, New Firms • Startups.

Jel: G32, G22, M13.

# Production of surface agents for limiting the growth of bacteria and fungi based on silver nano and microparticles made by electrochemical methods on an industrial scale

Bartosz STEMPSKI

*Nanotec Sp. z o.o. Affiliation, Toruń, Poland*  
*E-mail address: bartosz.stempski@globedata.pl*

Grzegorz GRODZICKI

*Nanotec Sp. z o.o. Affiliation, Toruń, Poland*  
*E-mail address: grzegorz.grodzicki@globedata.pl*

## **Abstract**

The article presents the basics of a new technology for the production of surface agents for limiting the growth of bacteria and fungi based on silver nano and microparticles made by electrochemical methods on an industrial scale, developed on the basis of the results of industrial research and development works. There is a growing interest in the use of nano and micromaterials in various fields of the economy, including cosmetology, arable and livestock agriculture, and medicine. Silver is a biologically active element that strongly limits the growth of bacteria, fungi and even viruses. In the case of water colloids produced by electrochemical methods on an industrial scale, the processes accompanying the reactions are not controlled with an appropriate level of accuracy. The authors developed methods to automatically control these processes for the first time based on the optical properties of water colloids. As a result of the project, theoretical foundations for control systems as well as functional diagrams along with appropriate program codes were developed. The technology was tested in the production line of water molecular silver colloids used in cosmetics such as creams, mists, cosmetic waters and serums. Thanks to it, the stability of the reaction and the quality of the manufactured intermediates were increased. The technology will also be applicable to silver colloids intended for agriculture and other industries.

**Keywords:** silver, nanomolecules, micromolecules, bacteria, fungi.

# The immersive technologies: how VR is going to disrupt the digital media and online communication sphere?

Lukasz PORWOL

Insight Centre for Data Analytics, NUI Galway, Ireland

*E-mail address: lukasz.porwol@insight-centre.org*

## **Abstract**

The Immersive Technologies that have been debated since 20<sup>th</sup> century, in the last decade, became a reality. In particular the major investments by large tech players such as Microsoft or Facebook who acquired the next-gen VR hardware pioneer – Oculus, led to proliferation of affordable, consumer devices that are said to already mainstream the immersive technologies in many domains. Virtual Reality headsets are making their way into plethora of training, education business and government use-cases.

To the date, majority of revenue in the domain is generated largely by entertainment applications of VR, especially gaming. Another convergent scenario for VR emerging is digital storytelling and immersive, interactive media releases such as 360 degree and spherical videos and live-streaming offering unparallel level of immersion, presence and character-empathy. However, it is Social VR solutions that are expected to disrupt digital online communications. In this context Facebook is currently testing their Horizon platform. Microsoft through targeted acquisition of AltspaceVR in 2016 also continues to improve on their cross-platform Social VR offering, marketing it as a new virtual event platform of choice. The arrival of VR to homes and offices brings many opportunities as well as challenges that are subject to prominent debates.

Our article will present a snapshot of research carried under COMPACT project funded by EC, Horizon 2020 program, with specific results on emergent Immersive Technologies in the context of media convergence. In particular our work draws from investigation of the Next Generation Internet related standards, recommendations and stakeholder's initiatives. Also, we will present valuable insights and opinions coming from international experts and stakeholders speaking at COMPACT European Immersive Technologies Symposium in October 2020. We will share our experiences in running a European event hosted using Immersive Virtual Reality and provide in-depth analysis of the field of convergent immersive media and serious online communication from both the technology and societal impact perspective.

**Keywords:** virtual reality, smart society, smart technology, online communications, internet standards, next generation internet.

# Soluții inteligente de iluminat de siguranță și de urgență în situații de dezastru

Monica-Mihaela FRANGULEA

arh., București, Romania

E-mail address: [monica\\_frangulea@yahoo.com](mailto:monica_frangulea@yahoo.com) / [www.monicaarchitectural.com](http://www.monicaarchitectural.com)

## Abstract

Riscul la hazard (dezastru) al societății contemporane este un element independent de ritmul dezvoltării tehnologice, sociale sau economice a acesteia. Hazardurile naturale (seismice, hidrologice, de climă, etc.) cât și cele antropice (explozie, incendiu, atac terorist, etc.), sau mixte nu pot fi controlate, de multe ori nu pot fi prevăzute dinainte de a se produce și de multe multe ori ele nu pot fi oprite.

Reducerea pierderilor de vieți omenești în situația producerii unui dezastru de orice tip este elementul central pe care trebuie să ne axăm în contextul planificării inteligente a măsurilor ce trebuiesc luate pentru a crea un grad de reziliență ridicată.

Căderea curentului electric în rețelele urbane este un fenomen ce se produce frecvent în caz de hazard : eveniment seismic, inundație, incendiu, uragan, tsunami și în multe alte tipuri de dezastre.

**Studiu de caz:** fenomenul “frozen rain” care a afectat orașul Toronto în 2013, având ca rezultat întreruperea furnizării cu energie electrică pentru cca. 300.000 consumatori pe o perioadă de câteva zile (1\*).

**Problema ridicată:** numeroase spații de subsol și alte zone de evacuare fără lumină naturală din multiple clădiri high-rise au rămas în întuneric deplin datorită întreruperii alimentării cu curent electric sau a eșecului sistemelor de iluminat de siguranță pe perioade îndelungate, periclitând evacuarea persoanelor aflate în acele spații.

S-a pus atunci problema găsirii unor soluții noi. Cum putem semnaliza prin elemente luminoase căile de evacuare din spațiile închise întunecoase și cum putem semnaliza de asemeni elementele din structura clădirii care trebuiesc ocolite pe parcursul evacuării (stâlpi de susținere, pereți) sau trebuiesc parcurse într-o anumită direcție (scări, rampe de acces) ?

Soluții tehnologice pentru acest impas există, fiind folosite însă în alte aplicații, din domeniul decorațiilor interioare și a iluminatului decorativ de spectacol : elemente fosforescente și gadget-uri de tip light-sticks (tuburi de lumină chimică).

Vom analiza cum și dacă putem implementa aceste tehnologii la o scară largă în proiectarea modalităților de semnalizare luminoasă a căilor de acces și evacuare ale clădirilor și spațiilor închise.

Exemplu de caz, proiect (Toronto - Arc Condominiums) - utilizarea inovativă a mozaicului fosforescent pentru soluționarea problemei discutate.

1\* *"Ice storm: Toronto Hydro CEO promises power within hours to remaining customers | Toronto Star"*. Thestar.com. 29 December 2013. Retrieved 23 February 2014.

**Cuvinte cheie:** semnalizare luminoasă, semnalizare traseu evacuare, iluminat de siguranță.

# Technology of auscultatory data analysis obtained in a non-invasive home examination of the fetal heart rate in the prevention of prenatal diseases and defects

Piotr MATUSZAK

*Goldcitadel Sp. z o.o., Toruń, Poland  
E-mail address: piotr.matuszak@globedata.pl*

Bartosz STEMPSKI

*Goldcitadel Sp. z o.o., Toruń, Poland  
E-mail address: bartosz.stempski@globedata.pl*

## **Abstract**

According to estimates, there are approximately 2.6 million miscarriages worldwide each year, 1.3 million of which can be effectively prevented. This was confirmed by The Lancet, publishing data on nearly 3 million miscarriages worldwide each year. The key fact is that 98% of miscarriages occur in low- and middle-income countries where professional fetal health care is not as good as in high-income countries, is difficult to access, or even absent. In high-income countries, the number of miscarriages is also relatively high, amounting to approximately 60,000 cases per year. Importantly, most cases related to miscarriages and other complications during pregnancy and childbirth could have been avoided if the staff operating such complex devices as professional CTGs were better trained. Nevertheless, as recent studies show, there is no evidence that the complex and advanced, and therefore difficult and expensive to apply CTG methodology gives better results than the non-invasive auscultation method in the case of cerebral palsy or stillbirths or the overall assessment of the health of the fetus in women who are at low risk of prenatal disease and complications. However, as shown by scientific research, the CTG method caused an increase in unnecessary cesarean sections and instrumental vaginal deliveries. The Goldcitadel team has developed a technology for the analysis of auscultatory data obtained in a non-invasive home examination of the fetal heart rate in the prevention of prenatal diseases and defects, which will enable the introduction of inexpensive devices and cloud services allowing for early warning of potential abnormalities in the heart development in the prenatal period. Currently, there are no similar technologies or related products or services in the world.

**Keywords:** fetal heart auscultation, prenatal diseases, prenatal defects, non-invasive home examination.

# The path of digitalization of services in Romania - from good practices to challenges in the current situation

George-Cristian GAVRILOAIA

*Phd student, Department of Public Administration and Management, Cluj-Napoca, Romania*

*E-mail address: cristian.gavriloaia@fspac.ro*

Ionelia-Bianca BOSOANCA

*Phd student, Faculty of European Studies, Cluj-Napoca, Romania*

*E-mail address: bianca.bosoanca@gmail.com*

## **Abstract**

Digitization is defined as the social transformation triggered by the massive takeover of digital technologies to generate, process and market information. Digitization uses the side effects resulting from their use: common platforms for application development, e-government services, e-commerce, social networks, and the availability of information online. In an innovation-based economy and a changing Europe, European countries need to meet the new challenges inside and outside the European Union by digitizing key sectors.

This paper discusses the major challenges for administrative services, our discussion using the best practice models of European countries that have proven effective in the field of digitization of administrative services. Based on these models, we will make recommendations for the digitization of the Romanian administration system and on how this system could be applied in Romania as well.

In this paper, a qualitative analysis will be used to highlight the novelty elements analyzed by the proposed topic. As a research method of this paper, the authors propose a case study using research tools and also some statistical indicators that will help us to apply the innovation result indicator to our model.

Therefore, the main objective of the paper is to show how to use a model of good practice, such as the general algorithm, to help other European countries to progress in innovation in public administration.

There are some research questions developed on this paper - How is the pro-innovation policy implemented in European countries? How could Romania digitize its administrative services in order to simplify the flow of information and to facilitate citizens' access to information, by simplifying it through an online system accessible to all? What are the main problems with the digitization of administrative services and the danger posed by this change?.

**Keywords:** innovation, technology, public services.

# Technology of multidimensional contextual analysis using the Internet of Things, data with a large volume of Big Data as well as cloud and mobile solutions

Mariusz CZERWIŃSKI

*Globedata Sp. z o.o., Toruń, Poland*

*E-mail address: mariusz.czerwinski@globedata.pl*

Piotr MATUSZAK

*Globedata Sp. z o.o., Toruń, Poland*

*E-mail address: piotr.matuszak@globedata.pl*

## **Abstract**

The presented project was implemented based on the following research areas: extraction of data of analytical significance from data sets registered by means of two-way BLE radio communication, a digital user profile built dynamically on the basis of data analysis from many sources, management and processing of big data in cloud resources, advanced analysis of profile data using classification, statistical and machine learning methods. As a result of the research and development work carried out, the technology of multidimensional contextual analysis using the Internet of Things, data with a large volume of Big Data as well as cloud and mobile solutions was created and implemented. This technology will allow in the near future to provide the market with new components and services related to the exchange of digital profiles of moving terminals, allowing for calculations and predictions helpful in the analysis of tourist data, matching offers for travelers and many other services, mainly from the SME sector. The use of systems using the BLE standard allows for the location of terminals in places normally inaccessible for classic GPS positioning, such as shop halls, shopping malls, public facilities, large hotels, historic churches, undergrounds, tunnels, etc. Moreover, it allows for significant energy savings and extending the operation of the device from the battery. The author's team applied approaches based on programmable FPGA gate systems, thanks to which it will be possible to optimize the functionality of future products in terms of market needs and significantly reduce their production costs.

**Keywords:** Internet of Things, Big Data, mobile solutions, FPGA.

# Visible light communication for smart cities

George SUCIU

*BEIA, Bucharest, Romania*

*E-mail address: george@beia.ro*

## **Abstract**

**Objectives:**This paper presents the results of Hybrid-VLC/IR-RF project that can be applied for secure communication using optical spectrum in smart cities. Experiments using this novel communication system is presented inside buildings and applicability for inter-building smart city applications is evaluated.

**Prior work:**Some previous work has focused on integrating new hardware components specific to the VLC/IR-RF hybrid communications system and a brief description of the architecture of the communications system has been presented in a paper at CYSEC conference.

**Approach:**The paper presents the case study about new ways of implementing the communication interfaces following the improvements that have been made to the VLC/IR-RF laboratory test bench from the hardware and software point of view. Also, performance evaluations in various environmental conditions are presented.

**Results:**The experiments present integration at prototype level as a test bench for the hybrid VLC communications system. As such, sensor configuration is performed on IoT (Internet of Things) devices and a mobile application is developed for receiving data over MQTT (Message Queuing Telemetry Transport) protocol.

**Implications:**The practitioners can use this solution for communication beyond WiFi/5G radio spectrum where secure communication is needed in harsh environments, for example underground metro, electromagnetic shielded/smogged spaces.

**Value:**The paper presents original work for next generation communication solutions beyond existing wireless communications such as 5G. The attention is focused on the intensive testing of the optical communication system within buildings where SMEs operate, as well as on the evaluation of its functionality for smart cities telemetry.

**Keywords:** IoT, security, VLC, optical communication, 5G.

# Romania's position in the global value chains in comparison with European countries

Marica DUMITRAȘCO

*Institute of Juridical, Political and Sociological Research, Chisinau, Republic of Moldova*

*E-mail address: mdumitrasco@gmail.com*

## **Abstract**

The theoretical backgrounds of external fragmentation of production are resumed in the work point main attention at the European countries and OECD experimental studies. In this paper, a contribution is made to better understand the insertion of Romania in the external fragmentation of production by using the wide range of WEB simulation tools of International Institutes.

Several important findings emerge from this research. The economy of Romania has obtained significant advantages from participation in Global Value Chains. A list of indicators demonstrates growth in values in comparison with the pre-accession in EU period. The research shows that industries of Romania with the highest foreign value-added share in gross export are classified mainly in high R&D intensity industries (computer, electronic and optical products; publishing software), medium-high R&D intensity industries (IT & other information services; motor vehicles, trailers and semi-trailers). It was established that upgrading in industries took place when foreign value-added content increases as a result of the innovational activity.

Another important observation was that the computer and optical equipment sector, IT and other informational services, as well as motor vehicles, are between sectors in which the employment, driven by foreign final demand, has essentially extended during the decade.

At the same time, some less favorable tendencies can be observed.

The study reveals that foreign value-added share of Romania's gross export is lower than average EU countries as well as the countries from the next EU enlargement that included in the analysis - Bulgaria, Hungary, Poland, and Estonia. It was revealed that Romania has insufficiently exploited the opportunities offered by the status of the EU member state to integrate into the value chains of European space.

The results of the study can be used in the process of elaboration of adequate education, R&D, labour market and industrial and service sectors policies by decision-makers and the private sector of the country.

**Keywords:** regional value chains, trade fragmentation, value-added terms, Romania.

# The regional policy of Bulgaria and the European city

Tsvetka STOENCHEVA

*Prof. PhD, University of National and World Economy, Sofia, Bulgaria*

*E-mail address: zvetty@abv.bg*

## **Abstract**

The present article aims at presenting the types of regional policy and through their comprehensive implementation to contribute to improving the living standard of the people. Regional policy in Bulgaria has its own peculiarities. They are the result of changes in the country's economic system in 1989. The institutions, economic and financial instruments for conducting an effective and efficient regional policy are indicated. The implementation of all types of regional policy are a prerequisite for the development of settlements and of cities in modern European in particular. Big cities are a driving force in the development of the European Union.

**Keywords:** regional policy, economic and financial instruments, European city.

# Smart economy through international academic mobility...where to?

Crina RĂDULESCU

*National University of Political Studies and Public Administration, Bucharest, Romania*  
E-mail address: [crina.radulescu@administratiepublica.eu](mailto:crina.radulescu@administratiepublica.eu)

Teodora I. BIȚOIU

*National University of Political Studies and Public Administration, Bucharest, Romania*  
E-mail address: [teodora.bitoiu@snsa.ro](mailto:teodora.bitoiu@snsa.ro)

Cristina Elena NICOLESCU

*National University of Political Studies and Public Administration, Bucharest, Romania*  
E-mail address: [cenicolescu@gmail.com](mailto:cenicolescu@gmail.com)

## Abstract

The economy cannot grow without its soul component, education. Over the years, the education system has been heavily influenced by ambitious international activities that helped grow the universities and together with it the entire economy. Not too long ago, before the health crisis stroke, the internationalization strategy tended to have a three-pronged aim: improving the efforts to promote the university as one with a distinctive mission, strengthening the study and placement mobilities for students, and developing a long-lasting network for educators and staff that could facilitate international research projects and best practices' sharing. Nowadays, the international academic mobility turned virtual, thus putting the added value through IES at risk.

The IES model used by paper goes in-depth of the value added to the teaching process by the institution – educators and staff – students (IES) trio. In fact, the research aims at revealing an imprint of the activities carried out by the trio since the launching of the new Erasmus+ program in 2014 (both KA103 and KA107), which already reached its mid-term evaluation, and the EEA grants since 2015.

The research question aims at whether the progress made before the health crisis will still keep the upward sloping trend. The paper's argument builds on the fact that should the internalization strategy follow the imprint developed by the authors then it would have a more accurate understanding of the results of the internationalization strategy and could better evaluate the progress and prioritize the gaps (Rădulescu et al., 2018).

The paper's structure is two-folded: on one hand, the theoretical framework provides us with a better understanding of today's need to be extremely active on an international level, a need that does not belong solely to the international relations anymore, but it is a transversal issue integrated in the daily life of the IES trio. On the other hand, the paper presents an analysis of the theoretical grounded issue in the authors' university, a small university of 400 employees (educators and staff) and 6800 students, also a young university established in 1991, but very ambitious on an international level, as the research will show.

In terms of methodology, the paper uses both a qualitative research for the theoretical background needed to substantiate the argument of the entire research (Kirby and Eby, 2016; Kirby and Wang, 2017; Martin et al., 2011, Quinteiro Goris, 2020), and a quantitative one, based on the available data collected from the reports of the Erasmus+ office and the statistics delivered by the National Erasmus+ Agency. The data shall be used fill in the proposed imprint model covering the activities of the IES trio, each item having different components.

**Keywords:** higher education, internationalization, mobility, educators, students, health crisis.

# Communication with citizens - the smart solution for smart city Galați

Florentina POPA

*Lect.univ. dr., Universitatea Danubius Galați*

## **Abstract**

The main stakeholders of smart cities are their own inhabitants and therefore civic engagement is not only important for formal city planning processes, but is the basis of the digital urban transformation into smart and sustainable cities and communities. This cannot be done without involving as many citizens as possible in decision-making, setting priorities and providing feedback. The new forms of governance and urban participation are distinguished precisely by the relationship established between the public administration and the community, by the ability to collaborate with their citizens to create together a better and smarter city for all.

In this paper I intend to analyze how Galați City Hall supports the creation of this relationship with citizens using mainly the digital environment. The research is based on the qualitative analysis of the ways in which the local administration supports the involvement of the city's citizens in debates and decision-making using the university and business environment as development agents.

**Keywords:** collaborative governance, online platforms, civic involvement, feedback, connectivity.

# Smart societies, gender and the 2030 spotlight - are we prepared?

Bissera ZANKOVA

Media 21 Foundation, Sofia, Bulgaria

*E-mail address: bzankova@gmail.com*

## **Abstract**

Smart societies cannot develop without adequate human and social capital based on the accumulation of knowledge driven by the new information and communications technologies. While digitisation is permeating all areas of life, it has become clear that technological revolution is not just a purely technical (or economic) process, but also a social one and it is not gender-neutral. New information and communication technologies can help women and girls access new opportunities, means of expression and channels for participation. However, technologies can also cause imbalances in the convergent environment. Specifically, the gender gap and digital divide transcends deeper, beyond the access to emerging technologies, as it is also rooted in bias-by-design of new solutions. The long-lasting male dominance in the sector of computer hardware and software development and broader understood ICT reflects on specific architectural and design choices informed by often unconscious bias of creators. The issue is further exacerbated by complex component dependencies reflecting many societal stereotypes: the concept of master and slave and male and female interfaces.

Human beings will need a variety of skills and equal social opportunities for people of all genders and backgrounds to be able to truly benefit from the new digital transformation as the digital skills are not equally distributed across diverse social groups. Experts have repeatedly underlined that advanced automation technologies can bring about not only great opportunities but also risks. Challenges can stem from the accelerated use of artificial intelligence without respecting such hidden biases related to categories like gender, ethnic and socioeconomic diversity. International bodies raise the admonition that “transparency and accountability for the data behind AI is critical to reducing bias, but very difficult to govern or enforce.”

The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) embody a human right based roadmap for progress that is sustainable and leaves no one behind. However, the World Economic Forum’s Global Gender Gap Report for 2020 poses the alarming statement that gender parity will be accomplished for 99, 5 years. Only by ensuring the rights of women and girls across all the goals will we achieve a sustaining environment now and for future generations and genuine inclusion for a smart society. The question is: are we prepared to reach such crucial goal.

The article will present research on gender inclusion in a technically driven world for a sustainable and smart society. The study is done within the project COMPACT, EC, Horizon 2020 programme and builds on the report on gender issues regarding social media in the age of convergence and COMPACT contribution to Eurodig 2020.

**Keywords:** equality between women and men, inclusion, AI and gender, sustainable development.

# Weirder than we can imagine: the historical evolution / involution of the region in Romanian law. Special focus on the Argeş-Muscel geo-historical space

Valentin - Stelian BĂDESCU

*The author is a lawyer in the Bucharest Bar and an associate scientific researcher of the Institute of Legal Research of the Romanian Academy.*

*E-mail address: valentinbadescu@yahoo.com*

Ruxandra Ioana BĂDESCU

*The author is an economist, doctoral student of the Doctoral School of Business Administration within the Academy of Economic Studies in Bucharest.*

*E-mail address: ruxbadescu@gmail.com*

## **Abstract**

In the modern era, human society has undergone major changes in political, social, cultural and economic terms. These transformations, which experienced an accelerated pace in the twentieth century and continue into the 21st century, have led human society for the better. The lives of communities and individuals have generally been improved. In many parts of the world, deep injustices and inequities have been eliminated, by securing fundamental rights and by quality leaps in life. At the same time, however, this context has brought with it the coagulation of currents that undermine fundamental values of human society. Aggressive secularism, radical tendencies to redefine the family, marginalization of Christian-moral values are a manifest reality. The Romanian society was not isolated from these developments. Coming out of a long totalitarian period, Romania and its inhabitants are still struggling to find themselves, to rediscover those common values, which are part of its intimate fabric, as in the case of our scientific research, the territorial administrative organization.

**Keywords:** Romania, the European Union, administrative law, region, regionalization, sovereignty.

# Mai ciudat decât ne putem imagina: evoluția/involuția istorică a regiunii în dreptul românesc. Cu privire specială asupra spațiului geo-istoric Argeș-Muscel

Valentin – Stelian BĂDESCU

*Autorul este avocat în Baroul București și cercetător științific asociat al Institutului de Cercetări Juridice al Academiei Române.*

*E-mail address: valentinbadescu@yahoo.com*

Ruxandra Ioana BĂDESCU

*Autoarea este economist, doctorand al Școlii Doctorale Administrarea Afacerilor din cadrul Academiei de Studii Economice din București.*

*E-mail address: ruxbadescu@gmail.com*

## **Abstract**

Societatea umană a trecut, în epoca modernă, prin schimbări majore în plan politic, social, cultural și economic. Aceste transformări, care au cunoscut un ritm accelerat în secolul XX și care continuă în secolul XXI, au condus omenirea spre mai bine. Viața comunităților și a indivizilor a fost în general îmbunătățită. Au fost eliminate, în multe părți ale lumii, nedreptăți și inechități profunde, prin asigurarea unor drepturi fundamentale și prin salturi calitative ale vieții. În același timp însă, acest context a adus cu sine coagularea unor curente care subminează valori fundamentale ale societății umane. Secularismul agresiv, tendințe radicale de redefinire a familiei, marginalizarea valorilor moral-creștine sunt o realitate manifestă. Societatea românească nu a rămas izolată de aceste evoluții. Ieșită dintr-o lungă perioadă totalitară, România și locuitorii săi încă luptă pentru regăsirea de sine, pentru redescoperirea acelor valori comune, care fac parte din țesătura sa intimă, precum, în cazul demersului nostru de cercetare științifică, organizarea administrativ teritorială.

**Cuvinte cheie:** România, Uniunea Europeană, drept administrativ, regiune, regionalizare, suveranitate.

# Open data availability in Croatian local government: improving the quality of life

Robertina ZDJELAR

PhD student on Faculty of Organization and Informatics

Varaždin, University of Zagreb, Croatia

*E-mail address:* robertina.zdjelar@kc.t-com.hr

Nikolina Žajdela HRUSTEK

Faculty of Organization and Informatics

Varaždin, University of Zagreb, Croatia

*E-mail address:* nikolina.zajdela@foi.hr

Anamarija MUSA

*Faculty of Law Zagreb, University of Zagreb, Croatia*

*E-mail address:* anamarija.musa@pravo.hr

## **Abstract**

A decade marked by various natural disasters points to the need for increasing implementation of technological developments that need to improve citizens quality of life. The development of Open Data (OD) portals and their application are also a feature of this decade. The availability of OD portals at the level of local public administrations and how much they are aimed at improving the quality of life of residents is a topic that authors deal with in this paper. An analysis of the availability and content of the OD portals will be carried out on the example of cities (urban) and municipalities (rural) in the Republic of Croatia.

The research questions are: 1) “How much OD are available to citizens in public services at the level of local self-government, urban as well as rural areas in the Republic of Croatia?” 2) “Is there a potential for the available open data to improve the quality of life?”

The paper is structured in four sections. The first one is focused on the purpose of the OD for local communities and citizens, as well as quality of life dimensions. The second will consist of defining comparative criteria for analyzing availability and content of local authorities OD portals in Croatia. The authors will present the findings on potential impacts on citizens quality of life by drawing upon examples worldwide in the third one. At the end will be given recommendations and conclusions.

# Learning religious knowledge in the context of a smart city

Sorayya SAGHA

*Graduate student of Quran and Hadith University of Islamic Studies, Qom, Iran  
E-mail address: Yas.zahra313m@gmail.com*

Kamran OVEYSI

*Assistant Professor, Department of Quran and Hadith, University of Islamic Studies, Qom, Iran.  
E-mail address: oveysi@maaref.ac.ir*

## **Abstract**

Learning means the accumulation, thinking, and application of complex knowledge, skills, and perspectives, and the advancement of communication technologies in the late twentieth century heralded dramatic changes in all aspects of human life. One of the concepts that has evolved due to technological advances in communication is the concept of the city. These new technologies have allowed the city to move beyond physical geography and into the realm of local relationships and into a new field and geography. Accordingly, the city, like other areas, has the opportunity to become virtual or smart. The smart city is emerging as a new way to solve many educational problems. This article analyzes the learning of religious knowledge in the context of the smart city through the method of libraries and documents. The achievements and results of this research include the development of friendly environments, changing the pattern of education, improving the quality of formal and informal education.

**Keywords:** education, model, religion, intelligent city, learning.

# Utilizarea Șase Sigma ( $6\sigma$ ) în administrația publică

Larisa-Florentina BADEA

*Drd, Școala Națională de Studii Politice și Administrative, București, România*

*E-mail address: badea\_larisa.florentina@yahoo.com*

## **Abstract**

În prezent sistemul administrativ românesc trece printr-o criză fără precedent odată cu răspândirea la nivel global al coronavirusului Sars-CovII, moment pentru care instituțiile publice nu au fost pregătite să asigure cererile și nevoile tuturor cetățenilor. În ciuda faptului că o parte dintre serviciile publice pot fi solicitate prin intermediul platformelor online ale instituțiilor (fapt benefic pentru perioada stării urgență în care programul cu publicul al instituțiilor a fost închis), nu toți cetățenii au acces la internet.

În cadrul acestei lucrări îmi propun să analizez modul în care utilizarea metodei Six Sigma ( $6\sigma$ ) și a instrumentelor sale în cadrul administrației publice poate eficientiza procesul administrativ în ceea ce privește înregistrarea și rezolvarea cererilor cetățenilor în contextul imposibilității deplasării acestora la sediul instituției și a utilizării unei platforme online de către unii cetățeni.

Astfel, cu ajutorul Șase Sigma poate fi implementată o strategie de pregătire a instituțiilor publice pentru situațiile de criză prin instruirea funcționarilor publici pentru o mai bună gestionare a cererilor și problemelor cetățenilor (atât la nivel online, cât și la ghișeu).

**Cuvinte cheie:** Șase Sigma, administrație publică, eficiență, proces, strategie.

# The role of public private partnerships in smart cities -lessons for cities in sub-saharan Africa

Thekiso MOLOKWANE

*Senior Lecturer, University of Botswana, Gaborone, Botswana*

Alex NDUHURA

*Senior Consultant/Lecturer Uganda Management Institute, Kampala Uganda*

*E-mail address: nduhuraa@gmail.com*

Tshombe -Muhiya LUKAMBA

*Professor, North West University, Gauteng, South Africa*

Innocent NUWAGABA

*Consultant/Lecturer Uganda Management Institute, Kampala Uganda*

## **Abstract**

Cities remain an anchor for society. As cities emerge, they fascinate and inspire generations. Existing literature reveals that the term cities renovates with opportunities that are increasing difficult to meet with reducing transfers. Based on a review of literature, this study reveals while transfers have caused administrative distress, public private partnerships have come out as an alternative service delivery that can reconnect service delivery journeys of sustainable cities. The objective was to explore the applicability of PPPs in cities. The outcome of this paper is relevant because by supporting cities to deliver services, the application of PPPs can enable cities in remaining relevant to their dwellers and visitors.

**Keywords:** cities, public private partnerships, sustainability, livability.

# Prospects for the development of smart cities in Bulgaria

Nikolay STOENCHEV

*Prof. Dr., University of Forestry, Sofia, Bulgaria*

Yana HRISCHEVA

*Chief Assist. Dr., University of National and World Economy, Sofia, Bulgaria*

## **Abstract**

The present article is devoted to the study of the attitudes of young people in Sofia in terms of acquisition of housing in highly urbanized areas of the city, their knowledge and preferences related to "smart cities." Their propensity to purchase housing in these areas will largely depend on the state of the housing market in the long term. Knowing their preferences would help to synchronize the possibilities of technology needs and the ability of potential customers to adapt to them and use them properly. It is not without significance and the increasing amount of funds to be invested in buying a home in the so-called "smart cities" and what part of the population could benefit from their advantages. The answer to these questions would be useful for both developers and local governments to update their priorities and meet the real needs of the population.

**Key-words:** smart cities, electronic technologies, residential real estate.

# Importance of using IoT, AI and cloud technologies for modelling the possible upcoming urban renewal projects in Bucharest

Marta-Christina SUCIU

*The Bucharest University of Economic Studies, Faculty of Theoretical and Applied Economics, Economics and Economic Policies Department, Bucharest, Romania*  
E-mail address: christina.suciu@economie.ase.ro

Oktay MUTLU

*MA in Real Estate Finance, Institute of Social Sciences - Okan University (Istanbul), Bucharest, Romania*  
E-mail address: okitay@gmail.com

## **Abstract**

Bucharest is one of the top cities with high seismic risk in Europe. Many residential buildings in the city are vulnerable to earthquakes. Risk grows with the increase in population density in different parts of the city. Additionally, old public utilities; out-of-date infrastructure; heavy traffic; inefficient public transportation are lowering the quality-of-life standards. All these facts are pointing out the necessity of rebuilding the city with large-scale urban renewal projects in the near future. Each urban renewal project gives a new chance to its habitants to improve the quality of life in the city.

One of the purposes of this article is to emphasize the importance of the fact that building smart cities starts with smart urban planning. Another purpose is to demonstrate the role of using relevant IoT, AI and cloud technologies in optimising the possible upcoming urban renewal projects' models for transforming Bucharest into a smart city with higher quality-of-life standards. These technologies are extremely helpful to take the picture of the current state of Bucharest, analyse the picture with data collected and accordingly optimise the urban renewal project models from the beginning. Examples of how to use the above-mentioned technologies in modelling urban renewal projects will be shared throughout the article.

The conclusion to be reached in this article is that optimising the urban renewal projects with the help of cloud, IoT and AI tools can reasonably increase the quality of life of the citizens living in the newly built Bucharest. At this point, a humble suggestion would be to establish the necessary infrastructure starting from today to collect and analyse data for modelling the upcoming urban renewal projects.

**Keywords:** smart city, smart urban renewal, smart urban planning.

# Political leaders need to become SMART. ASAP

Alina DICU

*Katell Media*

*E-mail address: contact@alinadicu.com*

## **Abstract**

Everything has changed in 2020. We live now a new reality. But the question is: have our leaders changed? As technology evolves so fast and furious, political leaders need to evolve too. The purpose of this paper is to explain what it takes to be a smart political leader in a world that is already too smart for many of us.

If we want to be able not only to survive, but to thrive in the following years, there are certain aspects that political leaders should take into consideration.

This paper proposes an original research in the Romanian context, where leadership is exercised mainly by force, not by vision.

These findings help political leaders understand how they can lead in face of a transforming world.

**Keywords:** leadership, smart people, government.

# On the need to create a monitoring system for safe gas consumption in multi-apartment residential buildings for a smart city

Archil PRANGISHVILI

*Academician at Georgian Scientific Academy, Tbilisi, Georgia*

*E-mail address: a.prangishvili@gtu.ge*

Nugzar IASHVILI

*Academician at Georgian Engineering Academy, Tbilisi, Georgia*

*E-mail address: n.iashvili@gtu.ge*

Yuri KHUTASHVILI

*Chief specialist at Georgian Technical University, Tbilisi, Georgia*

*E-mail address: khutashvili@yandex.com*

## Abstract

Smart city is not only the application of a large number of digital and electronic technologies for transforming the life and working environment of the city, it is mainly and ensuring the safety of citizens' lives. The security component in the Smart City concept includes issues of safe consumption of electricity, gas and water.

To solve the problems that have arisen and ensure the safety of the population, it is necessary to install devices for detecting and fixing gas leaks in apartments, houses and buildings.

For several years, the Georgian Technical University (Tbilisi) has been working on the creation of a new, innovative gas leak detector based on the semiconductor sensor of the Japanese company Figaro Engineering and on the creation of a gas control and gas leakage system in residential premises, including for multi-apartment high-rise buildings, which will be an obligatory component (subsystem) of the "Smart Home" and "Smart City".

However, it should be noted that the installation of the above devices in individual apartments does not solve the problem of ensuring security for the entire apartment building, since they should be installed in all apartments without exception. It is clear that a gas explosion in high-rise buildings will lead to destruction of neighboring apartments. Therefore, it is necessary to create a monitoring system for safe gas consumption for the entire apartment building.

**Keywords:** gas leak, semiconductor sensor, detector, identification, solenoid valve.

# City Intelligent Life: A Case Study on Shenzhen City Intelligent Classification of Domestic Waste

WEN Xiao-Yong

*GuangDong Administration College, Guangzhou, China*

*E-mail address: wenxiaoyong01@tsinghua.org.cn*

## **Abstract**

How to efficiently, conveniently, safely, scientifically and intelligently reform the urban garbage classification system and the environmental sanitation system is a common problem to promote the ecological development of urban life. Taking the key elements in the whole process of garbage collection and disposal as the starting point, taking the development of technology as the driving force to improve the management system as the guide, and combining the current situation of infrastructure construction and market practice of environmental sanitation system in Shenzhen city of China, following the intelligent technology route map and realization route of "internet + municipal solid waste classification" are established by using the time line, with supporting of modern information technology, from the aspects of publicity and education, policy designation and industrial chain construction, this essay will discuss on the intelligent management countermeasures of Shenzhen urban domestic waste classification based on "Internet + " to fully exploit the potential value of municipal solid waste and form a win-win environment and sanitation intelligent ecological circle.

# From fairy tales to smart concepts

Iliana FRANKLIN

*Mediaframe Ltd*

*E-mail address: info@mediaframestudios.com*

Paul FRANKLIN

*Mediaframe Ltd*

*E-mail address: info@mediaframestudios.com*

Molly BABINGTON

*Mediaframe Ltd*

*E-mail address: info@mediaframestudios.com*

Stevie STEDMAN

*Mediaframe Ltd*

*E-mail address: info@mediaframestudios.com*

Austin HILL

*Mediaframe Ltd*

*E-mail address: info@mediaframestudios.com*

Leroy DIAS

*Mediaframe Ltd*

*E-mail address: info@mediaframestudios.com*

Anastasia GUROVA

*Mediaframe Ltd*

*E-mail address: info@mediaframestudios.com*

## **Abstract**

What we see around us and how today will affect tomorrow is all depending on our creativity. Our intelligent life is inspired from our imagination. Since the world exists the main source of ideas has derived from the fairy tales and fables that humanity learned in its infancy. These brainstorming sources of ideas are constantly used by the science and technology to move our life forward through embodying our dreams for freedom, justice, democracy and sustainability through smart concepts and solutions. The future is here inspired by myths and legends and represented by Michio Kaku in his futuristic visions. Our proposed work is to visualise some of these ideas into smart concepts for the future. Our panel will discuss and demonstrate how an idea can transform from storytelling into a VR concept and will shed light onto the rise of some of the most ground breaking emerging technologies.

**Keywords:** creativity, imagination, storytelling, technology, engineering, smart living, smart cities, sustainability.

# Rediscovering urban intelligence within cities

Mauro ROMANELLI

*University of Naples Parthenope, Naples, Italy*  
*E-mail address: mauro.romanelli@uniparthenope.it*

## **Abstract**

Cities learn how to become intelligent urban communities using the potential of information technology, digital and intelligent applications to drive urban growth and promote value creation. As smart communities, cities identify a pattern that enables the urban community to construct intelligence as a source that relies on combining technological, organisational and human drivers of social and economic development. As intelligent urban communities, cities develop a smart-enabled vision as cultural and strategic approach to urban design that relies on mobilizing the organisational pattern for cities as engines of innovation and knowledge, moving from digital to artificial intelligence, considering cities not only as services providers but enablers of innovation, learning and knowledge. Intelligence refers to the ability to learn and apply knowledge in new situations. Intelligent urban communities help the city to identify a pathway for sustainability within urban ecosystems. Cities contribute to sustaining value creation processes that rely on smart communities that develop knowledge to support learning and contribute to innovation using the potential of information and intelligent technology to support change in a significant way. Cities construct and enhance urban intelligence strengthening the knowledge transfer and following a multi-level governance by involving all the stakeholders within urban communities. This study aims to explain how cities identify a pathway that drives cities as intelligent urban communities that develop a smart approach as cultural vision to urban development, strengthen technology from digitalization to artificial intelligence intelligent urban growth, sustaining the cooperation among the helices of urban landscape. This study relies on a literature review and analysis about the concepts of smart city and smart community as means to promote smartness in services management, urban mentality and governance as sources for innovation and change. Cities become intelligent communities relying on smartness as strategic and cultural vision for growth, employing artificial and digital technology and intelligence and where local government, business, research centers and citizenry express to learn how to generate new value and knowledge. In following a smart approach to urban development, cities design a pathway for urban sustainability. Intelligent cities develop smartness as a vision, culture and value for urban community governance.

**Keywords:** urban development, intelligent cities, sustainable and smart cities.

# Private information in public spaces: data protection in the times of privatization of public services

Juliana NOVAES

*University of Sao Paulo, Sao Paulo, Brazil*  
*E-mail address: juliana.novaes.camargo@usp.br*

## **Abstract**

Cities are the stage of a curious phenomenon in which people feel at the same time at home and like complete strangers. A city provides simultaneously the familiarity of its residents in relation to places and people and the possibility of living in relative anonymity. However, the last few decades have been accompanied by an increase in the use of information and communication technologies in the infrastructure and functioning of urban centers around the world. There has been a move towards the development of the commercial ecosystem of so-called smart cities, with the public administration increasingly partnering with private corporations to offer solutions in public services that involve the processing of personal data from citizens. **Objectives:** This paper aims to discuss the new dilemmas that arrive with the growth of surveillance technologies applied to urban centers and the increasing participation of the private sector in the processing of data whose origin lies within public services. **Prior work:** In order to accomplish so, this article analyzes this phenomenon from a capitalism surveillance framework perspective, in light of international data protection standards and with a primary focus on the analysis of legitimacy for the processing of citizens' data by private companies providing public services. **Approach:** The main approaches used are literature review and case studies. The first section will be dedicated to the discussion about the concept of "smart cities"; the second section will bring up the study of two cases about the implementation of facial recognition in the public transport system of the city of Sao Paulo; and the third and fourth sections are dedicated to the analysis of the legitimacy, risks, political and social implications of this type of surveillance practices conducted in partnership between the public and private sectors. **Results:** As a result, this paper points to some of the issues that arise with the implementation of surveillance technologies in public services, such as the invasions in individuals' rights of privacy and freedom of expression, as well as the regulatory gaps that exist with these public/private arrangements. **Implications:** The study offers an opportunity for researchers and policymakers to have a perspective on how these practical cases reflect some of the academic discussions around surveillance in smart cities. **Value:** This paper, therefore, offers an original analysis of two existing cases and their insertion into a broader discussion of surveillance in urban centers and some of the risks involved in the delegation of public services to private entities.

**Keywords:** privatization, personal data, public services, surveillance, smart cities.

# The infosecurity polygon concept

Ion BOLUN

*Technical University of Moldova, Chisinau, Republic of Moldova  
E-mail address: ion.bolun@isa.utm.md*

Rodica BULAI

*Technical University of Moldova, Chisinau, Republic of Moldova*

Călin ROSTISLAV

*Technical University of Moldova, Chisinau, Republic of Moldova  
E-mail address: rostislav.calin@isa.utm.md*

## **Abstract**

The increasing severity of cybercrime and the rising complexity of cyber-attacks accentuate the importance of research/development in infosecurity. In support of such activities in the Republic of Moldova, the PINFOSEC polygon is being implemented. The polygon will create the conditions and provide the necessary infrastructure and tools for conducting experiments/research/adaptations/developments, based on which practical recommendations will be elaborated and differentiated infosecurity solutions will be proposed, taking into account the particularities of the republic. PINFOSEC concept defines the basic objectives, determines the functional structure, describes the technological platform (SECIM), outlines the SECIM modules and formulates the principles of creating the infosecurity model system (SIMOSI) for application as needed. The SECIM modules will be implemented within the SIMOSI system, through simulations their characteristics will be researched, and further the afferent, depending on the case, infosecurity solutions will be developed to strengthen performances. Within PINFOSEC infospace, the INFOSEC website will be integrated. Its aim is to inform public administration institutions, economic agents and population about the dangers, vulnerabilities, incidents, means and necessary actions of infosecurity and of other important aspects in the field. To begin with, the results of an incipient assessment of informatics security state in enterprises/ organizations/institutions (EOIs) are at the base of works within the polygon. These results are obtained by an online survey using 24 indicators. According to this survey, the percentage of EOIs with 100% IT security performance for EOIs with over 500 employees is about twice as high (91.7%) as that for EOIs with up to 10 employees inclusive (43.8%). It is estimated that PINFOSEC will significantly contribute to creating the necessary conditions for improving the security of EOIs and of population in the republic. At the same time, the conditions for the training of highly qualified young specialists and for the continuous training of specialists in infosecurity and informatics in general will be improved.

**Keywords:** information security, infosecurity model, polygon functional structure, polygon platform.

# Smart Government in local adoption – authorities in strategic change through AI

Christian SCHACHTNER

*Professor of Public Management, IUBH University of Applied Sciences, Bad Reichenhall, Germany  
E-mail address: c.schachtner@iubh-fernstudium.de*

## **Abstract**

The digital revolution is an issue for local authorities to actively shape the dynamic change of service expectations.

**The Objectives** of the research project are investigated in how AI-supported can speed up decisions of authorities in unknown, dynamically changing situations professionally. The scientific interest lies in the question of possible linking options between learning theories of adult human education and deep learning strategies of machine learning approaches.

**The Prior work** serves the element of service optimization for citizens or business concerning the use of AI-applications for direct interaction and for process optimization in the background of processing.

**The Approach** is in addition to an introduction to the basic user scenarios of AI technology in the public task spectrum of local governance. In this respect, it bases on the empirical findings of the study 'Artificial Intelligence in Public Administration - Fields of Application and Scenarios.

**The Results** concerns the understanding, that human and AI-basic technologies are action-oriented learning systems performing in the fields of creating services in the web 4.0, such as the internet of things. Development learning theories, such as transformative learning for Data Scientists and Public Managers, should have an impact on more customer related AI-applications.

The **Implications** of this interdisciplinary Projekt should give an impact to academics in the public management and data sciences as well as specialists of learning in the field of human and machine-interaction. For practitioners and leaders of local authorities the possibilities of implementing AI-services should get visual.

The **Value** of the paper should be the combination of administrative, learn-strategic, technological and ethical requirements to be proposed in order to get the application scenarios of AI off the ground, also in the sense of acceptance management in the face of persistent innovation blockades of general 'smart government' measures.

**Keywords:** innovation management, learn and improve, AI as game changer for transformation.

# The nervous system of the city: ICT and media in smart city Berlin and smart city Warsaw

Jacek MIKUCKI

*PhD, University of Warsaw, Warsaw, Poland*

*E-mail address: j.mikucki@uw.edu.pl*

## **Abstract**

City governments use media services such as mobile applications, ICT platforms or websites to improve the quality of life. The role of municipal authorities is to create an appropriate strategy that will make it possible to create an optimal media infrastructure, allowing city dwellers to benefit from media services and solutions, and also allowing media creators to develop and create further facilitations for residents.

Researchers have noticed that proper using of communication and information technology in process of design of media infrastructure is crucial in creating smart cities (Haidine et al., 2016; Toporkoff, Rannou, 2014). There is a need for the creation of an appropriate infrastructure that will provide a link between the physical and digital space of a modern city (Mattern, 2016). Following this, the modern media can be classified in terms of both the physical and the digital sphere here (Bhowmik, 2016) and two highly connected means of communication: human to machine (H2M) and machine to machine communication (M2M) (Höller et al., 2014; Chen, 2013).

The goal of this article is to examine ICT and media in two European case studies – Berlin and Warsaw. The author understands media as H2M and M2M communications, and also in terms of both physical and digital media infrastructure. The study is based on analysis of grey literature with qualitative research: 30 semi-structured interviews conducted with local municipalities and city planners in both cities. The research hypothesis is that the use of media in smart city Berlin and smart city Warsaw is not the result of a specifically defined strategy.

The results evidence that the implementation of media based on ICT is not the result of a specific strategy of city authorities. In Berlin, despite the creation of the strategy document, it can be stated that strategy is implemented in a more flexible way and there is an emphasis on cooperation between the private and public sectors. In Warsaw, on the other hand, there is no official strategic document on the smart city. The municipal authorities of Warsaw are strongly involved in the implementation of the strategy and the individual offices of the City Hall work on smart projects, but they are carried out without a detailed plan.

The article may be used as a source of information for smart city design, media infrastructure, urban strategy with a focus on residents and ICT. The key contribution of the paper is to fill a gap in studies on information architecture and the design of media infrastructure. In a specific area such as the city, the media and the correct flow of information play a huge role, not only in communication but also in improving decision-making processes, management and development.

**Keywords:** smart city; media infrastructure; city management; smart city strategy.

# The internet is broken, but how can we save it?

Lukasz PORWOL

*Insight Centre for Data Analytics, NUI Galway, Ireland and Partnership for Social Development, Croatia  
E-mail address: lukasz.porwol@insight-centre.org*

Munir PODUMLJAK

*Insight Centre for Data Analytics, NUI Galway, Ireland and Partnership for Social Development, Croatia  
E-mail address: mpodumljak@hotmail.com*

## **Abstract**

On both sides of the Atlantic, in Europe and the USA as well as in China, several programs have been established to address the challenges faced by the essential backbone of global digital society – the internet. Usually referred to as The Next Generation Internet initiatives, they intend to spin international discussions and works related to major socio-technical developments in the domain. That includes the new hardware infrastructures such as 5G wireless technologies as well as new standards and protocols (the new IP) as well as Artificial Intelligence, Virtual Reality, Big Data and the Internet of Things.

The mission statement of the European Commission funded NGI initiative emphasizes the need for the new emerging, advanced technologies to make future internet more human-centric especially in the times of crisis. In this way EC, reflects on the state of the contemporary internet which with all its benefits and pivotal role in connecting governments, citizens and businesses around the world, is torn by biases, and frequently disrupted by malicious, manipulative and fake content that causes significant social harm. The issue is further elevated by questionable methods and business models applied by major technology players in the domain that through increasing convergence of media, communication and ICT creates significant socio-technical challenges and endangers the classic democratic models. This can be particularly observed in the area of mainstream media, increasingly dependent on native advertising (80-100%) and ubiquitous lobbying and ad-driven news market which largely lost its credibility in favor of even-less credible, but freely distributed, new, social-media-based outlets. That situation is exacerbated by search engines and social media ranking mechanisms that elevate extreme context (usually of negative sentiment) while diminishing news of informative and purely factual manner.

The article will present research on pre-standardization, self-regulation and stakeholders' initiatives in the domain of convergent media in the context of the Next Generation Internet. In particular, the study is done within the project COMPACT, EC, Horizon 2020 programme and builds on the project deliverables related to the issues in question as well as draws from rich discussions during international symposia on 5G and The Broken Internet organized by COMPACT consortium.

**Keywords:** fake news, biased media, smart society, internet standards, next generation internet, AI, sustainable development.

# Smart city cyber-physical security

Ana-Maria TUDOR

*Marketing department, BEIA Consult International, Bucharest, Romania  
E-mail address: ana.tudor@beia.ro*

George SUCIU

*R&D department, BEIA Consult International, Bucharest, Romania  
E-mail address: george@beia.ro*

George Valentin IORDACHE

*R&D department, BEIA Consult International, Bucharest, Romania  
E-mail address: george.iordache@beia.ro*

Gabriela BUCUR

*Marketing department, BEIA Consult International, Bucharest, Romania  
E-mail address: gabriela.bucur@beia.ro*

## **Abstract**

Recently, the number of Internet users has increased enormously, this becoming the main way in which states and non-states actors increase their economic and diplomatic capacity through strategic and targeted manipulation with the help of web content that they transmit to citizens. Brilliant urban areas have a bleeding edge obligation to guarantee a protected and safe physical and advanced environment advancing durable and feasible metropolitan improvement for the prosperity of EU residents. S4AllCities incorporates progressed mechanical and authoritative arrangements in a market situated brought together Cyber – Physical Security Management structure, targeting raising the strength of urban communities' frameworks, administrations, ICT frameworks, IoT and cultivating insight and data sharing among city's security partners. A smart city is made up mainly of information and communication technologies (ICT) to develop, implement and promote the practice of sustainable development to address the growing challenges of urbanization. Mostly, ICT is a smart network of objects and machines that are connected and transmit data using both wireless technology and the cloud. IoT-based cloud-based applications receive, analyze, and manage data in real time to make a good decision about quality of life. People use Smartphones, mobile devices, cars and smart homes for smart city ecosystems. Communities can improve energy distribution, streamline garbage collection, reduce traffic congestion, and even improve IoT air quality. This paper fills a gap in the literature dealing with attacks on critical infrastructure in smart cities and presents envisioned pilots for 3 cities in Europe, as well as experiments in follower cities, one of them being Buzau in Romania.

**Keywords:** ICT, wireless technology, urbanization, IoT, safety.

# Intelligent systems for smart cities in the context of industry 4.0 revolution- smart solutions for finance in emerging markets

Mircea BOȘCOIANU

*University Transilvania of Brasov, Romania*

*E-mail address: mircea.boscoianu@unitbv.ro*

## **Abstract**

The Industry 4.0 technologies has changed the path of development in the case of smart cities because all these advanced technologies (integrated systems, robotics, sensors, additive manufacturing, IoT, mobile communication 5G, cloud, big-data analytics) contribute dramatically to the quality and diversity of all intelligent systems for smart cities.

The aim of this contribution is to design an innovative framework for finance the typical smart cities-projects in the case of emerging markets. This contribution is very important in the actual context of Covid-19 post-crisis recovery. The literature is focused on developed countries with robust financial systems but only few papers are related to the development of smart cities in emerging countries.

This approach is based on survey of typical project with focus on modularity and scalability in order to match the capabilities of development with the financial markets. The main results are represented by the development of a new design for financing smart cities in the case of emerging markets based on the actual capabilities of capital markets. The impact for the development will be also analyzed in a comparative approach.

There are a lot of implications of this study for different groups: academics, researchers, but also for specialists in capital markets and entrepreneurs. The main contribution is related to the design approach of this framework, focused on the development of smart cities in emerging markets and it is sustained by two innovations, the concept of scalability and modularity, and the adaptation of financial product for emerging markets based on retailization and PPPs (public- private partnerships).

**Keywords:** smart cities, emerging markets, innovative framework for finance.

# Analysis of local information systems of Ecuador and the importance of urban marketing

Stefany CEVALLOS

*National University of Public Service, Budapest, Hungary*

*E-mail address: stefy220\_@hotmail.com*

## **Abstract**

This article addresses the importance of urban marketing in Local Information Systems in Ecuador. The government with the aim of planning and making decisions in real time should include the perspective of a new model of city in function of the new social needs and the construction of an image for its own country and the international arena to accelerate the local economy development. This research, describes the social impact of urban marketing in the construction of the cities to attract Foreign Direct Investment (FDI). Public management, plays a fundamental role in the development of different programs in the field of the digitalization of services to generate viable solutions and try to improve the quality of life of its inhabitants. Urban marketing and the ICT are a fundamental support for these. Citizens, businesses, governments and employees are a policy priority because cities are key factors for the new industrial scenario to converge all segments of society for ICT deployment and use. In addition, the article presents Local Information Systems for highlighting smart governance. The methodology used is secondary data sources including various types of books, journal articles, government reports and implementation plans.

**Keywords:** smart governance, FDI, image, ICT.

# Creative philanthropy and smart cities

Ani MATEI

*National University of Political Studies and Public Administration, Bucharest, Romania  
E-mail address:amatei@snsa.ro*

Menachem ZILBERKLANG

*National University of Political Studies and Public Administration, Bucharest, Romania  
E-mail address:info@galileefund.org*

## **Abstract**

The "creative philanthropy" is more and more present in recent debates and studies, along with models of "charity/service", "scientific/ philanthropy" or "new scientific" approaches.

Belonging rather to the third model, creative philanthropy is a basic characteristic of the new philanthropy at the beginning of the 21<sup>st</sup> century.

Well-known authors (Anheier&Leat,2006) appreciate that "philanthropy is experiencing a crisis due to a lack of awareness about the potential that foundations could have. The ability to overcome this crisis provides the key to reinventing philanthropy as a central institution of modern society".

In this context, creative philanthropy becomes a central issue of today's philanthropic foundations.

The progress of smart cities is to be added to the issues researched before. Recent field literature offers a numerous example of cities where "philanthropy is integral to progress".

The present study is a detailed approach of the conjunction/contiguity between creative philanthropy and smart cities, offering arguments and development support for more extensive studies in the future.

**Keywords:** creative philanthropy,smart cities,innovation.

# Improvement of the quality of smart toilets

Cristina BALACEANU

*Beia Consult International, Bucharest, Romania*

*E-mail address: cristina.balaceanu@beia.ro*

George SUCIU

*Beia Consult International, Bucharest, Romania*

*E-mail address: george@beia.ro*

Oana ORZA

*Beia Consult International, Bucharest, Romania*

*E-mail address: oana.orza@beia.ro*

Sabina BOSOC

*Beia Consult International, Bucharest, Romania*

*E-mail address: sabina.bosoc@beia.ro*

## **Abstract**

The development of people in society is influenced by social and economic factors in everyday life, which is why any age group and type of people must be included in our environment and must be offered the independence necessary for a normal life. The focus is on the elderly and disabled people. For helping them, we offer smart toilets, so that they no longer have to worry about basic needs, feeling safe and free to visit places such as malls, hotels, cinemas and concerts. To achieve this goal, the quality of public spaces and the quality of public bathrooms should be improved. Using high technology, this paper aims to develop an intelligent toilet system, especially for the elderly and people with disabilities. In addition to all the benefits of this smart toilet, an air quality monitoring system can be included to start cleaning procedures. It has been shown that humidity, temperature, amount of water, VOC, O<sub>2</sub> have a great impact on human health. The study began in the iToilet project, which developed a solution that led to a prototype for home use including the ability to adjust the position and height of the toilet and other auxiliary means using several different technologies. Moreover, it was necessary to develop this concept in public spaces, and the Toilet4Me2 project made this possible by exploring and implementing this concept. Furthermore, the Toilet4Me2 system includes an armrest, vertical adjustment mechanisms, tilting lift function and a shower unit, along with emergency identification and detection facilities, plus optional supplements. These facilities are dedicated to elderly and / or disabled users, either able to walk or in a wheelchair.

**Keywords:** smart toilet, air quality, elderly and disabled people.

# Budget allocation and funding of community food security projects in Gauteng Province

Wilheminah Nthabiseng MOFOKENG

Public Administration, School of Government Studies, Faculty of Humanities, North-West University  
E-mail address: nthabisengmofokeng67@gmail.com

Loraine Boitumelo MZINI

Prof., Public Administration, School of Government Studies, Faculty of Humanities, North-West University  
E-mail address: Tumi.Mzini@nwu.ac.za/ tumi.mzini@gmail.com (Corresponding author)

## **Abstract**

The context of this study focuses food security and pro-poor funding. This study assesses funding of community food security projects in the Gauteng Province. The study was prompted by high levels of poverty and unemployment. Despite the two challenges being at the fore front for policy makers in the country, civil society members are partaking in alternative and sustainable solutions to poverty reduction which has led to establishment of community food security projects. Considering the fact that agriculture is one of the growing contributors to the country's economy, these community food security projects are able to promote agriculture are able to create employment and revenue. Proper and adequate funding to these poverty reduction strategies ensures that the projects succeed and meet their intended objectives and goals. Funding makes it possible for the projects to be genuinely pro-poor, to promote pro-poor growth and improving the quality of the lives of the poor. Public funds need to be effectively, efficiently and economically utilised for the best interest of the poor. It is important for government to budget for developmental and sustainable initiatives, public expenditure needs to be properly managed. The aim is to identify appropriate *financing* mechanisms to address key food security. In an attempt to realise the research problem, a semi-structured questionnaire is used to solicit examine how community food security projects are funded. The article concludes with a set of recommendations for implementing and monitoring performance measures of school gardens.

# Dinamica accesului la cultură scrisă în interfețele urban-rural ale municipiilor din sudul și sud-vestul României

Cosmina-Andreea MANEA

*Universitatea din București, Facultatea de Geografie, România  
E-mail address: cosmina.andreemanea@gmail.com*

Costinel ȘERBAN

*Școala Națională de Studii Politice și Administrative, Școala Doctorală SNSPA, România  
E-mail address: costiserban1990@gmail.com*

## **Abstract**

Prin intermediul acestei lucrări se urmărește dinamica accesului la cultură în localitățile din jurul unor orașe mici, mijloci și mari din sudul și sud-vestul României (București, Craiova, Slatina, Pitești, Alexandria). Prin interfață urban-rural se înțelege în acest context primul inel de localități din jurul municipiilor analizate, iar prin acces la cultura, principalii indicatori urmăriți sunt accesul la biblioteci, muzee, cinematografe și evenimente culturale (desfășurate în localitățile respective și în orașul polarizator). Se încearcă astfel a se măsura gradul de dependență al acestor localități din punct de vedere cultural față de orașul în jurul căreia se află, precum și dinamica acestei dependențe în perioada după căderea regimului comunist. Un oraș inteligent trebuie să aibă o interfață urban-rurală inteligentă, bazată pe colaborare și coeziune teritorială, nu pe dependență și fragmentare, iar accesul la cultură poate fi un punct de reper pentru calculul coeziunii la nivel teritorial. Datele folosite provin în principal de la Institutul Național de Statistică, însă este urmărită și cu ajutorul datelor de la Ministerul Finanțelor numărul întreprinderilor cu activitate culturală existente în fiecare an. Acest studiu are o valoare importantă pentru administrațiile publice locale, care trebuie să planifice guvernarea și administrarea teritoriului pentru a asigura toate nevoile populației, una dintre acestea fiind accesul la cultură și educație. Prin măsurarea gradului de dependență în ceea ce privește satisfacerea acestei nevoi față de orașul polarizator, se pot identifica principalii factori ce determină diferențele de accesibilitate culturală, iar primăriile și consiliile locale pot astfel interveni în mod direct și eficient pentru a le reduce. Această lucrare va analiza în mod particular accesul la cultura scrisă și gradul de utilizare al bibliotecilor, oferind în același soluții pentru o gestiune a accesului echitabil la cultură.

**Cuvinte cheie:** accesibilitate, carte, cultură, dinamică, interfață urban-rural.

# Intelligent energy consumption practices within the European Union: empowering consumers towards a smarter consumption

Andrada S. VĂȘII

*PhD., Independent researcher in the energy field, Bucharest, Romania*

*E-mail address: andrada.vasii@yahoo.com*

## **Abstract**

This research focuses on the energy consumption practices within the European Union, aiming to investigate to which extent consumers are being empowered to consume in an intelligent way. Based on my PhD paper in which I have investigated the impact of the liberalized energy market at Member State level (both in the gas and energy sector), as well as on my Postdoctoral research in the renewable energy field, this research will further advance the concepts of *consumer* and *energy market* by trying to identify, and underline, the meaningful connections and enablers within the energy spectrum. In addition, the research aims to explain how much the consumers shape the system and to which extent the system enables the consumers. This research is based on a qualitative approach, more exactly document analysis, aiming to provide an in-depth overview of how the current European energy framework sustains and empowers consumers in their consumption practices. One of the main results of this research will be a two ways analysis of the energy market: from consumers' point of view, and from the market capabilities starting point.

I consider this research to be of interest and importance in the energy field, as it is more than just an overview of how the energy market has evolved throughout time within the European history. Thus, by investigating the route causes for energy consumption patterns, the research depicts to which extent the current practices can determine intelligent consumption for a sustainable future. Practicioners in the energy field, as well as researches, may use this research as a starting point for future debates concerning the sustainability of the European energy framework, as well as to advance further analysis on white territories such as consumption patterns and consumer attributes within the market.

**Keywords:** energy sustainability, energy future, impact.

# The economic importance of transportation and the circular economy of Iraq

Ghanim Ahmed KAMIL

*Ph.D. Student Management/Academy of Economic Studies of Bucharest (ASE), MOSUL, IRAQ*  
*E-mail address: Aghanim295@gmail.com*

Cristian-Silviu BANACU

*Professor At Bucharest University of Economic Studies (ASE), Romania*  
*E-mail address: Cristian.banacu@man.ase.ro*

Mamoun Walid ARIDAH

*Ph.D. Student Accounting/Academy of Economic Studies of Bucharest (ASE), Aqaba, Jordan*  
*E-mail address: aridahmamoun19@stud.ase.ro*

## Abstract

Transportation is of great importance in supporting the economy of Iraq and its one of the elements in the process of developing a strategic plan for the infrastructure of Iraq, where the concept of transportation and its importance is the mainstay of life, and the contribution of the transport sector to economic development is evident in that it helps effectively in linking production areas with consumption areas and in securing the movement of individuals And the transportation of raw materials and goods to and from investment areas, as it is considered a catalyst in the exploitation of natural resources, especially minerals, which are often concentrated in remote and sparsely populated areas, and the importance of the transport sector in the employment of manpower and the provision of Employment opportunities for a large segment of the population, whether in the field of transport itself or in other fields related to it or affected by its development; Consequently, the contribution of this sector must be recognized in absorbing the increasing numbers of people entering the workforce and thus in solving the problem of unemployment and the many social ills that result from it. besides, the provision of transportation of various kinds contributes significantly to the increase in cultural exchange between peoples and thus supports the development Human thought and the flourishing of science and the spread of its gains to spread to all countries of the world, and also transportation plays a major role in supporting and renewing the economic cycle of Iraq, as this research aims to clarify all the concepts and factors that affect the formation of the Iraqi economy.

**Keyword:** investment, economic environment, investment in transportation.  
JEL: LA1, LA2, P22.

# Smart mobility: urban transportation challenges in Romania and Italy

Marta-Christina SUCIU

*The Bucharest University of Economic Studies, Faculty of Theoretical and Applied Economics, Economics and Economic Policies Department, Bucharest, Romania*  
*E-mail address: christina.suciu@economie.ase.ro*

Marco SAVASTANO

*Sapienza University of Rome, Faculty of Economics, Management Department, Rome, Italy*  
*E-mail address: marco.savastano@uniroma1.it*

Gheorghe-Alexandru STATIVĂ

*The Bucharest University of Economic Studies, Bucharest, Romania*  
*E-mail address: alexstativa95@gmail.com*

Irina GORELOVA

*Sapienza University of Rome, Faculty of Economics, Management Department, Rome, Italy*  
*E-mail address: irina.gorelova@uniroma1.it*

## Abstract

The rapid development of cities, along with the growth of urban population, has brought up many challenges for the organization of human urban mobility in the most sustainable and smart way. The high need for modern arrangements of citizens' movement leads to the need for searching alternative solutions to urban transportation systems. We consider the main attention should be paid to environmentally friendly, accessible and cost-effective public transport and better organization of private, but also public transport. In the context of urban mobility, innovative technologies have to be in line with citizens' demands and technology providers, moreover beneficiaries being interested to identify a higher level of responsibility. Technological innovation and new business models (e.g. urban air mobility, self-driving cars, electric mobility, bike and car sharing, etc.) create various possible future scenarios for the urban transport solutions to be evaluated. At the same time, the concept of private vehicle, although still the most common, shades toward a pay-per-use *Mobility as A Service (MAAS)*. This paper presents a comparative analysis concerning the evolution of mobility systems in the urban environment. Our empirical analysis is based on two case studies shedding light on the evolution of urban mobility in Romania and Italy. Certain gaps in the development of transportation systems in these two countries can become a possible direction for their further evolution.

**Keywords:** smart city, smart mobility, sustainability urban development, innovative business models, mobility as a service.

# Innovative automatic sorting system of the construction and demolition waste materials

George SUCIU

*BEIA Consult International, Bucharest, Romania*

*E-mail address: george@beia.ro*

Ioana PETRE

*BEIA Consult International, Bucharest, Romania*

*E-mail address: ioana.petre@beia.ro*

Andrei SCHEIANU

*BEIA Consult International, Bucharest, Romania*

*E-mail address: andrei.scheianu@beia.ro*

Cristian BECEANU

*BEIA Consult International, Bucharest, Romania*

*E-mail address: cristian.beceanu@beia.ro*

Denisa PASTEAA

*BEIA Consult International, Bucharest, Romania*

*E-mail address: denisapastea@gmail.com*

## **Abstract**

Construction, renovation, and demolition projects produce large amounts of CDW that is costly to dispose. Waste processing plants extract useful materials from unsorted waste to reduce recycling costs. However today the problem of automated sorting of CDW is only partially solved, with a large part of the existing activities performed manually and this can be very tricky for dangerous material like asbestos. So far, no sorting system has been developed able to detect the aggregate (containing also pieces of bricks, tiles and glass), which is then often not recovered, or used for applications with very low added value, such as fill material in road construction. The remaining waste is usually converted into refuse derived fuel and burned for energy. This article presents a novel system architecture for sorting Construction and Demolition Waste (CDW) into high-purity, and small-size separated fractions for high-grade applications in the building industry. The method will be a “cutting-edge” technology for a modular robotic system to be easily integrated into customized end-user products. The architecture will be based upon technology for on-fly waste classification and will deliver a necessary technology demonstrator. The first result of the project is to obtain a highly automated and flexible process line for indexing and sorting CDW. Secondly, the system wants to achieve the application of vision sensors and the development of classification algorithms for fast identification and selection of CDW materials. The development of a novel grasping system for rapid CDW material handling and processing also represents a goal for the presented system. The proposed method can overcome environmental issues due to CDW, increasing the overall recycled material and maximize the technical and economic value of recycled materials and products.

**Keywords:** robotic arm, classification algorithms, recycling system.

# Overcoming the challenges of managing urban parking space in developing cities: lessons of engaging public private partnerships (PPP) in Kampala capital city authority

Michael GALUKANDE-KIGANDA

*ChMC; PhD, Uganda Management Institute, Kampala, Uganda*

*E-mail address: mpgalukande@umi.ac.ug / kigandamichael2000@yahoo.com*

## **Abstract**

This paper presents findings from a study carried out to examine involvement of private partners in managing urban street parking in Kampala City Council Authority. The objectives that guided the study were: to examine how public private partnerships expertise could contribute to improved management of urban street parking in Kampala Capital City Authority. Specifically, the study aimed at examining how public private partnerships could improve compliance to urban parking management regulations in Kampala City.

The study adopted a descriptive and analytical design, which involved the collection of data from RSCE staff, using both qualitative and quantitative approaches.

Findings revealed positive contribution of the expertise of the private partners in urban parking management as manifested in regulation compliance and involvement of stakeholders especially drivers in designing changes in street parking regulations and in identifying priority parking spaces. The study recommends contacting out management of street parking to private actors.

**Keywords:** urban street parking management, Kampala capital city authority.

# Mobilitatea inteligentă – provocări pentru politicile de mobilitate și planificarea spațială

Mihaela Hermina NEGULESCU

*Conf. Dr. Habil. Arh. Universitatea de Arhitectură și Urbanism “Ion Mincu”, București, România  
E-mail address: arh.mihaela.negulescu@gmail.com*

## **Abstract**

Mobilitatea inteligentă - autonomă, conectată, partajată, electrică - se anunță a deveni un peisaj complex de noi tehnologii, infrastructuri, servicii și sisteme de transport bazate pe Tehnologia Informației și Comunicațiilor (TIC). Ea va fi generată, va deservi și va fi conținută de sisteme urbane inteligente, iar acest mecanism va trebui bine gestionat prin politici de mobilitate specifice, pentru păstrarea echilibrului între exigențele de accesibilitate și cele de calitate a locuirii urbane. În contextul unor preocupări intense referitoare la evoluția mobilității inteligente și a efectelor sale holistice, lucrarea propune o sinoptică a potențialelor impacte ale emergentelor Sisteme Inteligente de Transport (STI), de natură socială, economică, de mediu, dar în special a celor de natură spațială. Cele două obiective ale studiului sunt: 1. identificarea unor repere de design al politicilor de mobilitate pentru STI și 2. identificarea unor categorii de previzibile impacte spațiale ale mobilității inteligente.

Studiul se bazează pe concluzii ale documentării și cercetărilor autorului, individuale și în cadrul unor proiecte naționale și internaționale. Abordarea este prospectivă, fundamentată pe o sinteză a cunoașterii actuale cu privire la mobilitatea inteligentă, bazată pe informație selecționată prin metoda triangulației.

Lucrarea concluzionează referitor la oferta de servicii STI și tipurile de comportamente de mobilitate aferente, cu impacte pozitive, care este oportun a fi dezvoltate, respectiv încurajate prin politicile pentru STI și la cele cu potențial impact negativ, care trebuie descurajate și limitate prin aceste viitoare politici. Sunt identificate categorii de efecte și transformări urbane spațial-funcționale generate de STI, la nivel de rețea rutieră, morfologie a străzilor, posibile evoluții la nivel de structură urbană, modificări și noi programe arhitectural-urbanistice, a căror cercetare se va dovedi în continuare oportună și necesară pentru adaptarea orașelor la provocările și exigențele mobilității inteligente, păstrând și chiar sporind calitatea locuirii urbane.

**Cuvinte cheie:** Sisteme inteligente de transport, politici pentru STI, oraș inteligent, vehicule conectate, autonome, partajate, electrice.

# Smart museums: enjoying culture virtually

## Case of Virtual Museum of the National Museums Foundation. Rabat - Morocco

Ikrane SELKANI

*University of Cordoba - Spain*

*E-mail address: ikrame.selkanii@gmail.com*

### **Abstract:**

Before, the city was a space dedicated to offering a range of services to all the inhabitants who lived there, such as public transportation, education, housing.... However, things have undergone a certain change with the introduction of the Internet and ICTs. To this end, we have today begun to hear about -Smart City-this new emerging concept leaves no major metropolis untouched.

The digital and modern age has affected almost every sector, even those who imagined they were frozen in time, thanks to the cities have experienced the technologies were throughout the early 21st century. Here, we cite for example: the world of banks, telecommunications, service companies ... even the public sector such as: education, culture, administration.

Future museums may also contribute to human culture in a society witnessing rapid changes via smart museum technology that encourages constructive participation with the public.

Digital technologies did not emerge overnight in museums, and started by replacing conventional analog broadcasting media without altering the experience of visitors. What is really new is the appearance, which includes screens near the works giving more information.

The term "virtual museum" has been defined as follows : "... a collection of digitized objects logically articulated and composed of various supports which, due to its connectivity and character multi-access, allows you to transcend traditional modes of communication and interaction with the visitor... " (Andrews and Schweibenz, Art Documentation, Spring 1998 issue).

Our study case will also reach the Virtual Museum of the National Museums Foundation Rabat Morocco. Here, we will discover the exhibits the Virtual Museum in partnership with Virtuelli, a virtual imaging agency which is a platform, open to the general public and art lovers that hosts virtual tours of art exhibitions organized by the National Foundation of Museums under its supervision.

**Keywords:** smart cities, virtual museum, new technologies, smart museums, virtual reality.

# The impact of smart city infrastructure on the global economic growth

Alexandra UNGUREANU

*Stefan cel Mare University of Suceava, Suceava, Romania*

*E-mail address: alexandra.ungureanu2016@gmail.com*

## **Abstract**

One of the main features of the 21st century is the massive attendance of technology, both in the private and business sectors, alongside continuous innovation as a particular constituent in the development of smart cities. The advantages of a smart city are mass and behind the changes that turn urban centers into smart cities, are dependable technologies apace with citizen participation and involvement, and an innovative approach to city management. Regarding this mental image, the global economy of 2030 with entrepreneurship at the core is going to be the result of the forced digitalization started one decade before by the COVID-19 pandemic. In this context, the objective of this paper is to emphasize the importance of implementing innovative high-tech mechanisms with the capacity of creating ecosystems defined by sustainable growth, with the capability of leading to a higher level of global welfare. The prior concept that gravitates around the paper, involves the intelligence within the smart cities which is no longer measured in the ability to surprise with "special effects" but in creating a relationship of mutual knowledge between cities and citizens. The transition to the new phase of smart cities occurs at the collision of a series of digital phenomena: the Internet of Things, big data analytics, AI, VR, and a greater culture of digital governance. For this paper, I have chosen a case study method to obtain relevant information through the overlaying of information from different sources. The results have proven that smart cities are reshaping the policy of public services delivery and management, transforming the way technology acts as a strategic lever for global urban development. The implications of this paper bring a contribution to the smart cities' data research via the value of the relevant results of the qualitative research methodology, detailed in the paper.

**Keywords:** innovation, urban policy, digital governance, city management.

# Conceptualization of the municipalities' role in development of IoT-driven smart city venture as urban entrepreneurship: A survey of Mashhad Metropolitan Area

Babak ZIYAE

Assistant Professor, Faculty of Entrepreneurship, University of Tehran

Mehran REZVANI

Associate Professor, Faculty of Entrepreneurship, University of Tehran

Mohammad EYNOLGHOZAT

PhD student, Faculty of Entrepreneurship, University of Tehran

Erfan MORADIYAN

PhD student, Faculty of Entrepreneurship, University of Tehran

## Abstract

Smart city is a complex term and it does not have a unique global definition but it is said that it consists of three components including people, technology and institutions. On the other hand, the smartness of a city is driven and enabled technologically by the emergent Internet of Things (which will be referred to as "IoT" in this article) paradigm which aims at exploiting the most advanced communication technologies to bring added-value services to the city and its citizens. City policy makers are therefore mandated to try to understand different factors and help realize the smart city vision which is improvement of citizens' quality of life. This article investigates different aspects of IoT-driven smart city and then concentrates on the role of municipalities in development of urban entrepreneurship in this ecosystem. A mixed-method research in Mashhad metropolis municipality also reveals that how this big city has progressed so far regarding the development of IoT entrepreneurship in smart city context. The result also puts emphasis on centralized direction of IoT-driven smart city ecosystem in order to succeed in development of IoT-driven smart city venture as urban entrepreneurship.

**Keywords:** Smart City, Internet of Things, Entrepreneurship, Municipalities

# Smart cities and age-friendly cities in Romania: an analysis of current projects and practices

Loredana IVAN

*National University of Political Studies and Public Administration, Bucharest,  
Romania*

*E-mail address: loredana.ivan@comunicare.ro*

Joost VAN HOOFF

*Faculty of Social Work & Education, The Hague University of Applied Sciences, Den Haag, The Netherlands*

*E-mail address: j.vanhoof@hhs.nl*

Dorin BEU

*Faculty of Building Services Engineering, Technical University of Cluj Napoca, Cluj-Napoca, Romania*

*E-mail address: dorin.beu@insta.utcluj.ro*

## **Abstract**

The role of smart cities in order to improve older people's quality of life, sustainability and opportunities, accessibility, mobility and connectivity is increasing and acknowledged in public policy and private sector strategies in countries all over the world. Smart cities are one of the technological-driven initiatives that may help create an age-friendly city. Few research studies have analysed emerging countries in terms of their national strategies on smart or age-friendly cities. In this study, Romania -which is predicted to become one of the most ageing countries in the European Union, is used as a case study. Through document analysis, current initiatives at the local, regional and national level addressing the issue of smart and age-friendly cities in Romania are investigated. In addition, a case study is presented to indicate possible ways of the smart cities initiatives to target and involve older adults. The role of different stakeholders is analysed in terms of whether initiatives are fragmentary or sustainable over time, and the importance of some key factors, such as private-public partnerships and transnational bodies. The results are discussed revealing the particularities of the smart cities initiatives in Romania in the time frame 2012-2020, which to date, have limited connection to the age-friendly cities agenda. Based on the findings, a set of recommendations are formulated to move the agenda forward.

**Keywords:** age-friendly cities; smart cities initiatives; smart city; Romania & public policies on smart cities; evaluating smart cities initiatives.

# The future of work in the smart city: managing virtual work by leveraging smart cities to achieve organizational strategy

Joshua Olusegun FAYOMI

*Kaunas University of Technology, Kaunas, Lithuania*

*E-mail address: joshua.fayomi@ktu.edu*

Zainab Abdulqadir SANI

*University of Debrecen, Debrecen, Hungary*

*E-mail address: abdulqadirz@ymail.com*

## **Abstract**

The goal of the organization is to maintain and increase productivity of its resources including human capital. A clear assessment of all the available resource to management provides requisite information to enable them allocate work tasks and monitor and assess outputs. The way work is done is changing across most industries and the future of work is one that is been celebrated and researched by experts and schollars alike. The ongoing COVID-19 pandemic has open up the virtual work sphere as a paradigm for all organizations to explore, and many otherwise traditional work arrangement are beginning to innovate around how their work functions are achieved. This paper explores the concepts of smart cities, the future of work and virtual work. And through a mixed mehod of interviews and survays identifies how organizations are leveraging on the advantages of smart cities in planning and implementing work arrangements for their employees in order to cope with the current pandemic and what their strategy would be overall when the situation comes back to normal. About 8 top managers were interviewed and 59 employees currently working virtually were surveyed. Responses were analised and connectivity, flexibility and autonomy were identified as factors organizations considered as they planned and implemented virtual work arrangements. And their outlook for the future certainly included virtual work arrangement for at least a fraction of their employees as working from home, cafes, hotels etc has become a norm today and is generally accepted as a legitimate work arrangement between organizations and their employees.

**Keywords:** smart cities, virtual work, future, organizational strategy.

# Transforming Mashhad into a smart city

Navid ZOHDI

*Smart City Deputy, ICT organization of mashhad Municipality, Iran  
E-mail address: zohdi-n@mashhad.ir*

Ali MOTEVALIZADEH

*Head of smart technologies  
E-mail address: motevalizadeh-a@mashhad.ir*

## **Abstract**

Due to the growing urbanization, cities are facing serious challenges, including implementing urban infrastructures, energy consumption and urban optimal management, air and water pollution. Therefore, in order to overcome the challenges, we must move towards smart cities.

Mashhad, like many other metropolises around the world, is facing above mentioned challenges. Therefore, the city local government has a special role in solving these challenges and providing appropriate service to citizens, pilgrims and travelers.

According Mashhad municipality mission and with the approach of transforming the city into a smart city, the largest datacenter in the east of the country, fiber optic back bone and integrated telecommunication stations has been implemented. These reliable infrastructure has provided the possibility of developing various electronic and smart urban services in public-private-people partnership. Like many mobile apps, integrated urban micropayment by MANcard and E-wallet, 150 one point services from one point in Mashhad's web portal.

Regarding improving inhabitants quality of life and reducing pollution, on-demand recycle waste collection mobile app was developed which improve waste segregation up to 100 percent and leading Mashhad to achieve remarkable silver medal in 2020 WeGo award festival.

**Keywords:** Mashhad municipality, PPP partnerships, urban services, urban management.

# Surabaya towards a smart city constrained by COVID-19

Akhmad Yusuf ZUHDI,

*Department of Civil Infrastructure Engineering, Sepuluh Nopember Institute of Technology, Surabaya, Indonesia*

*E-mail address: yusuf\_zuhdi@ce.its.ac.id*

Aan FAUZI,

*Department of Civil Infrastructure Engineering, Sepuluh Nopember Institute of Technology, Surabaya, Indonesia*

*E-mail address: aanfauzi@its.ac.id*

## **Abstract**

Surabaya, East Java is one of the cities in Indonesia which is well known as a Smart City. This achievement can not be separated from the breakthroughs and innovations that the local City Government (Pemkot) has made. The city government of Surabaya has also received various awards from within and outside the country, especially in the field of smart city. One of the awards is the 2018 OpenGov Recognition of Excellence. However, when the smart city was being held, a pandemic emerged that attacked almost all parts of the world. This study aims to identify obstacles and steps to deal with Covid-19 without disturbing the stability of Surabaya towards a smart city. The data were obtained from social media from the Surabaya municipal government and the smart city parameters were taken from academic papers. The concept of smart city according to Surabaya begins with Smart Government, namely by implementing an internet-based government system which is also known as e-procurement. Other parameters are smart branding, smart economy, smart living, smart society, smart environment. This paper focuses on discussing smart environment without neglecting other parameters. Unfortunately, since the Covid-19 pandemic Surabaya has become the city in Indonesia with the most corona cases after Jakarta and Bogor with confirmed positive data up to November 1, 2020, amounting to 15,973 cases. The Surabaya City Government (Pemkot Surabaya) has implemented various efforts in order to prevent or break the chain of the spread of COVID-19. Consists of promotive, preventive, curative and rehabilitative efforts.

**Keywords:** Surabaya Smart city, smart environment, to maintain covid 19.