

January 11, 2022



# MANAGING THE TRANSITION TOWARDS SUSTAINABILITY

A MULTI-STAKEHOLDERS' AND TERRITORIAL PERSPECTIVE

Prof Nathalie Crutzen



S'LAB







INTRODUCTION

THE SMART CITY INSTITUTE

PUBLICATIONS

APPLIED RESEARCH PROJECTS



# INTRODUCTION

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- ▶ Strong interest for research on sustainability management for the last 20 years (« travail de synthèse », Master thesis)
- ▶ PhD thesis in the field of Strategic Performance Management (2005-2009)
- ▶ Academic Lead of the Accenture Chair in Sustainable Strategy at HEC Liege (2010-2015)

# INTRODUCTION

## ACCENTURE CHAIR (2010-2015)

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- ▶ Publications on sustainability, strategy and performance management
- ▶ Applied research projects- eg. the international corporate sustainability barometer
- ▶ Postdoctoral research stay (9 months in 2012)
  - ▶ Schulich School of Business, Toronto, Canada (Dirk Matten & Andy Crane)
  - ▶ International Centre for Corporate Social Responsibility, Nottingham University Business School, UK (Jeremy Moon, JP Gond & Christian Herzig)
  - ▶ Center for Sustainability Management, Leuphana University, Luneburg, Germany (Stefan Schaltegger, Roger Burritt)
- ▶ Specific courses (HEC Liege, ESC Rennes, EDHEC)
- ▶ Participation to many practice-oriented workshops (Febelfin, Business and Society Belgium)

# INTRODUCTION

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- ▶ Progressively ....

How to ensure the sustainability (management) of territorial ecosystems ?

- ▶ Contribution to a « new » research agenda in management science dedicated to the **management of the transition of territories/cities towards sustainability, using a multi-stakeholders' perspective**

**via the** Smart City Institute (2015 - ...)





INTRODUCTION



**THE SMART CITY INSTITUTE**



PUBLICATIONS



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# THE SMART CITY INSTITUTE

## MISSIONS

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**SMART  
CITY  
INSTITUTE**

**TOWARDS SUSTAINABILITY**





# SMART CITY

## OUR DEFINITION

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A “Smart City” is a **multi-stakeholders’ ecosystem** (composed with local governments, citizens’ associations, multinational and local businesses, universities, international institutions...)

Engaged in a **sustainability strategy/transition**

Using technologies (such as digital) as potential **enabler**

In order to become **more sustainable** (economic prosperity, social well-being & conservation of our natural resources)

# THE SMART CITY INSTITUTE

## MISSIONS

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RESEARCH



TEACHING



INNOVATION



AWARENESS

# THE SMART CITY INSTITUTE

## RESEARCH FOCUS

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- Original focus on the management of the transition towards smarter and more sustainable territories/cities with research on:
  - ▶ Strategy & policy
  - ▶ Governance & stakeholders' dynamics
  - ▶ New public management
  - ▶ Performance Management/Control/Monitoring
  - ▶ Impact assessment
  - ▶ Entrepreneurship & new business models (eg. Circular economy, urban agriculture)
- ▶ **Multidisciplinary** team of scientific and applied researchers (quali and quanti methodologies)
- ▶ European funding (FEDER, Interreg) + Wallonia



# THE SMART CITY INSTITUTE

## RESEARCH TEAM

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Dr. JESSICA  
CLEMENT

Sustainability  
Transition/Smart City  
Policies



Dr. GIOVANNI  
ESPOSITO

Change Management  
Public Management



Dr. MICHEL  
MANJÒN-ANTOLÌN

Impact of  
Smart Cities



Dr. LUCA MORA

Urban innovation



Dr. RAMA  
KUMMITHA

Entrepreneurship/  
Smart City Strategies

# THE SMART CITY INSTITUTE

## RESEARCH TEAM



HÉLÈNE  
BLEUS

Circular Economy  
Business Models



CHARLOTTE  
FERRARA

Consumer Behavior  
Circular Economy



BENOIT  
RUYSSCHAERT

Sustainability  
Management Control  
Local government  
Circular Economy

# THE SMART CITY INSTITUTE

## RESEARCH TEAM



NICOLAS  
ANCION

GROOF  
Urban Agriculture



AUDREY  
LEBAS

Governance &  
Management of  
Smart Mobility /  
Monitoring &  
Evaluation



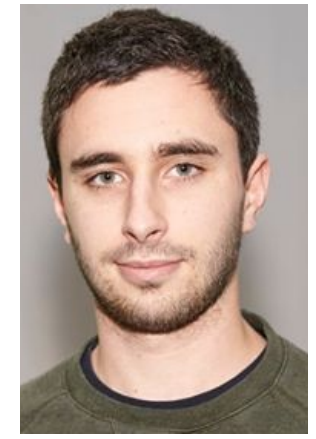
CATHERINE  
NGUYEN

Entrepreneurship  
Spin-off



MAXIMILIEN  
SERVAIS

Diagnosis &  
Evaluation  
Smart City Maturity



FLORENT  
SCATTAREGGIA

GROOF  
Urban Agriculture

# THE SMART CITY INSTITUTE

## MANAGEMENT



NATHALIE CRUTZEN

Academic Director

# THE SMART CITY INSTITUTE

## COLLABORATIONS

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- **Multidisciplinary** research projects (Gembloux, Lepur, UNamur, UMon)
- International research network
  - Leuphana University Luneburg
  - Erasmus Rotterdam
  - Newcastle Business School
  - Nova Business School, Portugal
  - Universidad Nacional de Chile
  - University of Laval (Quebec)
  - Texas A&M University (TTI)
  - University of South Australia/Griffith University





INTRODUCTION



THE SMART CITY INSTITUTE



**PUBLICATIONS**



APPLIED RESEARCH PROJECTS



## OUR LATEST PEER-REVIEWED PUBLICATIONS

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- ▶ Kummitha, R., & Crutzen, N. (2017). How do we understand smart cities? An evolutionary perspective. *Cities (HEC Liege Ranking : C)*, 67, 43-52.
- ▶ Crutzen, N., Bounazef, D., & Qian, W. (2018). Developing Sustainability Mobility Controls: The Case of Four Belgian Local Governments. *Social and Environmental Accountability Journal (HEC Liege Ranking : C)*, , 38, 2156-2245.
- ▶ Kummitha, R., & Crutzen, N. (2019). Smart cities and the citizen-driven internet of things: A qualitative inquiry into an emerging smart city. *Technological Forecasting and Social Change (HEC Liege Ranking : B)*, 140, 44-53.

## OUR LATEST PEER-REVIEWED PUBLICATIONS

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- ▶ Desdemoustier, J., Crutzen, N., & Giffinger, R. (2019). Municipalities' understanding of the Smart City concept: An exploratory analysis in Belgium. *Technological Forecasting and Social Change (HEC Liege Ranking : B)* 142, 129-141.
- ▶ Desdemoustier, J., Crutzen, N., Cools, M., & Teller, J. (2019). Smart City appropriation by local actors: An instrument in the making. *Cities (HEC Liege Ranking: C)*, 92, 175-186.
- ▶ Crutzen, N., Van Bockhaven, J., Schaltegger, S., & Giffinger, R. (2019). Guest Editorial - Sustainability Accounting and Control for Smart Cities. *Sustainability Accounting, Management and Policy Journal, (HEC Liege Ranking : C)*, 10(4), 646-653.

## OUR LATEST PEER-REVIEWED PUBLICATIONS

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- ▶ Esposito, G., Terlizzi, A., & Crutzen, N. (2020). Policy narratives and megaprojects: the case of the Lyon-Turin high-speed railway. *Public Management Review* (**HEC Liege Ranking : B**), 1-25.
- ▶ Esposito, G., Clement, J., Mora, L., & Crutzen, N. (2021). One size does not fit all: Framing smart city policy narratives within regional socio-economic contexts in Brussels and Wallonia. *Cities* (**HEC Liege Ranking : C**), 118
- ▶ Clement, J., & Crutzen, N. (2021). How Local Policy Priorities Set the Smart City Agenda. *Technological Forecasting and Social Change* (**HEC Liege Ranking : B**), 171.

## OUR LATEST PEER-REVIEWED PUBLICATIONS

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- ▶ Esposito, G., Nelson, T., Ferlie, E., & Crutzen, N. (2021). The institutional shaping of global megaprojects: The case of the Lyon-Turin high-speed railway. *International Journal of Project Management*, (**HEC Liege Ranking : B**) 1-25.
- ▶ Manjon, M., Aouni, Z., & Crutzen, N. (2021). Green and digital entrepreneurship in smart cities. *Annals of Regional Science* (**HEC Liege Ranking : B**).
- ▶
- ▶ Manjon, M., & Crutzen, N. (2021). Air quality in smart sustainable cities: target and/ or trigger? *Annals of Regional Science* (**HEC Liege Ranking : B**).

# SOME CURRENT SCIENTIFIC RESEARCH PROJECTS

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- ▶ Collaborative ecosystems in Smart Cities
- ▶ Link between UN SDGs & Smart Cities
- ▶ Circular business models and ecosystems
- ▶ Citizens' engagement in Smart Cities
- ▶ Impact of Smart Cities on health
- ▶ Sustainability performance management by local governments
- ▶ Configuration of sustainability strategies by local governments



INTRODUCTION



THE SMART CITY INSTITUTE



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APPLIED RESEARCH PROJECTS



# SOME APPLIED RESEARCH PROJECTS

## INTERNATIONAL CORPORATE SUSTAINABILITY BAROMETER – BELGIAN CASE

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### RESEARCH OBJECTIVE

- ▶ First International Corporate Sustainability Barometer 2012
- ▶ Compare sustainability/CSR management practices over the world



### METHODOLOGY

- ▶ Comparative analysis of practices in 11 countries worldwide
- ▶ The largest companies in those countries have been surveyed (response rate: 22.2%)



# INTERNATIONAL CORPORATE SUSTAINABILITY BAROMETER



A COMPARATIVE ANALYSIS OF 11 COUNTRIES

Eco-Efficiency in Industry and Science 31



Stefan Schaltegger  
Sarah Elena Windolph  
Dorli Harms  
Jacob Hörisch *Editors*

# Corporate Sustainability in International Comparison

State of Practice, Opportunities and  
Challenges



# SOME APPLIED RESEARCH PROJECTS

## PRACTICAL GUIDES

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5. MONITORING & EVALUATION

4. SMART MOBILITY

3. DATA GOVERNANCE

2. CITIZEN PARTICIPATION

1. STRATEGY

5 volumes

DOWNLOADED MORE THAN 10,000 TIMES

# SOME APPLIED RESEARCH PROJECTS

SMART CITY BAROMETERS

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# 7

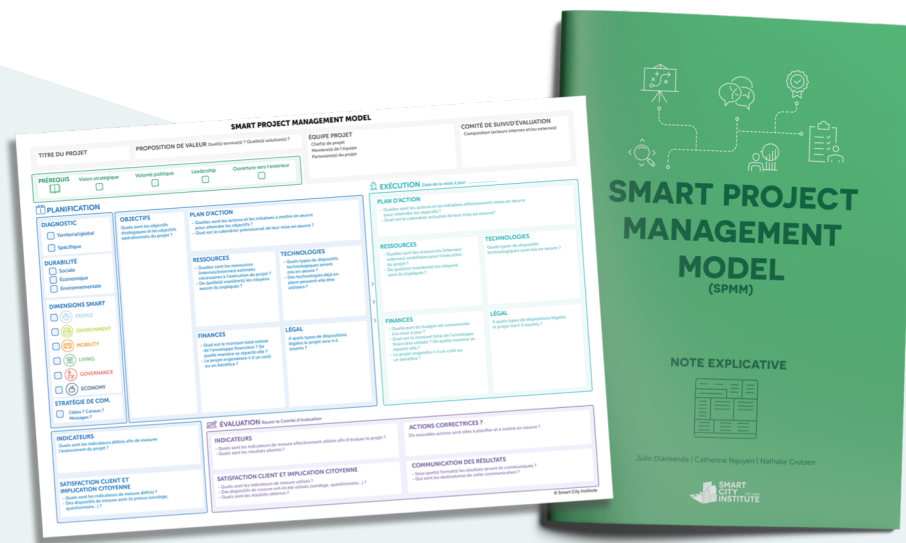
3 Belgian

4 Walloon

- HIGH RESPONSE RATES (53% IN 2020)
- DOWNLOADED MORE THAN 7,000 TIMES

# SOME APPLIED RESEARCH PROJECTS

## SMART PROJECT MANAGEMENT MODEL (SPMM)



- Context: Aligned with the collection of practical guides
- Format: Generic model (open source) + explicative note
- Objective: structure & manage SC projects
- Purpose: reflection, collaboration, communication & monitoring tool

# SOME APPLIED RESEARCH PROJECTS

GROOF

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**An innovative cross-sectoral approach  
to reduce CO2 emissions in the construction  
and agricultural sectors**

by combining energy sharing and local food production



# SOME APPLIED RESEARCH PROJECTS

## GROOF

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- **To reduce** CO2 emissions in the construction and agricultural sectors by combining energy sharing and local food production
- **To identify** and reduce barriers to market access
- **To support** first users in the implementation of their project
- **To experiment** and demonstrate the effectiveness of technology for a representative number of business and social models