BeGeo 2024

LA CONNEXION A L'ETAT PUR
DE ULTIEME CONNECTIE

NGI IGN

Enhancing Citizen Participation in Smart Cities through **Open Data** and Artificial Intelligence

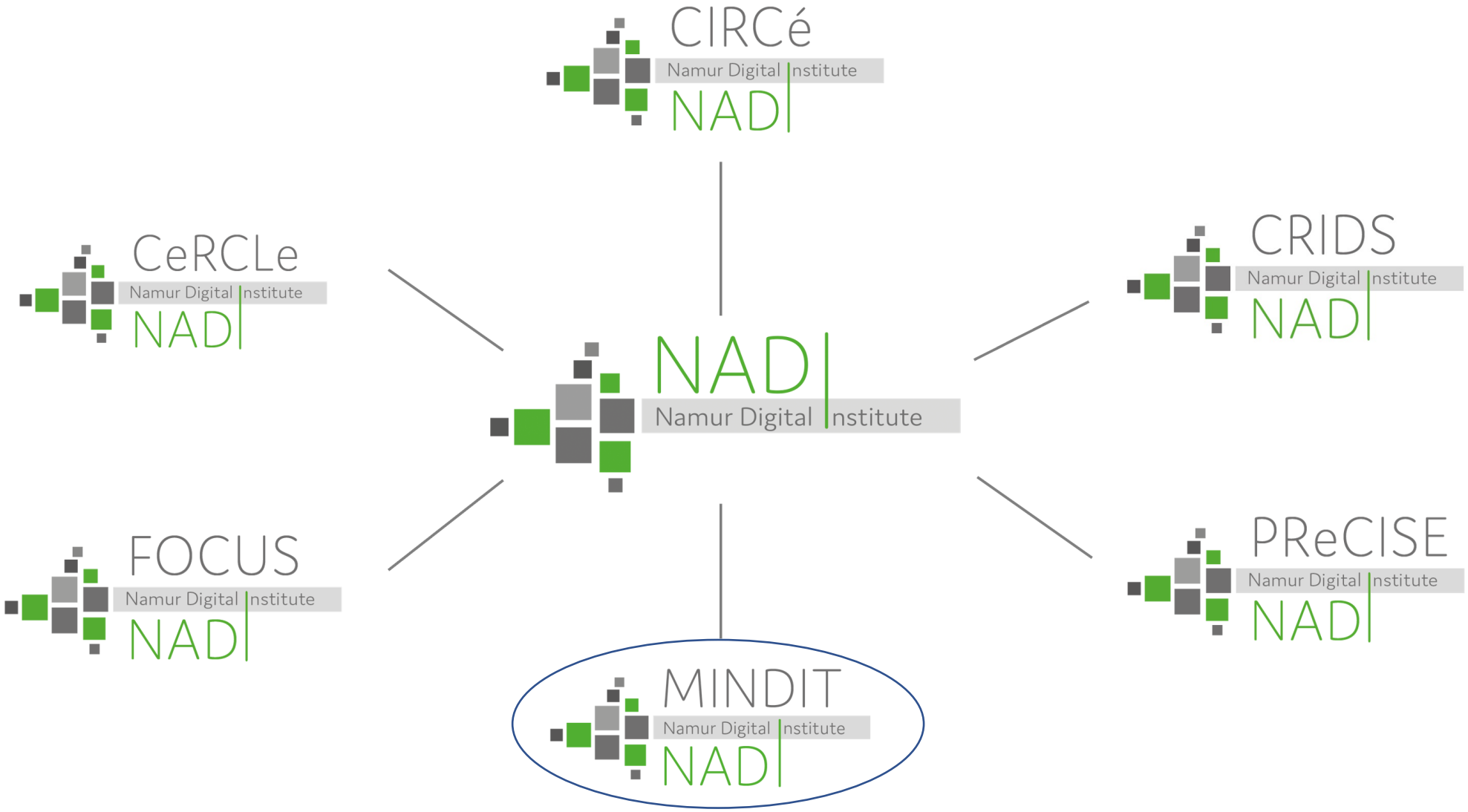
Prof. Anthony Simonofski, University of Namur

begeo.be

be EU belgium24.eu

Sponsored by

vito HEXAGON Leica Geosystems


CIRCé
Namur Digital Institute
NADI
CeRCLe
Namur Digital Institute
NADI
CRIDS
Namur Digital Institute
NADI
NADI
Namur Digital Institute
FOCUS
Namur Digital Institute
NADI
PReCISE
Namur Digital Institute
NADI
MINDIT
Namur Digital Institute
NADI

MINDIT
Namur Digital Institute
NADI

Transforming organizations with research on the Management of Digital Strategies, Decisions and Processes

Digital Strategy

Helping people in organization seize the full potential of digital technologies and better apprehend their integration

- Enterprise architecture
- IT governance
- Digital transformation
- Novel uses of digital solutions
- Sustainable IT

Decision Support

Supporting manager and decision-makers in organizations with digital and data-driven solutions

- Integration of Data, Information & Knowledge management
- Decision support systems
- Business Intelligence
- Decision-maker profiles

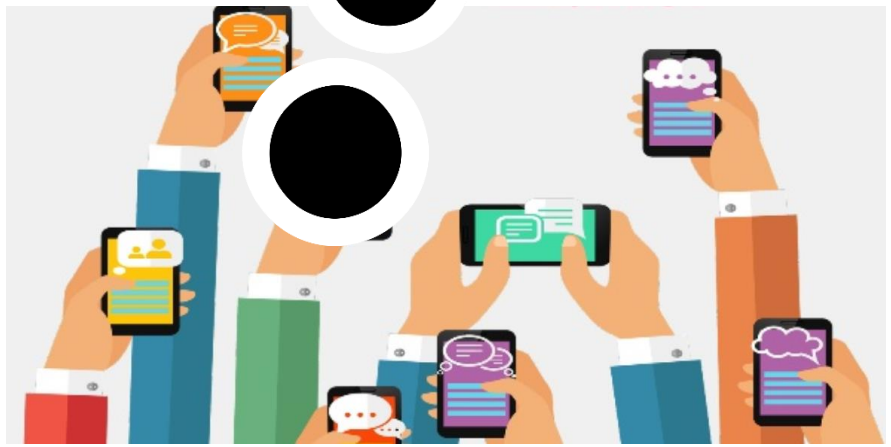
Process Management

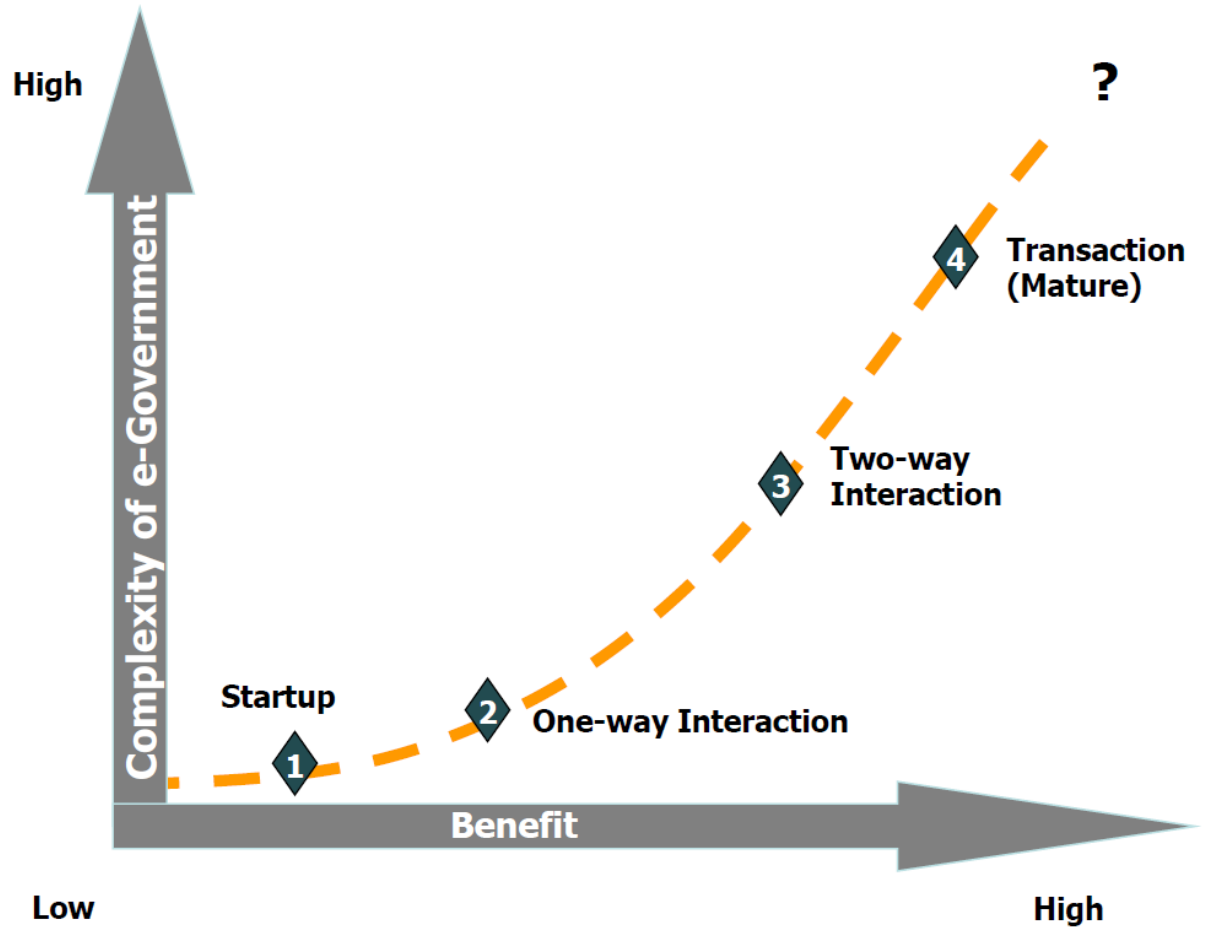
Solving enduring challenges related to business processes with the help of disruptive digital technologies

- Cross-organizational processes
- Decentralized applications
- Process mining
- Business process management

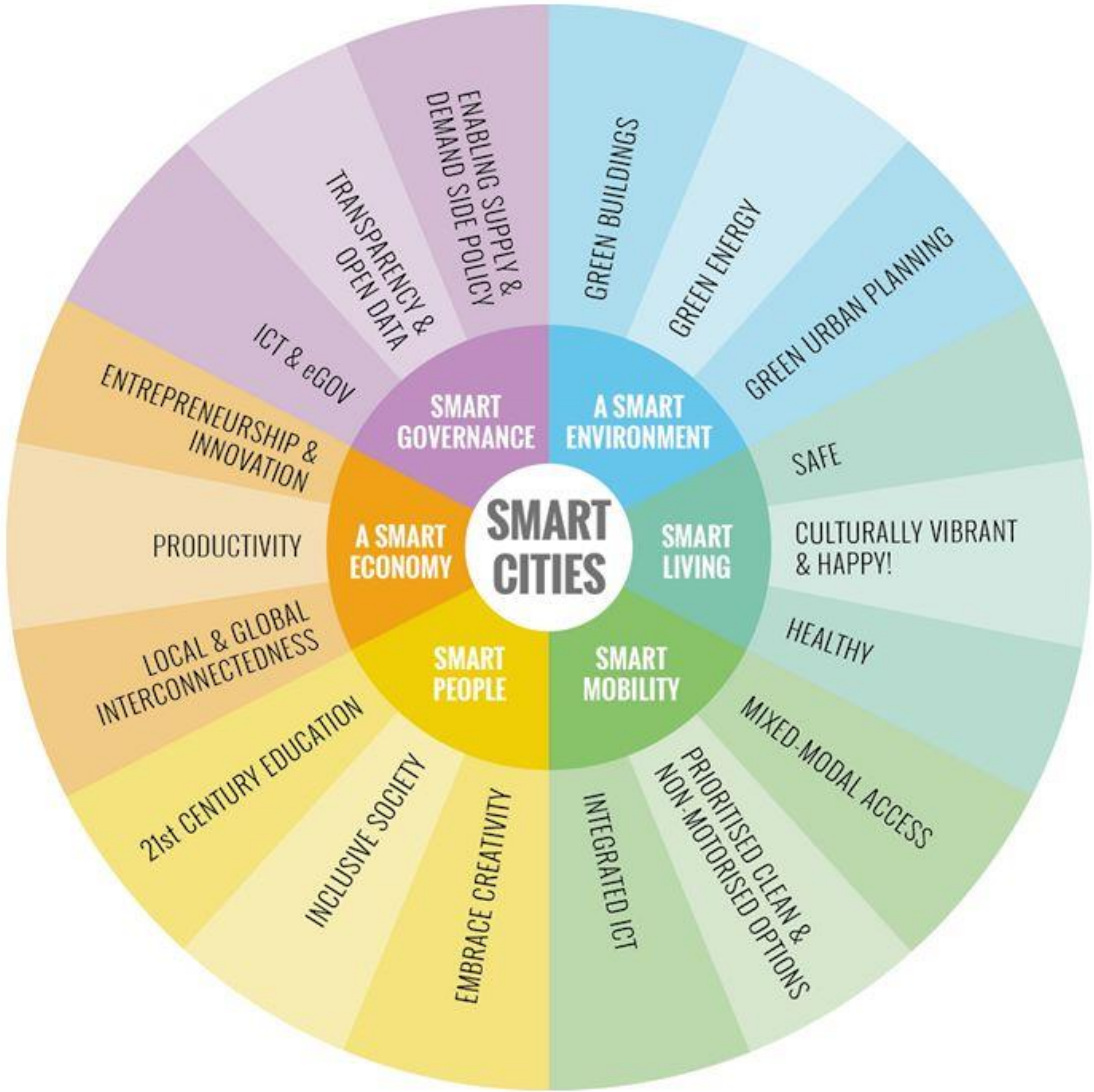
1. Big data & artificial intelligence
2. Collaborative economy
3. Co-innovation & co-creation
4. Security & Privacy
5. Software & Systems
6. Smart cities and e-government
7. Ethics and technology
8. Digital Education

https://nadi.unamur.be/research

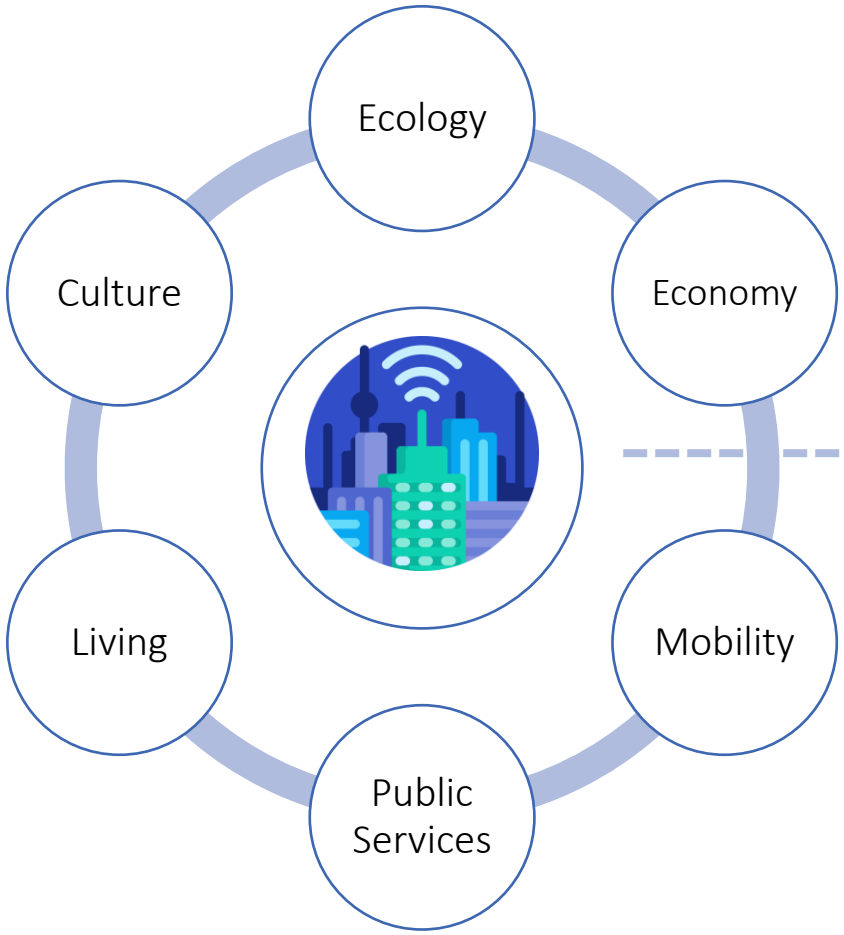


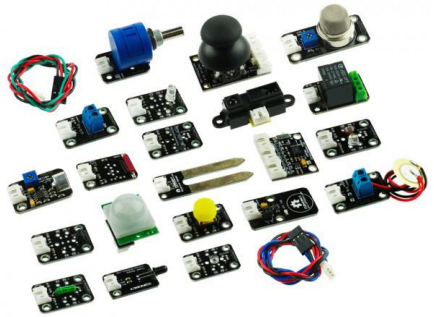

High
Complexity of e-Government
?
4
Transaction
(Mature)
3
Two-way
Interaction
2
One-way Interaction
Startup
1
Benefit
Low
High

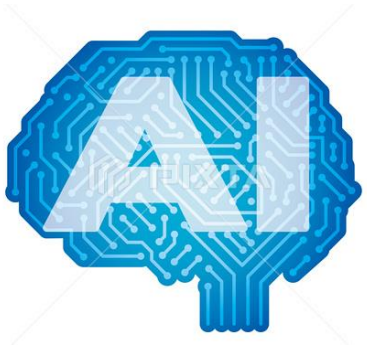
"A city is smart when investments in human capital, social capital and conventional and modern infrastructure enable sustainable economic growth, a better quality of life and sound management of natural resources, through participatory governance" (Caragliu et al., 2009).


SMART CITIES
SMART GOVERNANCE
A SMART ENVIRONMENT
SMART LIVING
SMART MOBILITY
SMART PEOPLE
A SMART ECONOMY
ENABLING SUPPLY & DEMAND SIDE POLICY
TRANSPARENCY & OPEN DATA
ICT & eGOV
GREEN BUILDINGS
GREEN ENERGY
GREEN URBAN PLANNING
SAFE
CULTURALLY VIBRANT & HAPPY!
HEALTHY
MIXED-MODAL ACCESS
PRIORITISED CLEAN & NON-MOTORISED OPTIONS
INTEGRATED ICT
EMBRACE CREATIVITY
INCLUSIVE SOCIETY
21st CENTURY EDUCATION
LOCAL & GLOBAL INTERCONNECTEDNESS
PRODUCTIVITY
ENTREPRENEURSHIP & INNOVATION

Smart City



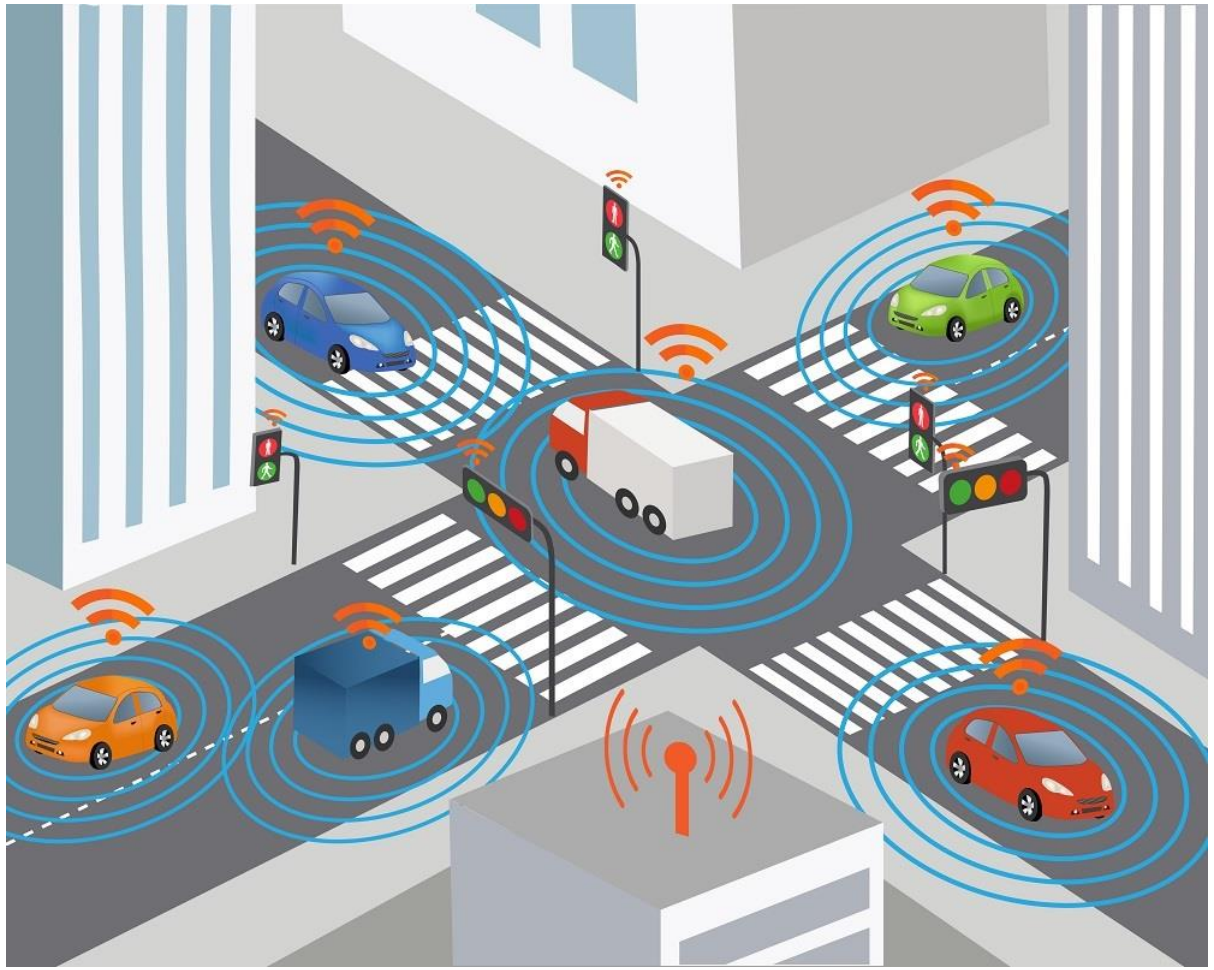




Digital Technologies as enabler

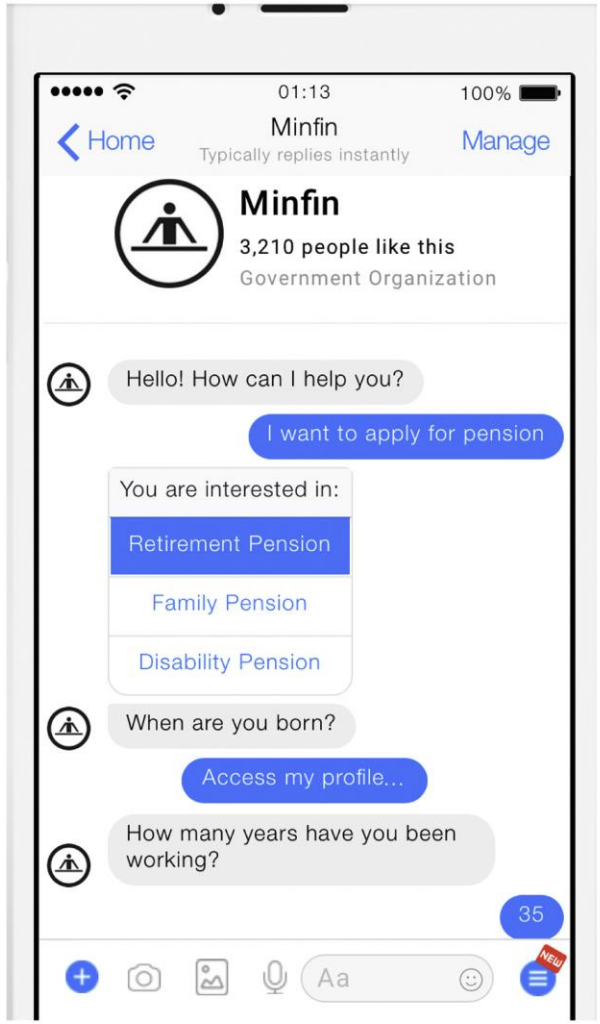
Fernandez-Anez, V., Fernández-Güell, J. M., & Giffinger, R. (2018). Smart City implementation and discourses: An integrated conceptual model. The case of Vienna. Cities, 78, 4-16.

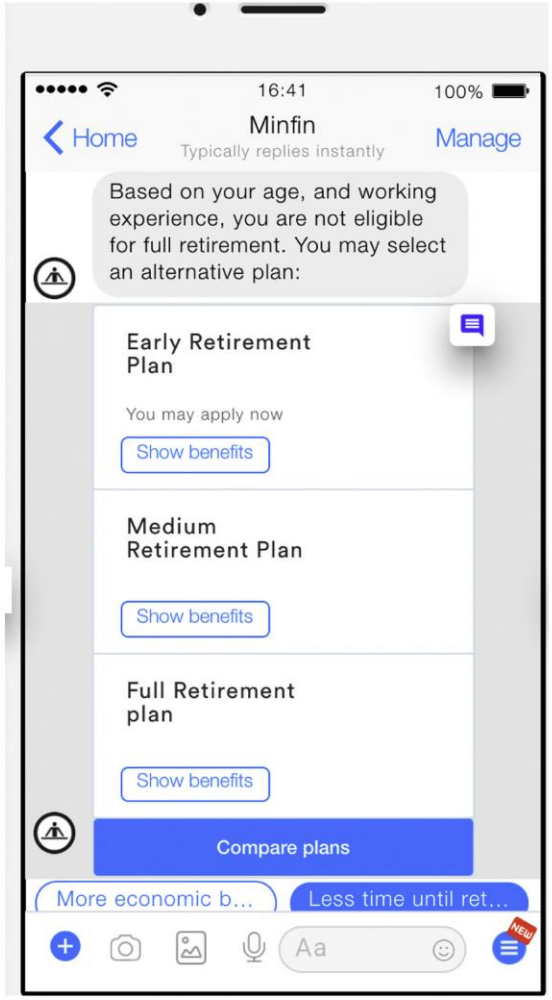
Ahad, M. A., Paiva, S., Tripathi, G., & Feroz, N. (2020). Enabling technologies and sustainable smart cities. Sustainable cities and society, 61, 102301.

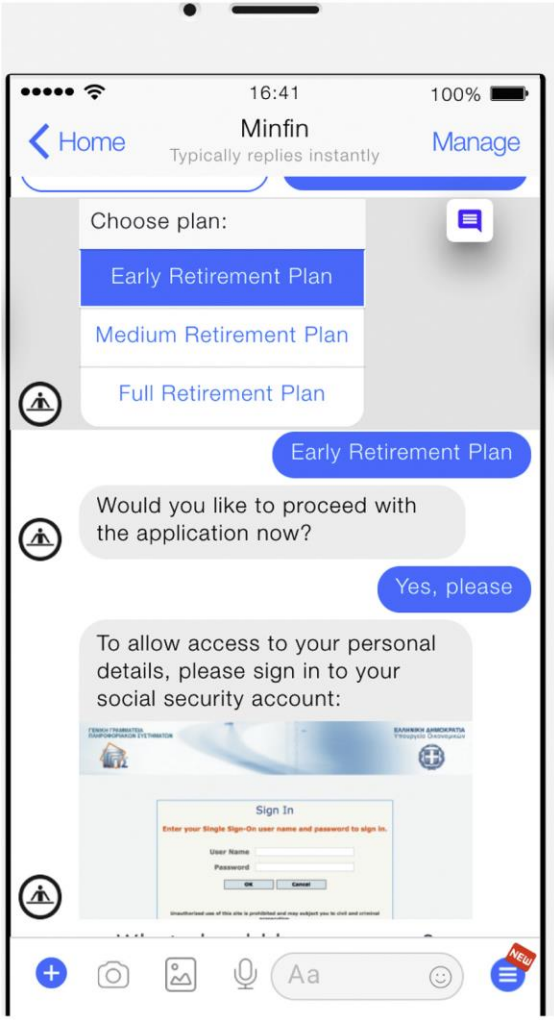


(Iyer, L. S. (2021). AI enabled applications towards intelligent transportation. *Transportation Engineering*, *5*, 100083.)

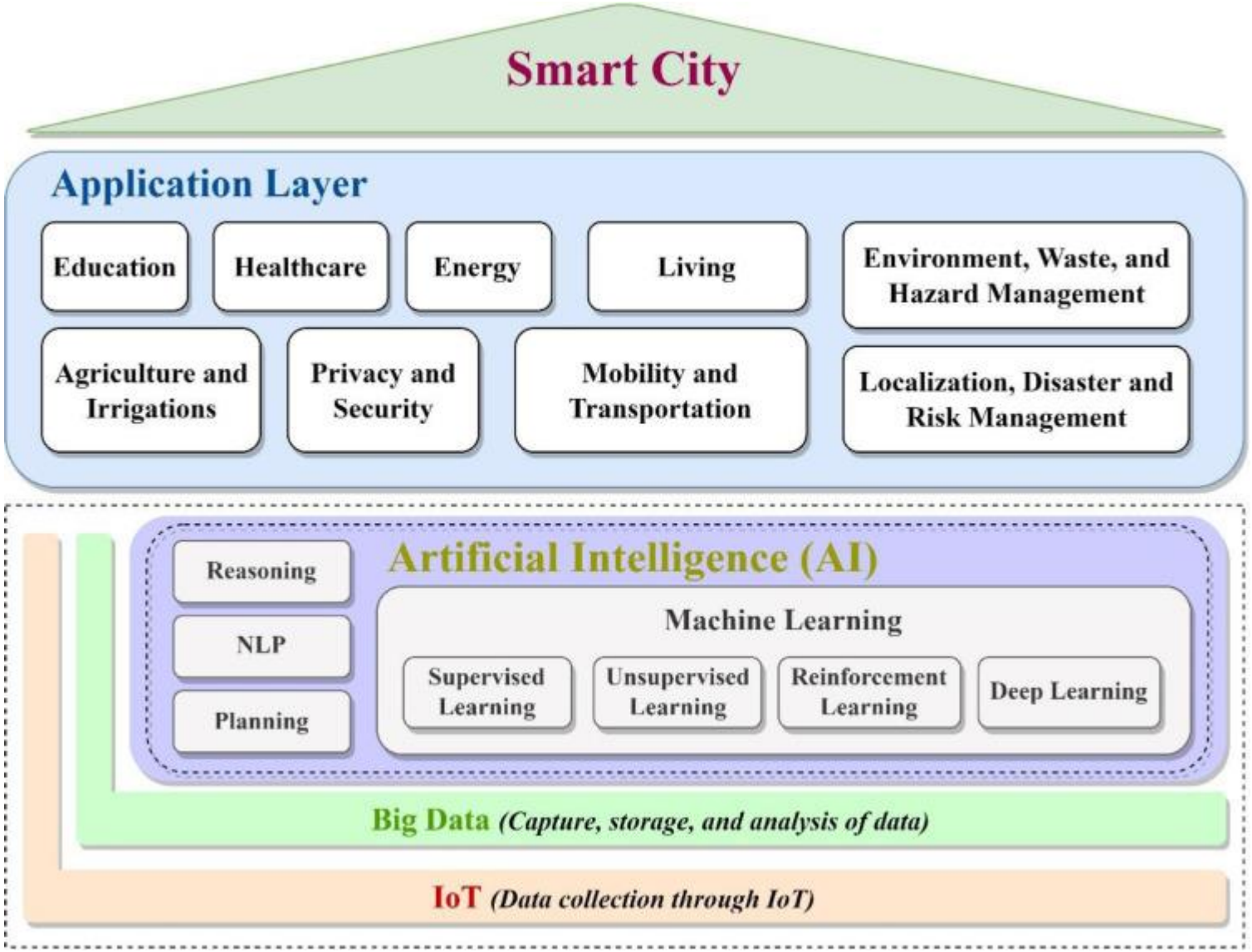
Fang, B., Yu, J., Chen, Z., Osman, A. I., Farghali, M., Ihara, I., ... & Yap, P. S. (2023). Artificial intelligence for waste management in smart cities: a review. *Environmental Chemistry Letters*, 1-31.

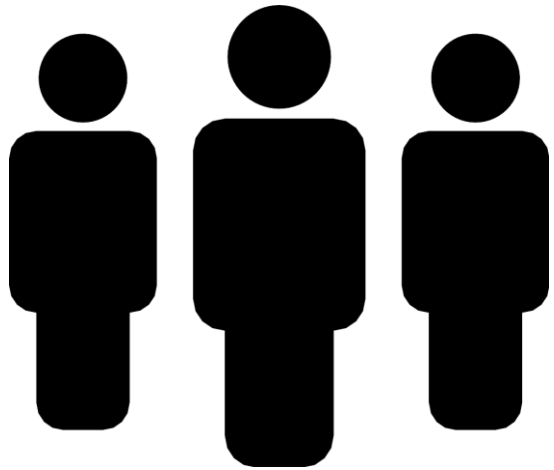

01:13
100%
Home
Minfin
Typically replies instantly
Manage
Minfin
3,210 people like this
Government Organization
Hello! How can I help you?
I want to apply for pension
You are interested in:
Retirement Pension
Family Pension
Disability Pension
When are you born?
Access my profile...
How many years have you been working?
35
Aa


16:41
100%
Home
Minfin
Typically replies instantly
Manage
Based on your age, and working experience, you are not eligible for full retirement. You may select an alternative plan:
Early Retirement Plan
You may apply now
Show benefits
Medium Retirement Plan
Show benefits
Full Retirement plan
Show benefits
Compare plans
More economic b...
Less time until ret...
Aa


16:41
100%
Home
Minfin
Typically replies instantly
Manage
Choose plan:
Early Retirement Plan
Medium Retirement Plan
Full Retirement Plan
Early Retirement Plan
Would you like to proceed with the application now?
Yes, please
To allow access to your personal details, please sign in to your social security account:
Sign In
Aa

Do you have smart city projects you are involved in ?



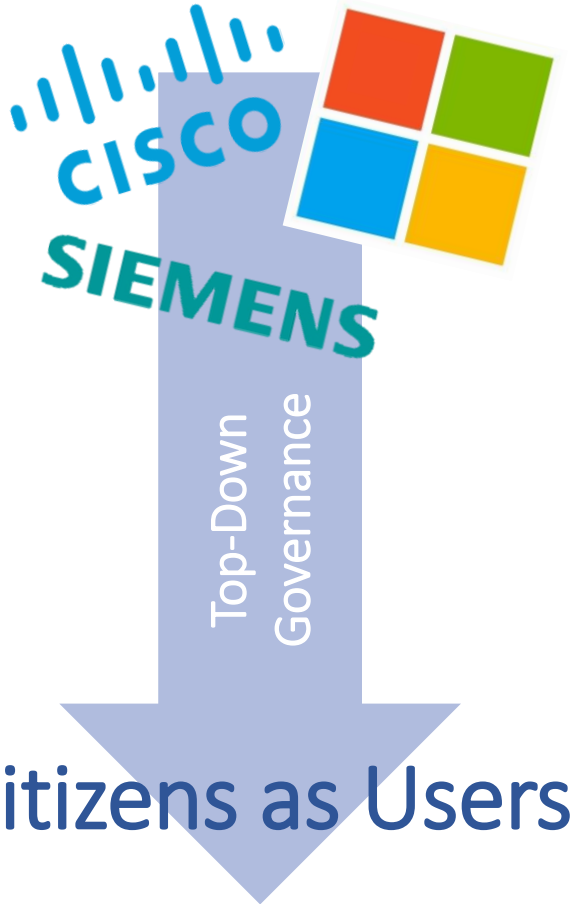


Citizens as passive users

Trust ?

Herath, H. M. K. K. M. B., & Mittal, M. (2022). Adoption of artificial intelligence in smart cities: A comprehensive review. International Journal of Information Management Data Insights, 2(1), 100076.

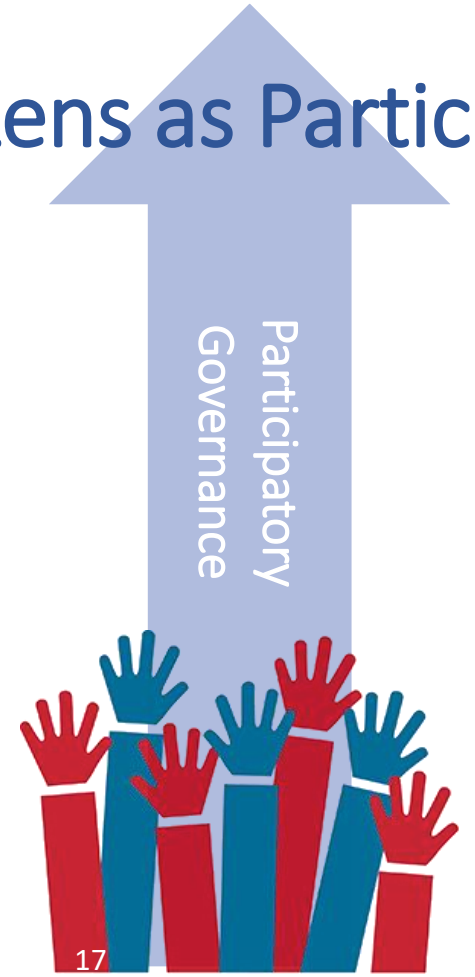
NO
THE
DINOS
THOUGHT
D´ELLE!



Citizens as Users

Smart City

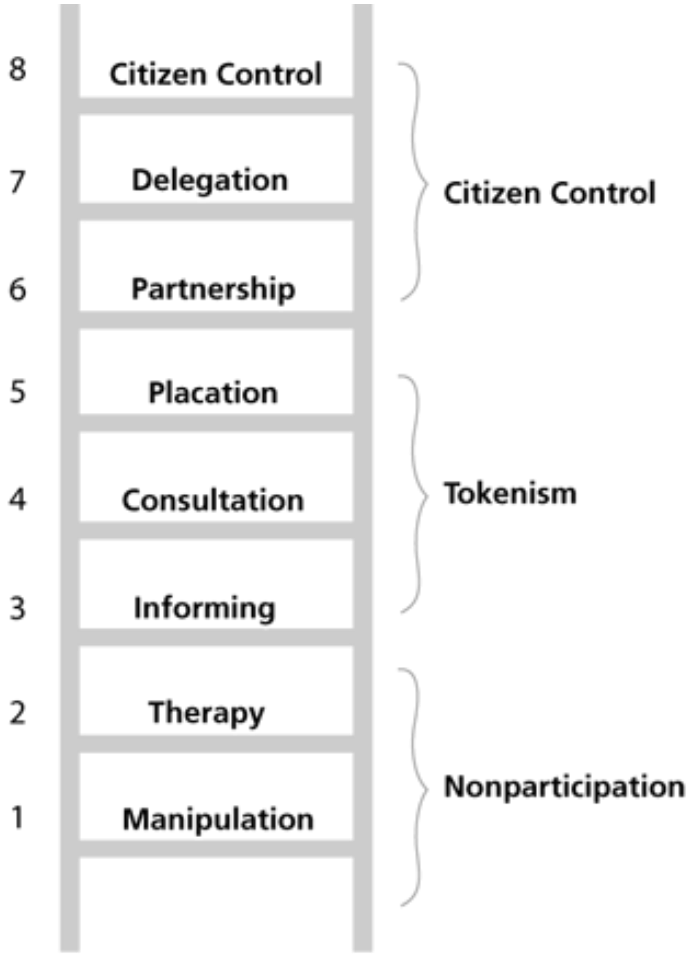
Citizens as Participants



Hollands, R. G. (2015). Critical interventions into the corporate smart city. Cambridge journal of regions, economy and society, 8(1), 61-77.

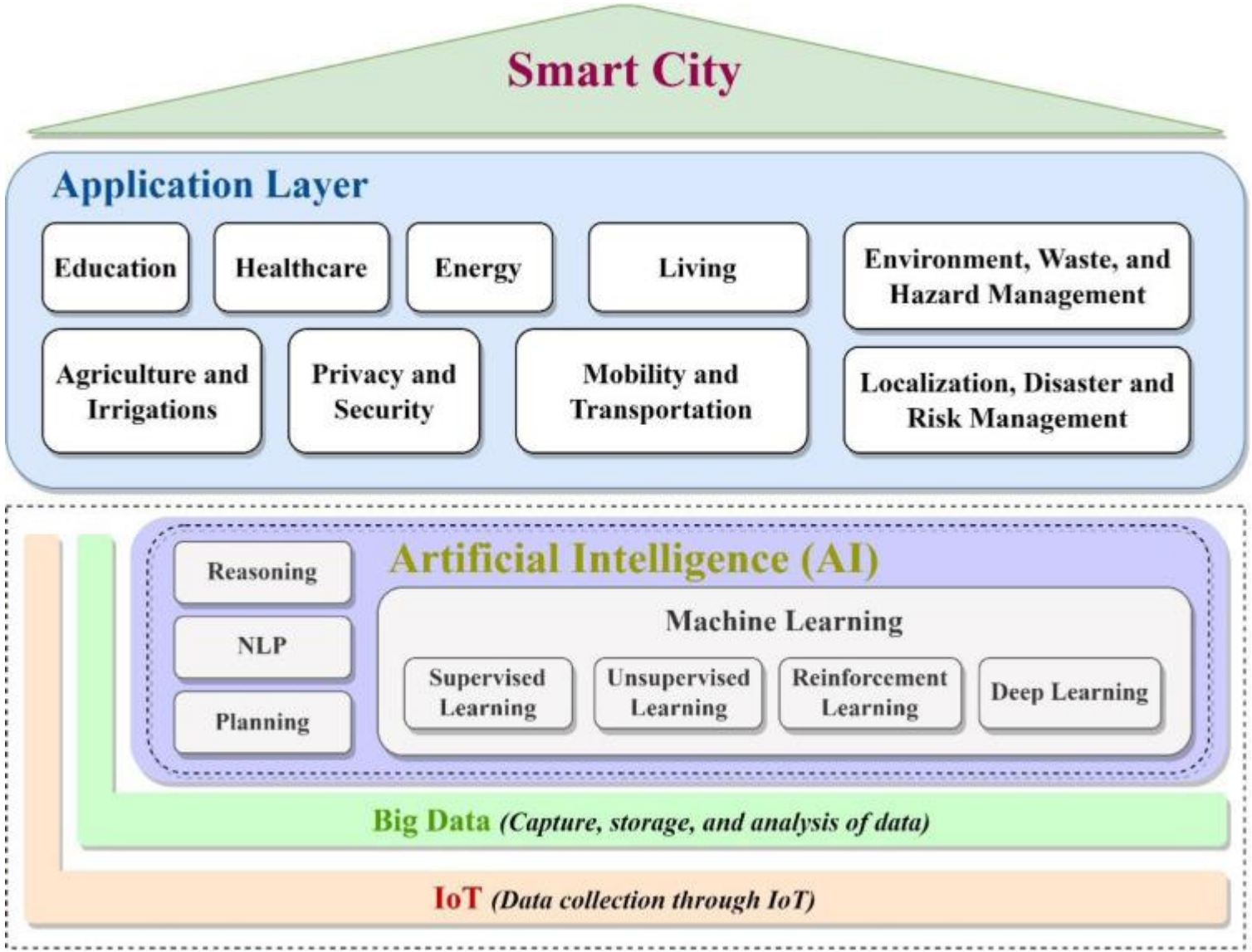
Dameri, R. P., & Rosenthal-Sabroux, C. (2014). Smart city and value creation. In Smart city (pp. 1-12). Springer, Cham.

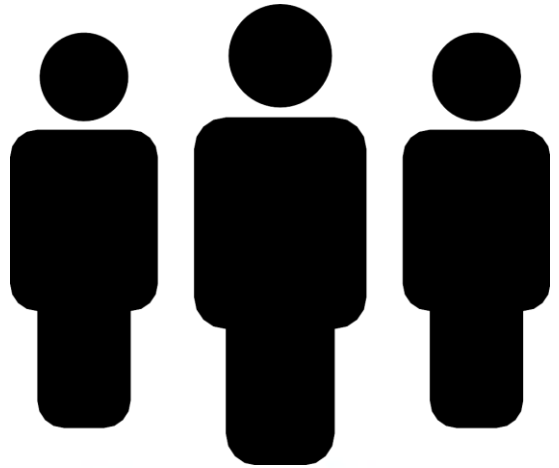
How to involve citizens in smart cities ? Examples ?

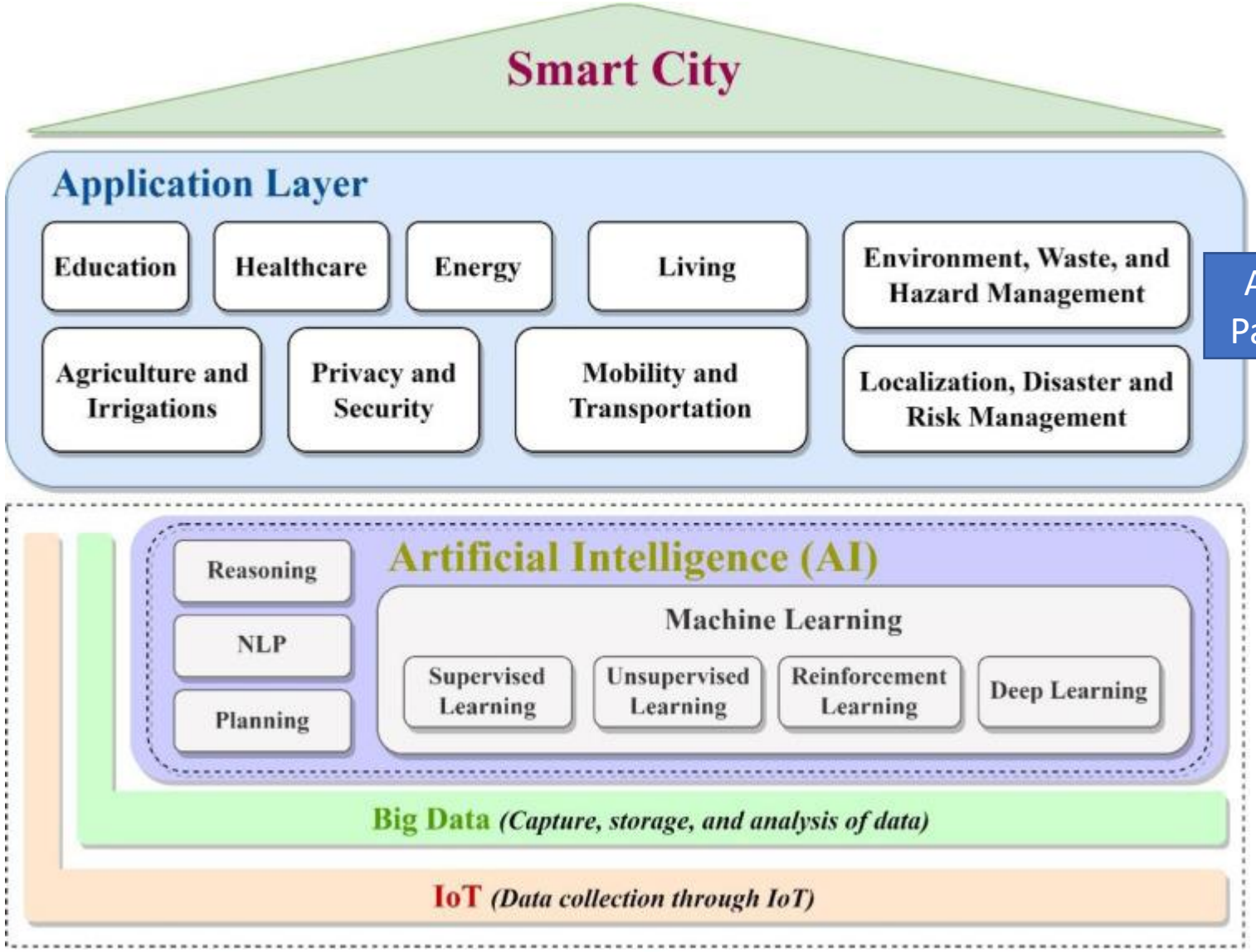


Arnstein's Ladder (1969)

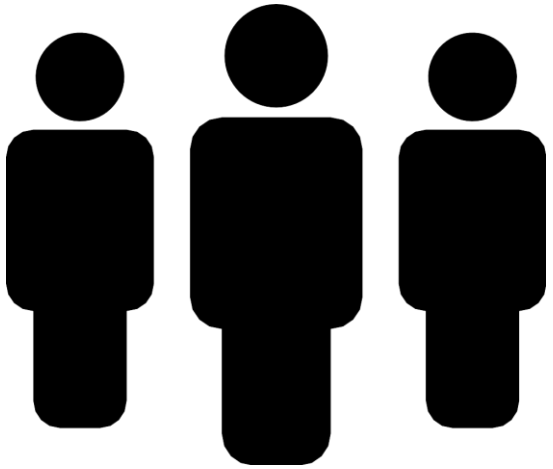
Degrees of Citizen Participation


Smart City
Application Layer
Education
Healthcare
Energy
Living
Environment, Waste, and Hazard Management
Agriculture and Irrigations
Privacy and Security
Mobility and Transportation
Localization, Disaster and Risk Management
Artificial Intelligence (AI)
Reasoning
NLP
Planning
Machine Learning
Supervised Learning
Unsupervised Learning
Reinforcement Learning
Deep Learning
Big Data (Capture, storage, and analysis of data)
IoT (Data collection through IoT)

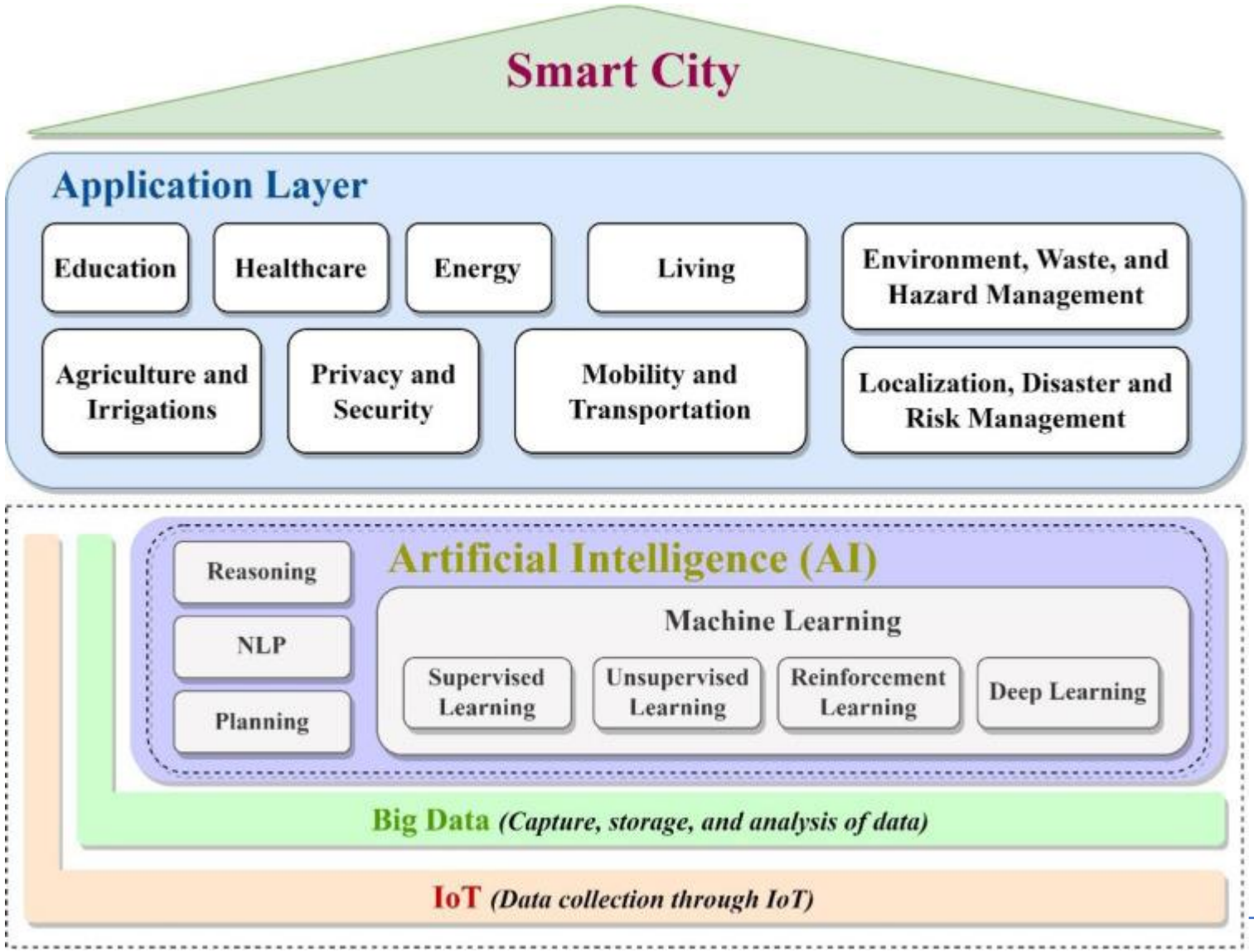


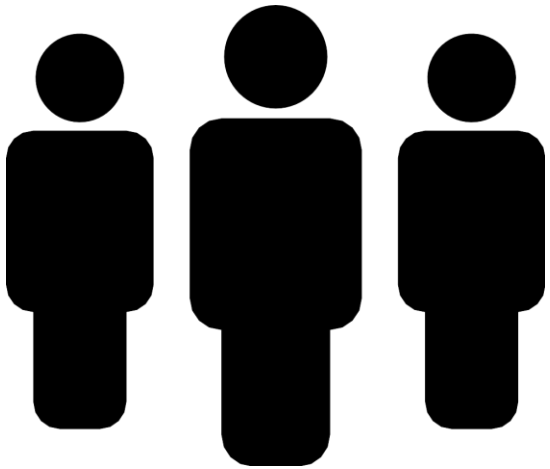


AI-Enhanced Participation ?

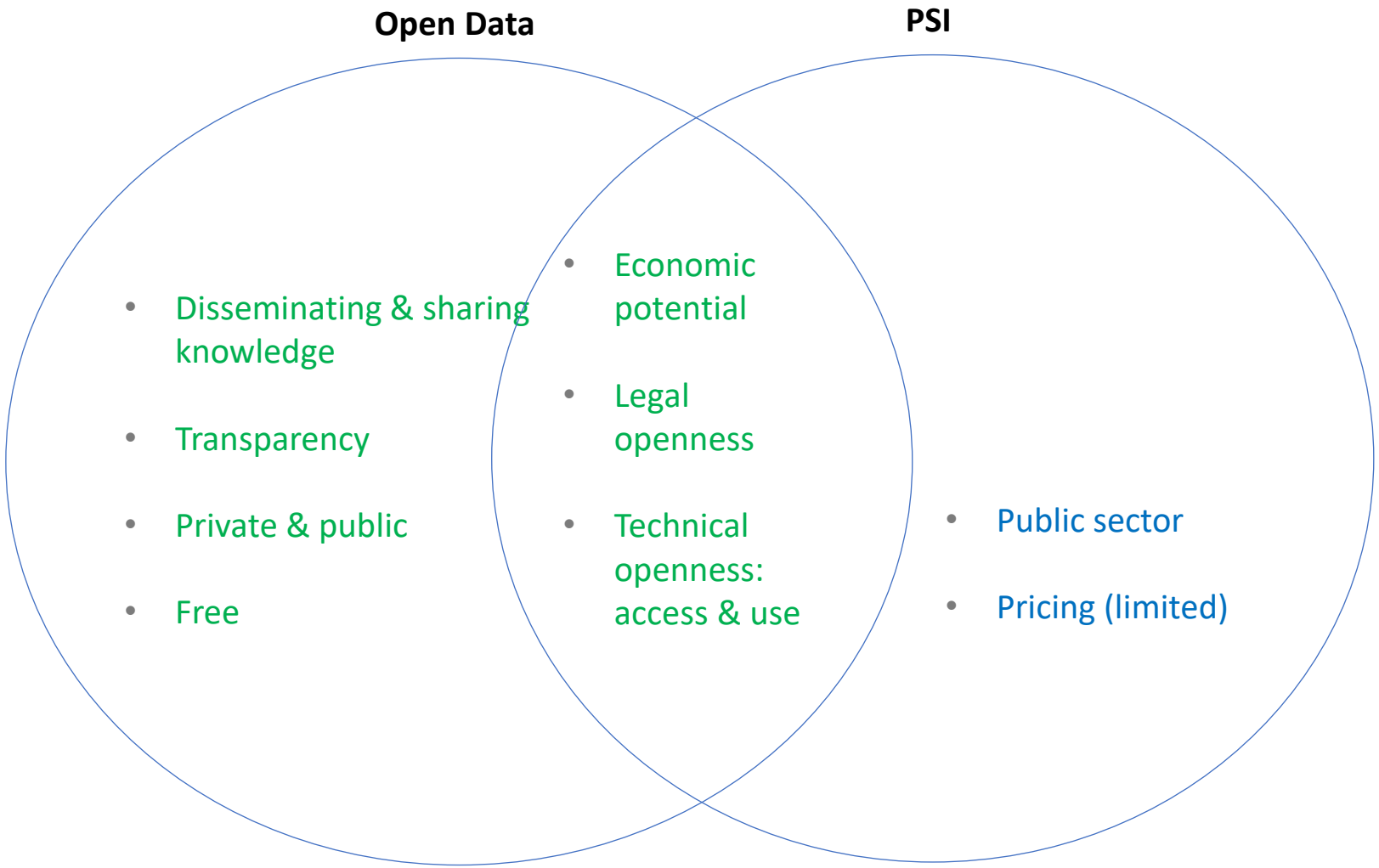


Citizens as Democratic Participants

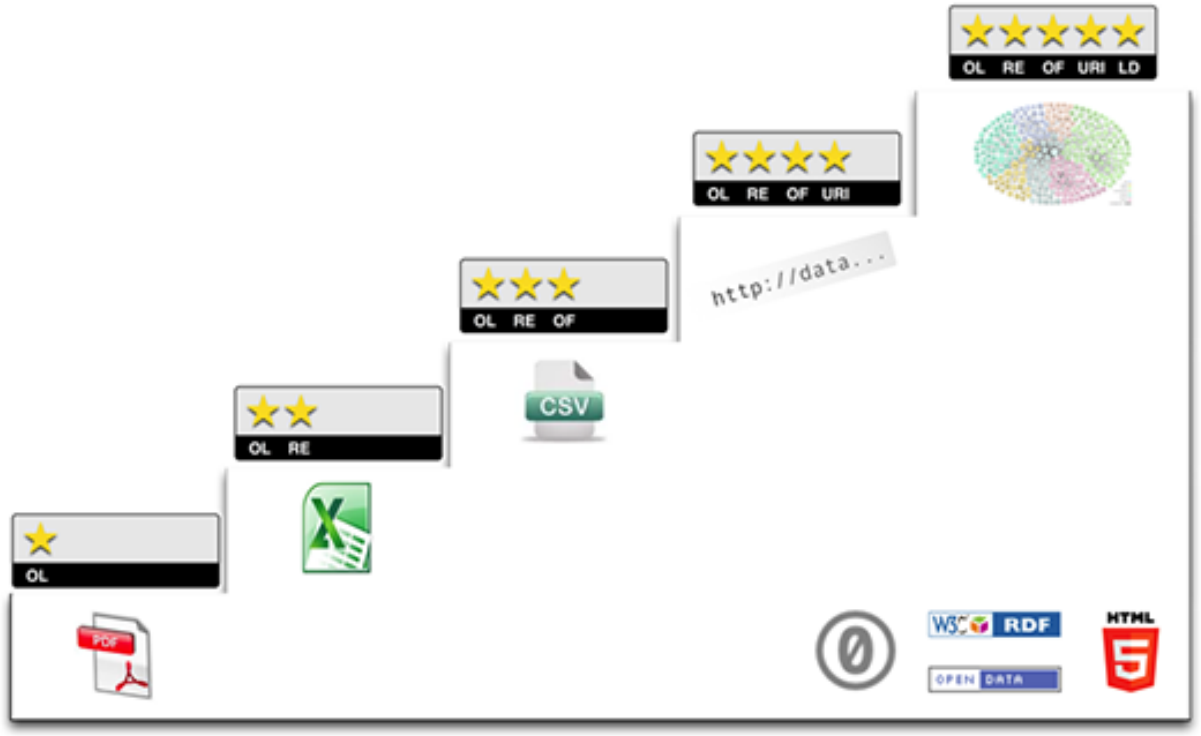




Citizens as Open Data Consumers


Open Data
PSI
Disseminating & sharing knowledge
Transparency
Private & public
Free
Economic potential
Legal openness
Technical openness: access & use
Public sector
Pricing (limited)

5 ★ Open Data


OL
OL RE
OL RE OF
OL RE OF URI
OL RE OF URI LD
CSV
http://data...
PDF
RDF
OPEN DATA
HTML

There are many ways to reuse data

- Mobile or web applications
- Data journalism
- Data visualization
- Artistic works
- Research and statistics...

But in practice use is fairly low

VILLE DE NAMUR

LE SOIR

ACCUEIL 〉 RÉGIONS 〉 NAMUR-LUXEMBOURG

Tout ce qu'on peut faire des données sur le web

MIS EN LIGNE LE 18/12/2018 À 16:23 PAR LUC SCHARÈS

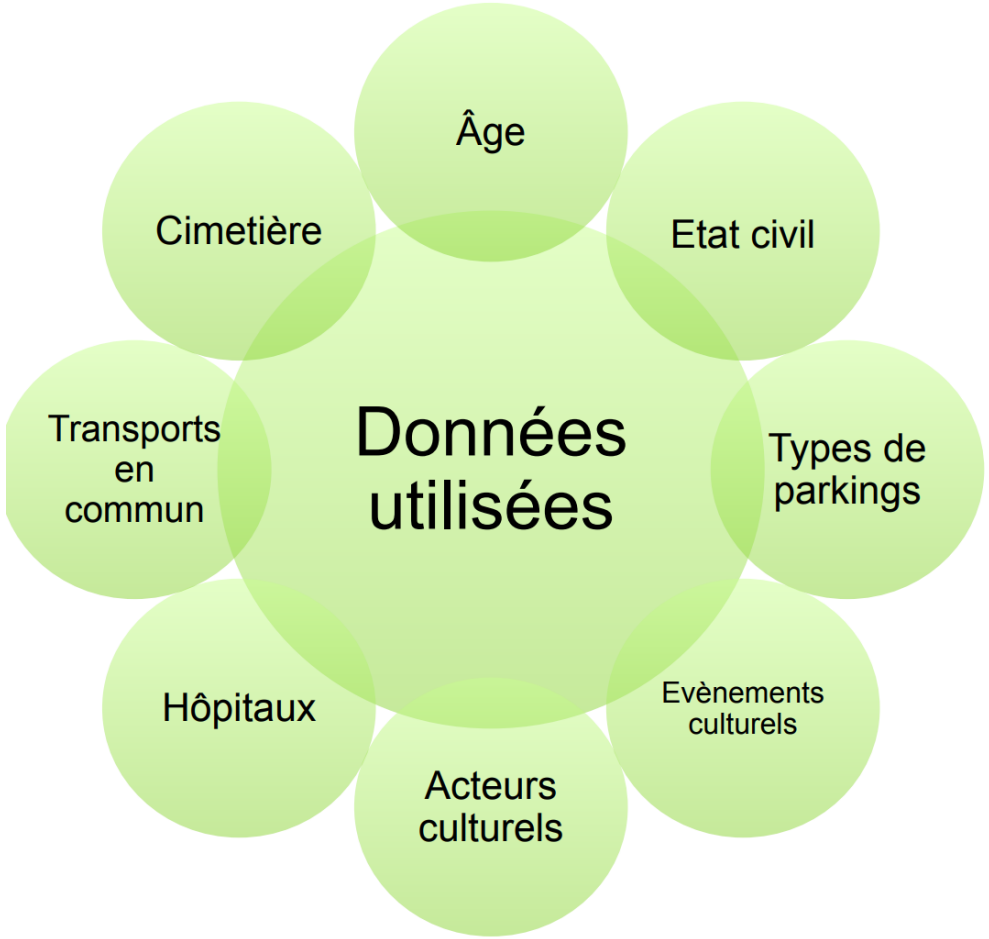
Les étudiants de l'UNamur ont planché sur l'open data. Pour le public, c'est un accès à un nombre impressionnant d'informations tous azimuts. Pour le service public, un outil précis d'aide à la décision.

L'UNamur planche sur l'open data

LUC SCHARÈS Publié le lundi 17 décembre 2018 à 17h16 - Mis à jour le mardi 18 décembre 2018 à 09h14

82 5

BeGeo 2024
begeo.be
19/03/2024 - Brussels Expo



Quelle est la clientèle visée par votre commerce ?

À quelle(s) tranche(s) d'âge votre commerce s'adresse-t-il ?

- [x] Moins de 20 ans
- [x] Entre 20 et 25 ans
- [x] Entre 25 et 30 ans
- [x] Entre 30 et 35 ans
- [ ] Entre 35 et 40 ans
- [ ] Entre 40 et 45 ans
- [ ] Plus de 45 ans
- [ ] Indifférent

À quel(s) état(s) civil votre commerce s'adresse-t-il ?

- [ ] Marié(e)
- [ ] Célibataire
- [ ] Veuf/veuve
- [x] Indifférent

Quelles facilités souhaitez-vous avoir à proximité de votre commerce ?

Quel(s) type(s) de stationnement souhaitez-vous ?

- [x] Parking voiture gratuit (disque)
- [x] Parking voiture payant
- [x] Parking vélo
- [ ] Indifférent

Souhaitez-vous avoir des événements culturels à proximité ?

- ( ) Oui
- ( ) Non
- (•) Indifférent

Souhaitez-vous avoir des lieux cultutels à proximité (musées, cinémas, théâtres, ...) ?

- ( ) Oui
- ( ) Non
- (•) Indifférent

Souhaitez-vous avoir des hôpitaux à proximité ?

- ( ) Oui
- ( ) Non
- (•) Indifférent

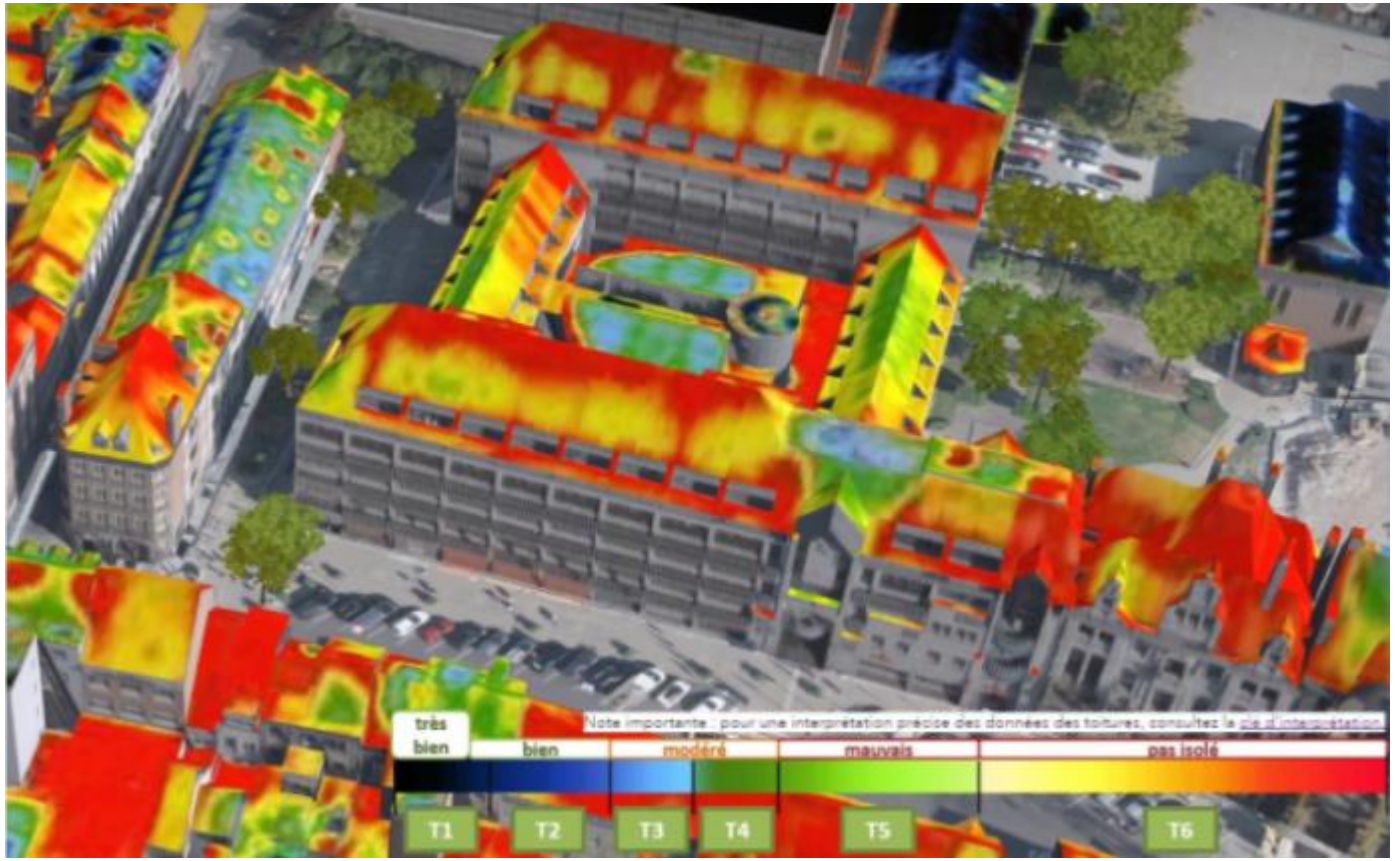
Quel(s) type(s) de transports en commun souhaitez-vous à proximité ?

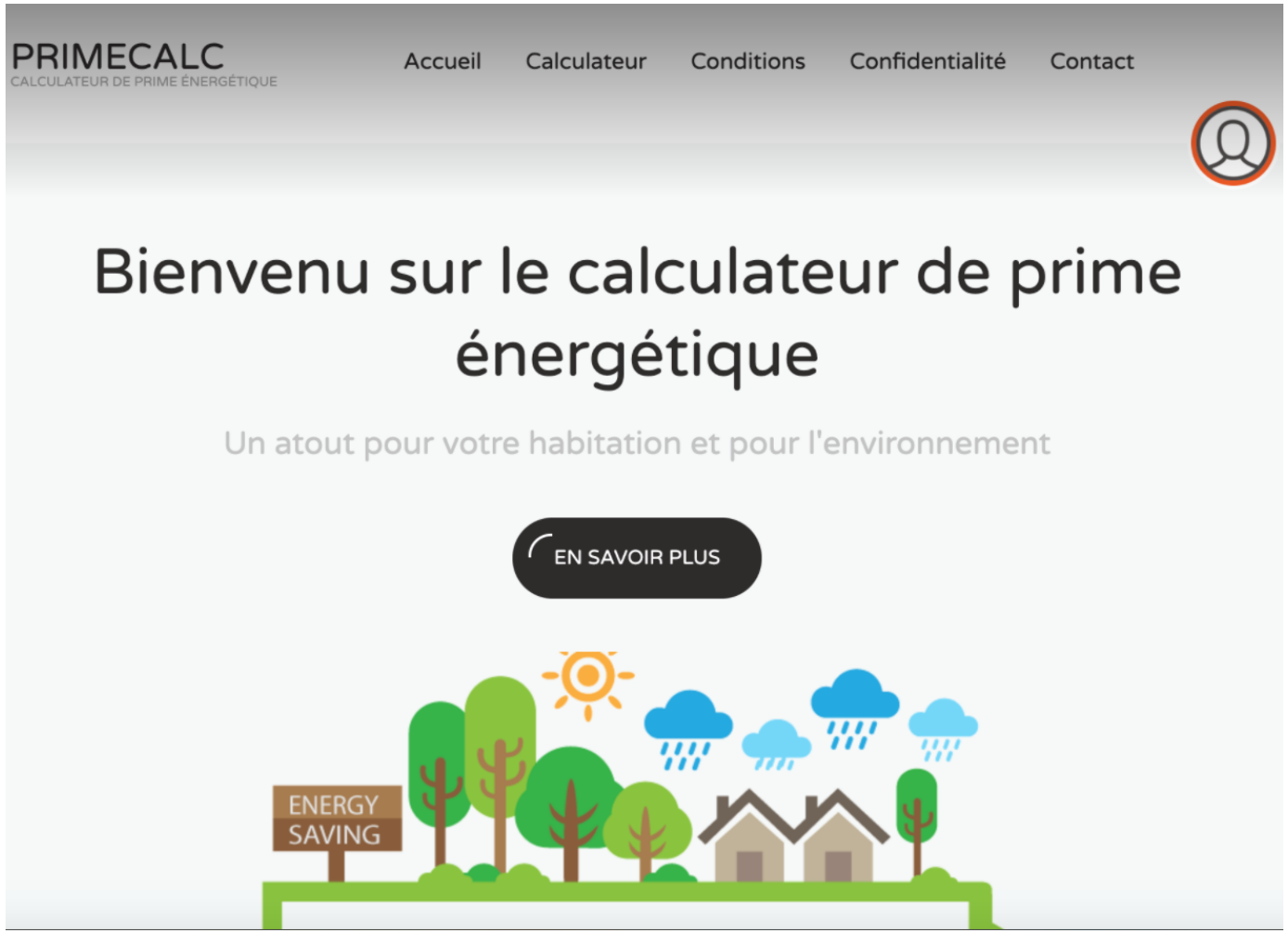
- [x] Bus
- [x] Train
- [ ] Indifférent

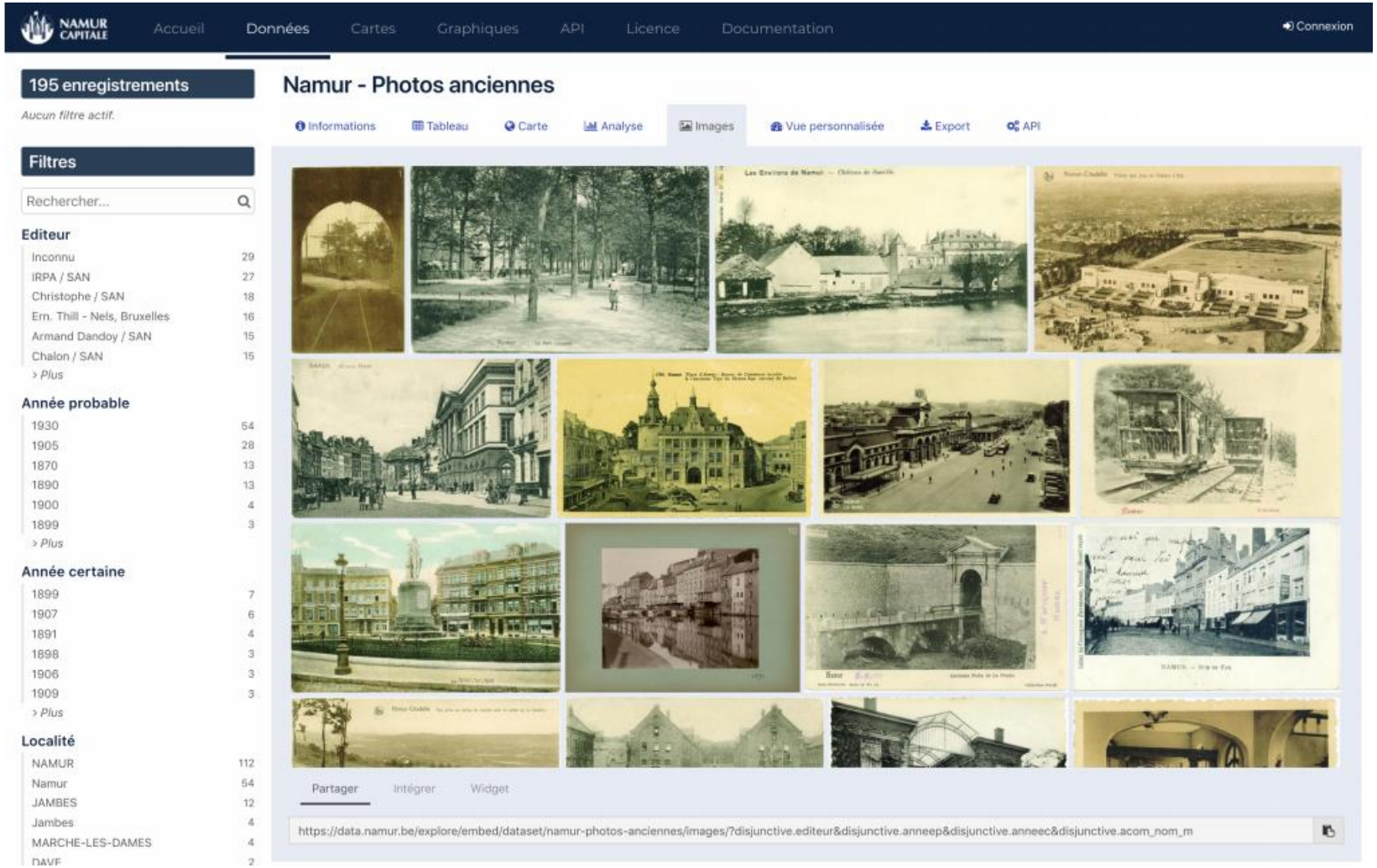
Souhaitez-vous avoir un cimetière à proximité ?

- ( ) Oui
- ( ) Non
- (•) Indifférent

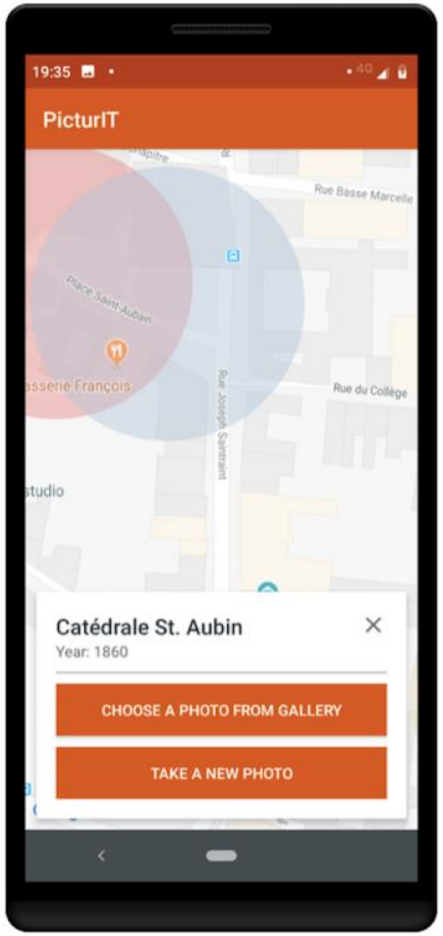
Saint-Servais
Bouge
Belgrade
Namur
SAUZINNES
Jambes
winne
Ronet
Chaussée de Charleroi
La Plante
VELAINE

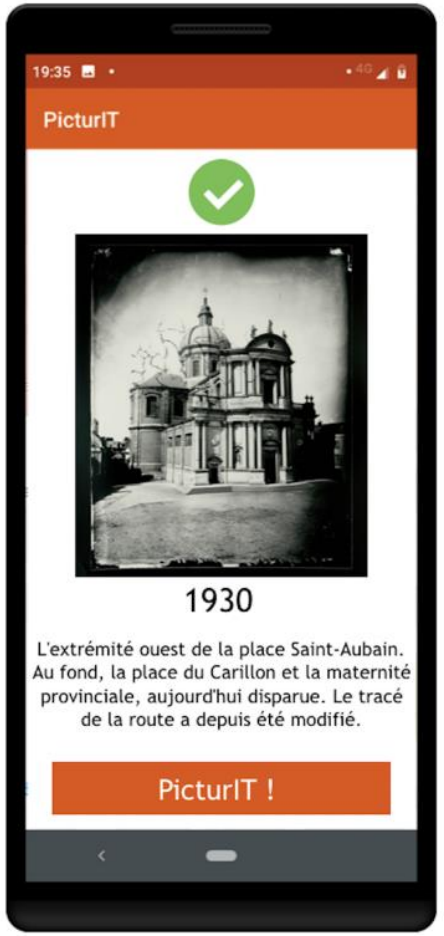

très bien
bien
modéré
mauvais
pas isolé
T1
T2
T3
T4
T5
T6


PRIMECALC
CALCULATEUR DE PRIME ÉNERGÉTIQUE
Accueil
Calculateur
Conditions
Confidentialité
Contact
Bienvenu sur le calculateur de prime énergétique
Un atout pour votre habitation et pour l'environnement
EN SAVOIR PLUS
ENERGY SAVING


NAMUR CAPITALE
Accueil
Données
Cartes
Graphiques
API
Licence
Documentation
Connexion
195 enregistrements
Aucun filtre actif.
Filtres
Rechercher...
Editeur
Inconnu 29
IRPA / SAN 27
Christophe / SAN 18
Ern. Thill - Nels, Bruxelles 16
Armand Dandoy / SAN 15
Chalon / SAN 15
› Plus
Année probable
1930 54
1905 28
1870 13
1890 13
1900 4
1899 3
› Plus
Année certaine
1899 7
1907 6
1891 4
1898 3
1906 3
1909 3
› Plus
Localité
NAMUR 112
Namur 54
JAMBES 12
Jambes 4
MARCHE-LES-DAMES 4
Namur - Photos anciennes
Informations
Tableau
Carte
Analyse
Images
Vue personnalisée
Export
API
Partager
Intégrer
Widget
https://data.namur.be/explore/embed/dataset/namur-photos-anciennes/images/?disjunctive.editeur&disjunctive.anneep&disjunctive.anneec&disjunctive.acom_nom_m

ACHERIE
ERMINE


19:35
PicturIT
Rue Basse Marcelle
Place Saint-Aubain
Rue du Collège
Catédrale St. Aubin
Year: 1860
CHOOSE A PHOTO FROM GALLERY
TAKE A NEW PHOTO

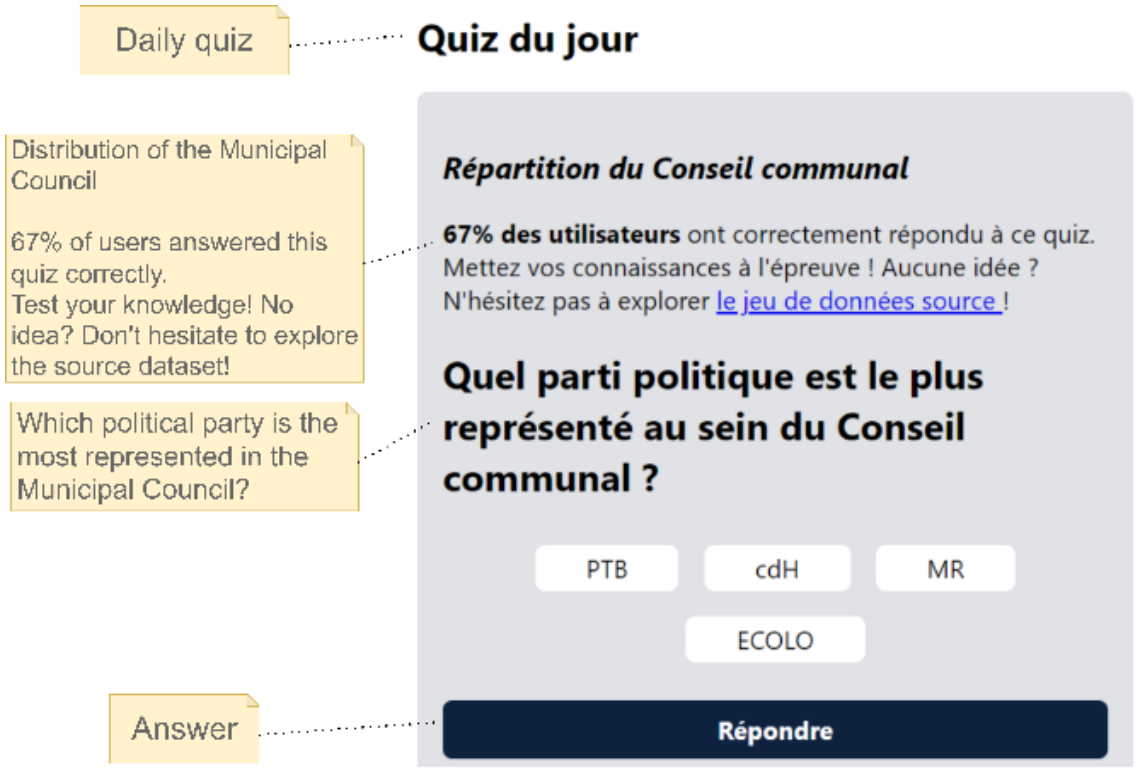

19:35
PicturIT
1930
L'extrémité ouest de la place Saint-Aubain. Au fond, la place du Carillon et la maternité provinciale, aujourd'hui disparue. Le tracé de la route a depuis été modifié.
PicturIT !

PicturIT

- Find a useful idea applicable to Namur
- Metadata quality
- Data quality (e.g. missing essential information)
- Combination of data impossible
- Little or no longitudinal data

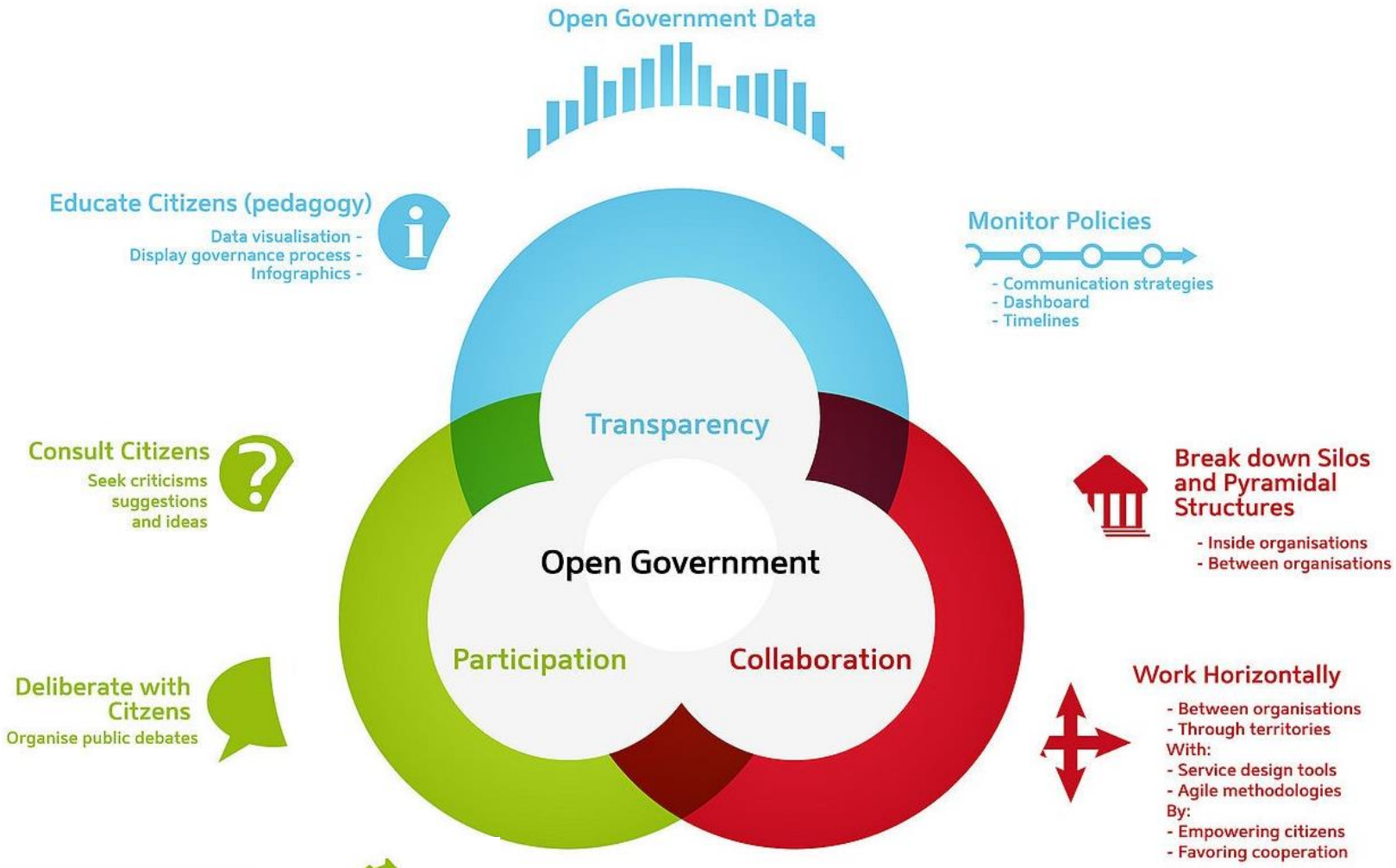
- Stimulating the use of Open Data
  - Collaboration with the academic sector
  - Collaboration with the private sector
  - Success stories
  - Reuse awards
  - Hackathon

- Usability of Open Data
  - Citizen needs analysis
  - Portal usability
  - Metadata
  - Possibility of integration



Simonofski, A., Zuiderwijk, A., Clarinval, A., & Hammedi, W. (2022). Tailoring open government data portals for lay citizens: A gamification theory approach. *International journal of information management*, *65*, 102511.

Do you see other ways to enhance Open Data usage ?


Open Government Data
Educate Citizens (pedagogy)
Data visualisation -
Display governance process -
Infographics -
Monitor Policies
- Communication strategies
- Dashboard
- Timelines
Transparency
Consult Citizens
Seek criticisms
suggestions
and ideas
Break down Silos
and Pyramidal
Structures
- Inside organisations
- Between organisations
Open Government
Participation
Collaboration
Deliberate with
Citzens
Organise public debates
Work Horizontally
- Between organisations
- Through territories
With:
- Service design tools
- Agile methodologies
By:
- Empowering citizens
- Favoring cooperation
Co-Design Policies
with Citizens
NGOs
Companies
Public authorities
Organise Partnerships
(inside/between)

Open Government Policy of Obama

- Open Data (https://www.data.gov/)
- Federal Government Information (https://www.foia.gov/)
- Federal IT investments (https://itdashboard.gov/)
- Monitoring Government spending (https://www.usaspending.gov)
- Government services (https://www.usa.gov/)
- Debate bills and regulations (https://www.regulations.gov/)

Thank you for your attention.

Let’s connect and discuss ☺

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