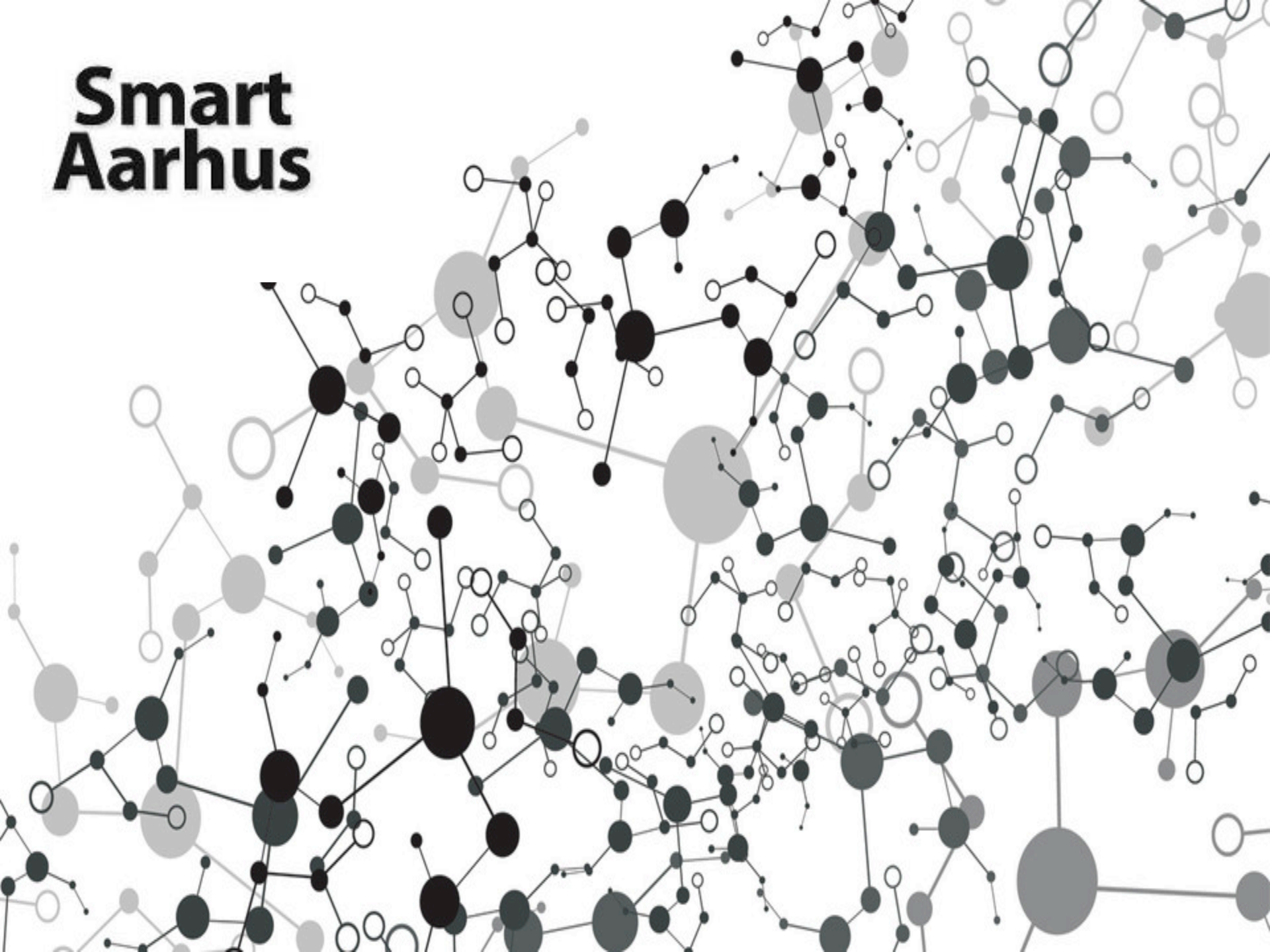


# Smart Aarhus





# Byer i transformation







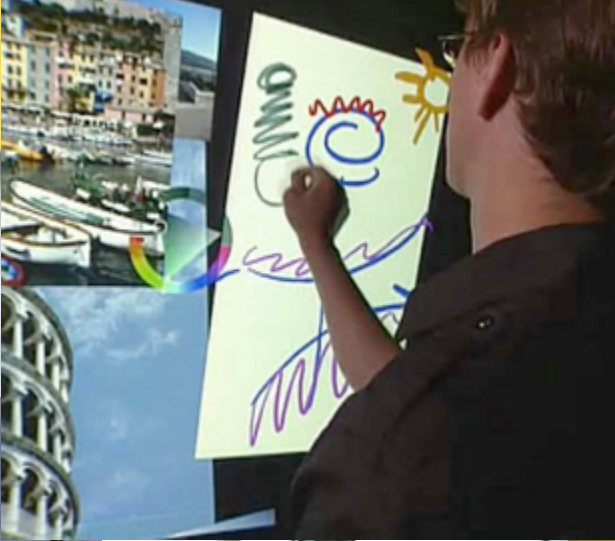
“A CITY  
EXISTS FOR  
THE SAKE OF  
A GOOD LIFE,  
NOT FOR THE  
SAKE OF LIFE  
ONLY”

- Aristotle

# Byer og regioner som fornyere

- *“Cities and regions are now becoming the laboratory for innovation and change”*
  - *Cities as a Lab project (American Institute of Architects)*
- Regionerne kan være de nye kraftcentre for innovation og fornyelse af rammevilkår (forudsætninger).
  - Pontus Tallberg, forsker Region Skåne





# Potentialet:

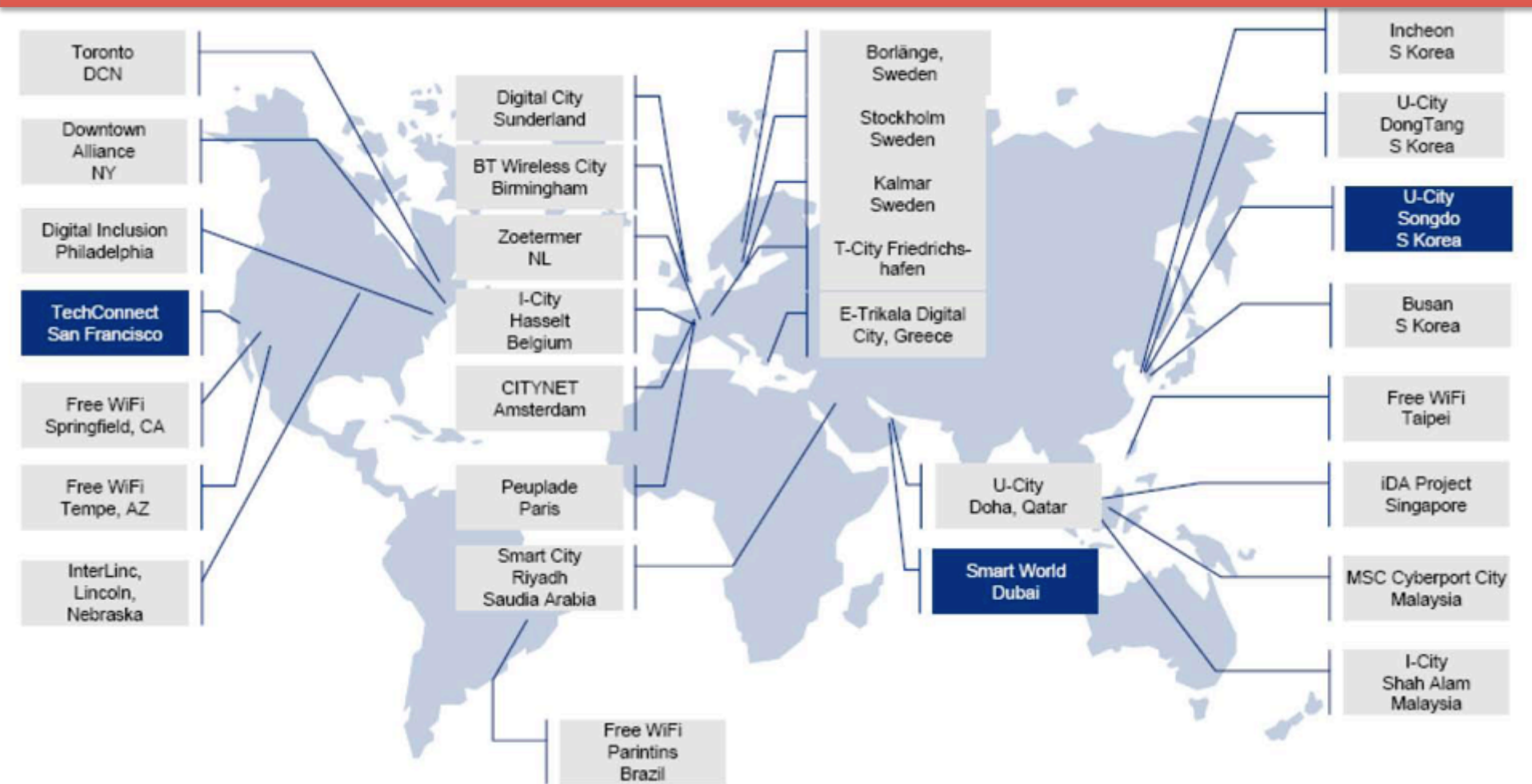
## - Den digitale økonomi

- Det digitale lag, i form af infrastrukturer, devices og åbne data udgør et kæmpe potentiale.
- Fra 3 millioner (2000) til 14 milliarder intelligente enheder i 2010.
- Internettet og den digitale økonomi er iflg. EU den centrale drivkraft for vækst og samfundsudvikling.
- 21 procent af væksten i BNP de sidste 5 år i de mest veludviklede lande, kan tilskrives internettet.
- Hver gang internettet er årsag til én tabt arbejdsplads (eksempelvis som følge af effektivisering), så generes der i gennemsnit 2,6 nye arbejdspladser.
- Danmark er et 'modent' IT land
  - # 2 i verden (Digital Economy Rankings)





# SMART CITIES GLOBALLY



# 'SMARTER BYER' I EN SMART REGION ?



- Der er stort potentiale i den digitale økonomi til at skabe vækst og løse samfundsmæssige problemstillinger
- 'Smart Cities' (Digitale byer) udpeges af EU som den centrale driver for vækst og innovation

Digital Agenda  
101011101110000100 2010-2020  
for Europe

[http://ec.europa.eu/information\\_society/digital-agenda/](http://ec.europa.eu/information_society/digital-agenda/)



## Ranking

Stadt	Eco	Peo	Gov	Mob	Env	Liv	Total
LU Luxembourg	1	2	13	6	25	6	1
DK Aarhus	4	1	6	9	20	12	2
FI Turku	16	8	2	21	11	9	3
DK Aalborg	17	4	4	11	26	11	4
DK Odense	15	3	5	5	50	17	5
FI Tampere	29	7	1	27	12	8	6
FI Oulu	25	6	3	28	14	19	7
NL Eindhoven	6	13	18	2	39	18	8
AT Linz	5	25	11	14	28	7	9
AT Salzburg	27	30	8	15	29	1	10
FR Montpellier	30	23	33	24	1	16	11
AT Innsbruck	28	35	9	8	40	3	12
AT Graz	18	32	12	17	31	5	13
NL Nijmegen	24	14	14	3	51	24	14
NL Groningen	14	9	15	20	37	13	15
BE Gent	19	16	31	7	48	4	16
SI Ljubljana	8	11	43	31	3	29	17
NL Maastricht	26	18	17	1	43	14	18
SE Joenkoeping	36	10	7	34	22	26	19
BE Brugge	23	20	29	18	44	2	20
NL Enschede	31	17	16	4	35	23	21
DE Goettingen	11	24	20	12	15	21	22

why smart cities?  
smart cities model

► the ranking  
benchmarking  
press & ressources

and  
the team

# DEFINITIONER PÅ SMART CITY

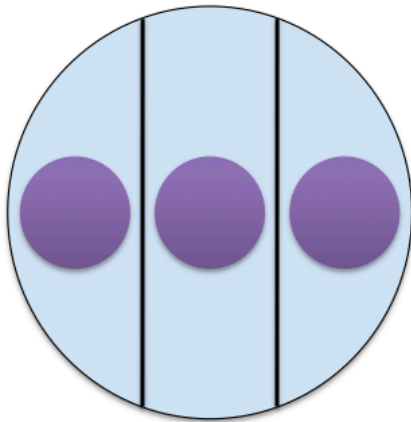
- *“We believe a city to be smart when investments in human and social capital and modern (ICT) communications infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance”*

– Kilde : A. Caragliu “Smart cities in Europe”, *Journal of Urban Technology*, forthcoming (joint with Chiara Del Bo and Peter Nijkamp).



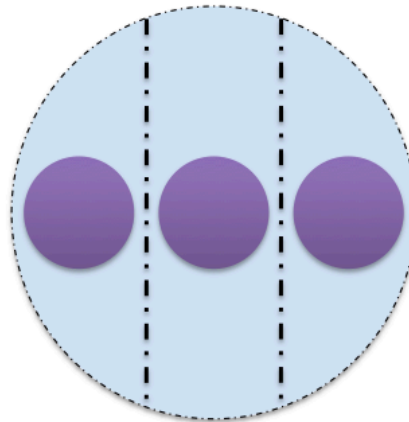


# Fra lukket til åbne sektorer

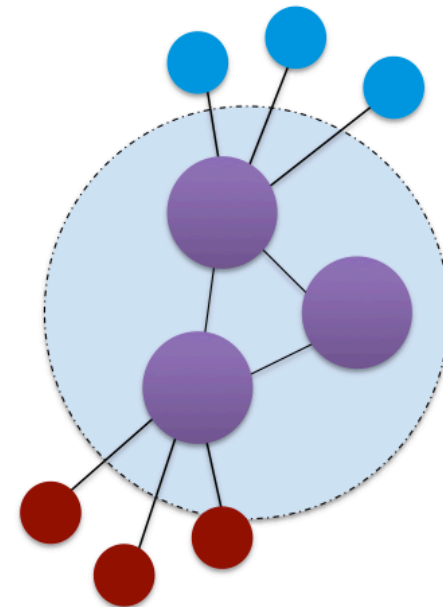


Source: David Armano, Edelman 2010, edelmandigital.com

**CLOSED**  
Silos, rigidity & information  
hoarding

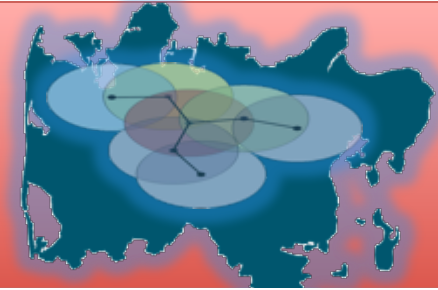


**COLLABORATIVE**  
Freely sharing information and  
knowledge internally

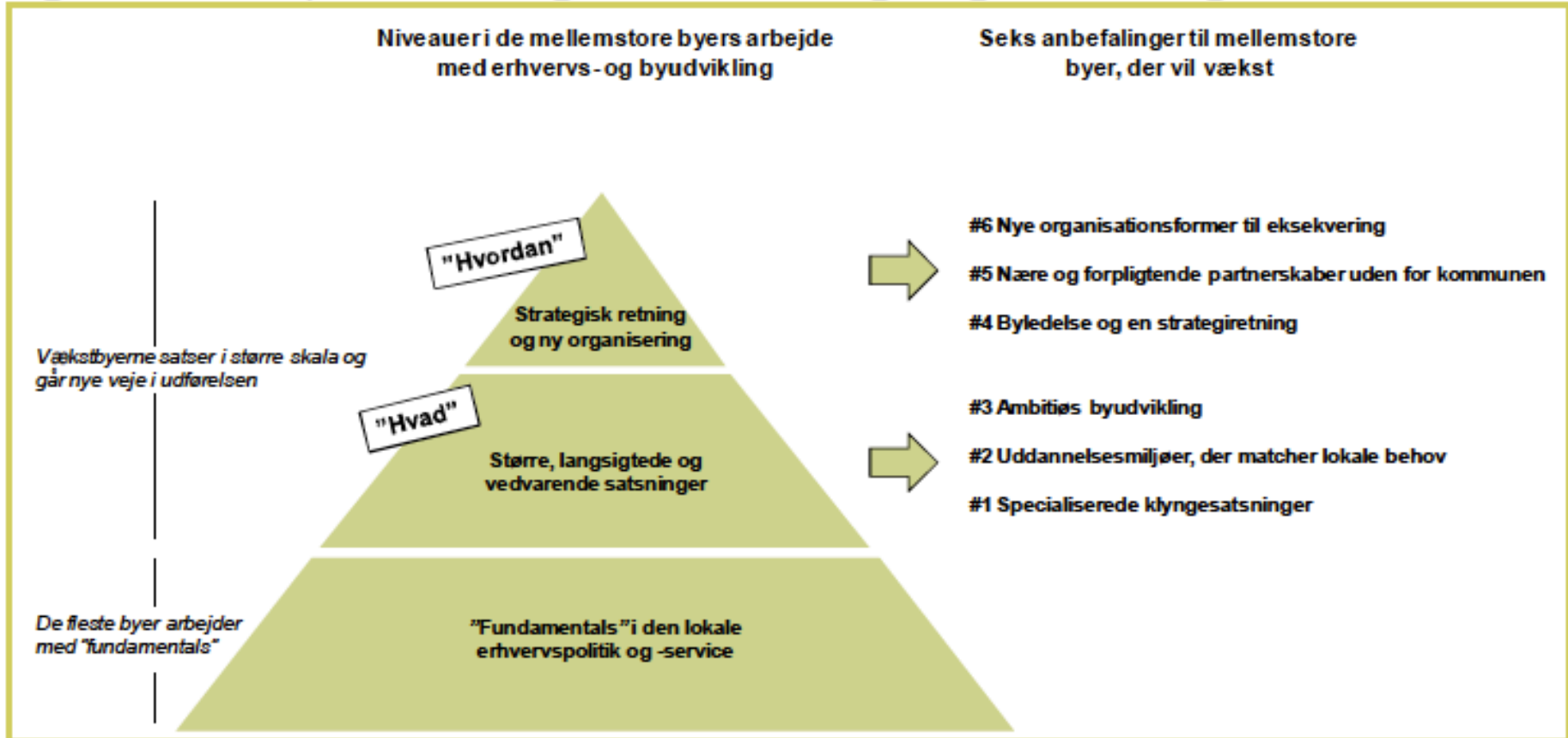


**OPEN**  
Connecting internal and external  
ecosystems/communities for  
mutual gain

# VÆKSTEN I DE SMÅ OG MELLEMLISTORE BYER



Figur 1.2 Vækstbyerne skiller sig ud ved, hvad de gør, og hvordan de gør det

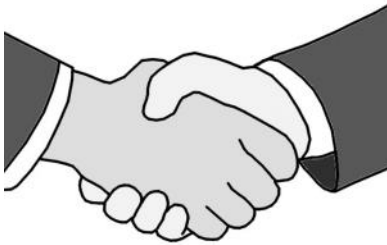


Kilde: Copenhagen Economics



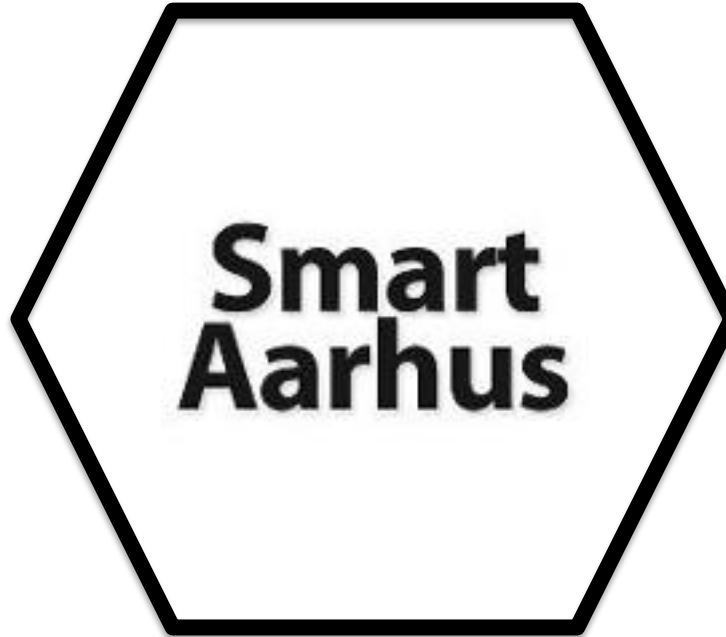
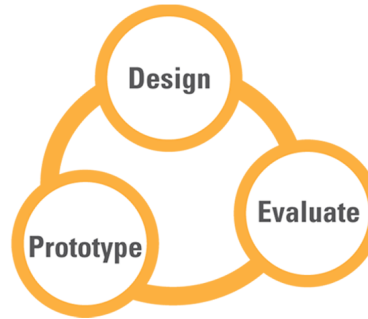
# Design thinking for new organizations and business models

Open Governance –  
New partnership structures



Societal challenges

Design



'Internet of Things', open data and web 2.0



Living Labs for citizen co-creation

# SMART CITY HANDLER FREMTIDENS RESSOURCER OG VELFÆRDSSAMFUND





# Samfundsudfordringer





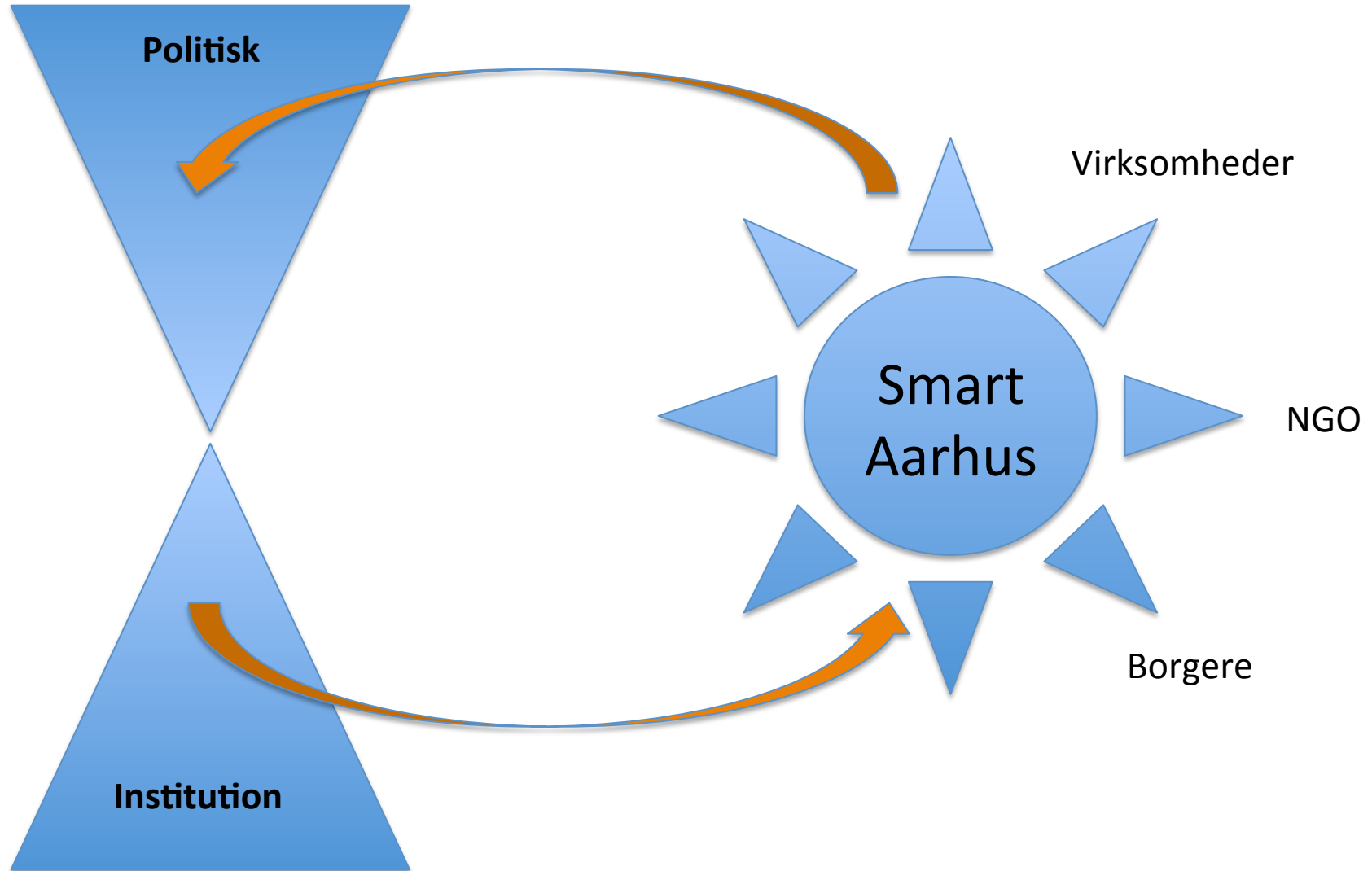
# Societal innovation as driver

- “Over the next 20 years, the biggest growth for national economies is likely to come in areas like health and education, whose shares of GDP (Gross domestic product) are already much greater than are cars, telecommunications, or steel. These growing social sectors are all fields in which commercial, voluntary, and public organizations deliver services, in which public policy plays a key role, and in which consumers co-create value alongside producers”
  - Geoff Mulgan, NESTA



**Kontraktbaseret og  
institutionaliseret samarbejde**

**Samarbejde via partnerskaber,  
der vil skabe systemisk forandring**





# Peer-governance

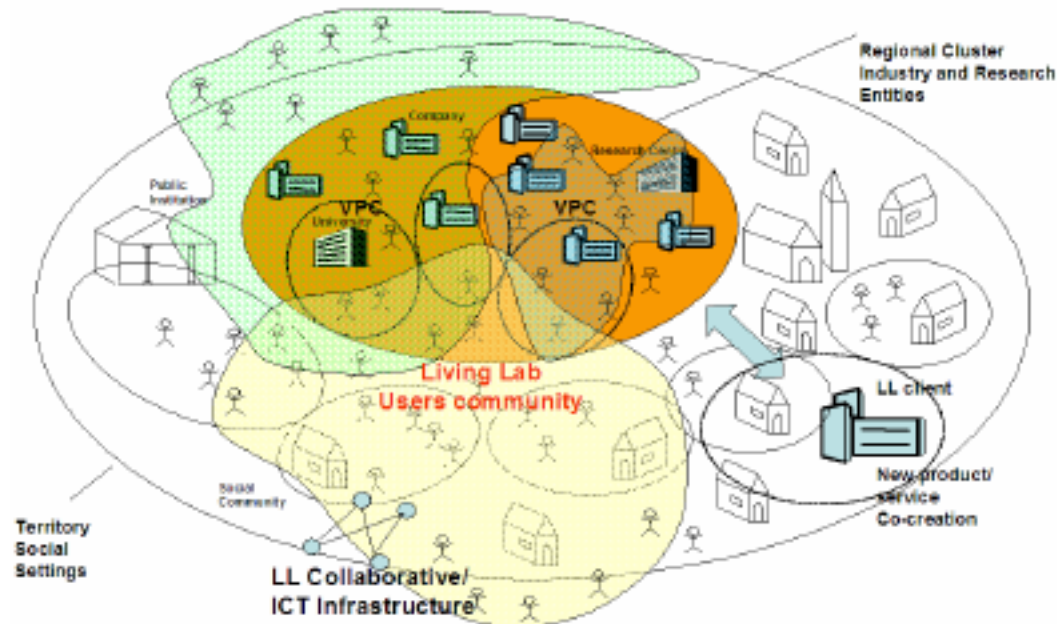
- "Peer Governance is defined as the **reflexive self-organisation** of **independent** actors involved in complex relations of reciprocal interdependence, with such self-organisation being based on continuing dialogue and **resource-sharing** to develop **mutually beneficial joint projects** and to manage the **contradictions** and **dilemmas** inevitably involved in such situations. Governance organised on this basis **need not entail a complete symmetry** in power relations or complete equality in the distribution of benefits: indeed, it is highly unlikely to do so almost regardless of the object of governance or the '**stakeholders**' who actually **participate** in the **governance process**. All that is involved in this preliminary definition is the commitment on the part of those involved to reflexive self-organisation in the face of **complex reciprocal interdependence**".

— Bob Jessop, University of Lancaster

# Udvikle samarbejdskoncepter



# ÅBEN INVOLVERING



European  
Network of  
Living Labs

Fig. 2.1: The conceptual framework of Open Innovation Functional Regions

Urban Living Labs are Open Innovation Ecosystems  
driving Smart Cities.



# Open Data

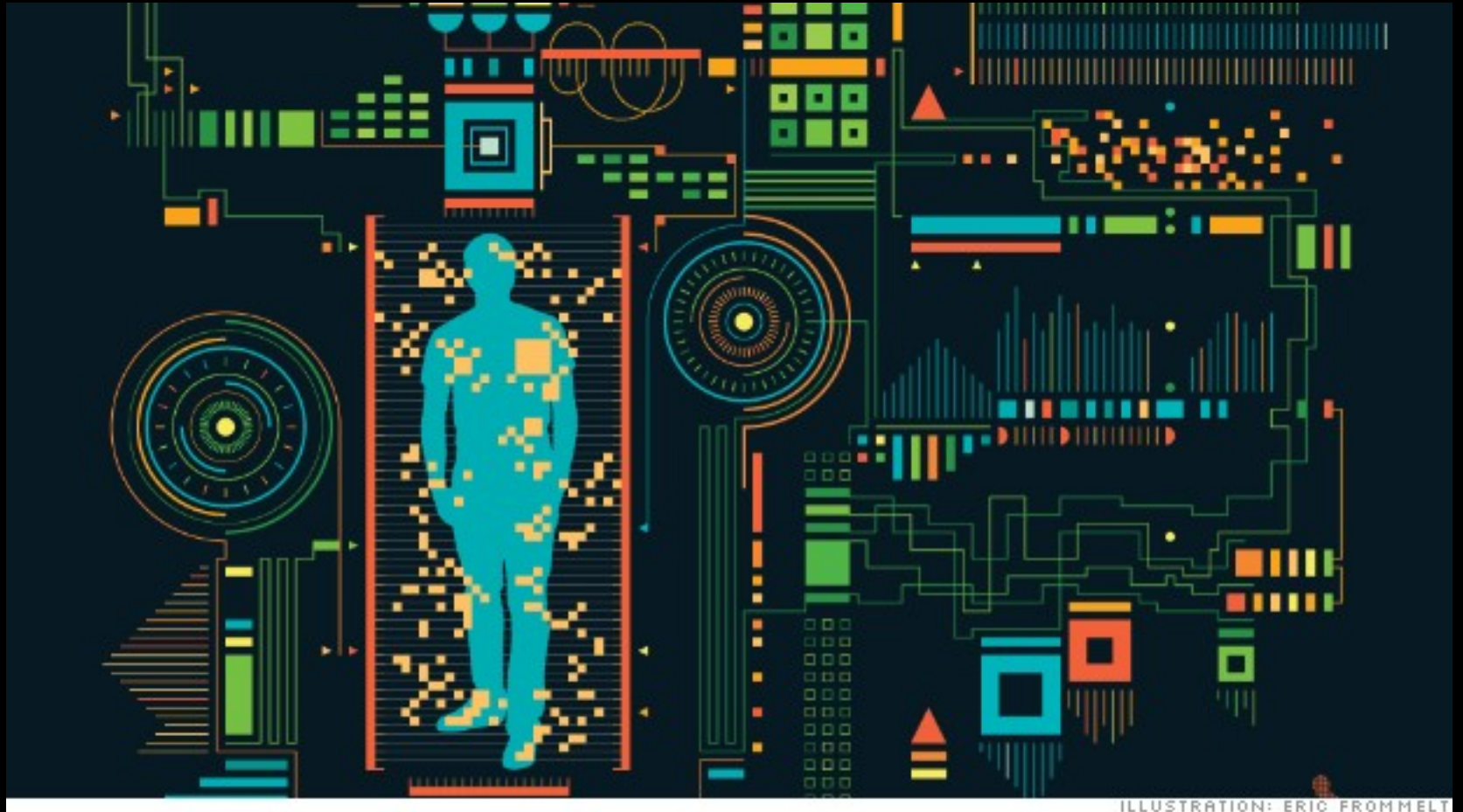
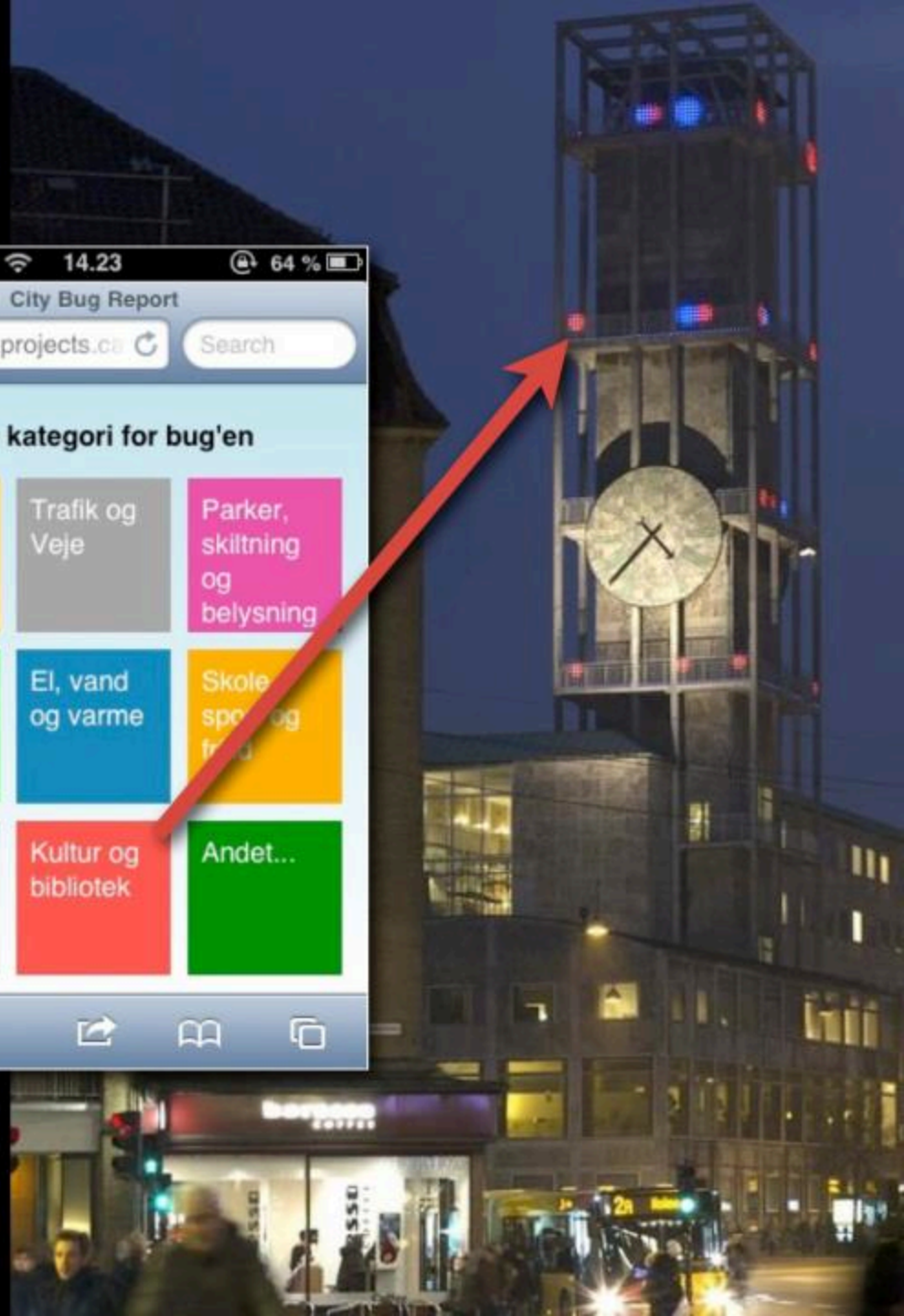


ILLUSTRATION: ERIC FROMMELT

# City Bug Report



## Velkommen til Aarhus' open data platform

Her bliver åbne data fra Aarhus-området gjort frit tilgængelige, så de er nemme at finde for dig. Vi håber, at du vil forvandle de åbne data til nye og innovative services og fortælle om det her på platformen.



## Søg efter data



### Popular Tags

[Aarhus Kommune](#)
[koordinater](#)
[Aarhus Kommunes Bib...](#)


### Geografi

Geodata fra Aarhus-området.

### 3D Terræn - Bymodel

3D terræn for den indre del af Aarhus By (ca. indenfor Ringgaden). Data er på DWG-formatet og er en tin-model

### 3D Bygninger - Bymodel

3D bygninger for den indre del af Aarhus By (ca. indenfor Ringgaden). Data er på DWG-formatet og er en...



### Natur og Miljø

Data om naturområder i Aarhus-området.

### Bålpladser i Aarhus

Koordinater på officielle bålpladser

### Fitness i det fri, Aarhus

Koordinaterne til 'fitness i det fri' omkring aarhus. Data anvendes i forbindelse med friluftslivaarhus.dk



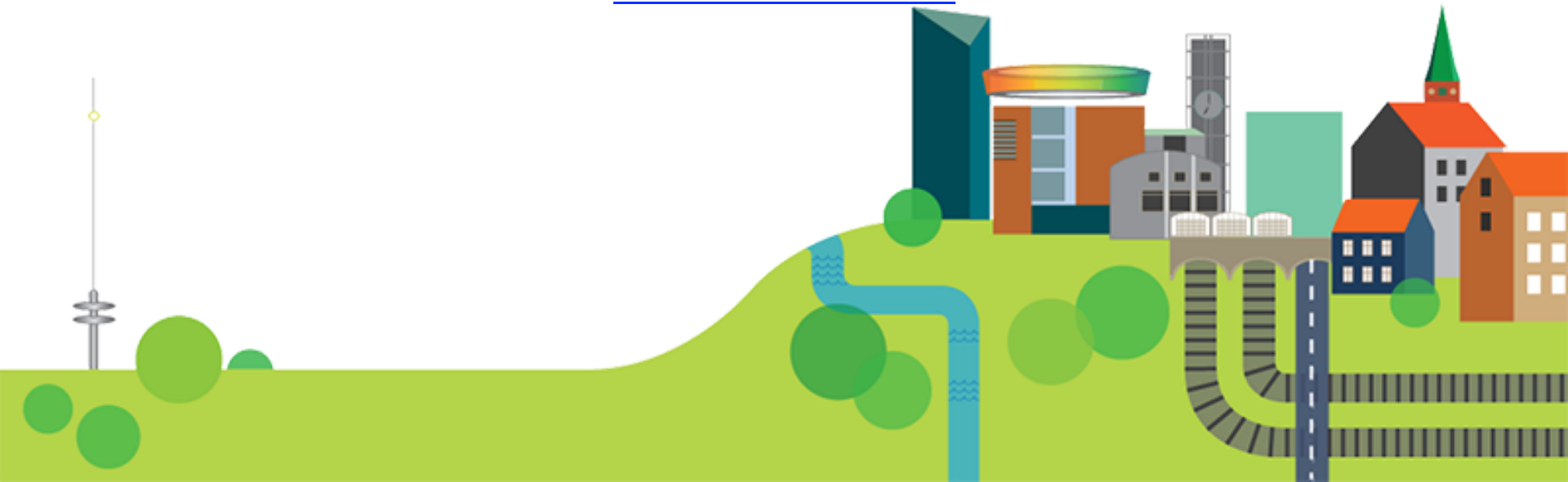


City and society  
Challenges

# Smart Aarhus

Shared Value

[www.smartaarhus.dk](http://www.smartaarhus.dk)



- Visionsproces i 2012: Hvilken type Smart City skal Aarhus være?
- Deltagere: Enkeltpersoner, private og offentlige organisationer
- Organiseres i arbejdsgrupper
  - Udgangspunkt i samfundsmæssige udfordringer
    - Sektor/geo-lokation fx katrinebjerg
    - Koncept fx åbne data eller smart grid
    - Værktøjer fx OPP, EU-samarbejde, netværk etc.



2012

Lancering

**Explore the Future with Aarhus**

Lancering og motivering af tænketanken

Skabe Visioner

**Get Smarter with Aarhus**

Realistiske ønskevissioner for Smart Aarhus skabes i arbejdsgrupperne

Nedbryde barrierer

**Make it happen with Aarhus**

Mulighederne identificeres  
Barrierer lokaliseres og fjernes

Evaluering

**Invest in the Future with Aarhus**

Evaluering og anbefalinger



- sætte innovation og digitalisering på dagsordenen – være en digital frontløber
- skabe nye offentlig private partnerskaber
- vækst i EU-finansierede projekter
- gøre Aarhus mere konkurrencedygtig og udnytte styrkepositionen på ICT
- gøre Aarhus og regionen til Europæisk Living Lab – Region Midtjylland som testfacilitet
- brande Aarhus som Smart city – i tråd med Danish for progress



# Working Groups as Living Labs

Open data

Digital entrepreneurship

Digital Cultural Heritage

Smart Utilities

Sustainability

Smart Governance

Smart Culture

Digital Infrastructure

Urban Media Space

Smart Education

Social Innovation

Citizen Engagement

Smart Future

Smart Citizen Services

Design in a Digital City

Digital Public Space

Digital tourism

Urban Space

Smart Well-being

Telemedicine

Mobility

Privacy

Gellerup

New Districts

Research

News & Media

Mobil services

Smart Retail

Campus

Emergency Response

Smart Activism

Crazy ideas





aarhusvand



URBAN MEDIASPACE AARHUS

