



# ONCE ONLY

"THE JOURNEY OF A THOUSAND MILES BEGINS WITH ONE STEP"

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**CHALLENGES AND OPPORTUNITIES IN THE CONTEXT**

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President Cluj IT

# KNOWLEDGE AGE

ONCE ONLY  
{THE OUTCOME}

ACCESSIBILITY FOR ALL  
CITIZENS MINDSET

INTEROPERABILITY  
CYBERSECURITY

INTERINSTITUTIONAL DATA  
SHARING FRAMEWORKS

INTRAINSTITUTIONAL INTELLIGENT  
DATA MANAGEMENT

INTEGRATED DATA SYSTEMS AND  
PLATFORMS WITHIN INSTITUTIONS

# INFORMATION AGE

# SYSTEM INNOVATION





# INTEROPERABILITY

HG 908 :: 14.12.2017 ROMANIA  
NATIONAL FRAMEWORK FOR INTEROPERABILITY

## POLITICAL CONTEXT

{Cooperation partners and alignment of objectives}

## JURIDICAL INTEROPERABILITY

{Alignment at legislative level to ensure data exchange}

## INTERINSTITUTIONALL INTEROPERABILITY

{Coordinated processes between organizations with interlinked objectives}

## SEMANTIC INTEROPERABILITY

{Alignment of data structures, data models, semantic standards}

## TECHNICAL INTEROPERABILITY

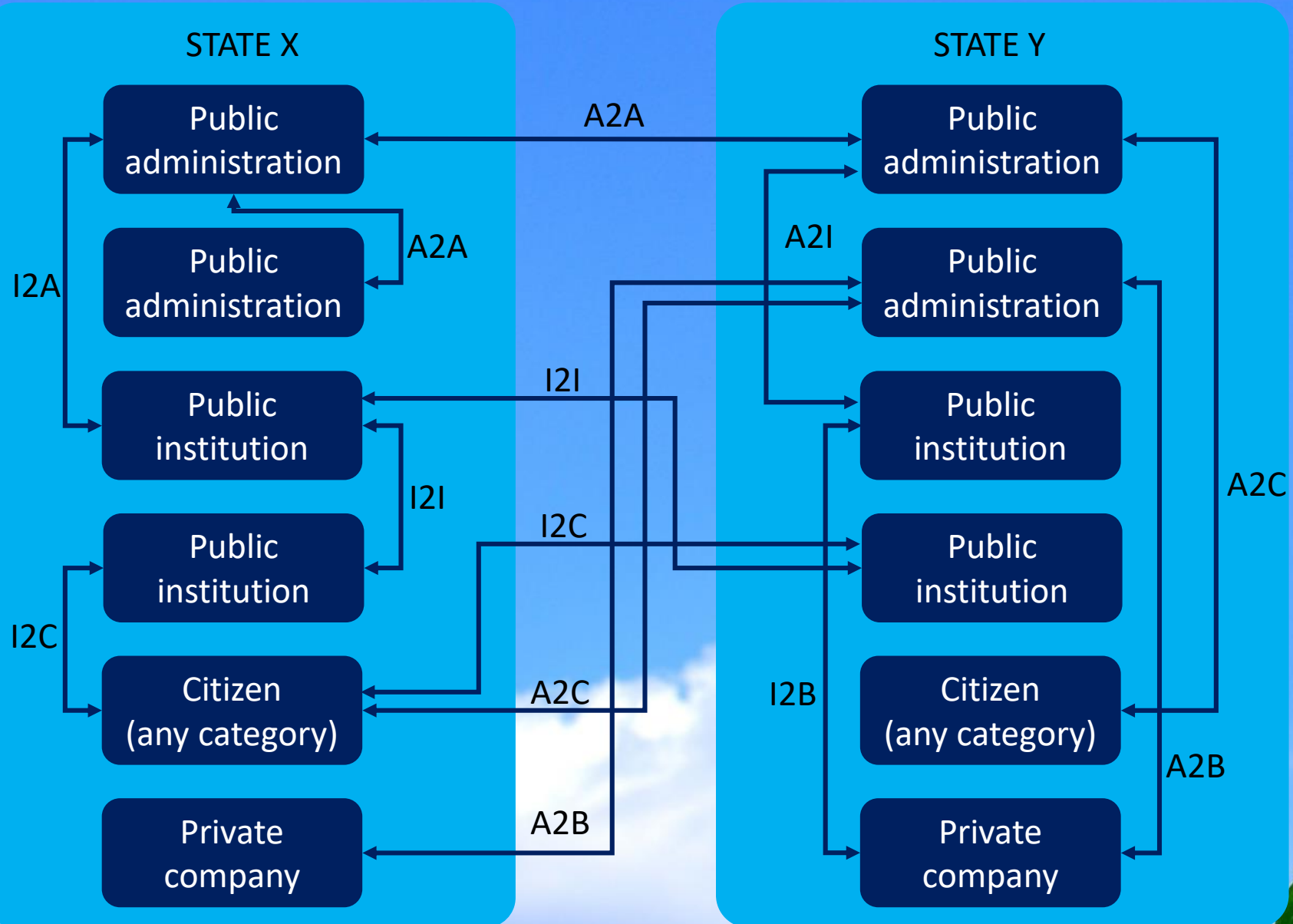
{Alignment of interfaces, security and data transfer protocols}

## INSTITUTIONAL INTEROPERABILITY

{Alignment of processes and data intra-institutional}

# DATA EXCHANGE AND MANAGEMENT

## FROM DATA TO INFORMATION AND TO KNOWLEDGE



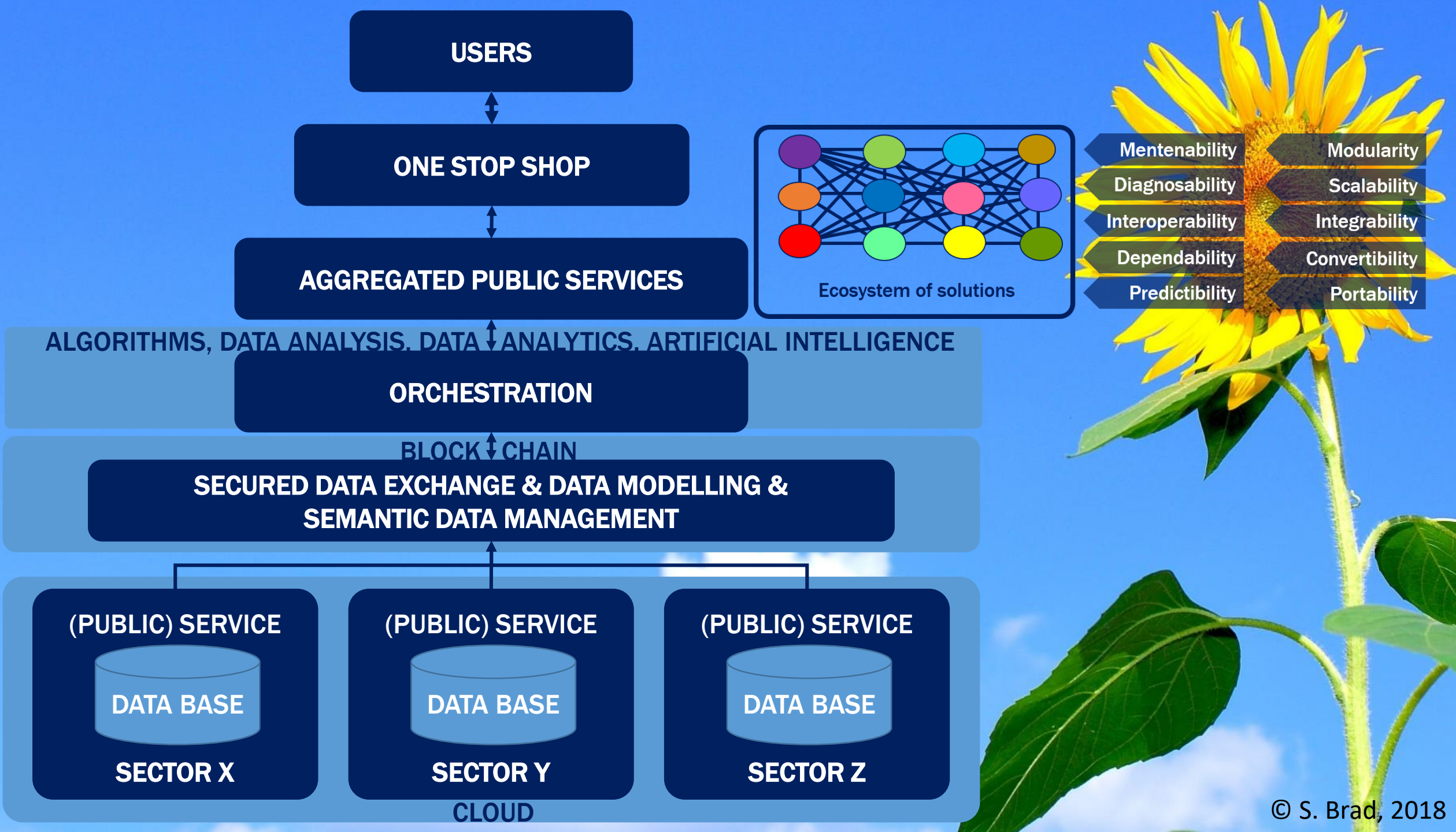
Intuitive and  
low-cost  
interfaces

Uniform  
messaging  
standards

Privacy and  
security  
policies and  
IT solutions

Education of  
data  
providers





## TOP-DOWN APPROACH

**SUPPORTING LEGISLATION**

**JURIDICAL SOLUTIONS**

**STANDARDS FOR DATA MODELLING**

**STANDARDS FOR DATA SEMANTICS**

**SUPPORT PILOT PROJECTS**

**INFRASTRUCTURE INVESTMENTS**

**CYBERSECURITY**

**PLATFORMS (NOT EXCLUSIVE)**

**APPLICATION SOLUTIONS (NOT EXCLUSIVE)**

**EDUCATION OF POPULATION**

.....

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**NETWORKING**

**INTEGRATION INTO MASTER PLATFORMS**

**ADOPTION OF DATA STANDARDS**

**SOLUTIONS FOR DATA SECURITY**

**SOLUTIONS FOR INTERFACING**

**INTERINSTITUTIONAL COOPERATION PROTOCOLS**

**LOCAL PLATFORMS**

**INTERNAL INTEGRATION OF DATA**

**INTERNAL DATA MODELLING**

**INTERNAL PROCESS MODELLING**

## BOTTOM-UP APPROACH





# WHY THIS LONG-TERM EFFORT?

**“ONCE ONLY” HAS MANY FACETS**

**Citizens**

**Administration system**

**Public institutions**

**Public transportation intra and inter-city system**

**Education system**

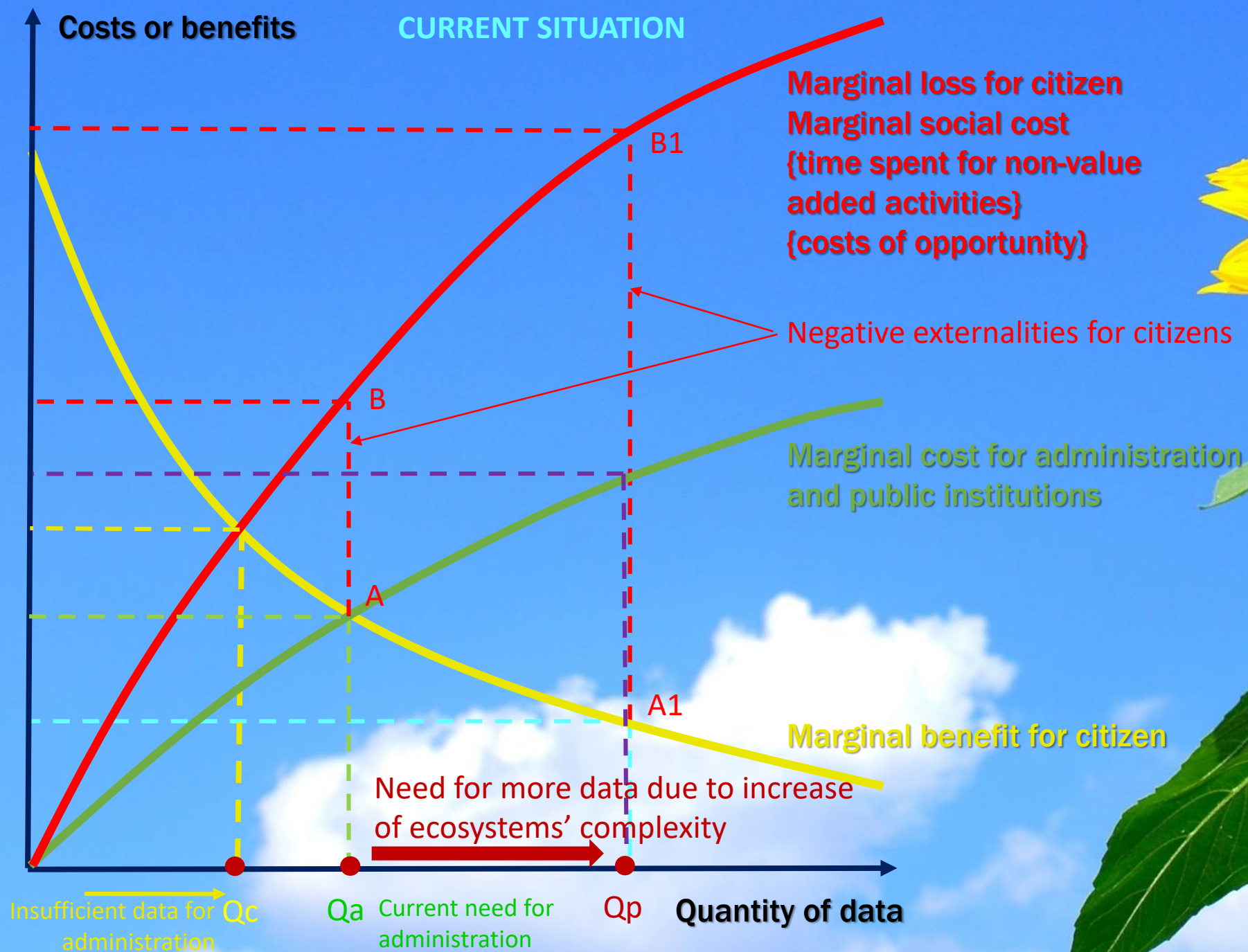
**Health system**

**Security and public safety system**

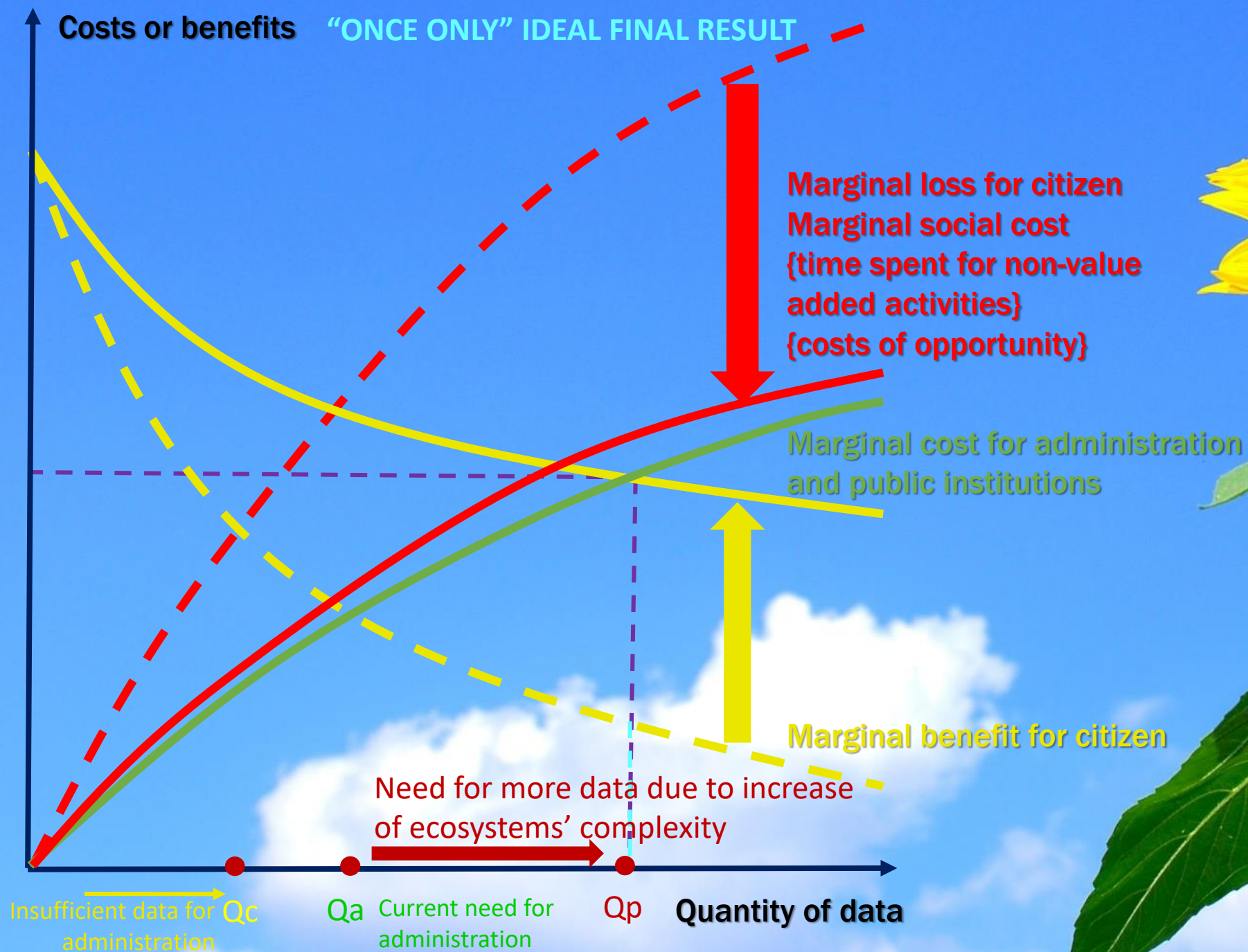
**Emergency system**

**Business system**





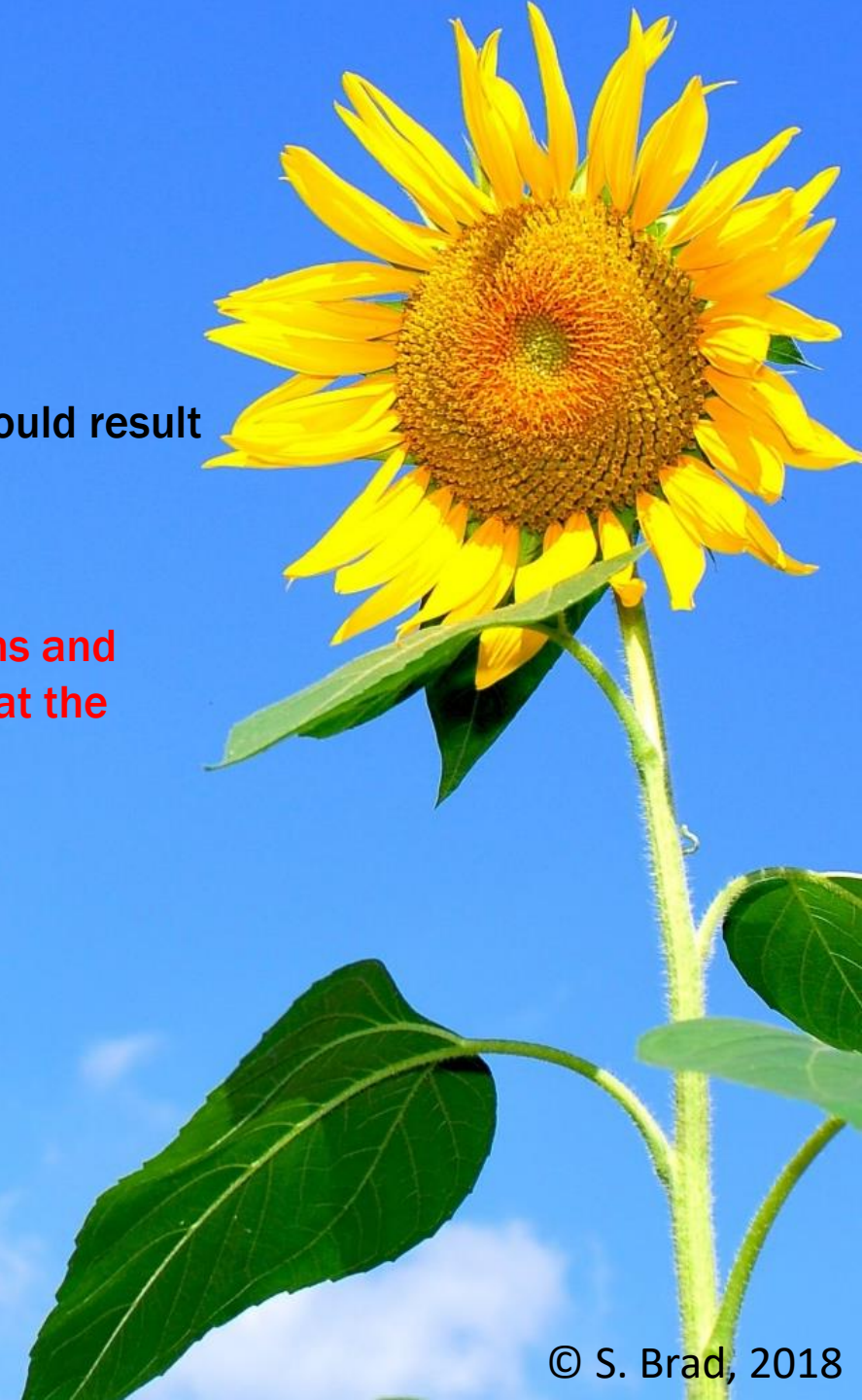




**"It is estimated that extending this 'once only' approach to the EU level could result in annual net savings of as much as €5 billion per year."**

**(EY, Danish Technology Institute, European Commission, 2014)**

**Savings mentioned above do not include negative externalities for citizens and natural environment, private costs at the interface A2B and social costs at the interface I2I, A2I and I2A**





# Instead of conclusions ... homework

- ✓ Investigate and quantify negative externalities for all stakeholders
- ✓ Define solutions to move the curves of social costs and benefits toward optimal paths
- ✓ Design optimal architectures for interoperability
- ✓ Design European standards for data semantics and data modelling
- ✓ Design cost-effective interfaces between systems
- ✓ Educate providers of data
- ✓ Support providers of data to optimize their internal processes
- ✓ Approach bottom-up useful projects and then create public pressure for top-down initiatives
- ✓ Invest more in robust cybersecurity solutions, such as blockchain-driven innovations
- ✓ Work more on cooperation to succeed with “once only” initiative such as to move beyond “Nash equilibrium” and reach “effectiveness frontier” and “reasonable optimum”, where utility of benefits for all stakeholders to be maximized in the space of constraints
- ✓ .... and more!

## Contact

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