Course Introduction to E-Government
Summer term 2025
Foundations - Scoping

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Agenda

❖ Scope of considerations

❖ E-government definition

❖ Evolution of e-government

❖ E-government as research discipline

❖ Literature

What characterises the public sector?

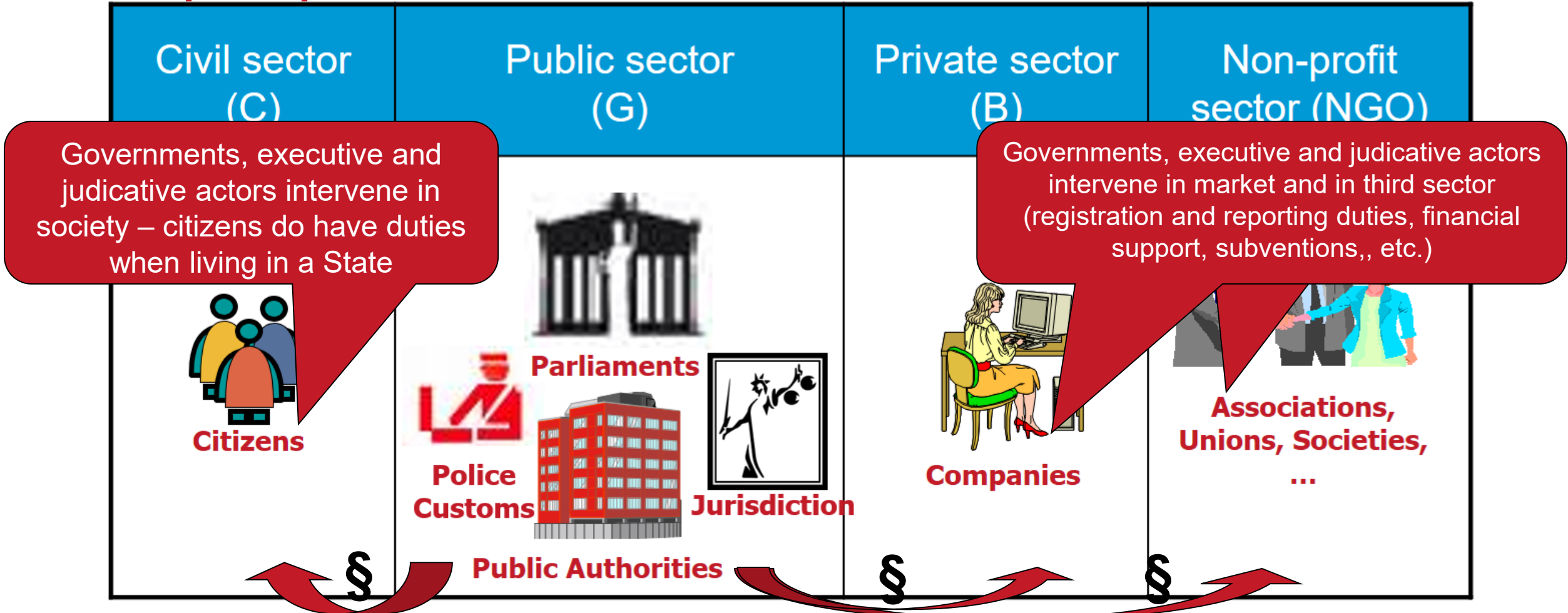**Scope of considerations: basic understanding about the public sector …**
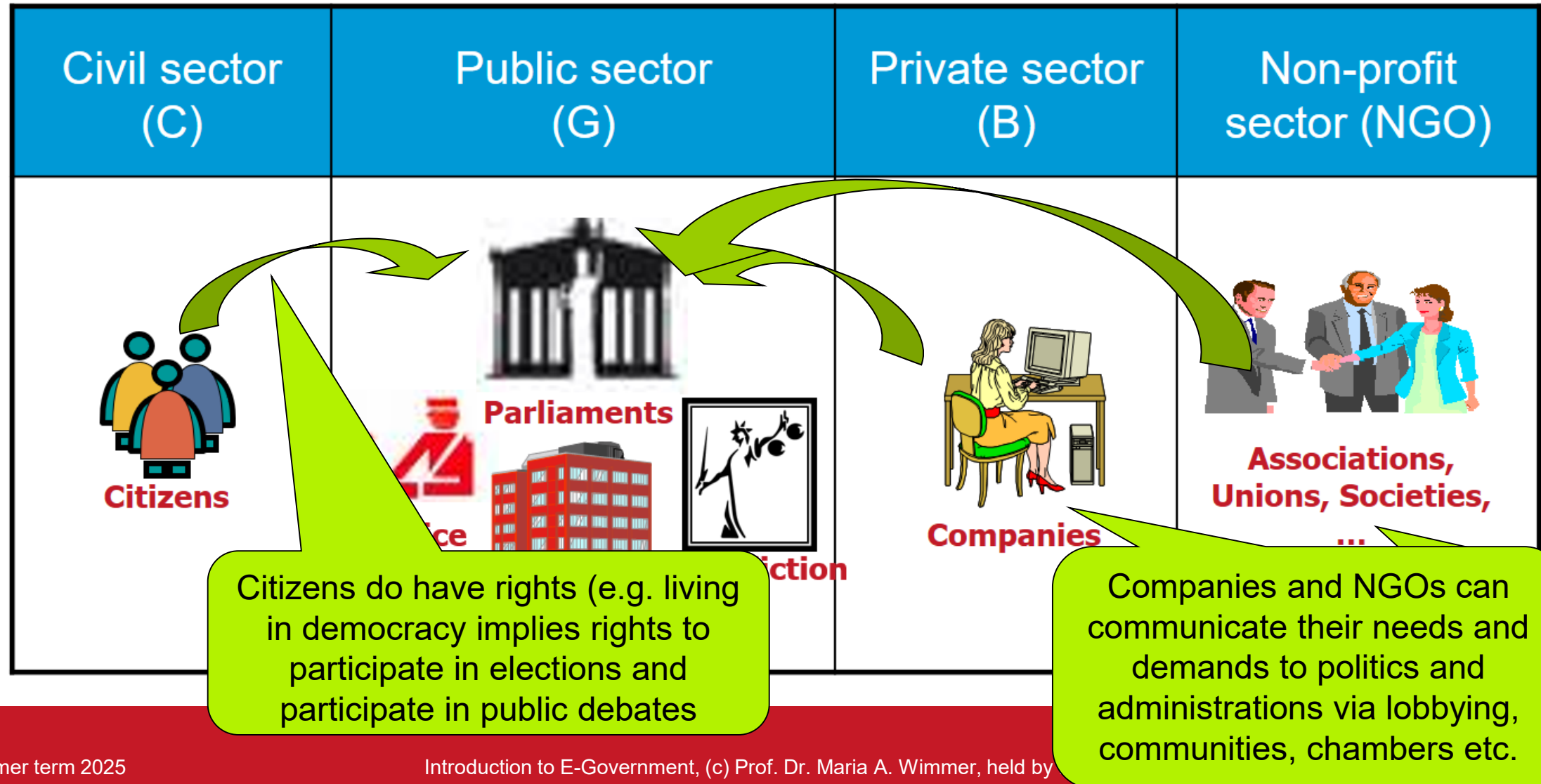
Main Sectors of Society

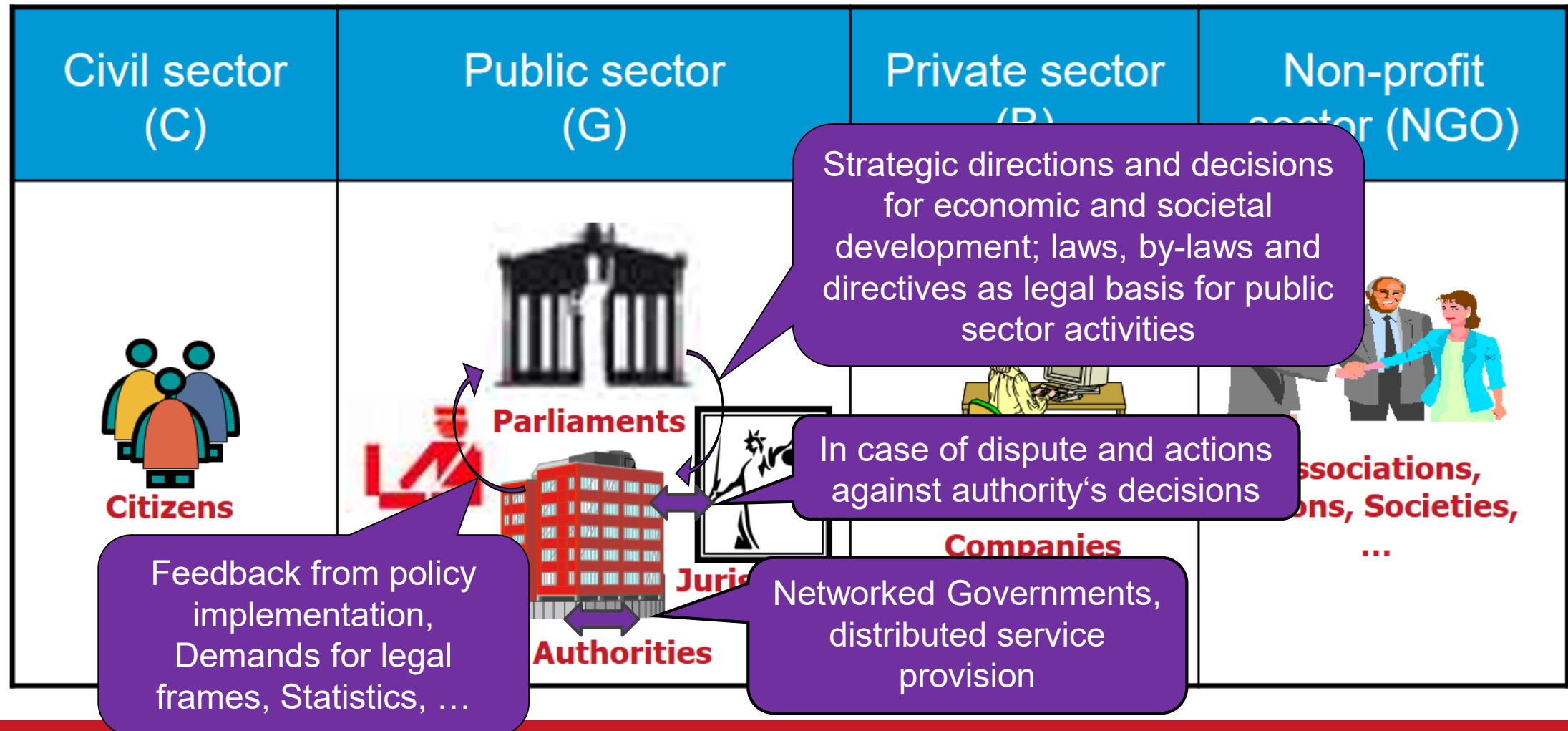|			

Sectors

Main actors

Relationships among Sectors – Driven by Obligations: G2C, G2B, G2NGO

Civil sector (C)	Public sector (G)	Private sector (B)	Non-profit sector (NGO)

Governments, executive and judicative actors intervene in society – citizens do have duties when living in a State

Governments, executive and judicative actors intervene in market and in third sector (registration and reporting duties, financial support, subventions,, etc.)

Citizens

Parliaments
Police Customs
Jurisdiction
Public Authorities

Companies

Associations, Unions, Societies, ...

§ § §

Relationships among Sectors – Driven by Rights: B2G, C2G, NGO2G

Civil sector (C)	Public sector (G)	Private sector (B)	Non-profit sector (NGO)
Citizens	Parliaments	Companies	Associations, Unions, Societies, ...

Citizens do have rights (e.g. living in democracy implies rights to participate in elections and participate in public debates)

Companies and NGOs can communicate their needs and demands to politics and administrations via lobbying, communities, chambers etc.

Relationships among Sectors – the Internal View: G2G

Civil sector (C)	Public sector (G)	Private sector (B)	Non-profit sector (NGO)
Citizens	Parliaments Authorities	Companies	Associations, ...ons, Societies, ...

Strategic directions and decisions for economic and societal development; laws, by-laws and directives as legal basis for public sector activities

In case of dispute and actions against authority's decisions

Feedback from policy implementation, Demands for legal frames, Statistics, …

Networked Governments, distributed service provision

Three Key Functions of Government

According to Lenk
(in Lenk and Traunmüller, 1999)
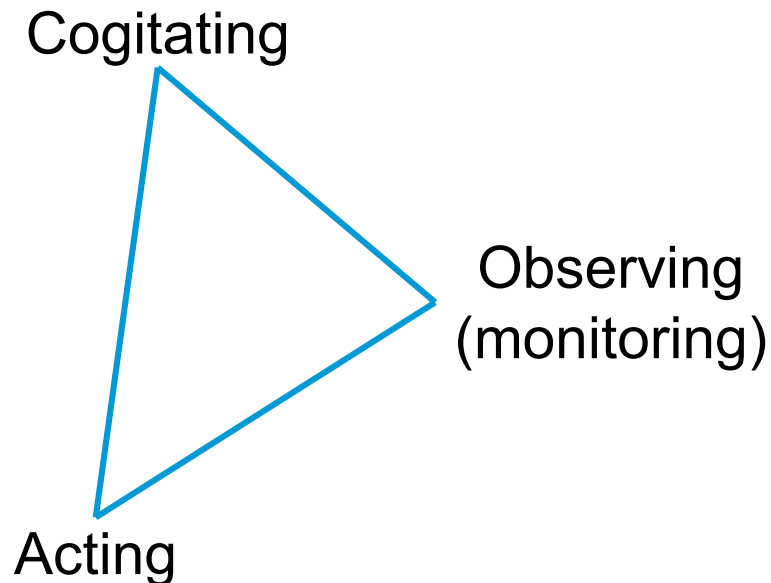
Also known as …
(see Wimmer et al 2001)

Cogitating

Observing
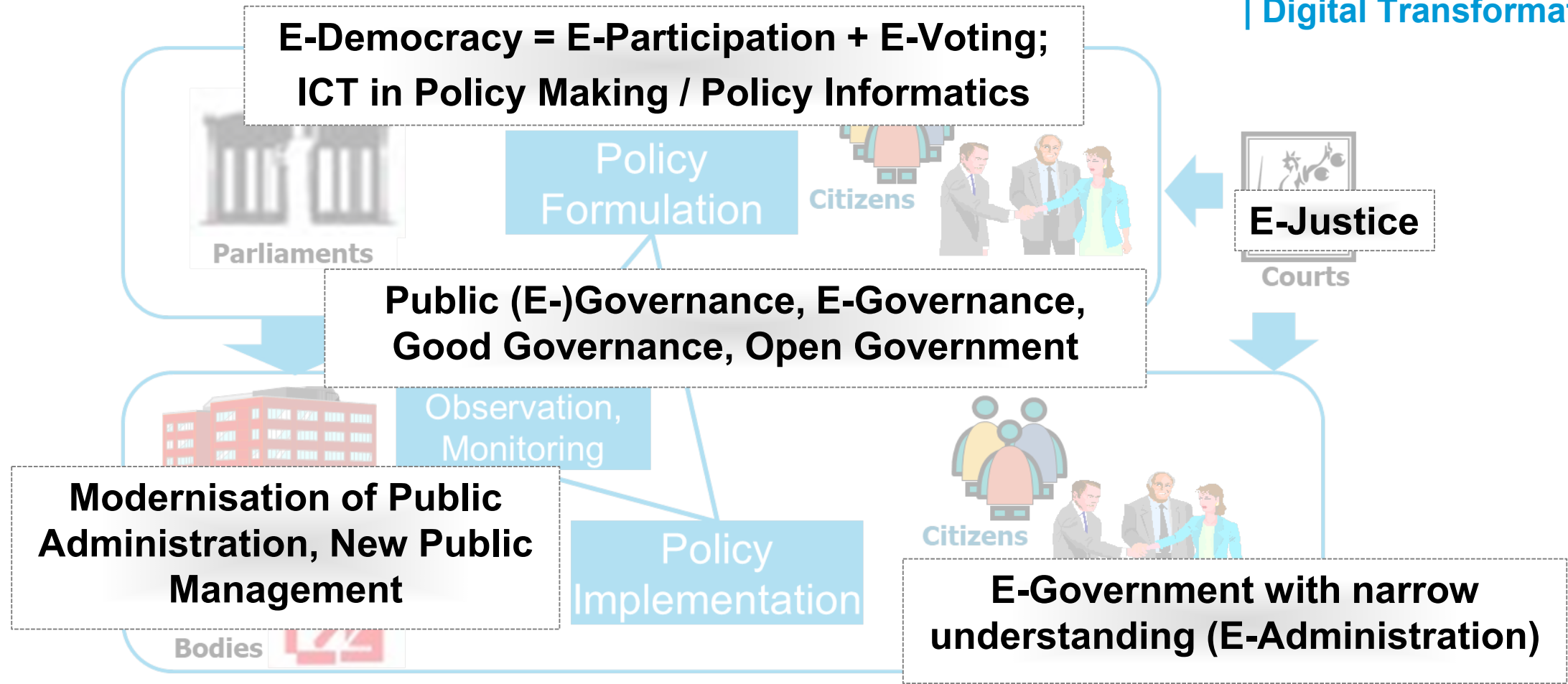(monitoring)

Acting

Policy
Formulation

Observation /
Monitoring

Policy
Implementation

Scoping Public Sector Activity into Core Fields of Action and Who the Stakeholders Are

Parliaments

Policy Formulation

Citizens

Companies, NGOs

Courts

Public Administration

Exekutive Bodies

Observation, Monitoring

Policy Implementation

Citizens

Companies, NGOs

(adjusted from Lenk & Traunmüller 1999, Wimmer et al 2001)

Digital Transformation and Organizational Modernization in All Three Functions
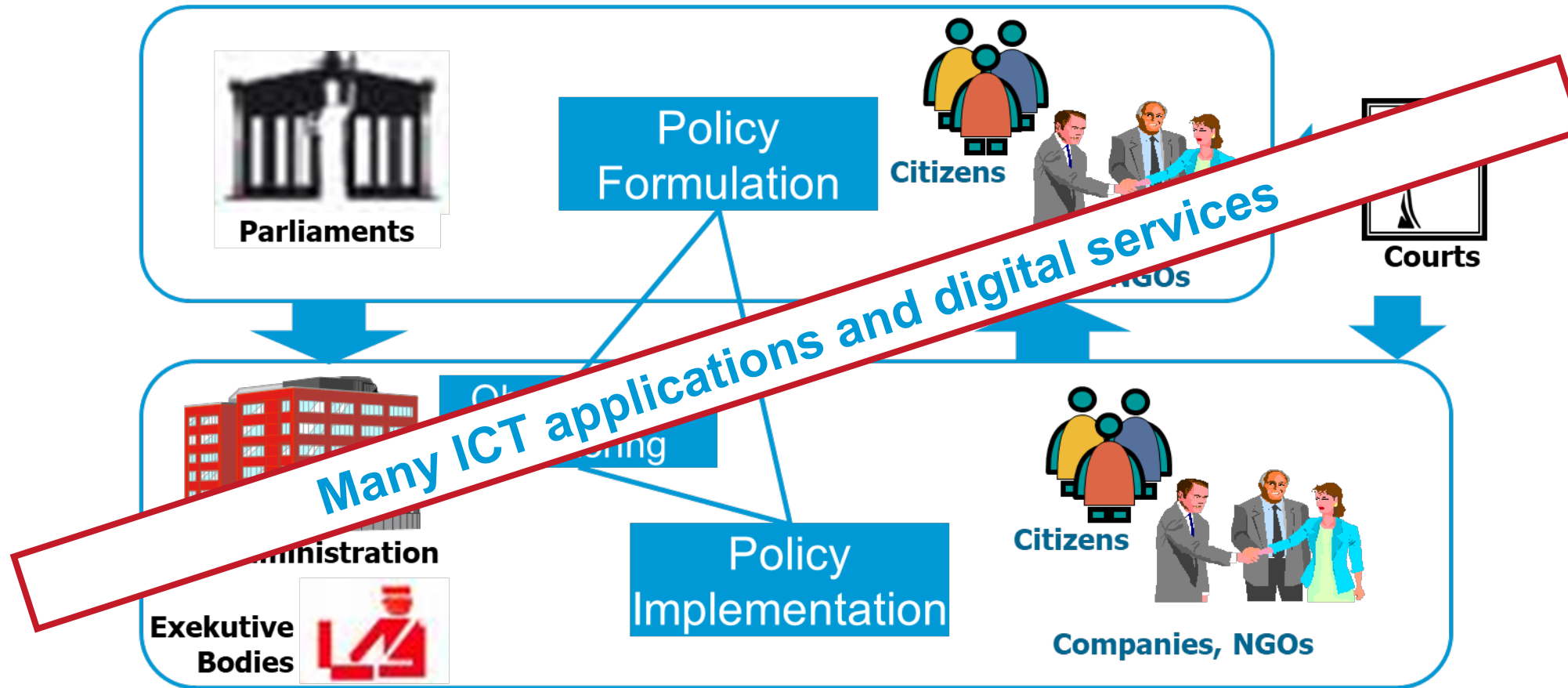
‚E'-Keywords in the Scope of Public Sector Activities

Electronic Government | Digital Government in the wider understanding and as a research discipline | Digital Transformation

E-Democracy = E-Participation + E-Voting;
ICT in Policy Making / Policy Informatics

Parliaments

Policy Formulation

Citizens

E-Justice

Courts

Public (E-)Governance, E-Governance, Good Governance, Open Government

Observation, Monitoring

Modernisation of Public Administration, New Public Management

Policy Implementation

Citizens

E-Government with narrow understanding (E-Administration)

Bodies

E-Government Definitions

What is it about?

What is E-Government Concerned about?

❖ E-government is not just ICT introduction

➢ Public sector modernisation as a key driver for ICT introduction

➢ ICT as facilitator for organisational modernisation

➢ Technical innovation transforming the public sector

Definitions of E-Government

German Society for Computer Science (GI): Memorandum of the FA VI (2000) (translated from German)

"*Electronic Government refers to ... the execution of processes of democratic formation and decision making as well as the delivery of services in politics, government and public administration by intensively using Information and Communication Technologies (ICT)*".

"*This definition includes … the vast amount of supportive and managerial processes to run the State. It also includes processes of delivering political and financial account*"

(Memorandum des Fachausschusses Verwaltungsinformatik der Gesellschaft für Informatik e.V. und des Fachbereichs 1 der ITG im VDE, September 2000, S. 3)

Also called Government 1.0 or E-Government 1.0 (see next section)

Gov 3.0 - D 1.1: https://www.gov30.eu/theproject/deliverables/, Wimmer et al 2020

Definitions of E-Government

European Commission in the eGovernment Action Plan 2016-2020:

„eGovernment supports administrative processes, improves the quality of the services and increases internal public sector efficiency. Digital public services reduce administrative burden on businesses and citizens by making their interactions with public administrations faster and efficient, more convenient and transparent, and less costly. In addition, using digital technologies as an integrated part of governments' modernisation strategies can unlock further economic and social benefits for society as a whole. The digital transformation of government is a key element to the success of the Single Market."

EUROPEAN COMMISSION

Brussels, 19.4.2016

COM(2016) 179 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

EU eGovernment Action Plan 2016-2020

Accelerating the digital transformation of government

{SWD(2016) 108 final}
{SWD(2016) 109 final}

EU eGovernment Action Plan 2016-2020, Accelerating the digital transformation of government,
https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016DC0179&from=EN

Recent Understanding of E-Government and Digital Public Services by the EC

The European Commission is taking concrete actions to develop cross-border digital public services.

Effective digital public services, or eGovernment, can provide a wide variety of benefits. These include more efficiency and savings for governments and businesses, increased transparency, and greater participation of citizens in political life.

ICT is already widely used by government bodies, but eGovernment involves more than just the tools: it involves rethinking organisations and processes, and changing behaviour so that public services are delivered more efficiently to people. Implemented well, eGovernment enables citizens, enterprises and organisations to carry out their interactions with government more easily, more quickly and at lower cost.

The potential cost savings are massive. In Denmark, electronic invoicing saves taxpayers €150 million a year and businesses €50 million a year. If introduced across the EU, annual savings could exceed €50 billion. Meanwhile, in Italy e-procurement systems cut over €3 billion in costs.

Cross-border digital public services allow people to move freely in the EU. Whether moving for work or family, you can easily deal with public services outside your home country.

As part of its strategy, the European Commission is taking concrete actions for the development of cross-border digital public services. These include, but are not limited to, the creation of European interoperable platforms such as a common framework for citizens' electronic identity management, and the fostering of innovation through funding of large-scale pilots.

Guidelines are available on how to make better use of open standards for ICT systems of public authorities in order to avoid dependencies on certain suppliers of ICT systems (lock in).

Shaping Europe's digital future

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https://digital-strategy.ec.europa.eu/en/policies/egovernment

E-Government Action Plan 2021 of the EC

https://digital-strategy.ec.europa.eu/en/policies/egovernment-action-plan

Set goals to modernize digital public services and make the EU a better place to work, live and invest

The eGovernment Action Plan enables people across the EU to fully enjoy the benefits of digital public services. The plans set goals to:

- set up a Digital Single Gateway enabling users to obtain all information, assistance and problem solving services needed to operate efficiently across borders;

- interconnect all business registries and insolvency registers and connect them to the eJustice portal, which will become a one-stop shop;

- pilot the 'once-only' principle for businesses across borders so they only need to provide information to a public administration in one EU country and if permitted it is then re-used between different countries;

- help EU Member States develop cross-border eHealth services such as e-prescriptions;

- accelerate the transition to e-procurement and implementation of the once-only principle in public procurement.

In order to achieve its objectives, the eGovernment Action Plan identified 20 actions addressing at least one of the following policy priorities:

- modernising public administrations using key digital enablers;

- enabling mobility of citizens and businesses by cross-border interoperability;

- facilitating digital interaction between administrations and citizens or businesses for high-quality public services.

Further actions may be proposed either by the Commission or by stakeholders, including EU countries and public administrations at all levels.

Generations of e-government: Government 1.0

❖ Government 1.0 (or E-Government* 1.0) refers to the use of ICTs and other web-based technologies for improving or enhancing the efficiency and effectiveness of public service provisioning to citizens and businesses

* E-Government and Digital Government used synonymously

Gov 3.0 - D 1.1: https://www.gov30.eu/theproject/deliverables/; Wimmer et al 2020

Evolutions of Understanding E-Government

From Government 1.0 to Government 3.0

Looking Back: ICT in the Public Sector before the E-Government Evolution

❖ Activities of administrative data processing of large public organisations (data centres, military, etc.) – more than 60 years ago

❖ In Germany: working group of ICT research in public sector was founded ("Fachbereich Informatik in Recht und öffentlicher Verwaltung") by Herbert Fiedler, Roland Traunmüller and other scholars of the field in the German Society for Informatics – the late 1970s – which at that time also included Legal Informatics

   ➤ In the late 1980s – early 1990s, the working group subdivided the topics "ICT in public administration" (E-Government) and "Legal Informatics"

❖ New Public Management reform of the mid 1990s not successful

❖ Late 1990s: E-government starting off with the wide availability of the Internet

E-Government and Digital Government Established around the Year 2000

❖ Late 1990s: establishment of the concepts electronic Government (Europe) and digital Government (US)

❖ Concepts emerging in early 2000ers
  ➢ some replacing "e" with "m" for mobile
  ➢ or "k" for knowledge
  ➢ or "t" for transforming
  ➢ or "i" for intelligent Government
  ➢ others bringing a radical view by dropping the "e"

❖ In the turn of 2005, e-government expanded to a full domain of research
  ➢ Dedicated to ICT usage in the various branches of the public sector

Drawbacks of Initial Approach to E-Government Research and Practice

❖ First approaches
  ➢ Too technology-focused
  ➢ Neglecting user perspectives, organisational aspects and the legal and policy dimensions in ICT developments

❖ High demand to focus more on good governance in e-government emerged around 2005

❖ Demand for a holistic view on e-government recognized

Recap: Holistic view on public sector information systems

Information system view:

Public service / interaction for service delivery

Strategic goals, incl. digitalisation

Context / Environment
- political
- legal
- socio-cultural

Interaction partner *

Public Administration / Company

* Customer of public administration / Company
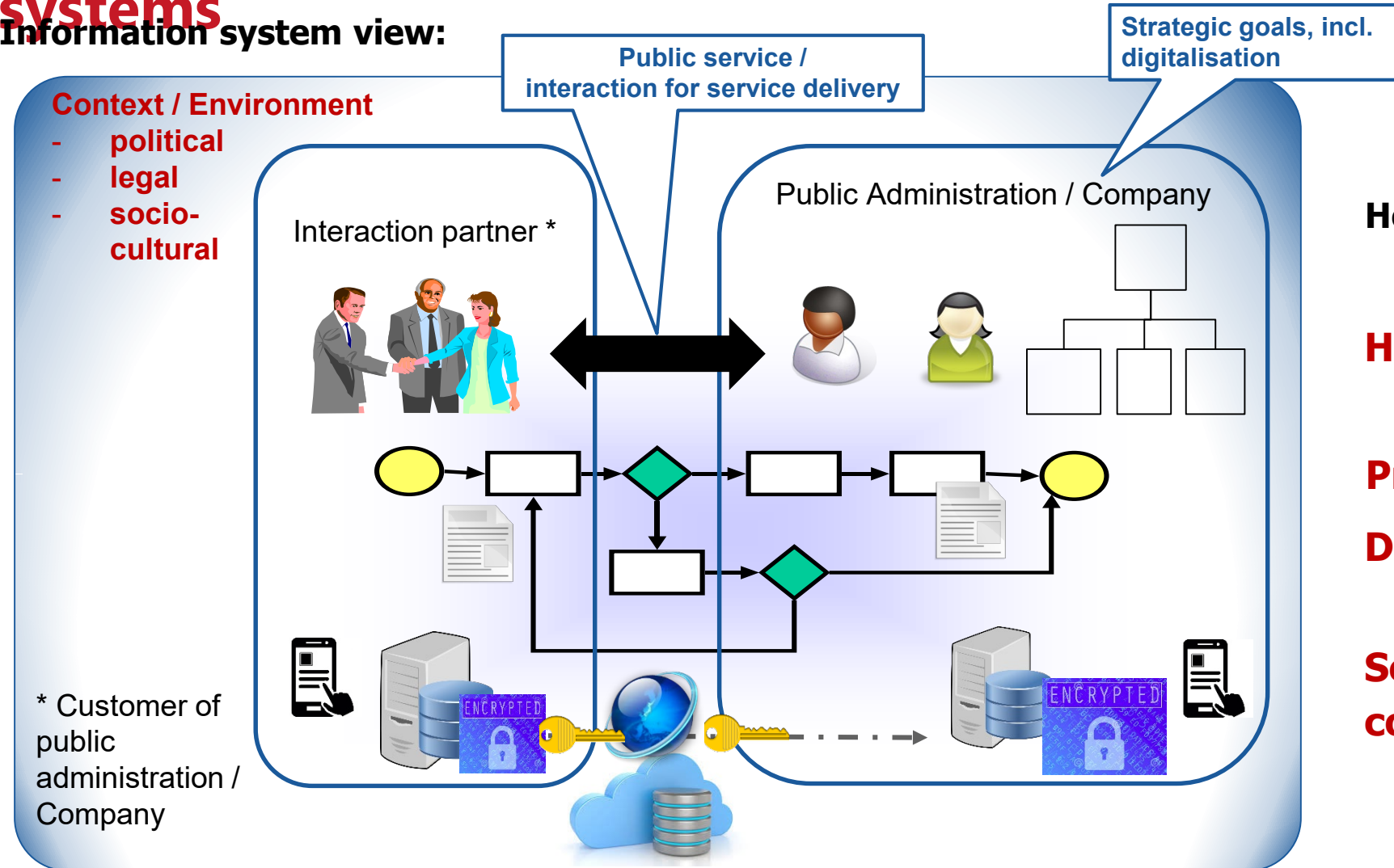
Holistic view:

Humans & Organisation

Processes

Data / Information

Secure ICT and communication networks

(Wimmer 2021)

Next Wave after 2005: From Technology-focused E-Government to Good Governance

❖ Two terms coined the development after 2005

➢ E-Participation, concentrated on citizen participation in democratic decision making and policy formulation therewith using modern ICT

➢ E-Governance / good governance and public governance, focusing on organisational and efficiency aspects and including citizen participation

Generations of E-Government: Government 2.0

❖ Government 2.0 refers to the use of the collaborative tools and approaches of Web 2.0, as well as to the opening of public information, in order to achieve more open, accountable and responsive government

❖ Government 2.0 incorporates different strands of evolution
  ➢ E-Democracy and E-Participation
  ➢ E-Governance, Public Governance
  ➢ Open Government, Open Government Data
  ➢ Stakeholder engagement
  ➢ Co-creation and co-production

Gov 3.0 - D 1.1: https://www.gov30.eu/theproject/deliverables/, Janowski 2015, Wimmer et al 2020

Digital Transformation in the Public Sector

❖ Contemporary societies characterized by complex problems, which require synergies across both multiple disciplines and stakeholders to be tackled

❖ Challenges:
  ➢ Society: increasingly interconnected, flexible, fast-evolving, unpredictable
  ➢ Governance: often silos-based, linear, hierarchical, over-simplified
  ➢ Policies, disciplines and actors isolated

❖ Government 3.0 explores opportunities and potentials of recent ICT developments to tackle the challenges contemporary societies face

Gov 3.0 - D 1.1: https://www.gov30.eu/theproject/deliverables/, Lachana et al. 2018, Wimmer et al 2020

Generations of E-Government: Government 3.0

❖ Government 3.0 refers to the use of new disruptive ICTs, in combination with established ICTs (such as distributed technologies for data storage and service delivery) and taking advantage of the wisdom of crowd (crowd/citizen-sourcing and value co-creation), towards data-driven and evidence-based decision and policy making

Gov 3.0 - D 1.1: https://www.gov30.eu/theproject/deliverables/, Lachana et al. 2018, Wimmer et al 2020

Disruptive Technologies and Enabling Technologies for Public Sector Transformation

❖ Disruptive Technologies
- ➤ Machine Learning & Artificial Intelligence
- ➤ Big Data Analytics
- ➤ Natural Language Processing & Sentiment Analysis
- ➤ Block-chain
- ➤ Virtual Reality & Augmented Reality
- ➤ Internet of Things
- ➤ Policy modelling and simulation
- ➤ etc.

❖ Enabling Technologies
- ➤ Big, linked and open data
- ➤ Cloud computing
- ➤ E-Identities
- ➤ etc.

❖ Paradigms
- ➤ Service co-creation
- ➤ Customization of public service
- ➤ Crowdsourcing

https://www.gov30.eu/wp-content/uploads/2019/02/GOV3.0_D1.1-Baseline-Research_v.1.0.pdf

Disruptive Technologies and Enabling Technologies
for Public Sector Transformation

Current trends in Government 3.0

❖ Smart city / smart region

❖ Community awareness platforms

❖ Once-only principle

❖ Smart digital eco-systems

❖ Innovation in the public sector

❖ Impact difficult to predict: technologies impactful across domains and disciplines

❖ Currently, a number of initiatives to explore and understand the impact of these technologies on the public sector
  ➢ E.g. Gov 3.0 analysis of gaps, impacts and challenges leading to research and training needs

https://www.gov30.eu/

Comparison of Gov 1.0, Gov 2.0 and Gov 3.0

D 1.1: https://www.gov30.eu/theproject/deliverables/ - for the literature referenced, see the references in the deliverable, See also Charalabidis et al 2019

#	Perspective	Gov 1.0	Gov 2.0	Gov 3.0
1	Main Goal	Better Services (Millard, 2004; Silcock, 2001), internal efficiency (Lee et al., 2005; Von Haldenwang, 2004; Chen et al., 2006)	Openness (transparency) & Collaboration (Bonson et al., 2012; Khan et al., 2014; Charalabidis & Koussouris; 2012).	Societal problem-solving (Hogan et al., 2017), citizen well-being (Bounabat, 2017), optimization of resources (Nam, 2013; Shin & Lee, 2015)
2	Main Method	Interoperability for Connected Governance (Gottschalk, 2009; Guijarro, 2007) -> Interoperability in networked governments / cross-border public service	Open & Collaborative Governance (Bonson et al., 2012; Charalabidis & Koussouris; 2012).	Smart Governance (Linders, et. al, 2015) & data-intensive decision making (Ojo & Millard, 2017; Nam, 2013)
3	Usual Application Level	National (Chadwick & May, 2003; Maumbe et al., 2008), but also regional and local	National & Local (Bonson et al., 2012).	Local to International (Pereira et al., 2018; Ojo & Millard, 2017; Nam, 2012; Nam 2015)
4	Key Tool	Portal (Ebrahim & Irani, 2005) for front-end, but also Records Management, Registers and other internal applications	Social Media (Bonson et al., 2012; Baumgarten & Chui, 2009; Boughzala et al., 2015) and e-participation platforms	Ubiquitous Sensors/Smart Devices/ Apps (Scholl, 2012)

Comparison of Gov 1.0, Gov 2.0 and Gov 3.0

#	Perspective	Gov 1.0	Gov 2.0	Gov 3.0
5	Key Obstacle/ Risk	Public Sector Mentality (willingness to adopt; insufficient knowledge; lack of strategy) Business Mentality (siloed solutions; non-conformance to standards) Citizens Mentality (accessibility, digital divide) (Carter, & Belanger, 2005; Carter & Belanger, 2004; Choi, 2017)	Public Sector Mentality (willingness to adopt) Business Mentality (siloed solutions; non-conformance to standards) Citizens Mentality (trust, digital divide) (Bertot et al. 2010; Osimo, 2008; Picazo-Vela et al., 2012; Khan et al., 2014)	Public Sector Mentality (willingness to adopt) Business Mentality (non-conformance to standards) Citizens Mentality (digital divide) (Sang, 2014; Nam, 2015)
6	Key ICT Area	Organizational Infrastructures (Dittrich et al., 2003)	Social Media & Open, Linked and Big Data (Bonson et al., 2012)	Artificial Intelligence & IoT (Pereira et al., 2018)
7	Most Needed Discipline, beyond ICT	Management (Ebrahim & Irani, 2005)	Social and Political Sciences (Nam, 2012; Di Maio, 2009; AGT, 2009)	A wide variety of disciplines concerning the domains of government activity, such as economic, environmental, behavioral sciences (Pereira et al., 2018)

Understanding E-Government as a Research Discipline

The wider understanding of E-Government | Digital Government

Challenges to Face along Digital Transformation in the Public Sector (1/2)

❖ Faster internationalisation of political, economic, cultural and societal relationships

❖ Considerable changes in demographics (immigration, age, social divide, etc.)

❖ Ecological burdens require ecological change of industrial society towards ecological and responsible innovation society

❖ Change in social structures, new types of poverty, social impoverishment, wildness of welfare, etc. demand new social administration and new forms of administration

[Budäus, 1998, pp. 15fff]

Challenges to Face along Digital Transformation in the Public Sector (2/2)

❖ Quick-wins through quick adoption of concepts from the private sector don't work

❖ Implementing new models, which integrate organisation and technology, require new skills of strategic and implementation actors

❖ Key requirements to successfully exploit and implement e-government potentials require competencies for
  ➢ Multi-disciplinarity, holistic thinking
  ➢ Connective Leadership
  ➢ „Really" understanding the users' needs

E-Government as Research Discipline: Key Research Questions

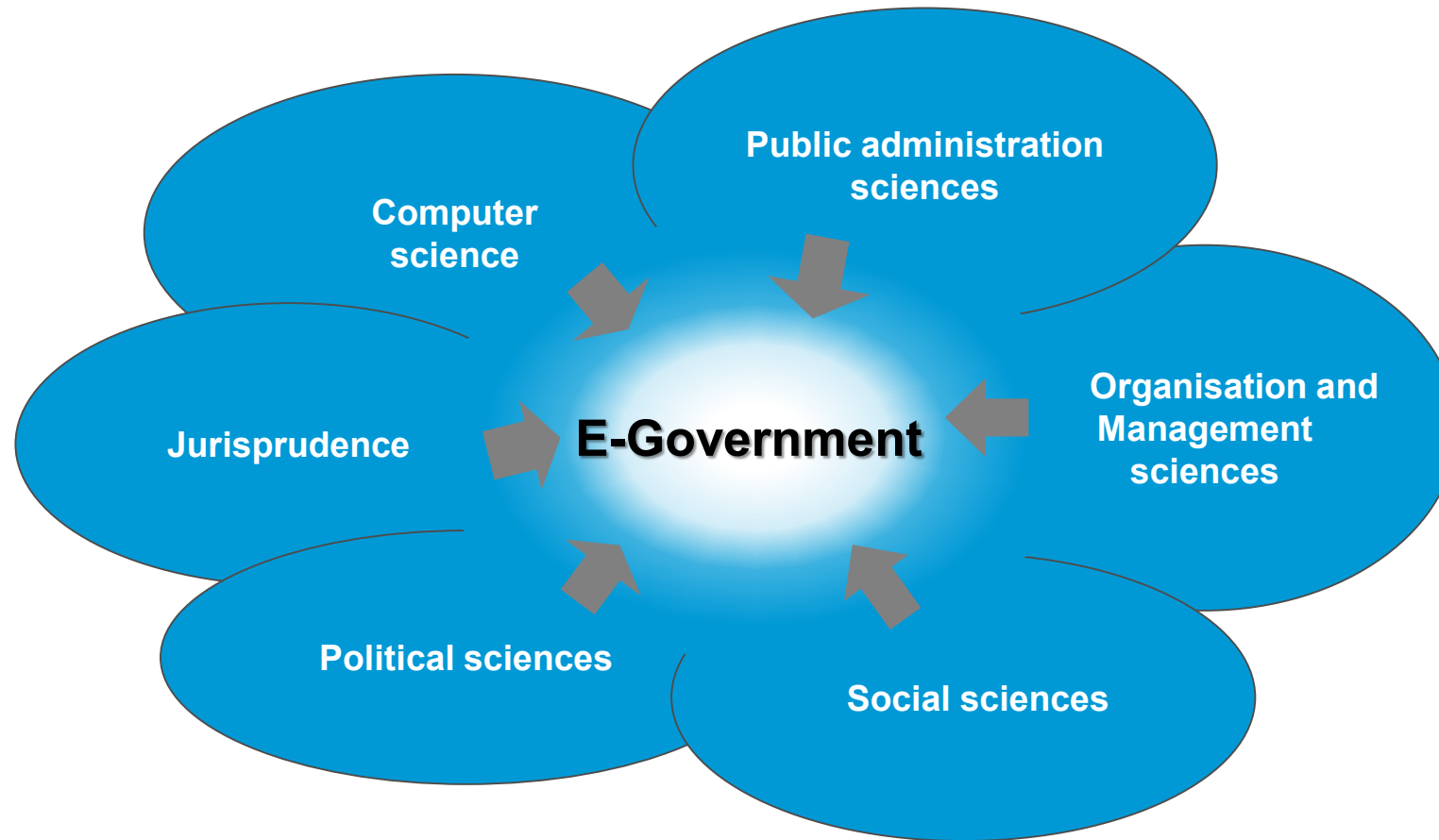❖ How can we conceptualise modern and improved public sector activities through the use of advanced ICT?

Modernising government   **Use of ICT**

❖ How can public sector governance and implementation of good governance principles be ensured?

❖ How can we therewith optimise the available resources with the help of modern ICT?

❖ How can we innovate to better meet the requirements of an ever transitioning society and economy?

Holistic View on E-Government Research and Practice

Government responsibilities and activities / political decision making / Policy implementation

Public Value Expectations / Good Governance / Economics and efficiency

Interaction

ICT innovations, new (disruptive) technologies

Society / Democracy / Market / Environment & Culture

Principles of interaction:
- cooperation
- collaboration
- participation
- openness
- transparency
- coherence
- trustworthiness

(Wimmer, 2007a)

E-Government as Multi-discipline

(Wimmer, 2007b)

E-Government as Multi-discipline: Methods of Research

Methods of Systems Engineering; Programming and conceptual Languages; Natural Language Processing theories; Information Retrieval theories; Data Mining Concepts; Theories of Model Building; Simulation theories, etc.

Administration [Institutional] Theories; Public Management; New Public Management; Governance of State Models, Public Sector Reform Models, Sovereignty of State, Public Value Models, etc.

Law-Making; Case Law; Interpretation of Law; etc.

Institutional Theories; Business Process Reengineering; Measurement and Benchmarking Models, etc.

E-Government

Democracy Models; Citizen Participation Frameworks; Political Power of State Modes

System Dynamics; Stakeholder Theories; Actor Network Theory; User Acceptance Models; Diffusion of Technology, Technology Acceptance etc.

Holistic E-Government View Accommodates Manifold Aspects

- ❖ Citizen participation / citizen at focus

- ❖ Accessible and user-driven e-government

- ❖ Openness and transparency

- ❖ Trustworthiness

- ❖ Efficiency and value-generating public services

- ❖ Process chains and ICT support along the process steps

- ❖ Understanding the data along the process chains

- ❖ Organisational change and legal compliance
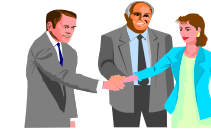
- ❖ Technological innovations and keeping pace with them

E-Government Encompassing Different Directions

Towards external actors

Digital public services for different customers of public srevice, including customer engagement
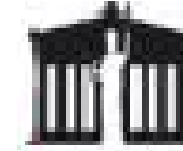
Citizen **Businesses, NGOs**

Towards internal modernization

Digital transformation, networked systems and internal modernization of public sector actors
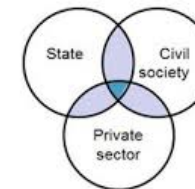
Public Authorities **Parliaments**

Networked overarching structures

Technical, semantical, organizational, legal and socio-cultural building blocks and preconditions

Governance

State   Civil society
Private sector

Building blocks of digitalization:

Interoperability   Competence
Security and eID   User acceptance
Trust   Management
Certification   Legal frameworks

Wrap-up

❖ Digital transformation of public services a current keyword in modernisation of the public services with the use of ICT

❖ Evolution of E-Government over Government 1.0, Government 2.0, Government 3.0

❖ Target groups: citizens, businesses, NGOs, public authorities

❖ Manifold expectations: Simplification, reduction of administrative burden, increase of efficiency and effectiveness, improved service quality, etc.

❖ Strategic and legal foundations pave the way to implementing the expectations

❖ Interoperability and standards becoming key building blocks for digital transformation of the public sector

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- ❖ M.A. Wimmer, G. Viale Pereira, A. Ronzhyn, V. Spitzer (2020) Transforming government by leveraging disruptive technologies: Identification of research and training needs. eJournal eDemocracy Open Gov 12:87–114. https://doi.org/10.29379/jedem.v12i1.594
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Thank you for your attention and good success with the module!

... your questions!

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