

Designing User Friendly and Secure Services of e-State

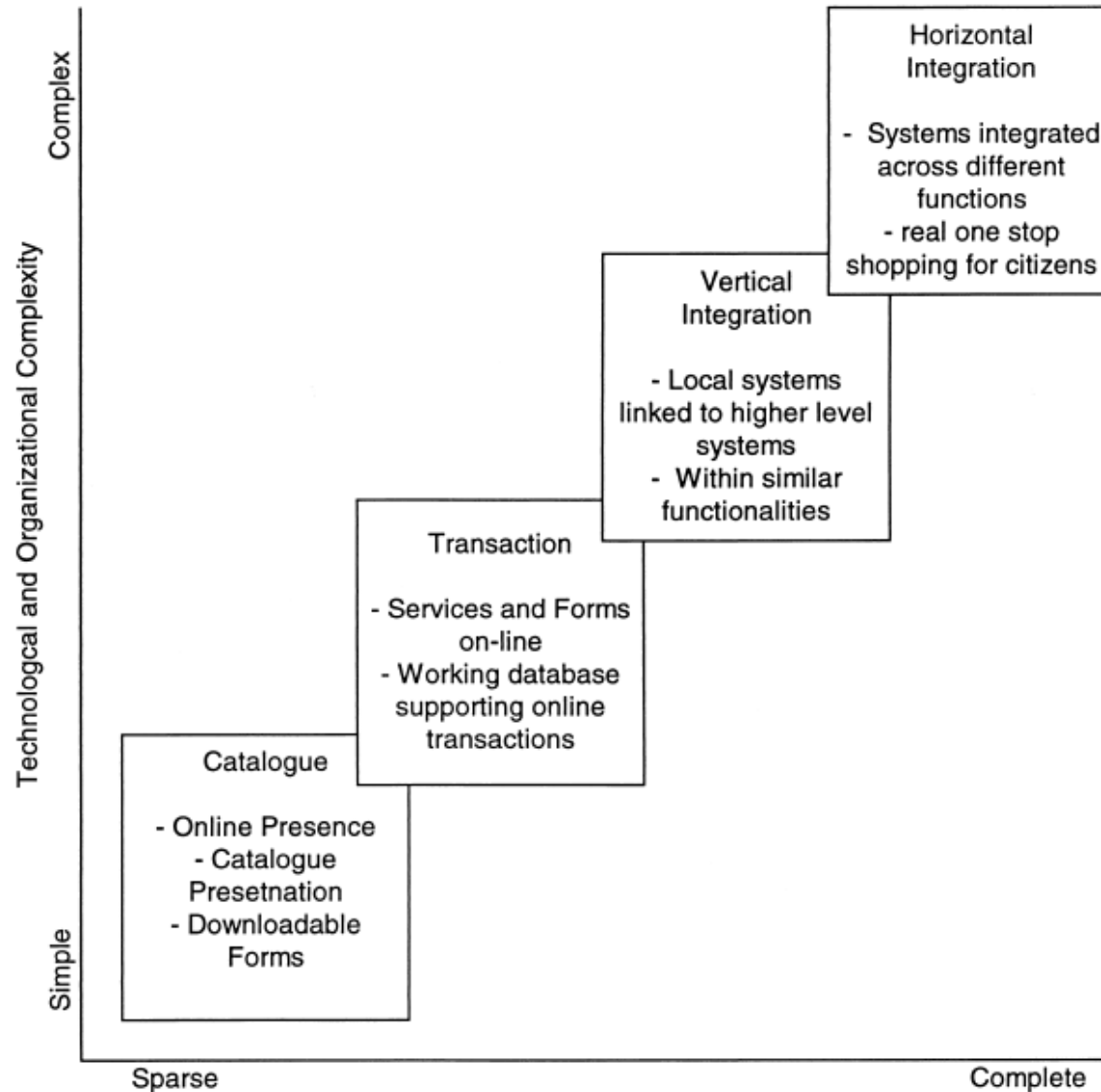
Prof Kuldar Taveter

Regina Sirendi

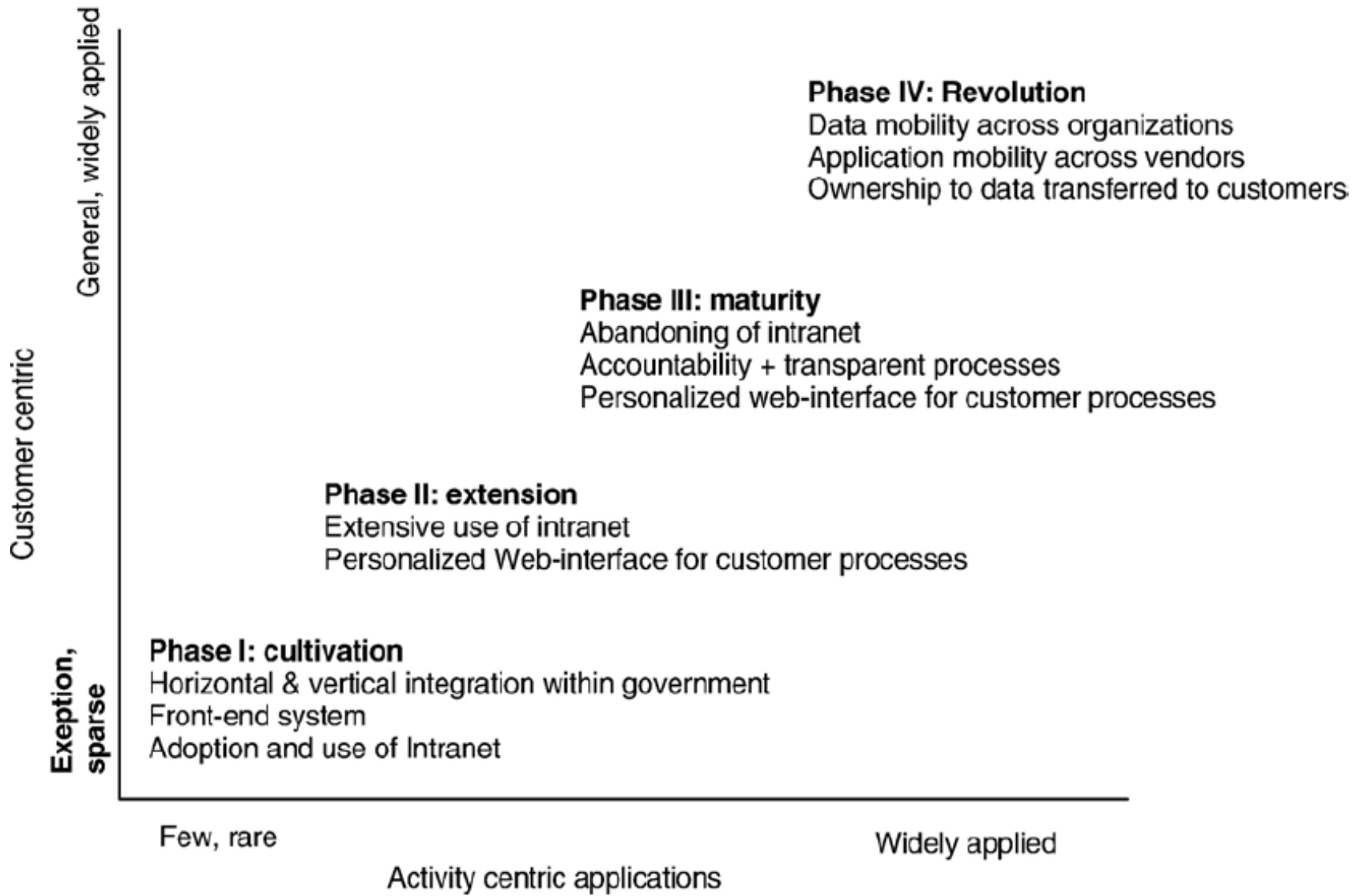
Department of Informatics

Tallinn University of Technology

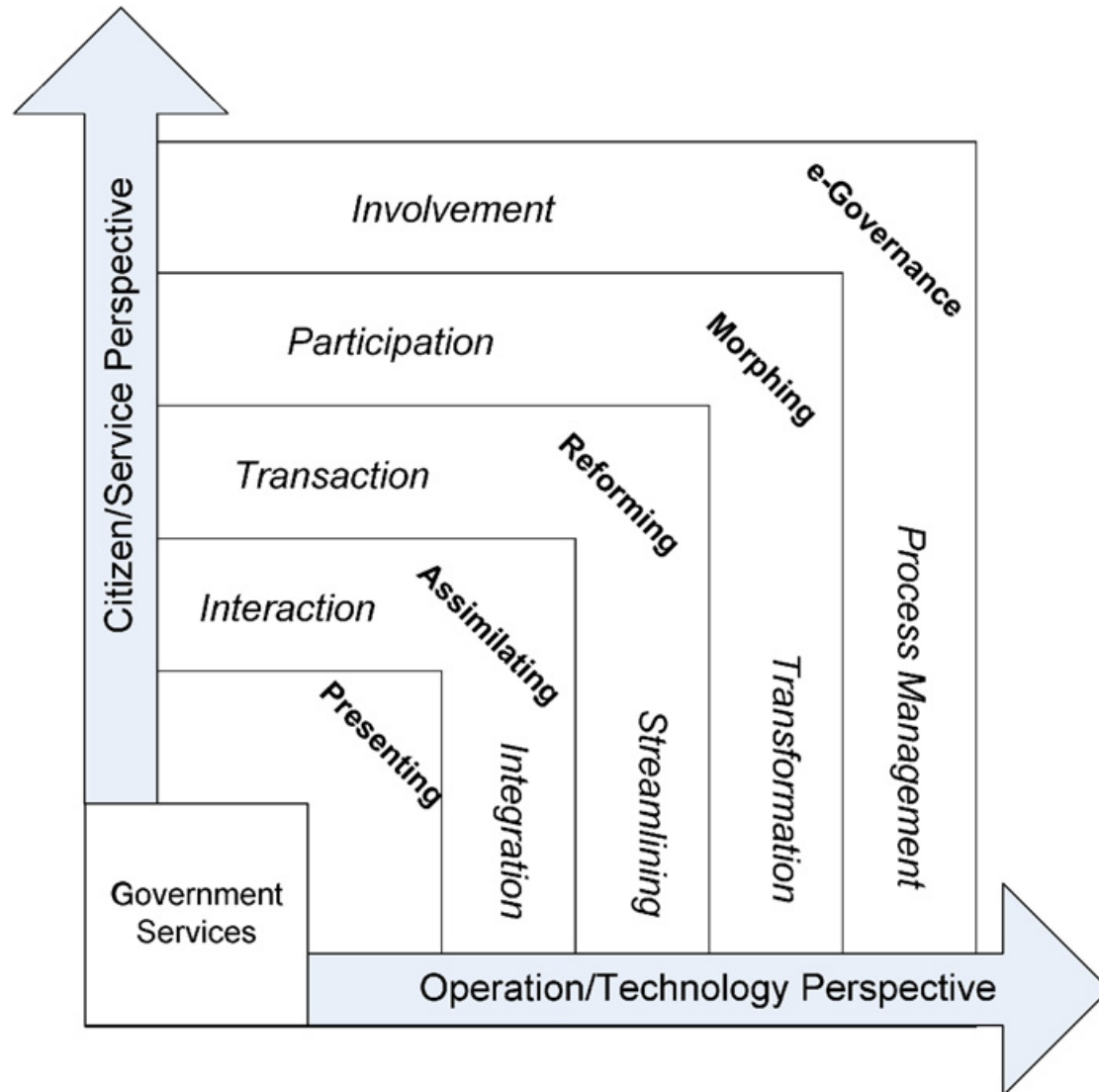
E-government stage models by Layne & Lee (2001)



Extension of the Layne & Lee model by Andersen & Henriksen (2006)



Merged e-government stage models by Lee (2010)



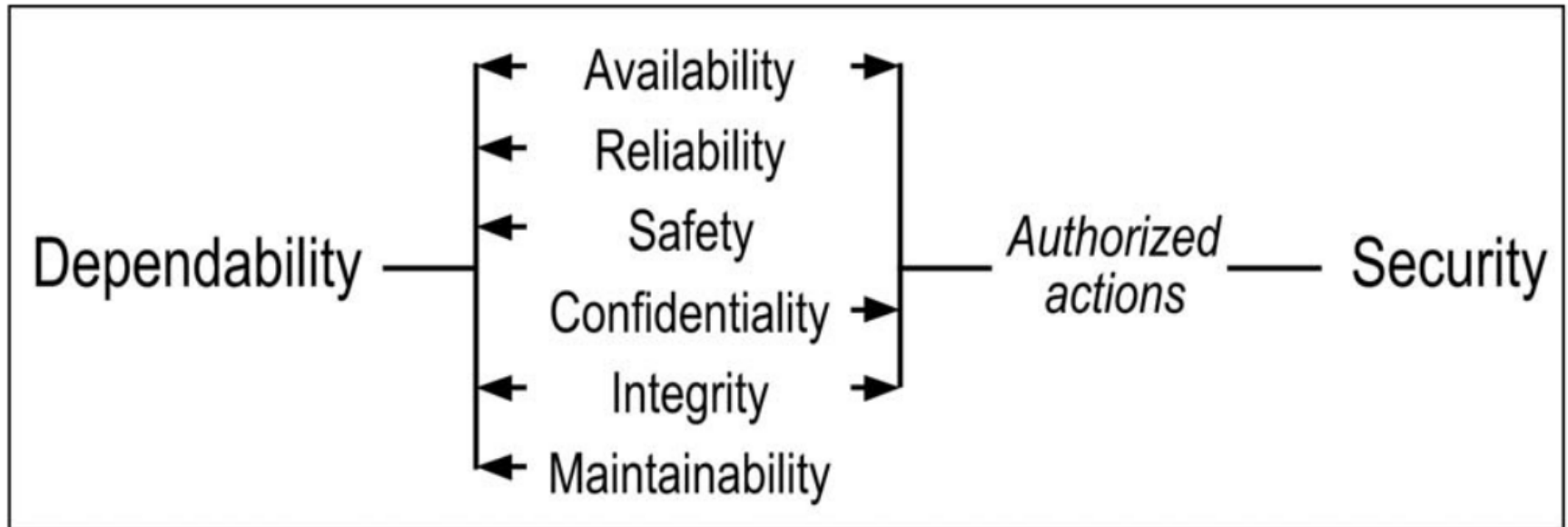
Levels of e-government services

1. Information (website)
2. One-way interaction (application form can be downloaded)
3. Two-way interaction (application form can be submitted)
4. Transaction (pre-filled forms can be completed and submitted, payments can be made, status can be followed)
5. Proactive and integrated (service is proactive and as much as possible automated, e.g. submitting tax file declarations in Estonia)

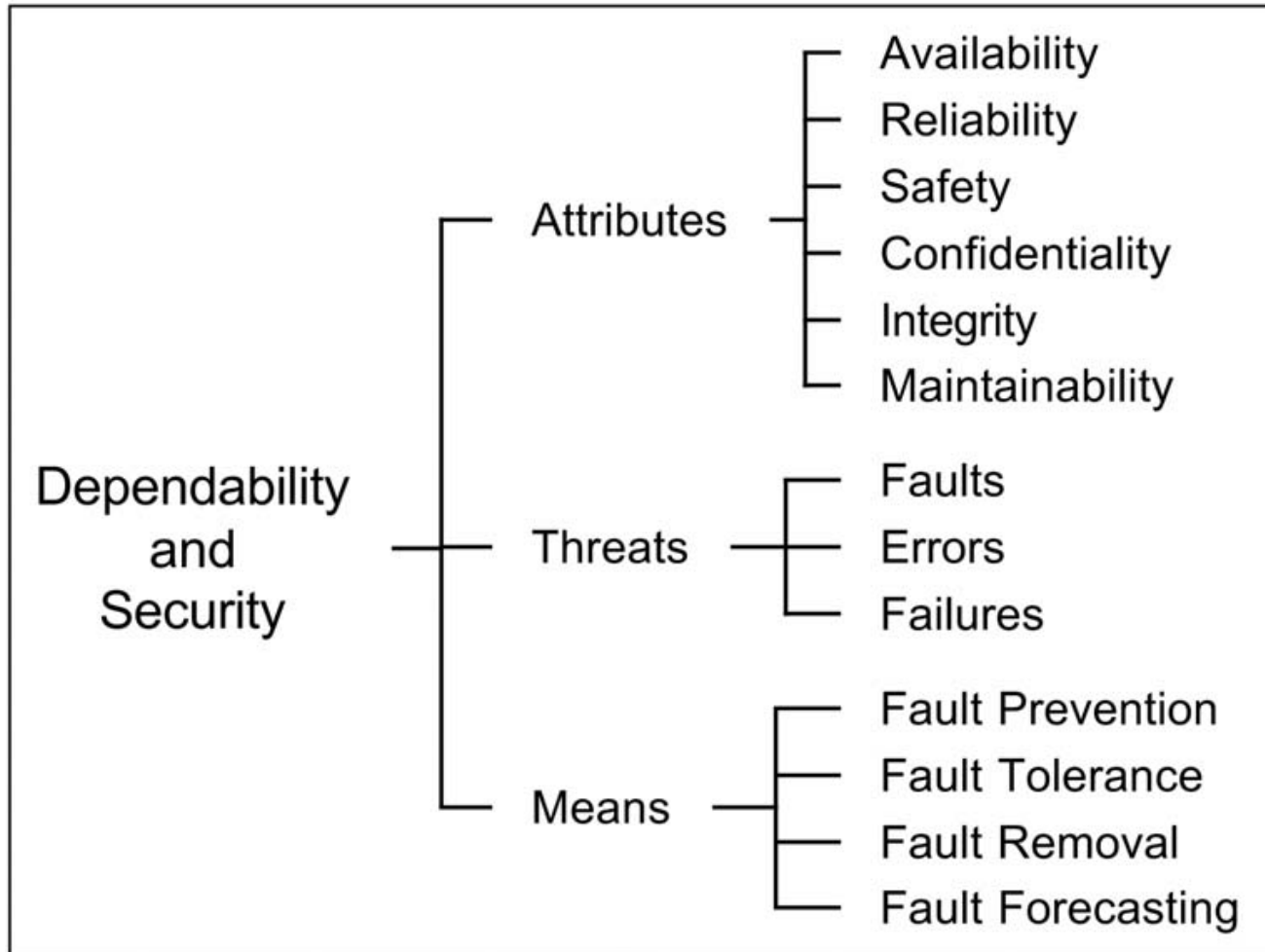
Proactiveness in e-governance

- Flipping the service delivery from “pull” to “push”
- Seamless delivery of timely information and services
- Rooted in needs, preferences, circumstances, life events, and location
- Personalised, adaptive, discreet, unobtrusive

Secure e-government services



Means to attain dependability and security



What is design?

- A specification of an **artifact**, manifested by an **agent**, intended to accomplish **goals**, in a particular **environment**, using a set of **components**, satisfying a set of **requirements**, subject to **constraints**

What is an artifact?

- The entity (or class of entities) being designed. Note: this entity is not necessarily a physical object.
- Classes of artifacts:
 - **physical artifacts**, both simple, such as boomerangs (single-component), and composite, such as houses (made of many types of components)
 - **processes**, such as business workflows
 - **symbolic systems**, such as programming languages
 - **symbolic scripts**, such as essays, graphic models, animations, and software
 - **laws, rules and policies**, such as a criminal code
 - **human activity systems**, such as software design projects, committees and operas

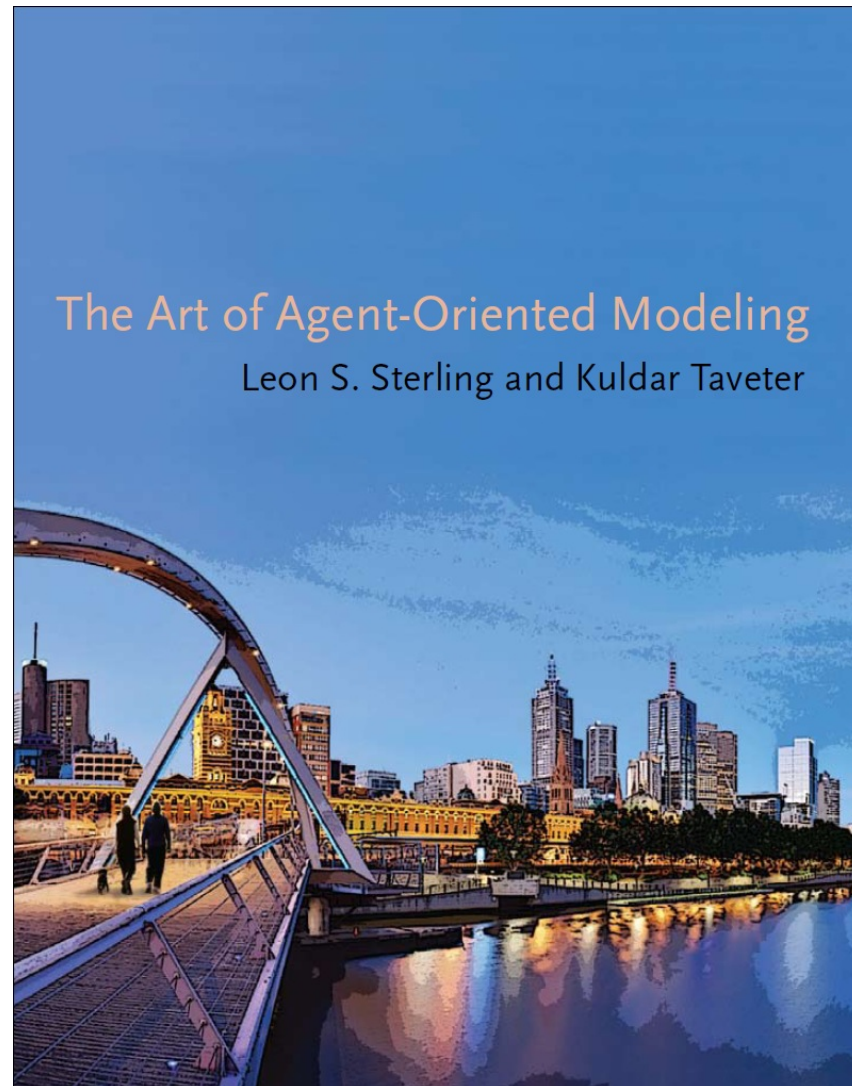
E-government service or public service as a sociotechnical (human activity) system

- A software intensive system that has defined operational processes followed by human operators and which operates within an organization
- A system that contains both a social aspect, which may be a subsystem, and a technical aspect

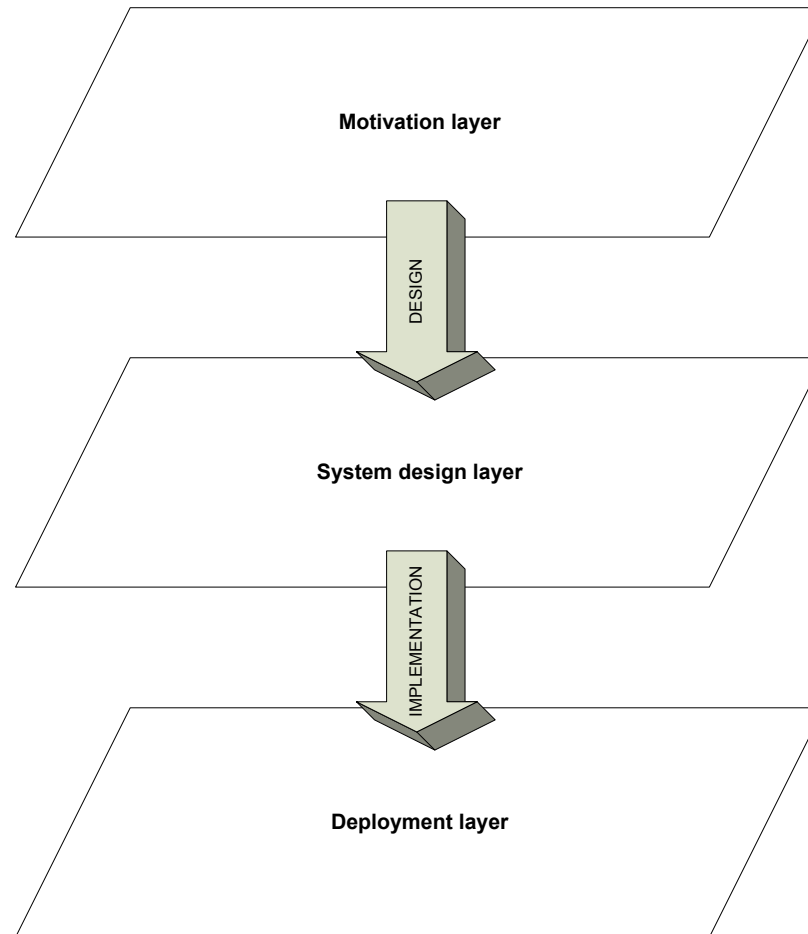
Service design

- Creates ecosystems of connected services
- Considers all the links in the customer-provider chain across:
 - Channels;
 - Organizational silos;
 - Information Systems.
- Requires holistic thinking about customer experience

Agent-oriented modeling (MIT Press, 2009)



Conceptual space for design









Three perspectives required

- Interaction
- Knowledge
- Behaviour

Conceptualizing proactive public services

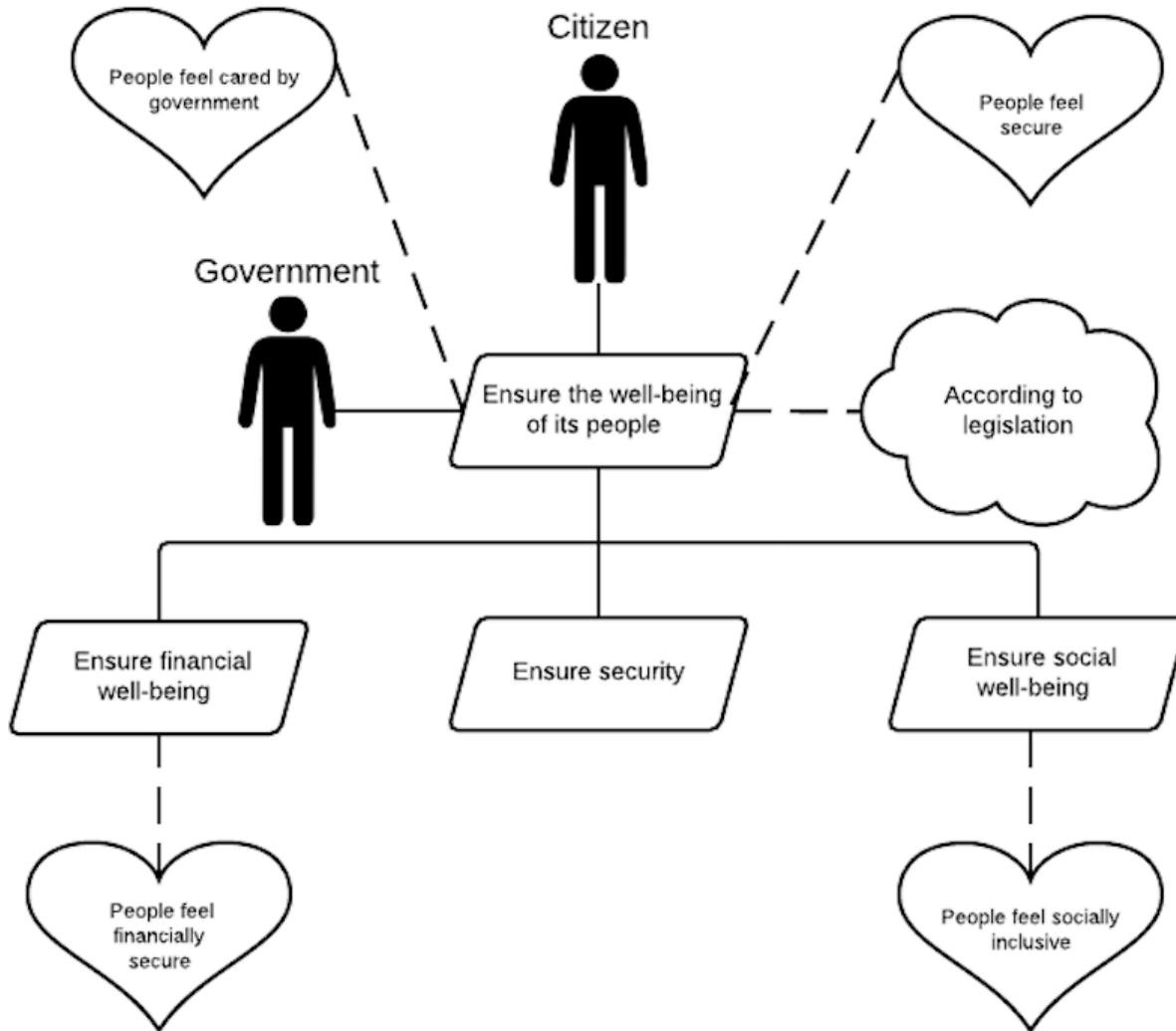
	Viewpoint aspect		
Abstraction layer	Interaction	Knowledge	Behavior
Analysis	Role models and organization model	Domain model	Goal models
Design	Agent models, acquaintance model, and interaction models	Knowledge model	Scenarios and agent behaviour models
Prototyping	Interaction prototyping	Knowledge prototyping	Behavior prototyping

Notation for goal models

Symbol	Meaning
	(Functional) Goal: To-Do goal
	Quality Goal: To-Be goal
	Quality Goal: To-Feel goal
	Role
	Relationship between goals
	Relationship between goals and quality goals

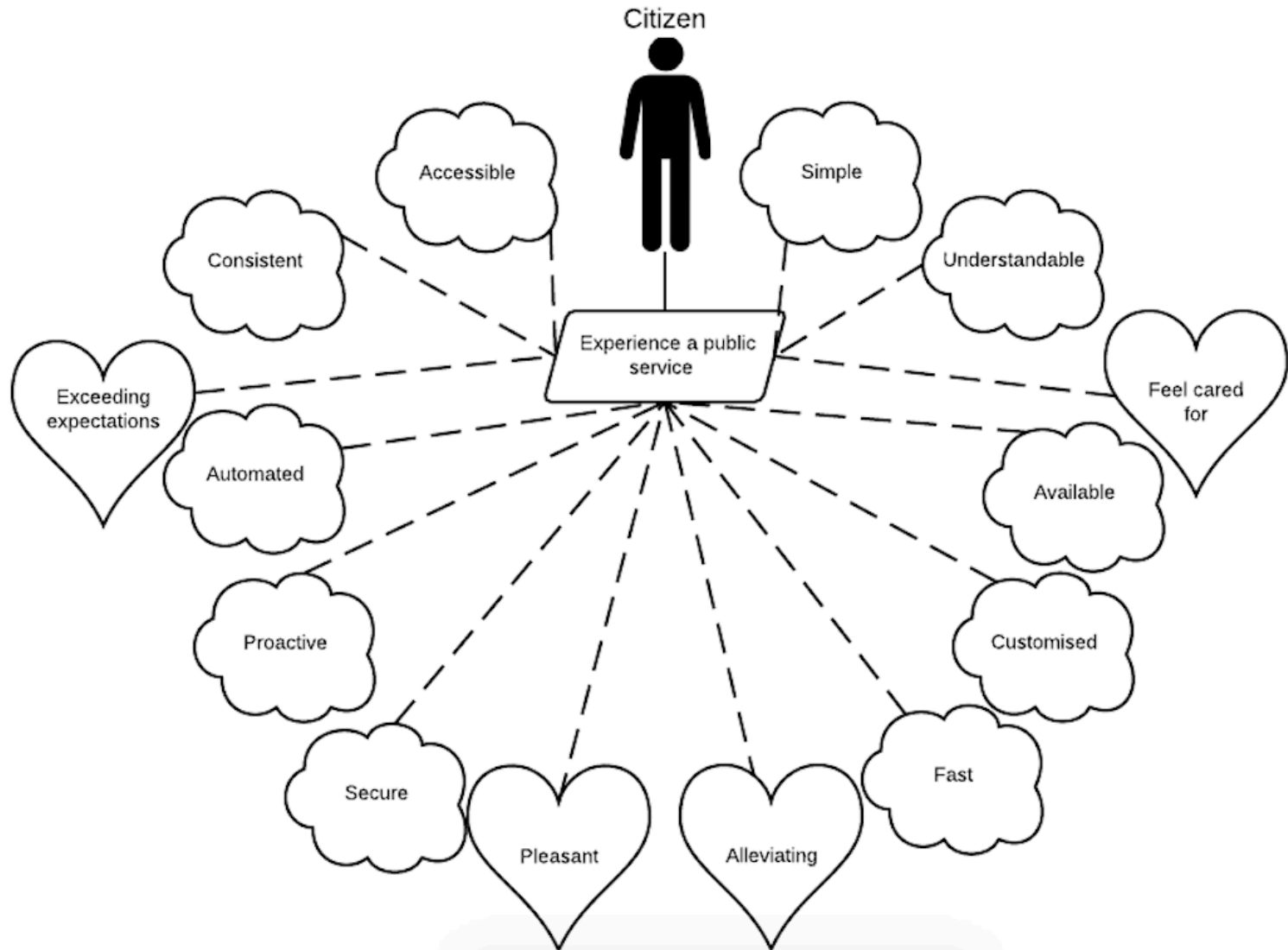
What is the role of
government?

The role of government

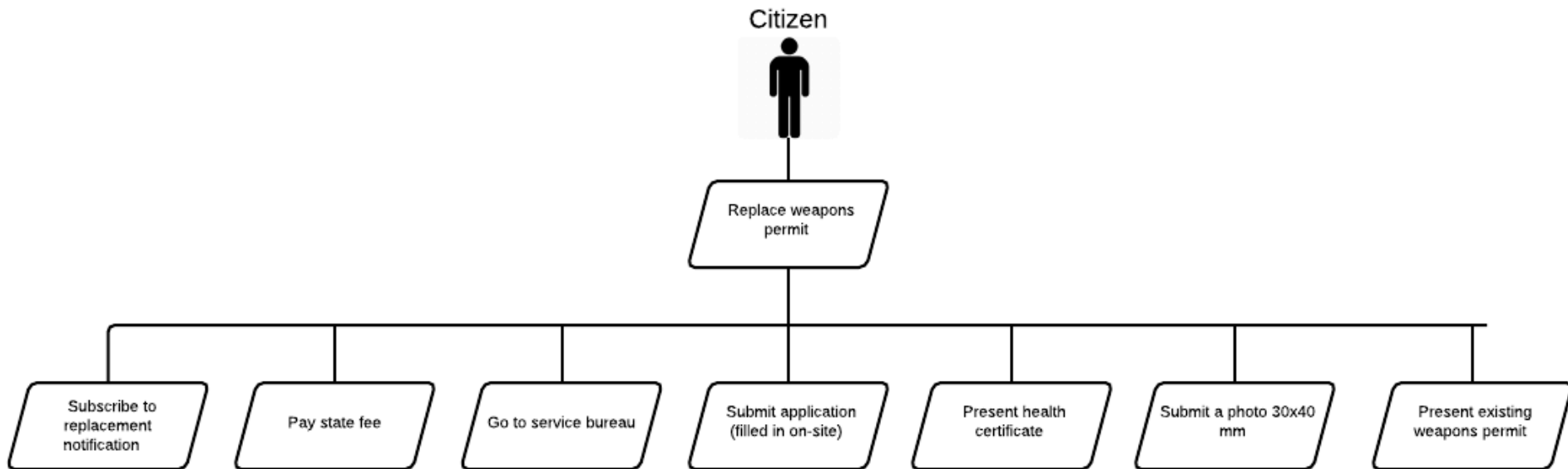


What is a good
public service?

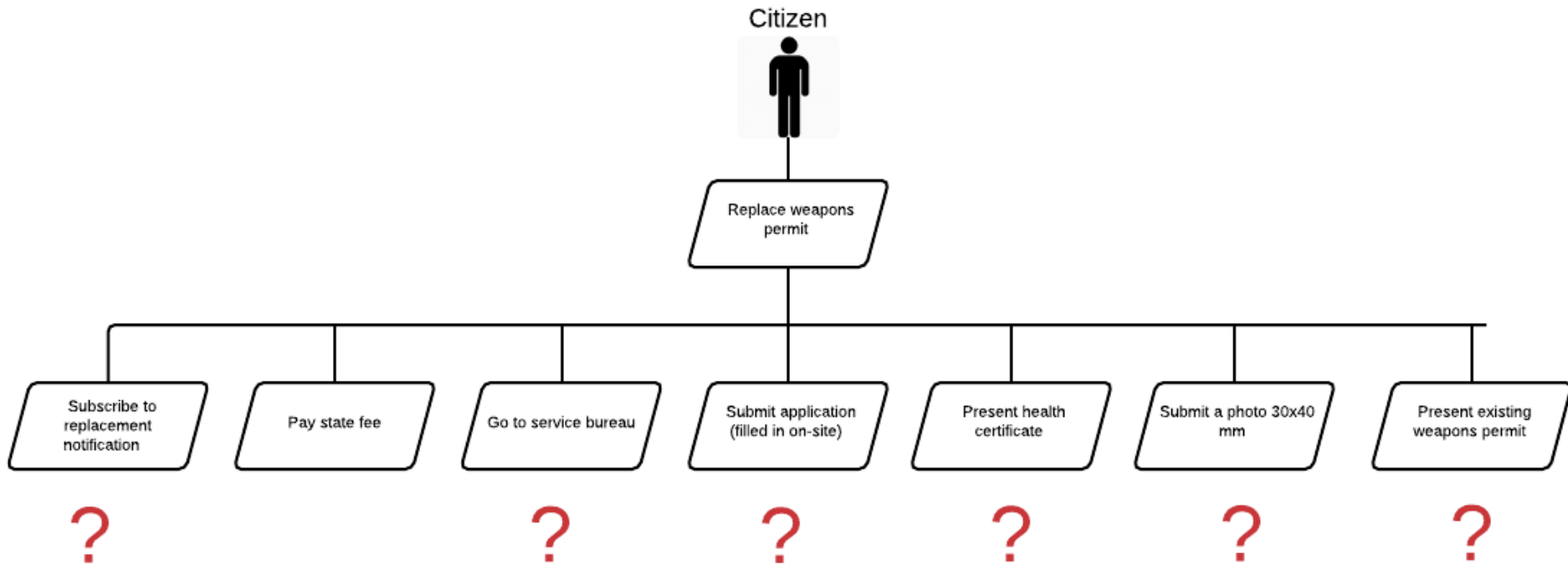
Good public service



Replacing weapons permit

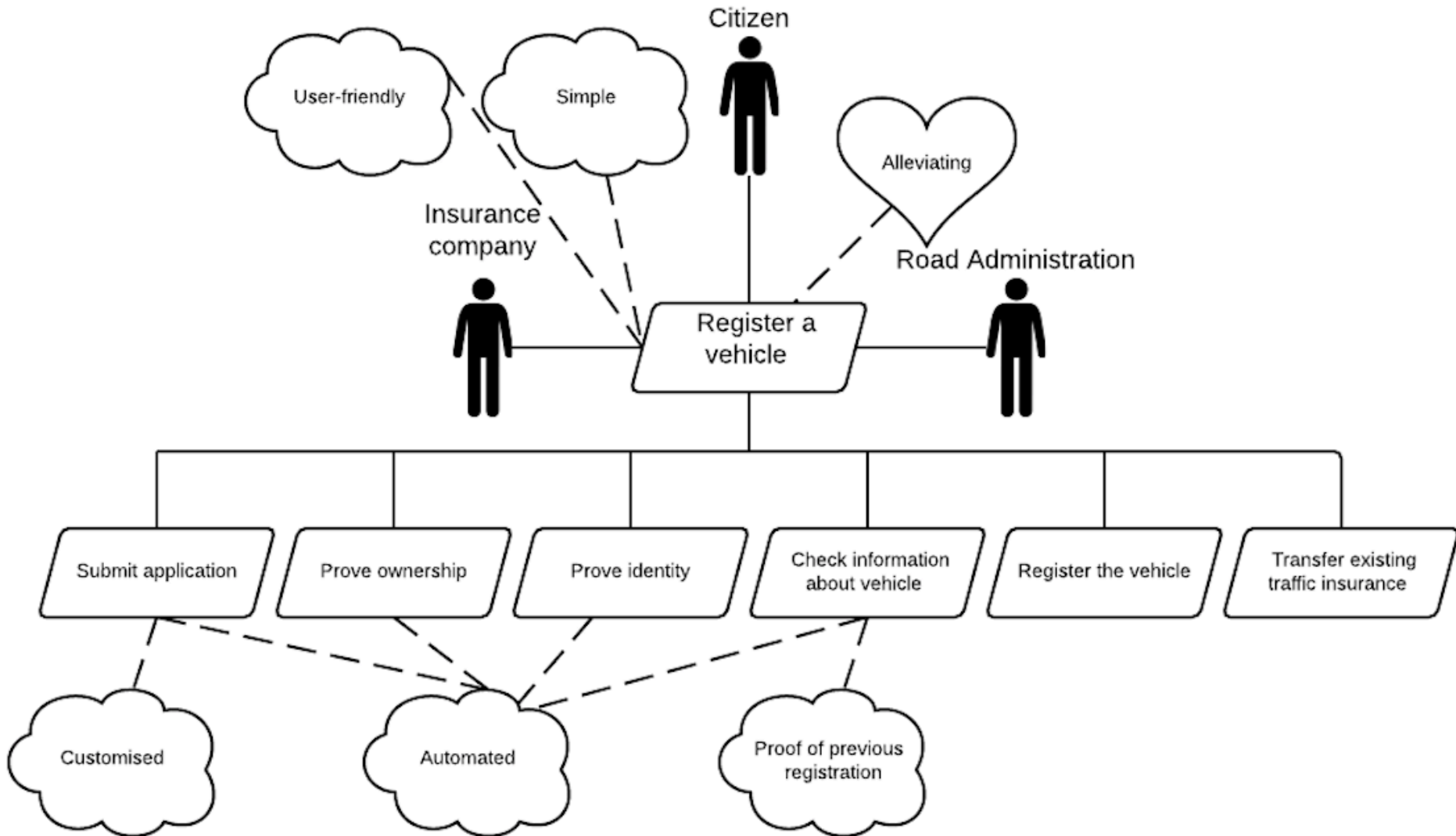


The search for a good public service



Is it possible to make all
services proactive?

Registering a vehicle



Public service for registering a vehicle

The screenshot shows a web browser window with the URL <https://eteenindus.mnt.ee/pages/main.jsf>. The page is titled "KULDAR TAVETER" (Dear Kuldar) and is for a user named "Maanteeameti e-teenindus". The user's name "KULDAR TAVETER" and a "Muuda rolli" (Change role) link are visible in the top right. There are buttons for "POSTKAST (0)" (Mailbox) and "VÄLJUN" (Logout). The page is in Estonian, with language options for EST, RUS, and ENG. A left sidebar contains navigation icons for "MAANTEEAMET", "MAANTEE", and "ÜHISTRANSPOORT". The main content area is titled "Tere, Kuldar Taveter!" (Hello, Kuldar) and includes a welcome message and several service links: "Toimingud sõidukitega" (Vehicle services), "Sõiduki taustakontroll" (Vehicle background check), and "Juhiloo vahetamine" (Change driving license). The right sidebar contains links for "Minu andmed" (My data), "Minu teated" (My notifications), "Poolelolevad toimingud" (Pending actions), "Klirvallikud" (My documents), and "Volitused" (Licenses).

MAANTEEAMET

KULDAR TAVETER
Muuda rolli »

POSTKAST (0) VÄLJUN

EST | RUS | ENG

Avaleht

Tere, Kuldar Taveter!

Oled sisenenud Maanteeameti e-teenindusse.
Vali vasakult menüüst sobiv kategooria ja soorita toiming või vaata informatsiooni.

Toimingud sõidukitega »
Sõiduki ostu-müügi vormistamiseks või kasutajate muutmiseks ja sõiduki ajutiselt registrist kustutamiseks ava sõiduki detailvaade ja vajuta vastavale nupule. Omanikuvahetuse vormistamiseks peab mõlemal osapoolel olema ID-kaart või Mobiil-ID ning PIN koodid. Omanikuvahetuse algatab sõiduki vana omanik.

Sõiduki taustakontroll »
Sõiduki tehniliste andmete ja ajaloo päring, osalemine kindlustusjuhtumites.

Juhiloo vahetamine »
Teie juhiluba ET704469, kehtivusega kuni 04.11.2020, saab vahetada e-teeninduses. Juhiloo varguse korral saate väiksema riigilõivu eest juhiluba taotleda büroos.

Minu andmed »
Saate muuta oma kontaktandmeid

Minu teated »
Saate lugeda enda teateid ning vajadusel pöörduda Maanteeameti poole.

Poolelolevad toimingud
Puuduvad

Klirvallikud
• Minu dokumendid »
• Minu sõidukid »
• Liiklusteooria prooviksam »
• Teekaamerad »

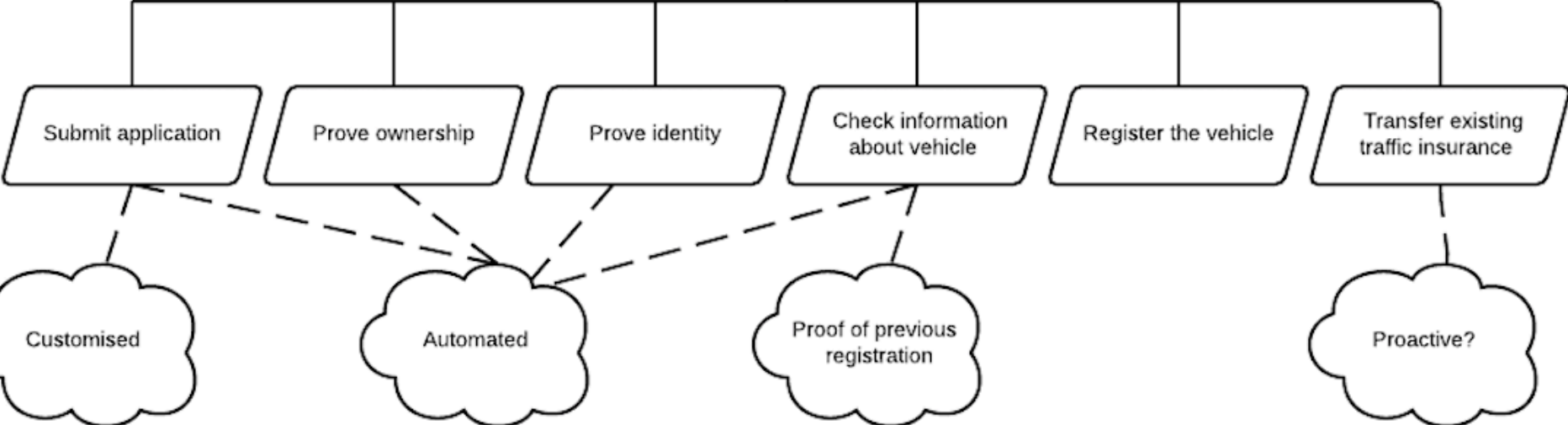
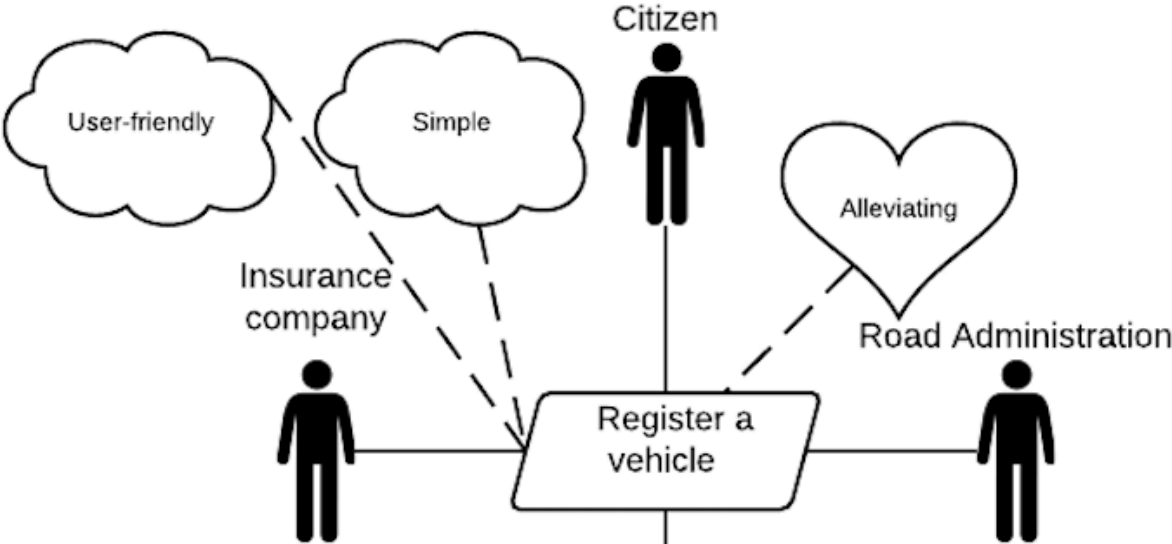
Volitused»
Teistele isikutele antud õigused toimingute tegemiseks e-teeninduses ja büroodes. Volituste andmiseks on vajalik ID-kaart või Mobiil-ID.

MAANTEEAMET

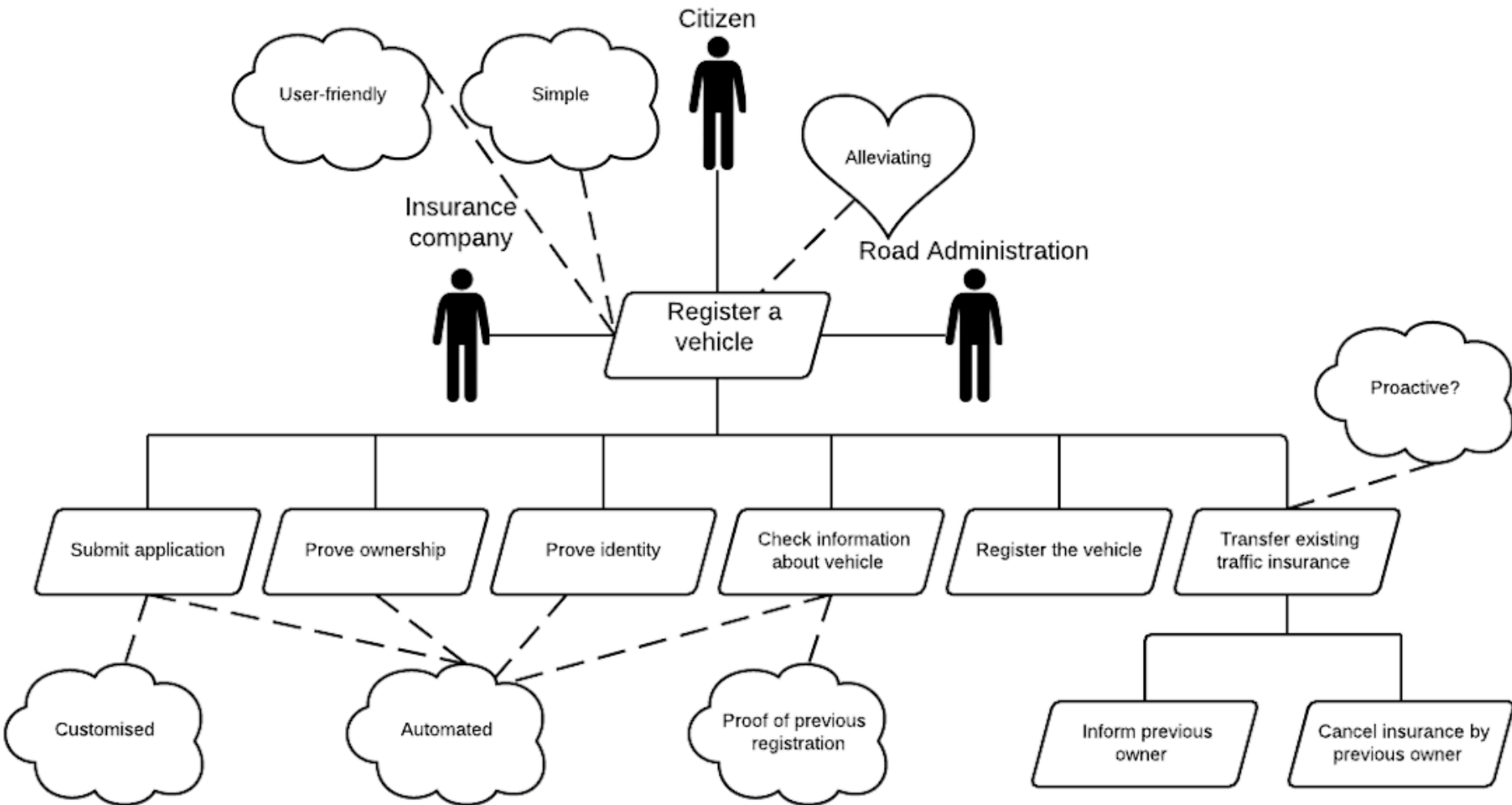
MAANTEE

ÜHISTRANSPOORT

Room for improvement?



Proactiveness introduced



Where do you see
potential for designing
proactive public
services ?

Wrap-up

- Designing public services should be tackled from both social and technical perspectives
- The pursuit for proactiveness should be introduced at different levels of government
- There is always room for improvement in public services, even in Estonia 😊

Some ideas on e-Democracy by Profs Michael N. Huhns and Kuldar Taveter

- Representative democracies suffer from a problem of granularity: a citizen has one vote to choose a candidate who represents the citizen for N issues
- This leads to “single-issue” voting
- Increasing the frequency of elections or the number of representatives has until now been too unwieldy and not cost-effective
- E-democracy could provide a finer granularity and better reactivity

Research and Consulting by TUT in e-Governance

