











IN5431 – spring 2024

IT governance and governmental platforms



Learning outcome

- Know the basic challenges of IT governance
- (Governmental) platforms: what are they for? with examples

Agenda

- Introduction
- IT governance
- Government as a platform

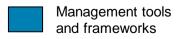


Introduction

Planned lectures (subject to change)

| Date | Time | Topic |
|--------------|-------------|-----------------------------------------------------------------------------------------------------------------|
| Fri. 19. Jan | 12:15–14:00 | Introduction of course and seminar |
| Fri. 26. Jan | 12:15–14:00 | Strategy, governing documents and other structural frames: what does it mean, and what is the importance of IT? |
| Fri. 2. Feb | 12:15–14:00 | Tools and frameworks 1: Introduction + projects |
| Fri. 9. Feb | 12:15–14:00 | Tools and frameworks 2: concept selection and alternative analysis with a business case |
| Fri. 16. Feb | 12:15–14:00 | Tools and frameworks 3: Business processes and IT architecture |
| Fri. 1. Mar | 12:15–14:00 | Tools and frameworks 4: IT Governance & platforms. |
| Fri. 19. Apr | 12:15–14:00 | Agile organizations |





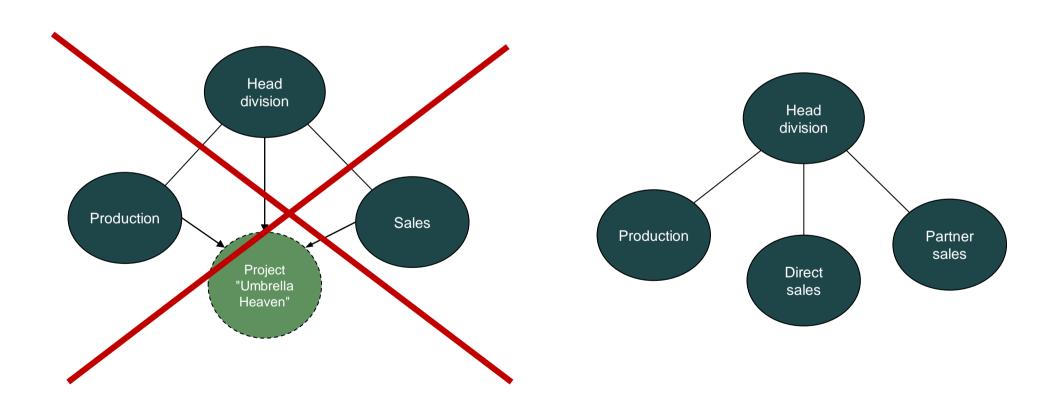
| Date | Time | Topic | What is it really about? | |
|-----------------|-------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Fri. 26. Jan | 12:15–14:00 | Strategy, governing documents and other structural frames: what does it mean, and what is the importance of IT? | The really big decisions in an organization: what should we improve the forthcoming years? Important discussion before choosing strategy: what are we really working together for – and who are we competing with? | |
| Fri. 2. Feb | 12:15–14:00 | Tools and frameworks 1: Introduction + projects | After deciding improvements, one needs to make some kind of sub- organization to coordinate the improvements. One typical sub-organization is a project. There are several frameworks to manage projects. | |
| Fri. 9. Feb | 12:15–14:00 | Tools and frameworks 2: concept selection and alternative analyzis with a business case | Both while working explicitly on strategy and in the daily operation of an organization, important prioritziation decisions must be made. There are established approaches for this as well – here we discuss some of them. | |
| Fri. 16. Feb | 12:15–14:00 | Tools and frameworks 3: Business processes and IT architecture | So far, we have discussed tools to make important decisions and organize generic improvements. However, organizations needs to be able to analyze and change their IT-systems. Business process modeling and IT architecture are important topics when analyzing and changing IT-systems. | |
| Fri. 1. Mar | 12:15–14:00 | Tools and frameworks 4: IT Governance & platforms. | In all but the very smallest organizations, there is tension between some central unit responsible for IT-organization and the different business units within the organization. IT Governance is concerned with the distribution of power to make IT-related decisions within an organization. | |
| | | | We also discuss platforms, with a particular focus on governmental platforms in this lecture. Note: in the second part government means the public administration, not IT governance | |

| Date | Time | | Topic | What is it really about? | |
|-----------------|----------|--------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Fri. 26. | 12:15–14 | 1:00 | Strategy, governing | uld we improve the | |
| Jan | | | s and frameworks 4: orms. | IT Governance & governmental | ing strategy: what are eting with? |
| Fri. 2. Feb | 12:15–1 | | • | organizations, there is tension responsible for IT-organization and within the organization. IT with the distribution of power to within an organization. with a particular focus on this lecture. Note: in the second | e kind of sub- cal sub-organization is a ects. |
| Fri. 9. Feb | 12:15–1 | the d Gove | ifferent business units ernance is concerned | | y operation of an made. There are uss some of them. |
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IT governance

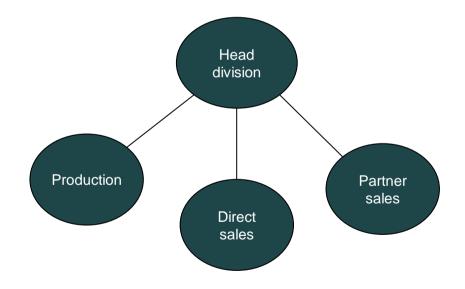
Recall from lecture February 06: Goodumbrellas may choose to establish a new «Direct sales» division to be responsible for Umbrella-Heaven.com



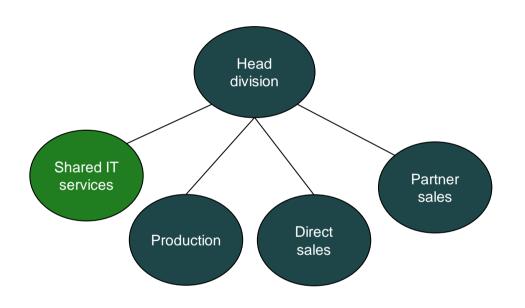
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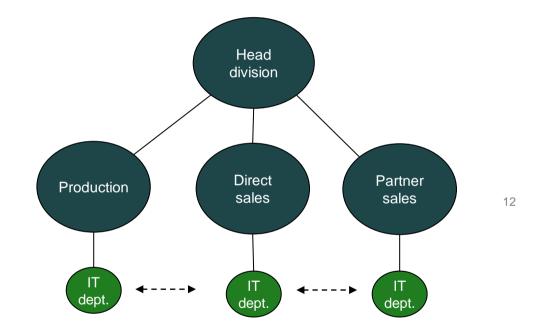
Soon, Goodumbrellas realize:

Each of the divisions spend considerable time and money on IT procurement and management. Still, division leaders struggle to prioritize IT adequately



Two (among several) alternatives



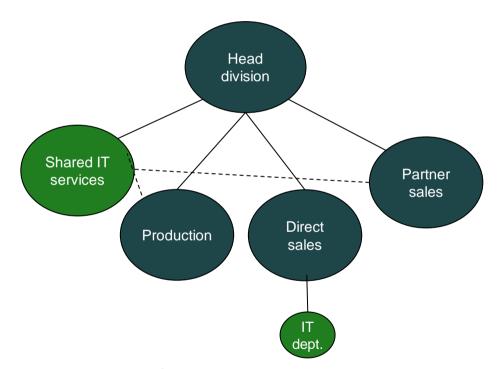


Alternative A

Create a shared IT services division

Alternative B

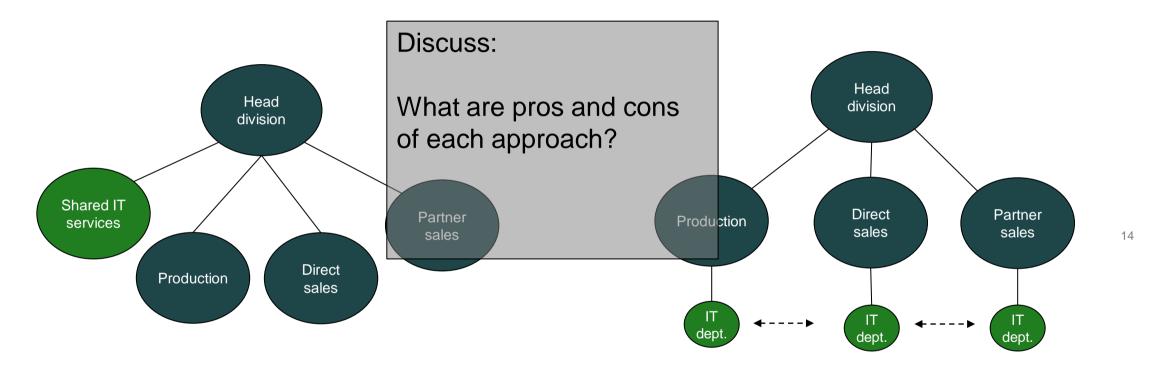
Require each division to establish an IT department



Alternative C

Direct sales is allowed its own IT department to grow – Production and Partner sales are sharing

Two (among several) alternatives

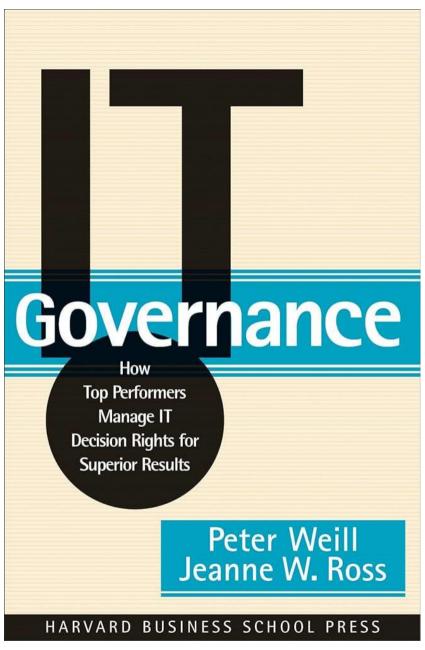


Alternative A

Create a shared IT services division

Alternative B

Require each division to take care of their IT-functions (e.g. through a small, local IT-department)



IT governance

Effective governance aligns IT investments with overall business priorities, determines who makes the IT decisions and assigns accountability for the outcomes.

Weill, P & Ross, J. (2005). A Matrixed Approach to Designing IT Governance. MIT Sloan Management Review, 46(2), 26.



Categories of important IT decisions

| IT Principles | How do the business principles translate to IT principles that guide IT decision making? What is the role of IT in the business? What are desirable IT behaviors? How will IT be funded? |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IT Architecture | What are the core business processes of the enterprise? How are they related? What information drives these core processes? How must this data be integrated? What technical capabilities should be standardized enterprisewide to support IT efficiencies and facilitate process standardization and integration? What activities must be standardized enterprisewide to support data integration? What technology choices will guide the enterprise's approach to IT initiatives? |
| IT Infrastructure Strategies | What infrastructure services are most critical to achieving the enterprise's strategic objectives? What infrastructure services should be implemented enterprisewide and what are the service-level requirements of those services? How should infrastructure services be priced? What is the plan for keeping underlying technologies up-to-date? What infrastructure services should be outsourced? |
| Business Application Needs | What are the market and business process opportunities for new business applications? How are strategic experiments designed to assess success? How can business needs be addressed within architectural standards? When does a business need justify an exception to a standard? Who will own the outcomes of each project and institute organizational changes to ensure the value? |
| IT Investment and Prioritization | What process changes or enhancements are strategically most important to the enterprise? What is the distribution in the current IT portfolio? Is this portfolio consistent with the enterprise's strategic objectives? What is the relative importance of enterprisewide versus business unit investments? Do actual investment practices reflect their relative importance? How is the business value of IT projects determined following their implementation? |

Six archetypal approaches to IT decision making, ranging from highly centralized to highly decentralized

| Archetype | Description | |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Business monarchy | the most centralized approacha senior business executive or a group of senior executives, sometimes including the CIO, makes all the IT-related decisions for the enterprise. | |
| IT monarchy | decisions are made by an individual IT executive or a group of IT executives. | |
| Federal system | C-level executives and business representatives of all the operating groups collaborate with the IT department. This is equivalent to the central government and the states working together. | |
| IT duopoly | a two-party decision-making approach involves IT executives and a group of business leaders representing the operating units. | |
| Feudal system | business unit or process leaders make separate decisions on the basis of the unit or process needs | |
| Anarchy | the most decentralized system, in which each individual user or small group pursues his, her or their own IT agenda | |

| | PERFORMANCE | | | |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--|
| | PROFIT | ASSET UTILIZATION | GROWTH | |
| Strategic Driver | Profitability via enterprisewide integration and focus on core competencies | Efficient operation by encouraging sharing and reuse | Encourage business unit innova- tion with few mandated processes | |
| Key Metrics | ROI/ROE and business process costs | ROA and unit IT cost | Revenue growth | |
| Key IT Governance Mechanisms | Enterprisewide management mechanisms (e.g., executive committee) Architecture process Capital approval Tracking of business value of IT | Business/IT relationship manager Process teams with IT members SLA and chargeback IT leadership decision-making body | Budget approval and risk management Local accountability Portals or other information/ services sources | |
| IT Infrastructure | Layers of centrally mandated shared services | Shared services centrally coordinated | Local customized capability with few required shared services | |
| Key IT Principles | Low business costs through stan- dardized business processes | Low IT unit costs; reuse of stan- dard models or services | Local innovation with communities of practice; optional shared services | |
| C | More centralized | Blended | More decentralized | |
| Governance | E.g., Monarchies and Federal | E.g., Federal and Duopoly | E.g., Feudal arrangements; risk management emphasis | |
| | Weill, P & Ross, J. (2005), A Matrixed Approach to Designing IT | | | |

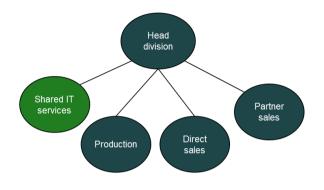
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Weill, P & Ross, J. (2005). A Matrixed Approach to Designing IT Governance. MIT Sloan Management Review, 46(2), 26.

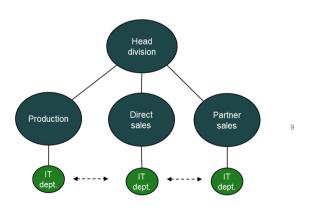
Excercise:

assuming an important goal is to grow the amount of business from direct sales (i.e., umbrellaheaven.com) – which, among the two alternatives, is the best?

| | PERFORMANCE | | |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
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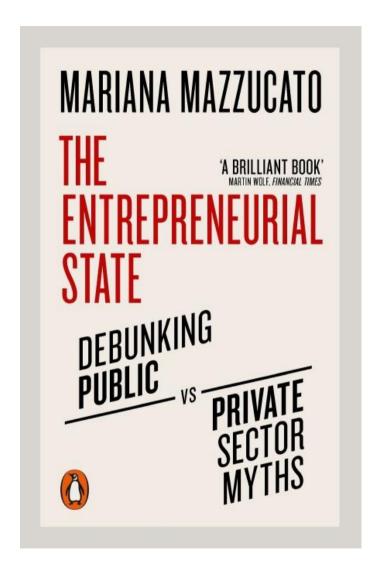
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Alternative B Require each division to establish an IT department

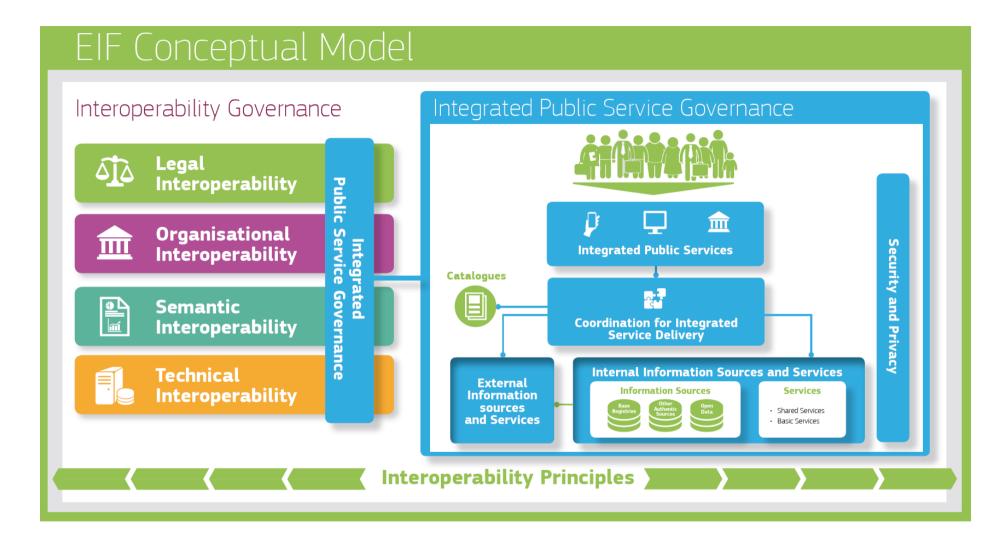


Government as a platform





... the state can proactively create strategy around a new high growth area before the potential is understood by the business community (from the internet to nanotechnology)

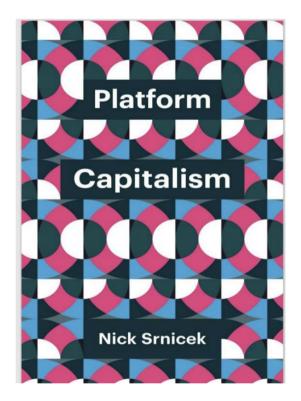


See:

https://www.digdir.no/digital-samhandling/rammeverk-digital-samhandling/2148 https://ec.europa.eu/isa2/eif_en/

Characteristics of Platforms (Srnicek)

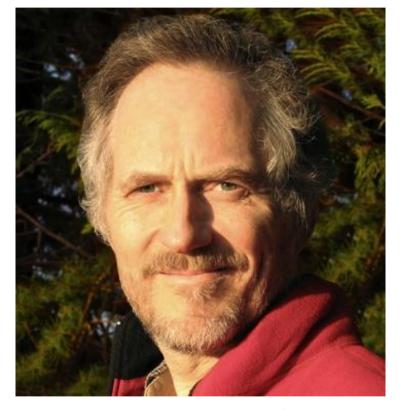
- Platforms are digital infrastructures that enable two or more groups to interact
- Network effects: the more numerous the users who use a platform, the more valuable that platform becomes for everyone else.
- Platforms often use cross-subsidization
- Platforms are also designed in a way that makes them attractive to its varied users
- Platform, in sum, are (can be) a new type of firm



- National government is a large, complex organization
- How to approach IT governance in the (national) government is an interesting challenge – with no clear solution

Government as a platform

- Information produced by and on behalf of citizens is the lifeblood of the economy and the nation
- Government information and services can be provided to citizens where and when they need them. Citizens are empowered to spark the innovation that will result in an improved approach to governance.
- In this model, government is a convener and an enabler rather than the first mover of civic action.



Tim O'Reilly

How to build a governmental platform - examples

1. Issue your own open government directive.



Meld. St. 22

(2020–2021) Melding til Stortinget

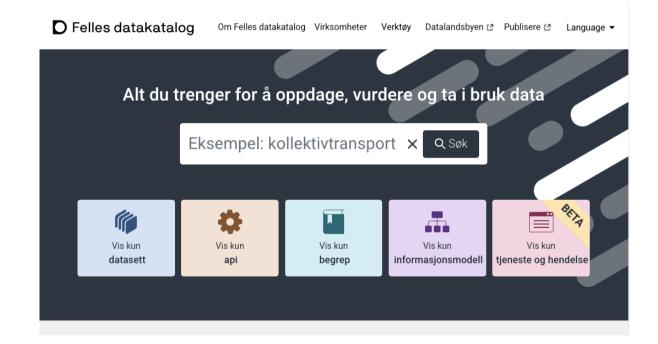
Data som ressurs

Datadrevet økonomi og innovasjon



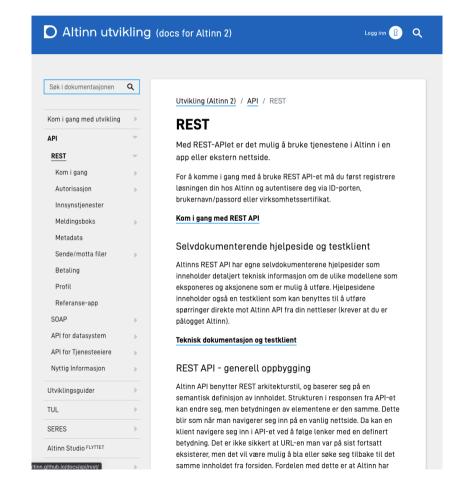
How to build a governmental platform - examples

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- 2. Create "a simple, reliable and publicly accessible infrastructure that 'exposes' the underlying data" from your city, county, state, or agency.



How to build a governmental platform - examples

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- 4. Share those open APIs with the public



Practical Steps for Government Agencies

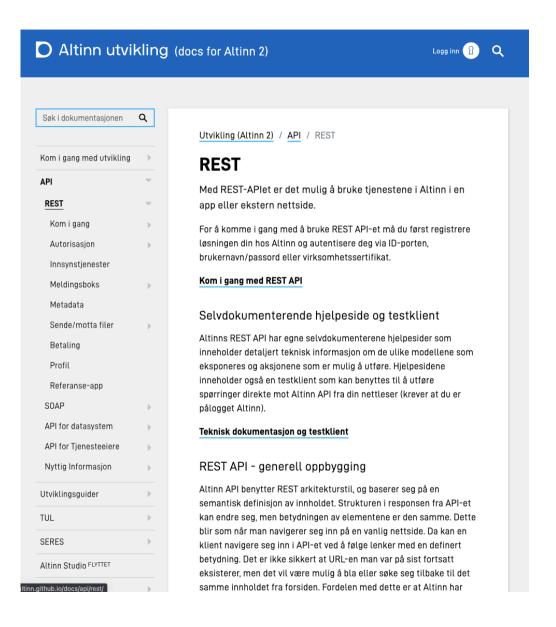
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- 4. Share those open APIs with the public
- 5. Share your work with other cities, counties, states, or agencies.
- 6. Don't reinvent the wheel: support existing open standards and use open source software whenever possible.

- 7. Create a list of software applications that can be reused by your government employees without procurement.
- 8. Create "a simple, reliable and publicly accessible infrastructure that 'exposes' the underlying data" from your city, county, state, or agency.
- Create an "app store" that features applications created by the private sector as well as those created by your own government
- 10. Create permissive social media guidelines that allow government employees to engage the public without having to get pre-approval from superiors.
- 11. Sponsor meetups, code camps, and other activity sessions to actually put citizens to work on civic issues.

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GOVERNMENT AS A PLATFORM: A HISTORICAL AND ARCHITECTURAL ANALYSIS

Bendik Bygstad, Dept. of Informatics, University of Oslo Francis D'Silva, Accenture Norway

ABSTRACT

A national administration is dependent on its archives and registers, for many purposes, such as tax collection, enforcement of law, economic governance, and welfare services. Today, these services are based on large digital infrastructures, which grow organically in volume and scope. Building on a critical realist approach we investigate a particularly successful infrastructure in Norway called Altinn, and ask: what are the evolutionary mechanisms for a successful "government as a platform"?

We frame our study with two perspectives; a historical institutional perspective that traces the roots of Altinn back to the Middle Ages, and an architectural perspective that allows for a more detailed analysis of the consequences of digitalization and the role of platforms. We offer two insights from our study: we identify three evolutionary mechanisms of national registers, and we discuss a future scenario of government platforms as "digital commons".

Keywords: e-government, Altinn, platforms

1. INTRODUCTION

In this study we explore the concept of government as a platform, and use the case of Altinn to develop our argument. The starting point is that information is power, in particular for a state. In 1086, twenty years after his victory, William the Conqueror ordered the systematic collection and documentation of the assets of England; the population, the land and the buildings. The objective was to create a national register for taxation purposes, and there were no appeal rights for the King's subjects, ever. Therefore it was called Domesday Book (Galbraith, 1961).

The most important part of the Domesday Book was the *cadastre*, the register of property. Defining the property object was important for taxation, but over time even more seminal as the key element in the law of property rights, which is a fundamental element in a capitalist economy (Williamson, 1990). The rest, we might say, is history. Today the digital infrastructures of modern states constitute the backbone of our societies (Scholl, 2015), and the Scandinavian societies have been pioneers in this respect.

In this paper we investigate the development of national electronic platforms, with an emphasis on the Scandinavian tradition. Our case is from Norway, called Altinn, which is a successful and advanced national platform that is used by all business and organizations, and by almost all inhabitants. Our research questions are:

- · What are the underlying mechanisms for the evolution of e-government platforms?
- · How can government platforms be developed into institutions for a modern society?

Our methodological approach is critical realism, which allows us to investigate the evolutionary mechanisms of digital government infrastructures, i.e. we aim to identify and explain the causal relationships between the assemblages of policies, organization and technology, and successful outcomes.

Our contributions highlight the importance of the historical heritage of national registers, as we identify three evolutionary mechanisms, which explain how national registers grew from simple paper-based

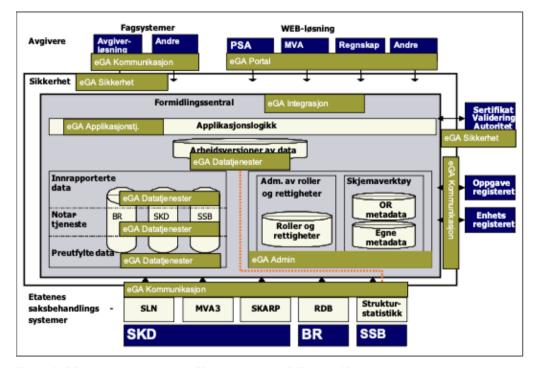
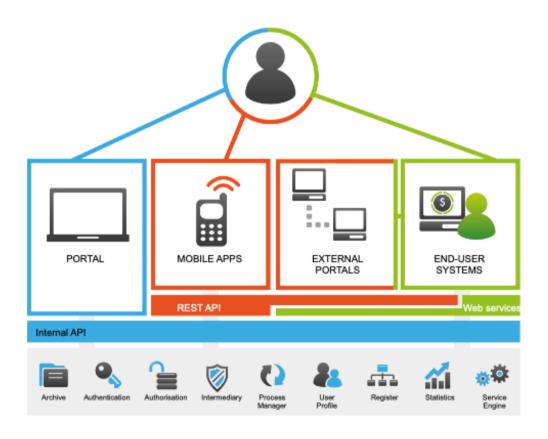


Figure 5. Schematic representation of key components of Altinn (in Norwegian)

Altinn as an innovation arena





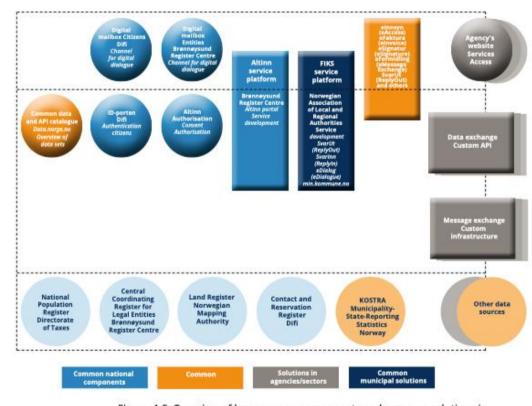


Figure 1.5 Overview of key common components and common solutions in 2019

Source: One digital public sector (2019), https://www.regjeringen.no/contentassets/db9bf2bf10594ab88a470db40da0d10f/en-gb/pdfs/digital_strategy.pdf

Nasjonale fellesløsninger

ID-porten

ID-porten gjør det mulig for brukerne dine å logge seg inn på offentlige tjenester. Med kjente elektroniske IDer som MinID, BankID, Buypass og Commfides kan innbyggerne bruke påloggingsløsninger de kjenner fra før til å autentisere seg.

Bruksområde: Identifisere og verifisere brukere

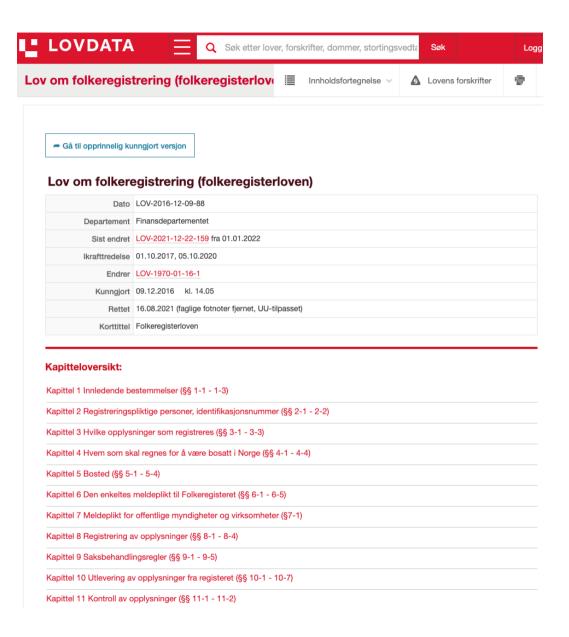
Forvalter: Digitaliseringsdirektoratet

Source: Nasjonale fellesløsninger, https://www.digdir.no/felleslosninger/nasjonale-felleslosninger/750

On national registries

National registries require:

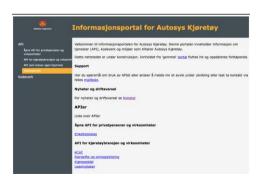
- A data model to capture the necessary information
- A database to store the actual data
- Processes and interfaces to
 - a. update the registry, aiming to make it represent reality as correctly as possible
 - retrieve data from the registry,
 striving for convenience, but also
 ensuring legal compliance



Car ownership update (Statens vegvesen)

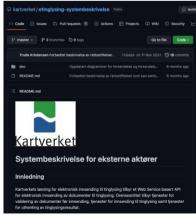
Nyhet på FINN! Gjør hele bilhandelen på ett sted



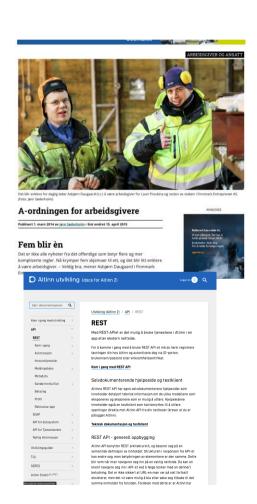


Property ownership update (Statens kartverk)





Employee monthly reporting ("A-meldingen")

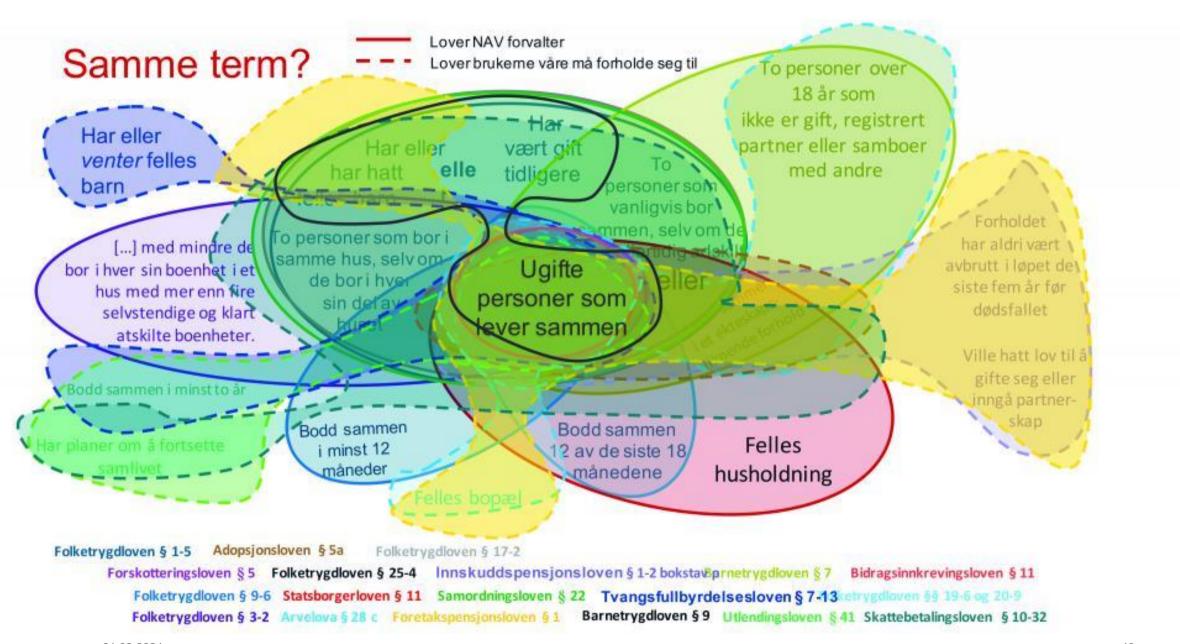


This sounds good, but why is progress so slow?

Important reasons

- 1. Complexity in particular to ensure only legal updates are allowed, and providing correction features
- 2. Standardization (of data model)
- 3. Security, in particular authorization
- 4. Governance: which entities should be responsible for what?
- 5. Testing is expensive and requires specific competence
- 6. Lack of necessary competence (mainly technical, but also the important combination of technical and functional perspective)
- 7. Lack of willingness/confidence to invest from important stakeholders





Next week - March 8

- Guest lecture by Steffen
 Sutorius formerly head of the
 Norwegian Digitalization
 Agency
 («Digitaliseringsdirektoratet»)
- Topic: (Organizational) change management with practical examples
- Note: will not be recorded



Photo: Digitaliseringsdirektoratet

Summary

IT governance

- All organizations need IT governance
- Of particular importance is centralization vs decentralization of different types of decisions

Government as a platform

- Governments are well positioned to provide a platform both for external and internal innovation
- Creating an infrastructure for sharing governmental data and APIs are important steps to achieve this platfom

