

Spatial Data Infrastructure as an open Digital Platform for Digital Government

Thorben Hansen



Topics to be covered

1. Why are we talking about Digital Platforms and what is it?
2. Why are Digital Platforms important for Spatial Data Infrastructure?
3. How does Spatial Data Infrastructure fit with Digital Platforms?
4. Why taking Spatial Data Infrastructure to a Digital Platform approach?

The rise of Digital Platforms

The Platform Economy: innovation from the outside-in

Industry leaders are unleashing technology's power by developing new technology platforms. But more than that, it's the platform-based business models and strategies they enable that are driving the most profound global macro-economic change since the industrial revolution. In the digital economy, platform ecosystems are nothing less than the foundation for new value creation.



Digital Platforms will be everywhere – and work in interrelated ecosystems

Every Organization Needs a Digital Platform Strategy

Not every organization should assume a leadership role in a business ecosystem; however, every organization needs a digital platform strategy. To engage and manage business ecosystems, organizations are creating and integrating with a digital business platform to share critical assets.

The digital platform strategy will vary from company to company. Some companies will develop a platform business model that encompasses providers, consumers and employees to create or exchange goods, services and social interaction. Others might integrate with other organizations' digital platforms. Regardless of the setup, the strategy must integrate business and IT needs and establish a collective leadership vision. Companies must decide what makes sense for their organization and long-term business goals.

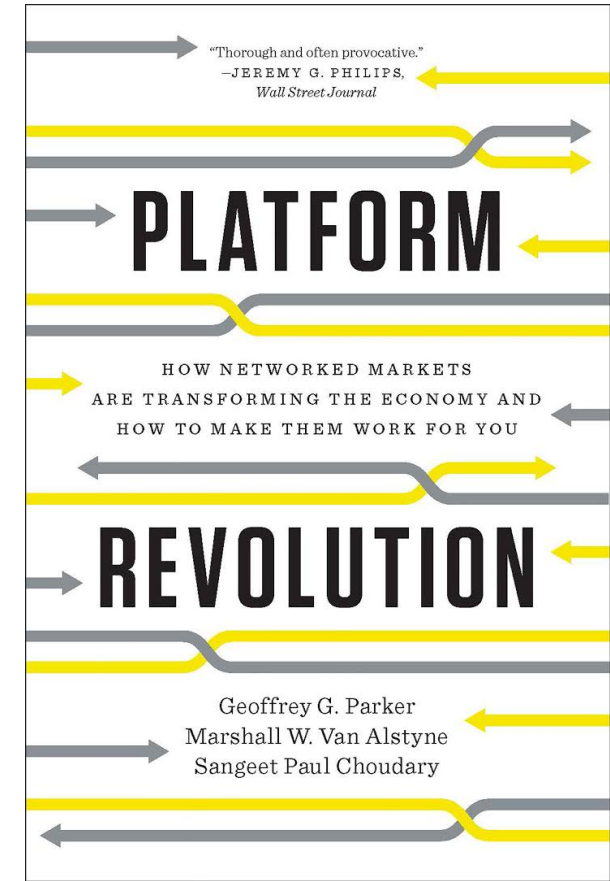


Multi-sided Network and Network Effects

- *A multi-sided network* is a network that links two or more distinct but interdependent groups of users
 - Multi-sided networks are also often referred to as multi-sided markets
- In a multi-sided network users gain benefits from interacting with separate, complementary classes of users
 - e.g., in the video game industry console owners are attracted to platforms with the most games, while developers are attracted to platforms that have the most users
 - e.g., to provide integrated travel experiences, companies such as travel agencies have served as focal points for multiple players – local transportation companies, event coordinators, tour guides, etc.
- Platforms support multi-sided networks
- **Positive *network effects* are the main source of value creation and competitive advantage in a platform business**

Digital Platform definition

- A platform is a business based on enabling value-creating interactions between external producers and consumers.
- The platform provides an open, participative infrastructure for these interactions and sets governance conditions for them.
- The platforms overarching purpose is to consummate matches among users and facilitate the exchange of goods, services, or social currency, thereby enabling value-creation for all participants.



Pipeline vs. Platform

- Linear Value Creation
- Resource control
- Internal optimization
- Focus on customer value
- Supply-side economics of scale
- Scales linearly

- Multidirectional Value Creation
- Resource orchestration
- External interaction
- Focus on ecosystem value
- Demand-side economics of scale
- Scales exponentially

Why are Digital Platforms important for SDI ?

- Digital government is undergoing digital transformation utilizing digital platforms
- Digital government is data-driven
- A common data infrastructure is necessary to provide the reliable data that is crucial for making informed and transparent decisions
- Spatial data brings in the geographical dimension that allows for spatial analysis and map based presentation

Spatial Data Infrastructure as a Digital Platform

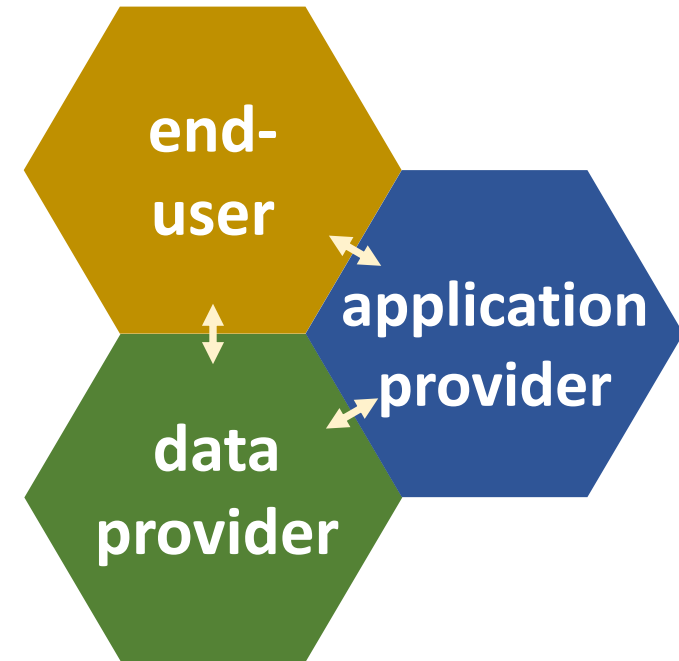
- The INSPIRE directive describes the business environment for spatial data infrastructure (SDI) as follows:

Spatial data come from many sources and is used within many domains. An efficient use of government resources requires that spatial data is stored, made available and maintained at the most appropriate level and that it is possible to combine spatial data from different sources and share them between several users and applications.

- The business environment for SDI enables value-creating interactions between producers and consumers
- The SDI provides an open, participative infrastructure for these interactions and sets governance conditions for them
- An overarching purpose of the SDI is to consummate matches among users and facilitate the exchange of data and services, thereby enabling value creation for all participants
- **Conclusion: the core of a SDI can be seen as a *digital platform***

Types of users of the digital SDI platform

- Users of the platform categorized in multiple, separate, complementary classes of users interacting with each other in a multi-sided network
 - **End-users**, whose primary interest in the platform is to utilize data
 - **Data providers**, whose primary interest is to distribute data from data custodians as a generic, multi-functional commodity
 - **Application providers**, subject-matter experts whose primary interest is to support end-users improve utilization of data



Network effects in a SDI

	END-USER	DATA PROVIDER	APPLICATION PROVIDER
END-USER		+ MORE DATA PROVIDERS ATTRACT MORE END-USERS	+ MORE APPLICATION PROVIDERS ATTRACT MORE END-USERS
DATA PROVIDER	+ MORE END-USERS ATTRACT MORE DATA PROVIDERS		+ MORE APPLICATION PROVIDERS ATTRACT MORE DATA PROVIDERS
APPLICATION PROVIDER	+ MORE END-USERS ATTRACT MORE APPLICATION PROVIDERS	+ MORE DATA PROVIDERS ATTRACT MORE APPLICATION PROVIDERS	

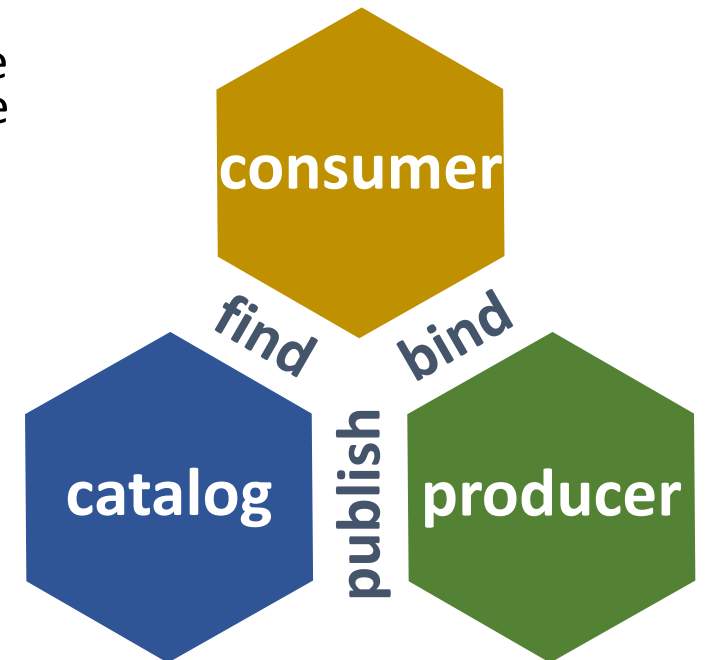
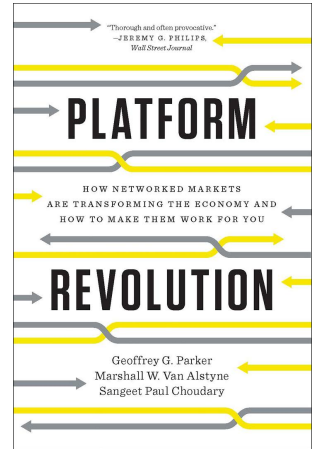
cross-side network effects

same-side network effects

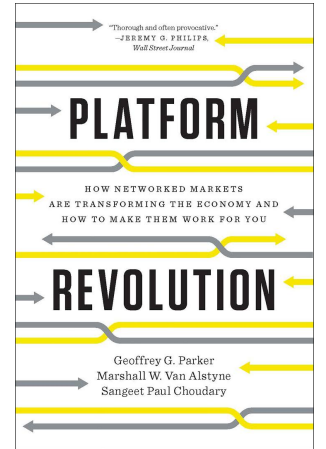
Platform architecture

Participants + Value Unit + Filter → Core Interaction

- The **core interaction** is the most basic interaction enabled by the platform to take place between producers and consumers
 - In SDI context this is exchange of information about the geodata provided by the platform
- There are fundamentally two **participants** in any core interaction: the *producer*, who creates value, and the *consumer*, who consumes value
 - In SDI context *producers* are the data custodians providing data via the platform and *consumers* are the end-users and the subject-matter experts providing data consuming applications to end-users
- The **value unit** is information created by the producer that has value for the consumers
 - In SDI context this is a description of the geodata sets and the geodata services provided via the platform
- The **filter** is an algorithmic, software-based tool used by the platform to enable the exchange of appropriate value units between users
 - In SDI context this is the catalog service allowing consumers to discover, evaluate and bind to relevant geodata sets and geodata services



Platform architecture



Pull, Facilitate, Match: The how of platform design

- **Pull.** “Platforms need to solve a chicken-or-egg problem that pipeline business don’t suffer from: users won’t come to a platform unless it has value, and a platform won’t have value unless users use it. Most platforms fail simply because they never overcome this problem.”
- **Facilitate.** “Unlike traditional pipeline business, platforms don’t control value creation. Instead, they create an infrastructure in which value can be created and exchanged, and lay out principles that govern those interactions. That’s what the process of facilitating is all about.”
- **Match.** “A successful platform creates efficiencies by matching the right users with one another and ensuring that the most relevant goods and services are exchanged. It accomplishes this by using data about producers, consumers, the value unit created and the goods and services to be exchanged.”

Why taking SDI to a digital platform approach?

- Users will be seeing the world from a digital platform perspective

 **accenture**

“In the digital economy, platform ecosystems are nothing less than the foundation for new value creation”

Gartner.

“Every Organization Needs a Digital Platform Strategy”

- SDI can learn from digital platform concepts and best-practice
 - This topic will be discussed at workshop tomorrow

Friday, September 21, 2018 - 09:00

09:00 Digital transformation and the future of SDIs

Ray Boguslawski

Gorilla 4 & 5

The rise of Digital Platforms – my take

- Digital platforms will become the preferred and dominant business model for digital government in the future. Digital platforms offer citizens and businesses the ability to connect to government and other service providers as an integrated part of their day-to-day activities.
- Data infrastructure and digital platforms fit well together, and the core of a data infrastructure can be developed as a digital platform.
- Aligning SDI concepts and developments to digital platform concepts and developments will be of mutual benefit – and a necessity for the future of SDI.

Thorben Hansen

Consultant and founder

geoadvice

p: +45 2063 6376

m: thorben@geoadvice.dk

w: www.geoadvice.dk