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An Information-Economic Perspective on Platform Governance

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New Perspectives on the Digital Economy: Sharing, Platforms & Regulation
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Background and motivation

- Whither platform regulation?
- Motivated by safeguarding competition and innovation
- Yet, interventions are typically based on static economics
- Recent proposals to apply a dynamic capabilities framework
- Presentation adds an innovation perspective

Plan for this presentation

- Innovation as a combinatorial process
- Multiplicity of digital innovation processes
- Factors shaping complementary innovation
- The dual platform governance problem
- Implications for digital economy policy

Innovation as a combinatorial process

- Traditional view of innovation: new products, processes, services, designs (e.g., OECD Oslo Manual, 2018)
- An information-economic view conceptualizes innovation as a process of combining and recombining explicit and tacit knowledge
  - *Explicit* knowledge can be codified, protected by rights, and transacted in markets. It is a (quasi-) public good.
  - *Tacit* knowledge is critical for the dynamic capabilities of a firm. It cannot be codified nor transacted in markets. It is a private good.
- Plasticity and expandability of digital technology greatly expand the combinatorial space of innovation opportunities

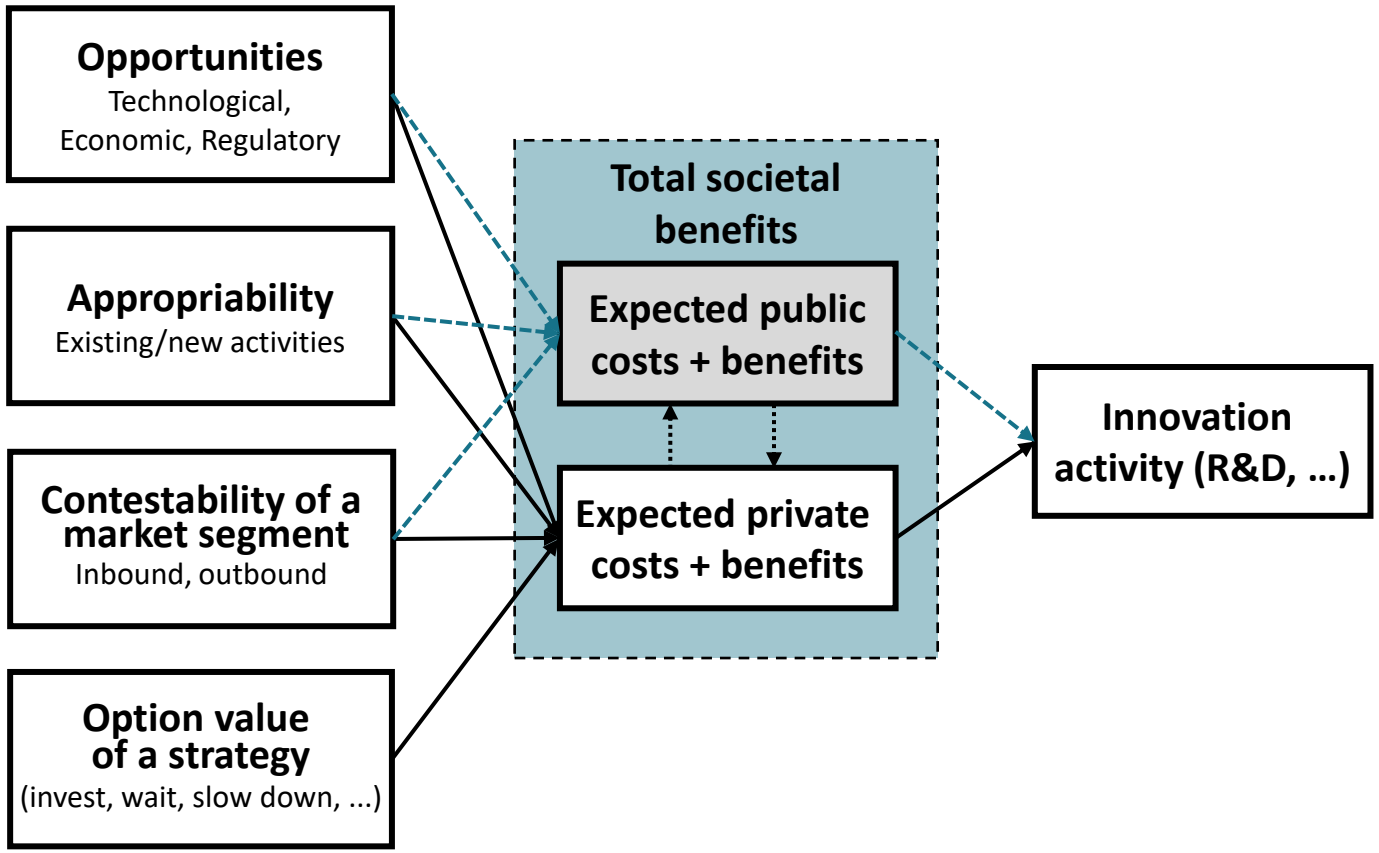
Search for welfare-enhancing combinations

- Innovation is a trial-and-error process to find workable, sustainable, welfare-enhancing, new combinations of knowledge (e.g., Antonelli, 2011)
- Digital innovation is based on intentional variation, real-time feedback, selection, and replication of successful experiments (e.g., Brynjolfsson, 2011)
- Intentional search may sample the opportunity space randomly or follow a sequential process with a stopping rule (e.g., Chade et al., 2017)
- Dynamic capabilities include heuristics to effectively navigate this space (e.g., sensemaking, entrepreneurial spirits, …) (e.g., Petit & Teece, 2021)

Multiplicity of innovation processes

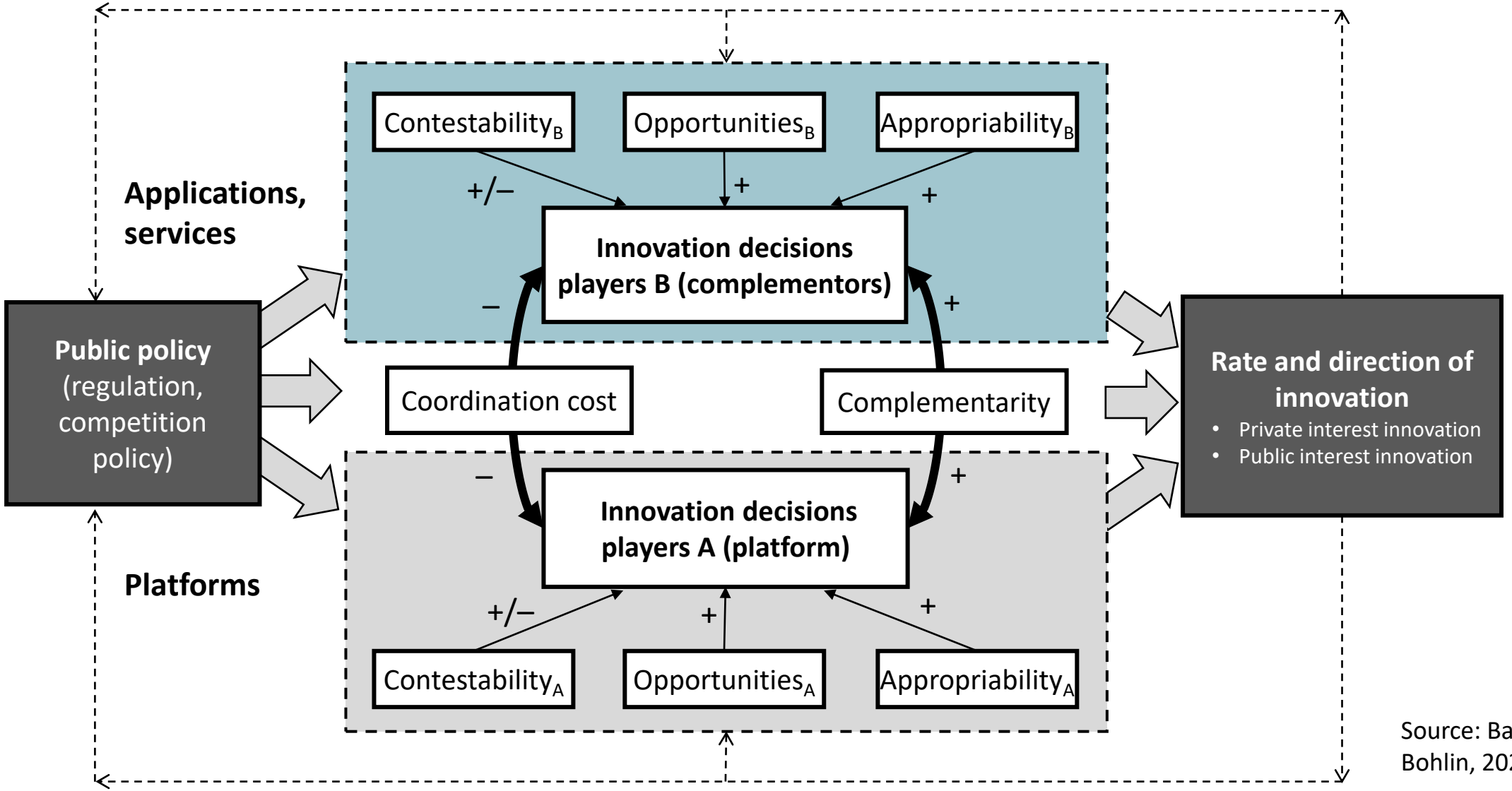
- Modular and architectural innovation
  - Modular, incremental innovations search over a limited information space coordinated by technical architectures
  - Architectural innovations search over a meta-space of solutions that enable/constrain related (modular, incremental) innovations
- Complementary and systemic innovation
  - Complementary innovations combine architectural and modular elements into specific solutions
  - Systemic innovations require the coordination of multiple, digital and non-digital assets to provide services (e.g., smart mobility)

Factors shaping innovation at the firm level



- Private, for-profit players, are driven by private gains (profits, firm value, sale to larger company)
- Social and peer production (e.g., open software such as Apache) consider private and public benefits
- Publicly funded and non-profit projects typically also consider social benefits

A system of dynamic relations and feedbacks



Source: Bauer & Bohlin, 2022

Dual platform governance problem

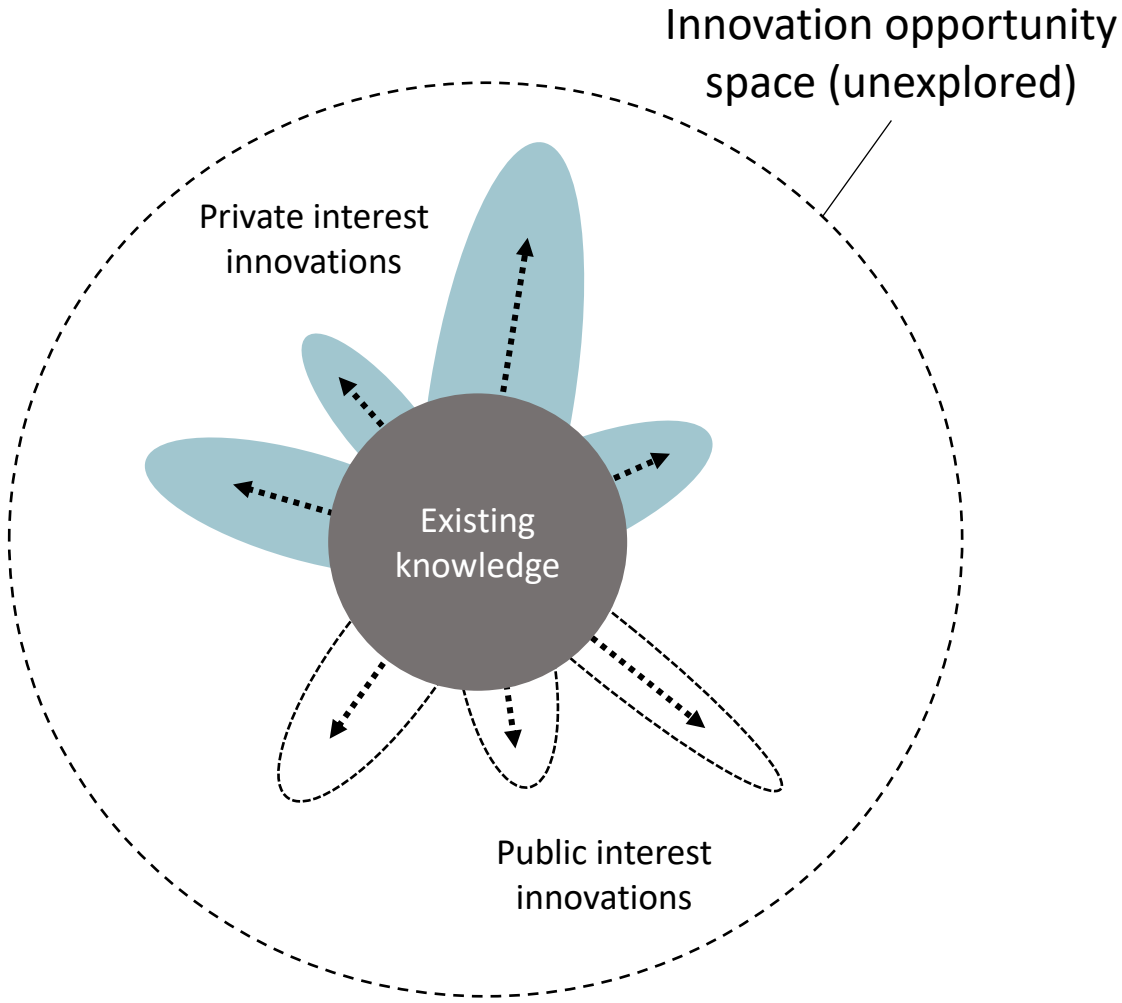
Internal governance

- Must share data and knowledge to enable complementary innovation searches
- Lower coordination costs by reducing the complexity of the search space
- Possible moral hazard problems as ecosystem grows (e.g., sub-optimally low sharing)

External governance

- Seeks to align private platform interests with public interest
- Seeks to mitigate moral hazard problems for large platforms
- Needs to overcome problems of asymmetric information
- Risk of capture to alter the distribution of surplus

A 2D visualization



- Commercial platforms will primarily search in private interest directions
- External governance limits the combinatorial space
- It will likely redirect innovation efforts by other players toward platforms
- Public interest innovations require alternative organizational models and/or financial incentives

Implications for digital economy policy

- External platform governance would ideally design rules that broaden and diversify the direction and scope of searches
- Ex ante measures, such as *per se competition rules* or *behavioral regulation*, may narrow the innovation search space and amplify path dependencies
- Other instruments, such as *fast-track competition policy* tools or *most-favored nation principles*, sustain a broader combinatorial space and are less prone to deepening path dependencies
- Digital economy policy requires additional, sustained initiatives to encourage institutional and organizational diversity

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