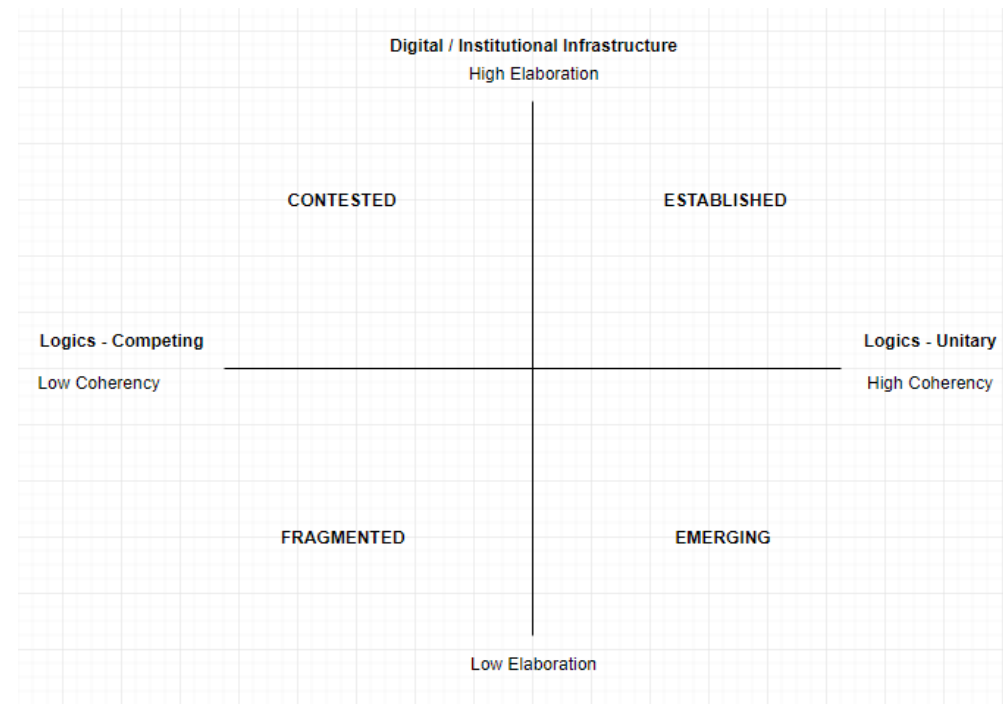# A Framework for Understanding AI-Induced Field Change: How AI Technologies are Legitimized and Institutionalized

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*1. In order to answer how **AI-induced fields are subject to varying degrees of legitimacy and processes of institutionalization**, I develop a framework that incorporates views from institutional theory and information systems theory (below).*

*2. Next I apply the concept of **Pathways of change** in order to enable a more dynamic view on how AI-fields are likely to move between conditions corrosponding to their relative **elaboration of Digital and Institutional Infrastructutre as well as coherency in terms of Logics** (below).*

ACTORS
• Subject position: central, middle status, and peripheral actors • Characterized by roles or functions, i.e., field-structuring or governing organizations, formal governance units, field coordinators, etc.

DIGITAL INSTITUTIONAL INFRASTRUCTURE
Standard-setting digital technologies that enable, constrain, and coordinate numerous actors' actions and interactions in ecosystems, fields, or industries (Hinings et al., 2018).

INSTITUTIONAL INFRASTRUCTURE	DIGITAL INFRASTRUCTURE
Established through activities such as: certifying, assuring, and reporting against principles, codes, rules, and standards, as well as through the formation of new associations and networks among organizations, including official rules and regulations (Waddock, 2008). • **Logics**: refers to the relationships among individuals and organizations in the field. Logics can be competing or unitary. They may be based on market, social, and other considerations. • **Work**: refers to the practices and actions of individuals and organizations that has implications for creating, maintaining, and disrupting institutions over time. Looks at the effect of institutional change on areas such as hierarchies of status and influence, as well as subsequent power relations. Incorporates the notion of field structuring events, which informs or disrupts logic formation.	Established from a multitude of digital building blocks, defined as the computing and network resources that allow multiple stakeholders to orchestrate their service and content needs (Constantinides et al., 2018). • **Technological Maturity**: refers to the elaboration of hardware and software-based infrastructures and associated technological standards. Includes the perceived accuracy, safety, and reliability of an AI system/agent. • **Data**: refers to the data that is used in a model, which either can be sensitive or non-sensitive, private or publicly available, centralized or decentralized, and may be linked to varying forms of ownership. • **Autonomy**: refers to whether the AI-agent holds limited or extensive autonomy to act and whether the agent's actions have a negligible or a considerable impact on its environment and surroundings.

GOVERNANCE
• Combinations of public and private, formal and informal systems that exercise control within a field. • Units and processes that ensure compliance with rules and facilitate 'the overall smooth functioning and reproduction of the system (e.g., standards, regulations, reward systems, and social control agents that monitor and enforce these). • Governance can differ within and between fields, as well as across geographies, e.g., countries.

*3. I find that, across the fields of **Facial Recognition, Autonomous Vehicles, Recommender Engines, Smart Speakers, GPT-3 and Deepfakes**, issues in terms of legitimization are especially relevant in terms of **(1) altered power-dependencies** between humans and machines, **(2)** questions over **data-use and control**, as well as **(3) unelaborate institutional infrastructure**. These are all obstacles to the wider institutionalization of several AI- fields.*