Contribution ID: **287**   Type: **Poster**

The Chinese Experience of Using Data as a New Production Factor to Realize Economic Value

Monday 13 October 2025 19:10 (20 minutes)

In the context of the digital economy, data has become an important strategic foundational resource and economic growth engine for a country. China is the first country to elevate data to the level of production factors in its policy system, and officially listed data as another key production factor after land, labor, capital, and technology in 2019. When the transformation of production factors triggered by data begins to change the organizational operation of the entire economy and society, how to unleash the value of data factors becomes a key issue. A large amount of low-cost raw data itself does not have value, and data as a production factor need to be empowered for digital economic growth through market-oriented processes such as resource transformation, productization, assetization, and capitalization.

The starting point is data resource transformation, which is the process of transforming previously scattered and disordered data into reusable, organized, and valuable information resources through steps such as collection, consolidation, cleaning, sorting, and labeling. According to 2024 National Data Resource Survey Report, the total annual national data production is 41.06 zettabytes (ZB), which means China has abundant data resources. In terms of public data, more than 60% of provinces and cities specifically designated in the national plan have started the authorization and operation of public data.

The second step is data productization, which refers to process data resources into tradable products or services with clear application scenarios. For example, in order to further accelerate the development and utilization of public data, the National Data Bureau of China has officially released 70 demonstration scenarios in 2025 with clear data products, covering various fields such as highway emergency rescue, smart farmland construction, enterprise service "zero proof", data empowerment of precision medicine, ecological governance of the Yellow River Basin, and innovation of scientific research paradigms.

The third step is data assetization, which refers to transform data resources into measurable and manageable intangible assets with clear property rights and transaction value through legal and market mechanisms. The Interim Provisions on Accounting Treatment of Enterprise Data Resources issued by the Ministry of Finance of China was officially implemented on January 1st, 2024, clarifying the accounting treatment methods for data resources. At least 100 Chinese A-share listed companies have included "data assets" in their balance sheets in their 2024 annual reports, involving a total amount of 2245 million RMB.

The fourth step is data capitalization, which refers to the process of financing, pledging, and other financial operations of confirmed data assets through the financial market to realize the financial value of data assets. For example, on March 2025, Changzhou (a city near Shanghai) implemented 240 million RMB of public data pledge financing. The current data pledge cases are mostly concentrated in the fields of transportation, energy, etc. In the future, they can be extended to medical, agricultural, cultural, tourism and other industries.

Through these four steps, raw data will gradually be transformed into resources, products, assets, and capital, and then governments and enterprises can better utilize data, improve decision-making efficiency, and generate new revenues. Although there is still some disagreement among policy makers regarding the ownership of data factors, and some contradiction between public data openness and assetization, it is necessary to further study the basic concepts, operating rules, and implementation paths of data factor in practice, and continuously improve the relevant policy system in strengthening data infrastructure construction, improving data governance, unleashing the synergistic effects of data factor, promoting data openness and sharing, and fully unleashing the data "multiplier effect" in various industries.

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Session Classification: Poster Session

Track Classification: SciDataCon Persistent Themes: Data, Society, Ethics, and Politics