Research on New and Old Kinetic Energy Conversion  
Dynamic Factors Based on Cloud Computing-Big Data Service Enterprises  

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Abstract. In China, the “New and Old Kinetic Energy Conversion” was proposed as the latest national development idea, and it was quickly concerned by relevant researchers. Cloud computing - Big data service enterprises, as a representative of new technology innovation enterprise, have become the leading force to promote the new and old kinetic energy conversion. In this paper, the deep dynamic sources of the two kinetic energy conversions are analyzed in details, and the new and old kinetic energy conversion dynamics are subdivided from the national, industrial and enterprise levels. On the basis of the prior research, this paper combines the actual situation of cloud computing-big data enterprises, and finally determines 68 dynamics factors of new kinetic energy replaces traditional kinetic energy of cloud computing-big data service enterprises based on three levels and eight categories.  

Keywords: Traditional kinetic energy, Cloud computing - Big data, Service enterprises, Dynamic factors  

1. Introduction  
Conversion of kinetic energy from old to new was introduced in 2015. The specific work of one-way conversion of two kinetic energies was promoted during the year of 2017. Around the world, the government of many countries attached great importance to conversion of kinetic energy from old to new. For a while, the new kinetic energy and the traditional kinetic energy became the hot words that governments and the media around the world have sought after. But so far, the academic community has not given a unified and precise definition of this concept.  

Generally speaking, “traditional kinetic energy” means the original economic driving force, mainly the traditional economic model and the traditional industry. The "new kinetic energy" has a wide range of connotations, mainly driven by the "four new" economy.  

So far, most scholars have carried out innovation and industrial transformation and upgrading
research from the innovation-driven process and links, based on different innovation perspectives and from different levels of innovation on the role of industrial adjustment. However, the direct research on innovation drives the driving mechanism of conversion of traditional energy to emerging energy especially the composition of new and old kinetic energy conversion factors of service enterprises and the results of their contents are still few.

From an industry perspective, cloud computing-big data service companies have ushered in a golden age of development in recent years. In 2015, the business of big data related industries achieved a revenue of 280 billion yuan, a growth rate of over 30%. In 2016, the business income of major manufacturers in the industry doubled[1].

Meanwhile, academia and industry will also focus on the big data corporate social responsibility performance. Zhang Lanting, in CPC Central Party School, proposed that big data has a impact on promoting the enhancement of social management[2].

According to the results of the above analysis, this paper discusses the role of cloud computing-big data service enterprises in promoting the transition from traditional kinetic energy to emerging kinetic energy and its internal operating mechanism and clearly defines the types of new and old kinetic energy conversion dynamic factors and gave their using definition, thereby providing a scientific theoretical model for backward research in this direction.

2. The mechanism of new and old kinetic energy conversion
A large number of studies by Lundvall. B A and Schmoch U show that innovation occurs not only at the enterprise level but also at the regional, national and even global levels.[3][4]This paper draws on this research, and combines the actual situation in China to explain the mechanism of traditional energy to emerging energy conversion from the national, industrial and enterprise levels, as shown in Figure 1.

![Figure 1. Structure analysis of innovation-driven conversion of traditional energy to emerging energy](image)

At the national level, institutional innovation provides a good environment for the effective implementation of innovation-driven strategies, and is the guarantee for the conversion of traditional energy to emerging energy.

See from an industry, technological innovation promotes the transformation and upgrading of industrial structure, which is the core driving force for the conversion of traditional energy to emerging energy.

From the enterprise level, the improvement of enterprise service innovation ability can affect the competitiveness of enterprises and stimulate consumer demand, which is the key driving force for the conversion of traditional energy to emerging energy.

3. The design of new and old kinetic energy conversion factors with cloud computing-big data as basis
In the previous research, the author draws on the research results of Liu Qitao et al. (2018) to preliminarily determine the reference indicators for the definition of the conversion of new and old kinetic energy dynamic factors.[6]

Based on the deeper research and understanding of the conversion of traditional energy to emerging
energysources, this paper summarizes the cloud computing-big data service enterprises to promote new and old kinetic energy conversion. Definition of conversion from old kinetic energy to new kinetic energy dynamic factor is shown in Table 1 below.

**Table 1.** New and Old Kinetic Energy Conversion Dynamic factors of Cloud Computing - Big Data Service Enterprises

| Technological innovation (25 factors) | Upper drive (R&D) | ①Technical staff ratio ②R&D personnel full-time equivalent ③R&D expenditure growth rate ④R&D personnel invention patent authorization number per 10,000 ⑤Machine equipment ⑥Independent design capability ⑦R&D achievement quantity ⑧Technology certificate ⑨Information exchange with university |
|--------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Middle drive (Transformation of results) | ①Technology market transaction volume growth rate ②Product design level ③Standardization level ④Product uniformity ⑤Corporate image ⑥Information exchange with his company ⑦Customer relationship ⑧Competitor ⑨Cost price factor |
| Lower drive (Business operation) | ①Madrid trademark international registration application growth rate ②Telecommunication business growth rate ③E-commerce sales growth rate ④Cost control ⑤Brand awareness ⑥Market monopoly ⑦Lead cultural trends |

| Service innovation (19 factors) | ①New product introduction speed ②Substitute threat ③High technology service industry added rate ④Delivery level ⑤Design softness ⑥Production flexibility ⑦AS level ⑧Customer loss prevention ⑨Small order customer ⑩With local relations ⑪Minority customer dependence ⑫Geography Location ⑬Employees' rights and responsibilities are clear ⑭Provides training ⑮Information sharing ⑯Self-determination ⑰Express business volume ⑱Employees cooperate with each other ⑲Employees' superior order |

| Institutional innovation (24 factors) | Management mechanism (Rule system) | ①Number of new registration entities ②Number of technology innovation incubators ③Utilization rate of e-commerce platform ④New economic value added ⑤Tax proportion ⑥Departmental responsibility distribution ⑦Department cooperation system ⑧Department target negotiation |
|--------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Market supervision (Control concept) | ①National high-tech development zone enterprises growth rate ②Domestic and overseas listed enterprises added value ③Strategic emerging industries added value and GDP proportion ④High technology manufacturing added value accounted for the added value of industrial enterprises above the scale ⑤Urban commercial complexes Increase ratio ⑥Cultural industry added value and proportion of GDP |

| Financial support (City pilot) | ①Actual utilization of foreign capital growth rate ②Foreign direct investment growth rate ③R&D expenditure and GDP ratio ④High-tech product export growth rate ⑤Unit GDP energy consumption reduction rate ⑥Per 10,000 yuan fixed assets investment to create GDP value |

| Employment mechanism | ①Proportion of master's degree or above in economically active population ②High-skilled talent growth rate ③Full-time labor |
4. Application of results

The technological innovation factor at the industrial level and the service innovation factor at the enterprise level can be directly applied to the empirical research related to the competitive advantage of the enterprise, and can guide the formulation of the enterprise's competitive strategy and development strategy. The institutional innovation factors at the national level can be used for government and social welfare organizations to support the policy research and related recommendations for new and old kinetic energy conversion.

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