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## **EXPLORING HOW COMPANIES CAN GAIN A COMPETITIVE ADVANTAGE IN THE DIGITAL AGE**

*Digital disruption is sweeping through all countries and all industries, and technological innovations such as big data, cloud computing, AI artificial intelligence and the Internet of Things are making the arrival of an all-digital era increasingly fast. Digitalisation has become the new engine of economic growth, and digital transformation is an inevitable choice for enterprises in the future digital era and has become a key area of competition. Based on the changes in the organisational structure of enterprises in the digital era, the article proposes the directions that enterprises need to improve in the digital era, based on the three capabilities of acquiring data, integrating data and applying data respectively, in order to provide theoretical support for improving competitive advantages in the industry.*

**Keywords:** *digitalisation, enterprise competition, data acquisition, data integration, data application*

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## **ИССЛЕДОВАНИЕ ТОГО, КАК КОМПАНИИ МОГУТ ПОЛУЧИТЬ КОНКУРЕНТНОЕ ПРЕИМУЩЕСТВО В ЦИФРОВУЮ ЭПОХУ**

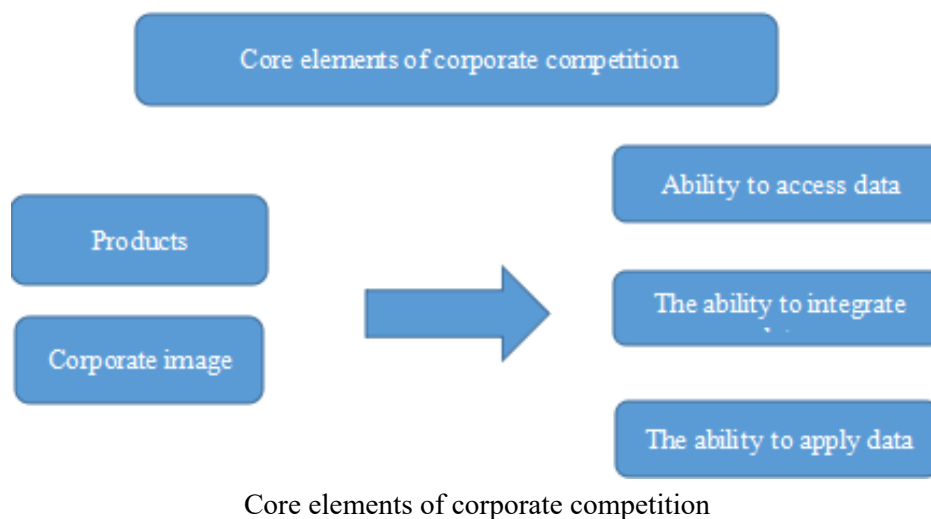
*Цифровые потрясения охватывают все страны и все отрасли, а такие технологические инновации, как большие данные, облачные вычисления, искусственный интеллект AI и Интернет вещей, делают наступление полностью цифровой эры все более быстрым. Цифровизация стала новым двигателем экономического роста, а цифровая трансформация является неизбежным выбором для предприятий в будущей цифровой эре и превратилась в ключевую область конкуренции. Исходя из изменений в организационной структуре предприятий в цифровую эпоху, в статье предлагаются направления, которые предприятиям необходимо улучшить в цифровую эпоху, основываясь на трех способностях: получение данных, интеграция данных и применение данных соответственно, чтобы обеспечить теоретическую поддержку для улучшения конкурентных преимуществ в отрасли.*

**Ключевые слова:** *цифровизация, конкуренция предприятий, получение данных, интеграция данных, применение данных*

**Introduction.** Along with a new round of scientific and technological revolution and industrial revolution, a new generation of information technology has been deeply integrated with the real economy globally, driving a major change in the economic and social form, and the digital economy has gradually become a new economic and social form after the agricultural and industrial economies. The core of this new economic and social form is to use data as an important factor of production, and to use digital technology to drive and influence human production, life and ecology, resulting in new technologies, new products, new business models and new demands from the macro to the micro level, and to achieve an all-round improvement in the productivity of society as a whole [1]. If you start a digital transformation without being fully prepared, you may face huge risks. This is because digitalisation can bring a higher level of risk that cannot be monitored or mitigated at all by traditional mechanisms alone.

In the industrial economy, enterprises were mainly organised in a linear, functional, process and network type of structure, basically in the form of a pyramidal hierarchy with clear organizational

boundaries, relatively centralised leadership authority, vertical transmission of orders and emphasis on the setting up of positions in departments and departments based on professional division. At the top of this pyramidal structure are the top managers with absolute authority, followed by the department heads and middle managers, and the operators at the bottom. This organisational structure makes it difficult for companies to adapt to the increasingly fierce competition in the market due to the lack of organisational innovation. The era of mass production and mass consumption has come to an end. Demand is becoming increasingly individualised and diversified, making it necessary for production to become multi-variety and small-lot. Under such circumstances, the traditional organisational model of enterprises inevitably leads to increasingly large organisations, bloated institutions, swollen personnel, reduced sensitivity and a serious challenge to the logic of their existence. With the explosive development of digital technology, it has become an inevitable trend for enterprises to change their pyramidal hierarchical organisational structure and opt for flat, networked, intelligent and collaborative platform-based organisations. The organisational mechanism is moving from centralised control to empowerment, from a single decision-making centre to a diversified decision-making centre, and from management's empirical decision-making to decision-making based on big data. The relationship between the organization and its employees places more emphasis on the division of labour and assistance, organizational efficiency places more emphasis on internal collaboration, and organizational boundaries become increasingly blurred, moving towards cross-border integration and open development (figure).



In the digital age, companies need to realise that the core of competition in the new era has changed from products and corporate image to data, and that the requirements for competitiveness in the new era have accordingly changed to the three competencies of acquiring data, integrating data and applying data [2].

1. Ability to access data.

1) Internally: Improving the efficiency of business operations.

Internally, the data acquired is more often used to increase business benefits, such as helping companies to reduce unnecessary expenses or improve productivity. By acquiring a large amount of data and making proper use of it, enterprises can increase their profits and speed up their work efficiency, thus enhancing their competitiveness.

2) Externally: enhancing market perception.

Externally, the purpose of acquiring data is to help companies understand real-time information about the market and consumers, so that they can find their own position and develop and adjust their competitive strategies. There are two main aspects of data external to the enterprise, namely market

data and consumer data. To obtain market data, companies can, on the one hand, estimate part of the market data through the sales of their own products, and on the other hand, they can cooperate with professional third parties and commission them to conduct market research, collect data and form reports. Consumer data is very rich in content, containing not only data about a certain type of product, but also important data about consumers' current consumption preferences, consumption hotspots, consumption structure and other important data that can provide value to enterprises.

## 2. The ability to integrate data.

More and more companies are recognising the importance of data in the digital age, but collecting large amounts of data is not the same as acquiring usable information or helping companies create benefits. Therefore, in addition to acquiring data, companies need to open up internal and external «data lakes», integrate data from various sources and distil useful information. The integration of resources based on data and information is also one of the core competencies of companies in the digital era.

### 1) Internal structure optimisation and reduction of duplication and waste.

In the face of the huge amount of data and information generated all the time, enterprises must first integrate their internal information resources. The integration mainly includes four steps, namely unified model, elimination of heterogeneity, application of big data and security management. In the first step, enterprises need to take a business-oriented approach, aggregate the most core data of each business that needs to be shared the most, and set up data standards in this way, so that all acquired data information can be stored uniformly according to the standards in the future, and each business department can then read the information from this database. The second step is for the business to achieve the integration of structured and unstructured data. In addition to structural data in digital form, there is also unstructured data in the form of video, audio, e-mail, pictures, etc. Enterprises should build a suitable data management model when integrating information resources. In the third step, enterprises should increase investment in big data technology and build a big data platform using a combination of technologies such as cloud computing, distributed computing and data mining to help enterprises realise the efficient use of integrated information resources. In the fourth step, for the integrated information resources, enterprises should focus on the security management of data, and can guarantee the security of information resources through extensive cooperation with upstream and downstream enterprises as well as third-party institutions such as security management agencies and evaluation agencies. After realising the integration of enterprise information resources, enterprises can also optimise and integrate their corporate structure on this basis to further enhance their competitiveness. Or re-establish a separate database or department dedicated to providing commonly used data and completing similar tasks, in order to optimise the organisational structure of the enterprise and reduce the waste caused by duplicate construction.

### 2) Integrate external resources and identify win-win opportunities.

The integration of external resources should not be limited to the aggregation and optimisation of resources within the industry, but should be combined with popular hotspots and focus on cross-border cooperation to discover more opportunities and create benefits in a broader field. The integration of external resources can also be a cross-industry cooperation of resources, the pursuit of business model innovation, and the courage to break the rules.

## 3. The ability to apply data.

In response to the characteristics of the digital age, such as volatility, uncertainty, complexity and ambiguity, companies must always be prepared to adjust their strategies and plans according to the events that are happening or are about to happen. This is demonstrated by the ability to rapidly iterate and deliver products or services in response to changes in market demand.

**Conclusion.** In my personal opinion, digital disruption may seem like a threat, but it can also be a turnaround, even if the benefits outweigh the drawbacks. No matter how mature a company is,

the challenge is the same as for any up-and-coming business: to create a new business organisation, to change mass production and mass consumption to multi-variety and small batch sizes, and to make the business a long-term success. In the digital age, companies need to be more flexible and diverse in order to adapt to changes in the market. As Professor Wei Wei sees it, business models focus not only on external stakeholders, but also on internal stakeholders, and also on internal stakeholders in between the previous two. A good business model always creates maximum value for the focal company and its stakeholders, in other words, it maximises the sum of the surplus of the focal company and the surplus of the stakeholders. As we turn the core of our competitiveness into a change in our ability to leverage data, it is not only a change in organisational form, but also a need to better integrate our own business situation with the synergistic progress of external developments to improve our competitive advantage.

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