

# Planning Adjustment, Transformation, and Upgrading Strategies for Sustainable Post-print Development

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## Abstract

The operations of cable radio and television have reached a crossroads to a certain extent; transformation and development represent the general trend, and “adjustment, transformation, and upgrading” (调转升), i.e., transformation, upgrading, and structural adjustment, constitutes an inevitable requirement for the cable radio and television industry. This paper primarily discusses and elaborates on the main content of “adjustment, transformation, and upgrading” from three aspects: its definition, implementation methods, and implementation pathways.

## Full Text

### Abstract

The cable television industry in China has reached a critical juncture, making transformation and development an imperative trend. “Adjustment, Transformation, and Upgrading” (调转升)—or more specifically, transformation and upgrading with structural adjustment—represents an essential requirement for cable operators. This paper provides a concise discussion and elaboration of the main components encompassed by “Adjustment, Transformation, and Upgrading” from three perspectives: what it entails, how to implement it, and the pathways for its execution.

**Keywords:** cable television; transformation; upgrading; structural adjustment

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## Introduction

The policy, technological, business, and market environments facing China’s cable television industry are becoming increasingly complex and volatile. Market

competition, particularly in the residential customer segment (public customer business), has intensified, leading to prominent subscriber churn and sluggish business growth. Some network companies have experienced dual declines in both cable TV and broadband user metrics, as well as simultaneous drops in revenue and profit indicators. Consequently, industry players are experiencing unprecedented pressure for survival and development, finding themselves at a crossroads while actively exploring innovative paths forward. This has given rise to the pressing demand for “Adjustment, Transformation, and Upgrading.”

Fundamentally, this strategic initiative represents the supply-side structural reform of cable network companies. Based on the production characteristics and operational patterns of these enterprises, such reform requires adjusting development philosophies, transforming management approaches, and upgrading industrial capabilities—or in essence, achieving “transformation and upgrading with structural adjustment.” This involves optimizing resource allocation, reconstructing business models, network infrastructure, and operational management, resolving supply-demand contradictions, reshaping user experiences, and ultimately achieving sustainable development.

## 1. Transformation

“Adjustment, Transformation, and Upgrading” begins with transformation, which serves as the foundation and key to upgrading and structural adjustment. Without transformation, upgrading and structural adjustment would be like trees without roots or water without a source. Drawing from the transformation experiences of telecommunications operators, this paper argues that cable operators’ transformation should proceed along seven dimensions.

### 1.1 Business Market Transformation

First, the industry must shift from traditional to emerging business models. Traditional models include conventional broadcast television, basic video-on-demand, and simple broadband access services. Emerging models, by contrast, comprise Internet-centric applications derived from these foundational services—such as broadcast-to-on-demand conversion, broadcast service extension, personalized on-demand offerings, integrated on-demand solutions, broad media convergence services encompassing news, government affairs, and civic amenities, as well as smart home, smart community, and smart city initiatives. In short, this transformation means strengthening fundamentals while pursuing integrated development.

Second, the guiding principle must shift from technology-driven or mandate-driven approaches to user demand-driven orientation. Objectively speaking, current cable offerings are predominantly technology-driven—focused on “what we can do”—with media cloud platforms serving as a typical example. Alternatively, they are often mandate-driven—implementing what government departments require—with applications in news, education, health, and lifestyle

sections of interactive platforms exemplifying this approach. Such practices typically give insufficient consideration to user response and market impact. The shift to user demand-driven orientation essentially means adopting market orientation and prioritizing customers.

### **1.2 Network Technology Transformation**

First, equipment deployment must transition from resource consumption to green efficiency. Current network expansion predominantly relies on equipment stacking, leading to escalating energy consumption and increasingly acute data center space constraints. The shift toward green efficiency involves technological innovation in equipment form factors and the reconstruction and evolution of network platform architecture toward flattening and software-defined approaches.

Second, technology deployment must transition from traditional to emerging Internet technologies. Traditional network technologies encompass conventional signal transmission, switching and routing, access and distribution, and reception and presentation technologies, including network layering architecture and system configurations. The transition to emerging Internet technologies essentially means IP-based protocols, software-defined networking (SDN) for connectivity, network function virtualization (NFV) for capabilities, cloud-based resources, and big data-driven management and control.

### **1.3 Service Support Transformation**

First, business development must shift from reactive response to proactive initiative. Currently, cable operators' service support essentially follows a "support what we launch" model, without establishing a forward value chain from user needs to product development to service support. The shift to proactive initiative means actively discovering user needs and creating value from the user perspective.

Second, business support must shift from rigid and sluggish to flexible and agile. Typically, launching a new business product involves lengthy development cycles in the business support system, often missing market opportunities. Achieving flexibility and agility requires, first, rapid business support from the system itself, which imposes technical requirements on the business support infrastructure, and second, swift decision-making in management, which demands improvements in organizational structure and decision-making mechanisms.

### **1.4 Operation and Maintenance Transformation**

First, maintenance technology must shift from traditional to intelligent approaches. Traditional maintenance is characterized by: (1) insufficient technical means—networks that could benefit from network management systems often lack them, while those with management systems typically only have element-level and element management functions, with limited network, service, and

business management capabilities; (2) relatively independent technical means—management systems are typically proprietary, lacking end-to-end integrated management; (3) cumbersome fault handling processes—low automation levels that rely heavily on maintenance personnel expertise; and (4) absence of fault situational awareness and early warning mechanisms, resulting in prevalent reactive firefighting approaches. The shift to intelligent maintenance essentially means leveraging big data, artificial intelligence, and other emerging technologies to standardize and improve maintenance technical service capabilities and system construction based on the inherent technical characteristics of equipment, networks, and systems.

Second, management must shift from decentralized to centralized and unified approaches. Network systems feature end-to-end, joint operations as production characteristics. Therefore, the fundamental principles of network maintenance are centralized management, unified dispatching, clear boundaries and responsibilities, centralized supervision with separate maintenance, and separated duty-checking with combined technical-repair functions. The shift toward centralized and unified management essentially means establishing scientifically sound operational organization systems and standardized, efficient operational mechanisms based on the production characteristics and patterns of network systems.

### **1.5 Organization Management Transformation**

First, organizational structure must shift from lengthy vertical chains and fragmented divisions to flat and streamlined models. Currently, some cable companies feature organizational structures with numerous departments (fragmented divisions), complex specialization (fine blocks), and cumbersome processes (long chains). Despite this complexity, issues such as overlapping functions, missing functions, and functional disorder remain common. The shift to flat and streamlined structures essentially means organizational reconstruction to establish scientifically rational organizational frameworks adapted to productivity development requirements.

Second, management must shift from extensive and decentralized to intensive and efficient models. Objectively speaking, current management in some cable companies remains relatively extensive and decentralized. Despite having lengthy chains and fine blocks, these organizations typically lack vertical integration, instead implementing departmental responsibility systems with absent business line management mechanisms. The shift to intensive and efficient management essentially means improving and standardizing organizational behaviors.

### **1.6 Talent Team Transformation**

First, personnel competency must shift from traditional expertise to Internet-converged emerging talent. Depending on the position, today's technical person-

nel must not only understand analog and digital broadcast transmission, circuit and packet switching, and object-oriented software engineering, but also comprehend IP transmission, SDN/NFV, cloud computing, big data, and even AI, IoT, smart cities, and mobile Internet. This transformation essentially means developing T-shaped professionals with both depth and breadth.

Second, talent management must shift from position-based to demand-based models. Cable operators currently employ position-based talent management. However, network systems and operations management are specialized and hierarchical, with varying importance and requirements across different specialties and levels. The shift to demand-based management essentially means planning rational talent structures and configuring scientific talent ratios according to network business and its development.

### **1.7 Investment Cooperation Transformation**

This transformation occurs in two stages: primary and advanced. In the primary stage, the focus shifts from project-based cooperation to establishing a sound industrial chain. Cable operators cannot succeed alone and rely on external partners for survival. This represents the industrial chain relationship. Today, this relationship is extending and evolving, with various entities in the chain intersecting and forming complex relationships that collectively constitute an ecosystem. Therefore, the advanced stage of investment cooperation transformation involves shifting from establishing industrial chains to perfecting the ecological chain. Both aspects of this transformation require a sound strategic development plan, appropriate tactical planning, and corresponding operational implementation plans.

## **2. Upgrading**

Upgrading refers to the natural and spiraling improvement of business product quality, network system functionality, enterprise production efficiency, and comprehensive competitiveness that emerges during the transformation process. For instance, business product upgrading and service quality improvement accompany business market transformation; network system functionality upgrading and enhanced business support capabilities follow network technology transformation; technical support capability upgrading and improved operational efficiency result from service support transformation; operation and maintenance capability upgrading and enhanced system reliability accompany O&M transformation; market responsiveness upgrading and improved management efficiency follow organizational management transformation; personnel competency upgrading and improved talent allocation result from talent team transformation; and industrial chain upgrading and enhanced sustainable development capability follow investment cooperation transformation.

### 3. Structural Adjustment

Structural adjustment serves as the source and driving force of transformation. Facing current and future market competition environments and industry development trends, cable operators should adjust development philosophies and operational concepts according to the principles of selective focus, prioritization, and proportional coordinated development. This involves proactively optimizing industrial layout, adjusting business structures, strengthening resource allocation for key businesses, and improving organizational structures and operational frameworks accordingly. This drives the transformation pathway and achieves the goal and effect of upgrading industrial capabilities.

For example, despite intense competition with telecommunications operators in the enterprise customer segment (集客业务), the growth potential of such business remains promising given the development of information applications and smart city initiatives. Moreover, cable operators generally maintain naturally good relationships with local governments. Therefore, cable operators should adjust their business layout, optimize business structures, and prioritize enterprise customer business development as a key focus. This requires institutional adjustment, mechanism optimization, and resource allocation in funding and talent, along with strategic planning to strengthen and expand this business segment through a comprehensive “Adjustment, Transformation, and Upgrading” framework.

In conclusion, “Adjustment, Transformation, and Upgrading” is an imperative driven by circumstances, practical requirements, and the demands of the era for cable operators. Structural adjustment is the source of transformation; transformation is the foundation of upgrading; and upgrading is the outcome of transformation. Only by scientifically and rationally planning the “Adjustment, Transformation, and Upgrading” strategy and holistically managing the relationships among these three elements can cable operators identify pathways to sustainable development and achieve their sustainability goals.

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*Note: Figure translations are in progress. See original paper for figures.*

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