

Research on Development Mechanism and Model of Shanghai Digital Content Industry Based on the Integration of Three Networks¹

Sheng Liu Li Tao

Shaofeng Lan

School of Management
Shanghai University of Engineering Science
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Abstract

Based on the analysis of the present situation of Shanghai digital content industry, the demand analysis for digital content industry is demonstrated based on the integration of three networks. Then the growth mechanism of digital content industry chain is further explored based on industrial economics, theory of industry chain. Finally, the present situation and problems in the development of Shanghai digital content industry are analyzed, suggestions and measures for the future development of the digital content industry are proposed.

Keywords: The Integration of Three Networks; Digital Content Industry; Cobweb Model; Industry Cluster; Investment and Financing System²

1. Introduction

Since the mid-1990s, global informatization is undergoing profound changes, application services has being given more priority than technology innovation, industry competition advantages don't rely on master of newest information technologies and system software, but application of technology into society, economic and life. Under this condition, the digital content industry which in high development and total health, satisfying demand of human spirit culture, representing development orientation of future technology has become a hot topic.

There are some advantages and disadvantages in shanghai digital content industry. So it is indispensable to establish corresponding theory system to instruct the construction and development, theory research in this sphere is deficient, especially, research on how to change linear and unopen development pattern, reconstruct organizational interaction content flow still remains vacant based on three networks.

Viewing through the development situation, series of barriers concerned with digital content product will vanish, and shanghai digital content industry will face more fierce market competitiveness with the open policy, it can't win the foreign mass media mogul no matter in size, fund, human capital and management, but also product quantity and quality. Doctrinal investigation and inquiry should be done on growth theory and development mode to survive and develop in the new competitive environment. Then development mode should be constructed to make it has a place in the world digital content industry competition.

2. Development Situation of Shanghai Digital Content Industry

2.1 From Perspective of Scale, Industry Scale has increased Year by Year but Growth Rate tends to be Stable in Recent Years

Shanghai digital content industry output value became larger and larger from 2004, attained 544billion \$ in 2010, which has 2000 medium-sized and small enterprises as an important base of china and even Asian-Pacific area.

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The speed of growth increased year by year from 2008, and year stable growth rate is around 38%, which indicates shanghai digital content industry has become an important stably increasing economy-support industry, as figure 1 shows

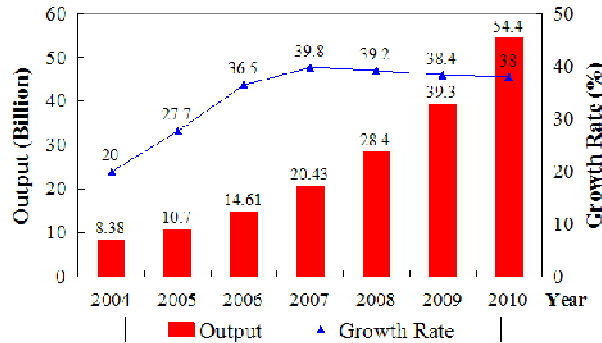


Fig.1 2004-2010 Shanghai Digital Content Industry Scale and Growth Rate

2.2 From Perspective of Industry Structure, Digital Animation, Digital Audio-Visual, Digital Learning, Digital Publishing Occupied Relatively Small Part

Shanghai digital content industry structure preliminary was formed by a pattern in which online games, mobile content and other network services is given priority to, digital learning, digital animation, digital publishing and digital audio-visual wins rapid development.

The distribution of industrial structure is shown in figure 2:

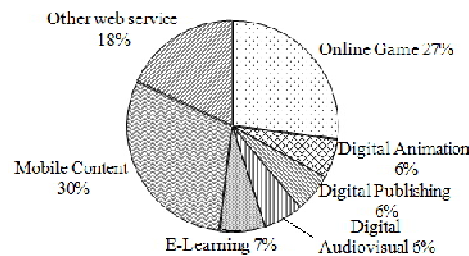


Fig. 2 2010The Structure Distribution of Shanghai Digital Content Industry

It can be seen from the figure 2 that the network game, mobile content, and other network services occupied 75% of the Shanghai digital content industry, and digital animation, digital publishing, digital audio-visual, digital learning occupied only 25%, but has the huge development potential.

With the development of global economy and acceleration of the optimization structure, importance and proportion of animation industry in the world culture strategy and the economic structure ascends year by year. China put forward that share of animation industry must be at least 1% of GDP in 5 to 10 years. Shanghai is the birthplace of Chinese digital animation, with geographical and human resources advantages, Shanghai animation has huge development space.

Four backbone project constructions which consist of Shanghai book content repository, digital libraries, the high-quality periodical digital platform and digital copyright trading platform have already started. These good infrastructure and regulations construction has set up a platform for the rapid development of Shanghai digital publishing industry.

Shanghai digital audio-visual industry (includes digital music and video sharing and VOD) emerged, developed very quickly in recent years.

Among them, 13 enterprises have the Internet audio-visual license, including tudou, PPlive and PPS video as the country's leading online video sharing and on demand enterprises. With tudou listed in the United States, a new upsurge in the development of digital audio and video in Shanghai will inevitably emerge.

2.3 From Perspective of Industrial Agglomeration, a Preliminary Scale Effect, but Have Not Form a Brand Effect

In recent years, Shanghai digital content industry park bass have been built through overall plan, rational layout, dislocation development, complementary advantages, then industrial pattern is gradually formed in which core and extend area develop complementarily. And industrial agglomeration effect has been formed by Parks which attracted many multinational enterprises, famous enterprises and information services enterprises with good hard and soft environment, which in turn becomes the impetus of industry development.

At present it basically has: Zhangjiang national digital publishing base, hongkou "TMT" joint digital content industrial park, zhabei Shanghai multimedia valley, xuhui digital entertainment industry base, changing multimedia industrial park, min hang zizhu science park, ,putuo heaven and earth network digital content industry base and baoshan Shanghai animation derivatives industrial park.

These parks have formed a large scale effect and good development prospects. But there are still a large gap compared with Beijing zhongguancun, hangzhou animation Industry Park and other famous brands in digital industry base, so popularity is still needed to cultivate and improve, then benign interaction between the industrial agglomeration and circulation should be promoted.

2.3 From Perspective of Industry Share in the Country, the Proportion Declines Year by Year, Competition Pressure is Becoming Bigger And Bigger

Shanghai network game (mobile game excluded) average annual compound growth rate is 25% from 2005 to 2010, the revenues will reach 14.4 billion yuan in 2010 , accounts for 26.5% of the Shanghai digital content industry, but the national share declines year by year. network game industry scale and growth rate from 2004 to 2010 as shown in figure 3,

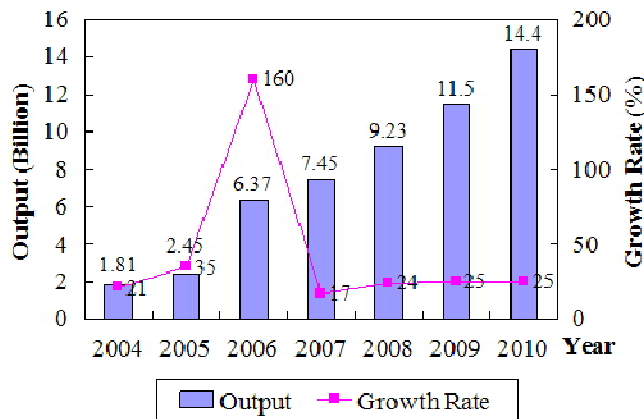


Fig.3 2004-2010 Shanghai Network Game Industry Scale and Growth

Shanghai animation production once occupied most share of Chinese animation production. But caught up by other domestic competitors in recent years, Proportion of Shanghai animation institutions is declining and less than Guangdong, Zhejiang, Jiangsu provinces. At present, Shanghai has more than 200 animation companies in different size and capacity, but its scale share falls compared with the high-speed development of the national animation body. As shown in figure 4:

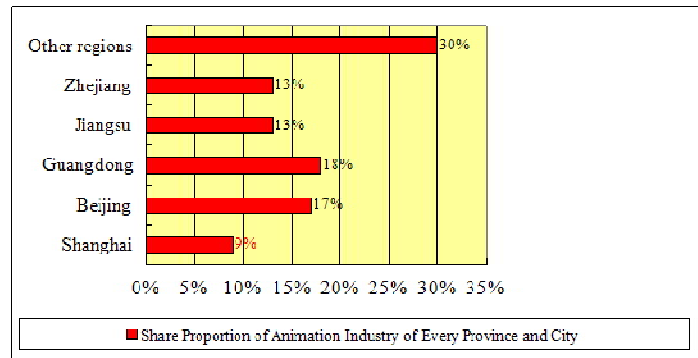


Fig.4 2010 Digital Animation Market Share Proportion of the Country

In addition, several major domestic network service corporate headquarters are located in Beijing, such as Sina, Sohu, Chinese, etc. There are no leading enterprises located in Shanghai, which is not consistent with Shanghai 'national economy status

Overall, In terms of structure, the network game, mobile content, and other network services is larger, but the development speed is slow, digital animation, digital publishing, digital audio-visual, digital learning is small, but development speed is relatively fast; the national share of Shanghai digital content industry decreased year by year, more and more competition pressure comes from other brother provinces and cities.

3. Digital Content Industry Needs Analysis Based on Three Networks Integration

Three networks integration has brought big business for the digital content industry, meanwhile produces new demand in many links such as digital content production, trade, transport, technical support, service support, mainly concentrated in the following aspects.

The scale of Internet users, mobile Internet users, cable TV user scale continues to expand as shown in figure 5 , 2007-2010,Shanghai Internet scale , due to the accelerated popularization of 3 g, still have continued ascension space.

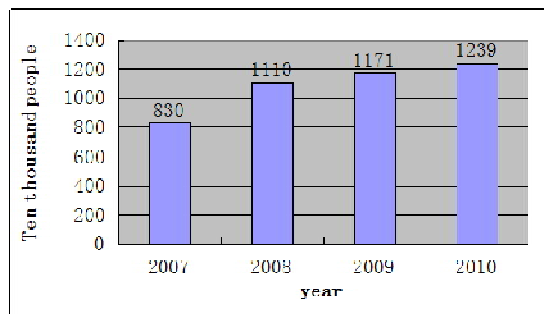


Fig. 5, 2007-2010 Scale of Shanghai Internet Users

Digital Content Products System Needs Cross-Network and Cross-Screen Integration

Entire contents of the distribution system has changed, moving from a single terminal, an independent network, the network terminal toward separating content based on three networks integration system, integration of content distribution has changed. As 2009 Blockbuster launched a three-screen integration business, Dragon TV launched the three-screen integration program "Oriental Room Live." in 2010

Urgent Need to Improve the Content Marketing Service System

In face of a new content inscription, it needs to establish and perfect the content of new service system, expand the connotation of content services, and should highlight localization, personalized marketing, combine with the characteristics of the different needs of users around and provide more targeted content services

Three Networks Integration will Promote Industrial Innovation

Three networks integration is reconstructing traditional industry chain, representative integration business industry chain are formed by the content provider, content (services), information service providers, network operators (transmission), terminal manufacturers and users.

Three networks integration reengineers traditional impact on new digital content industry which means benefits adjustment between subjects in each link, such as more highlight on provider status in the new industry chain service

Content Banking System of the "Central Kitchen + Buffet" Should Be Built

Radio, television and the Internet will co-exist and integrate in the content level. "Central kitchen" provided by radio and television like a bank's VIP clients which network operators can establish cooperative relations with and obtain greater benefits with the mutual exploitation. "Buffet" provided by various social content resources like retails, radio and television should effectively organize and regulate, sort and distribute them to form a huge bank of "content", so as to establish a new integrated content architectural patterns .

4. Theoretical Analysis of the Development and Growth Mechanisms in the Digital Content Industry Chain

Although the industrial chain theory has become more mature and perfect, but related theory of digital content industry chain has not yet been built, especially, the growth dynamics ,mechanism and the related theory of growth model has not yet been described based on Three networks integration. Therefore, this section will explore the basic rule of digital content industry chain growth, aiming at providing theoretical guidance for the growth practice of the Shanghai digital content industry chain .

4.1 Dynamic Mechanism Model Analysis of Digital Content Industry Chain

Digital content industry chain formation has inherent mechanism and process of development and evolution. Product, information, value, technology and knowledge chains are embedded in the reticular formation of the industrial chain, as shown in figure 6. In order to simplify Problems, this article only explores the growth principle from perspective of industry chain structure in three aspects, there are industrial added value, degree of labor division and transaction level .

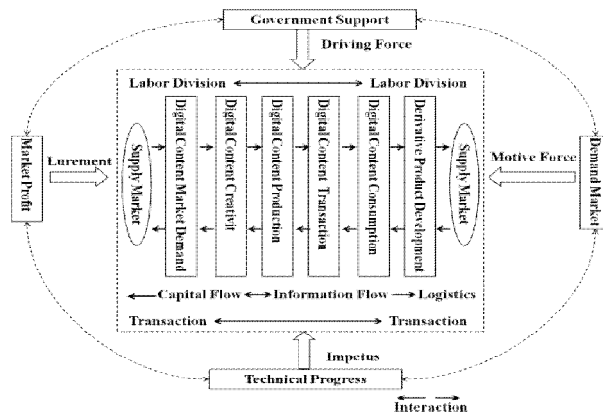


Fig.6 Dynamic Mechanism Model of Digital Content Industry Chain

The Industrial Added Value, the Basis of Formation and Development of Digital Content Industry Chain

Michael Porter's value chain theory elaborated that operation of enterprises is the process of value added chain. So the value-added is the basis of the formation and development. For the industrial chain, the inherent value requirement is: productivity ≥ sum of internal productivity and production efficiency (collaboration multiplier effect). Meanwhile, the transaction costs ≤ sum of the internal transaction costs between enterprises. Expressed in mathematical model as follows (network effects of division)

$$\sum_{i=1}^n f_i(x) \leq g(x) \quad \text{and} \quad \sum_{j=1}^n H_j(x) \geq C(x)$$

Here, $f_i(x)$ denotes the i-th production efficiency, $g(x)$ denotes the productivity of the industrial chain, $H_i(x)$ denotes the i-th transaction cost, $C(x)$ denotes sum of the internal transaction costs between enterprises.

Single enterprise production efficiency is restricted by its scale and scope economy effect: $f_i(x) \leq M_i(x) \cup f_i(x) \leq N_i(x)$ $M_i(x)$ 、 $N_i(x)$ denotes the scale economy effect and scope economy effect of I enterprise respectively.

Digital content industry chain can be divided into three specific basic value chains. Among them, basic value chain is the value generation process in which products move from the production, transaction, finally reaches the customer through consumption, value-added ability were produced in three main links :production, trade and consumption. Auxiliary value chain is supply of product idea, equipment .R&D technical support of digital content production, and its function is to improve efficiency and capacity; while Extended value chain is value-added part brought by new products which are formed by a certain link capacity expansion or deep development of digital content products' added value, and value-added space is generally bigger.

The Deepening Division of Labor - The Sufficient Condition of Digital Content Industry Chain' Formation and Continuous Development

With technology progress and market scale expansion, enterprise's vertical separation, outsourcing of intermediate product and service began to appear, meanwhile, production of single enterprise is not only restricted by capabilities, but also upstream and downstream enterprises. Therefore, with the deepening and the evolution of division in industry , the relationship between enterprises also continue to evolve, they cooperate with and complement each other, also compete with and restrict each other, in this way the prototype of the industrial chain is revealed.

As a result, formation and development of digital content industry chain is also based on the deepening of specialization, a multitude of enterprises must constitute interconnection and interdependence between each other, so as to enhance the coordination, cooperation and production circuitous degree. The specialized degree of each link is deepening, circuitous production chain continuously extended, produce the endogenous mechanism of increasing returns, finally growth of digital content industry chain is realized through positive feedback loops.

Reduction of Transaction Cost-The Necessary Condition of Digital Content Industry' Formation and Continuous Development

From the perspective of reducing transaction costs, "the enterprise is an alternative of price mechanism, enterprise and market can be replaceable means of coordinated production ", and " enterprise substitution of the market is only replacing product market with factor market ", when economic activity only exists in digital content companies, market, middle organization forms that is between enterprises and market ,then choosing what kind of organization form as appropriate institutional arrangements depends on asset specificity level, transaction frequency and level of uncertainty .

When level of the three variables is low, the automatic regulation of market is effective means; when level is higher, the firm's mandatory regulation will be instead of organization; when the level is between the above two, automatic adjustment and mandatory adjustment will occur simultaneously, an intermediate organization will be formed.

The organization of Digital content industry chain, therefore, is suitable to build into "network organization" which has network relationship. Measures should be taken to innovate operation mechanism, service contents and industrial cluster mode, also to promote industrial agglomeration.

4.2 Growth Mechanism and Model of Digital Content Industry

Research on formation mechanism of industry chain is often from the perspective of supply and production. But Wu Jinming put forward a more ideal industrial formation model - the cobweb model, as shown in figure 7. This model illustrates the process of industrial chain formation very well. This main model content is as follows:

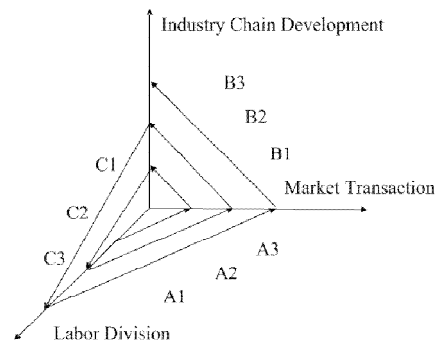


Fig.7 The Cobweb Model of Industrial Chain

The division of labor gives rise to the formation of the industrial chain, and causes organization deepening unceasingly under the impact of trade mechanism. In the model, C1, C2 and C3 denotes degree of labor division, meanwhile, $C1 < C2 < C3$ means the deepening of labor division; A1, A2, A3 indicates degree of market transactions, similarly A1 "A2" A3 represents the deepening of market transactions degree; B1, B2, B3 expresses the degree of industrial chain development, $B1 < B2 < B3$ shows continuous extension of industry chain and growing complexity of formation. The intersection of three coordinates denotes initial state has neither division of labor nor market transactions, not even to say industrial Chain generation.

Starting from point C1 not the origin means that the division of labor is the starting point of market transactions and industrial chain generation. C1 promotes generation of the market degree A1, under the effect of A1, it needs B1 dock with it .B1 promotes the further development of social division of labor, then it evolves from C1 to C2. Accordingly, under the action of C2, the degree of market transactions develop from A1to A2, and A2 promotes the development move from B1 to B2, the cycle moves industrial chain to form and develop in this way.

It can be concluded that when efficiency is low because of the trade environment, credit and t system problem, enterprises tend to product and sale by their own and not participate in the division of labor; But as long as transaction efficiency improves and reach a certain threshold, the digital content industry chain enterprises will tend to participate in the division of labor, and with the improvement of transaction efficiency to a certain threshold, enthusiasm of enterprises will be enhanced driven by the benefit maximization goal, then the level of specialized ability and cooperation between industry chain upstream and downstream will be further improved.

Therefore, transaction efficiency level, deepening division of labor and the overall effect of industry chain presents an interacted and endogenous relationship, therefore measures should be taken to optimize the environment of macro industrial development, build a multi-level and diversified investment and financing system, promote public service and talent industry agglomeration effect.

5. Research on Policy System of Shanghai Which Aims at Promoting the Development of Digital Content Industry

Based on analysis of the dynamic mechanism model and growth mechanism of the digital content industry chain , we suggest to implement "package" policy support system including macro environment optimization, industrial chain cultivation and clustering development ,fiscal and tax preference , diversified investment and finance and talent agglomeration.

5.1 Macro Environment Optimization Policy of Industry Development

5.1.1 Certification of Market Qualification and Industry Admittance System

On the one hand, according to the number and type of Shanghai digital content industry, regulation should be loosened to animation company, digital publishing, digital audio-visual and content industries which are given priority to, when free competition and industry scale has not yet been formed; on the other hand, according to the characteristics and development scale of the digital content industry , market access can be divided into subject access and transaction object access, meanwhile, dynamically adjust the market qualification certification of different background and industry admittance system based on relevant laws and regulations and market demand, then Diversification, multi-type, free competition in the industry and business operation entity should be set up. Specific methods include:

- 1) Support the small and medium-sized enterprises, actively promote a variety of effective realization form of public ownership economy, guide non-public economy in the field of digital content industry, all fields that doesn't violate laws and regulations should be encouraged to enter through the property rights trading, mergers and acquisitions ,the shareholding system reform, time -limited management transfer, the government franchise auction, and other forms by private capital and foreign capital, and all will be treat as same with state-owned economic in investment. Market access, land use, credit, taxation, public finance, etc.
- 2) Ease restrictions on investment way of digital content enterprises. Support and encourage investors with equity and creditor's rights and trademarks, patents and other intellectual property rights as capital, further widen the Funding channel of the digital content companies.
- 3) Encourage and support the social capital establish all kinds of digital content enterprises which are policy-allowed and suitable for the city construction in the form of equity participation, equity holding, or sole proprietorship, and loosen enterprise registration restriction . Registered capital of parent company can be reduced to 25 million yuan when it forms a group company, the total registered capital of the parent company and subsidiaries can be reduced to 55 million yuan, the subsidiary corporation numbers can be reduced to 3.

5.1.2 Perfect Digital Copyright Law Protection and the Market Competition Mechanism

The integration of three networks helps promote the integration of broadcast networks, telecommunications networks and the Internet in business, and in such an open environment, to better meet the protection needs of digital content for each role in the industrial chain, Not only DRM standard which is appropriate to requirements is urgently needed, but also a third-party agency should be introduced to complete unified authentication and authorization of the content, networks and terminals, realize consumption and settlement of digital media content across the network, cross-platform, cross-terminal environment.

5.2 Industrial Chain Cultivation and Industrial Cluster Policy

5.2.1 Innovate Operating Mechanism and Service Content , Create Three-Dimensional Marketing System, Promote the Industrial Chain Integration and Extension

On the operating mechanism, the radio and television networks should be further integrated to establish “municipal cable network company” as market main body of radio in the competition of three networks integration, make the differentiated regulation and separate competition eventually develop into syncretic regulation and competition.

On the service content, the mechanism of independent innovation should be further optimized, then original products with local cultural characteristics of digital content should be cultivated and product value chain extended

For independent intellectual property rights of digital products and technologies owned by enterprises which are included in the catalog of “shanghai independent innovation products” and “the Shanghai municipal government procurement independent innovation products”, government purchase should be encourage and fiscal fund is given priority to.

On the marketing system, products export can enjoy export tax refund (exemption) policies in accordance with the current tax law provisions, suspend business tax of digital content enterprise which provide overseas services(broadcast exempted) , organize and guide the city enterprises actively declare national reward fund for export culture

Encourage enterprises to exploit international market, provide funds to coordinated development and promotion of foreign trade and economic region, capital and international market development of small and medium-sized enterprises.

Digital content enterprise which is engaged in the technology transfer, technology development and related technology consulting, technology services of income, shall be exempted from business tax.

5.2.2 Speed Up the Industrial base and Industrial Park Construction, Innovate Industrial Cluster Mode, Promote the Development of Industrial Agglomeration

The government should reference to advanced industrial cluster development pattern based on the development stages and characteristics, make "basic research and technology catch-up" digital content industry cluster development strategy.

Meanwhile, it should set up special development funds of digital content industry agglomeration area, lean to industrial concentration area and support the development of the digital content industry force:

The local government should reduce administrative examination and approval, simplify the formalities for examination and approval and shall not charge any additional fees beyond policy. To digital content industry garden area, demonstration base and key projects which are recognized within the scope of the policy permission.

For digital content industry park of city, public service platform construction projects may apply for the digital content industry gathering area development special fund subsidy project. Fund the rent and utilities of digital content enterprises in the zone. Encourage enterprises to declare a national digital content industry demonstration base and when success will be given certain incentives to

The Fiscal and Tax Preferential Policy of Industrial Development

5.3.1. Fiscal Subsidies

Set up the evaluation standard of key enterprises for different industries of digital content, focus on financial support for a number of key enterprises with 3-5 years and make it become the industry's leading enterprises. Also encourage domestic digital content leading enterprises move into Shanghai, Offering active support in registration, operation and other aspects to corporate headquarters which move to Shanghai.

Support projects listed in the directory guide by the municipal propaganda culture, city software and integrated circuit industry development special funds, municipal science and technology special funds in accordance with relevant regulations. Renew the catalog of guide in digital content industry of city every year, Give subsidies or discount loans policy support to key projects which satisfy the requirements of "shanghai service industry development direct funds use and management method" in accordance with the "method" regulation.

Encourage and support the digital content companies declared national major projects of science and technology, 863 plan, the national new key product plan, state services development guide fund and national electronic information industry development funds, providing 30%-50% funds support for the national project according to the relevant provisions of national government and municipality.

Support Key projects of new and high technology industrialization, major scientific research projects and public service platform projects that implemented by digital content enterprise from city special funds for independent innovation and industrialization of high and new technology development according to relevant provisions of the "administration measures for special funds of Shanghai independent innovation and high-tech industry development".

5.3.2. The Preferential Tax Policy

Encourage digital content enterprises with certain strength and size to declare national high and new technology enterprise and advanced technology service enterprise, and the income tax shall be levied at a reduced tax rate of 15% when identified as a national high and new technology enterprise. Make administrative fees deduction to enterprises that engage in digital radio, film and television, network transmission, digital publishing, animation games, cultural creativity innovative enterprise, high-tech enterprise or high-tech projects according to the regulations; use the amount of the local profit from actual corporate income tax pay as measuring basis in the first 3 tax years, Check and arrange the bounty to support the development of the enterprise specially;

Support general digital content enterprises to declare software companies .New digital publishing company income tax shall be exempted the first and second years, and shall be levied by half in the third to fifth years when identified as software production enterprises since the profit-making year, But when the enterprise has certain strength, can encourage it declare as the state planning layout of the key software enterprises, and when considered to be within the state planning layout of the key software enterprises and not enjoy tax breaks, the enterprise income tax shall be levied at a reduced tax rate of 10%.

Actively guide digital content products enjoy preferential tax policies of software product. Software products developed and produced by digital content enterprise which may be general VAT taxpayer on its own, levy 17% VAT of the statutory and implement the refund in accordance with the relevant provisions when the part is beyond more than 3% of the actual tax burden.

5.3 Investment and Financing policy of Industrial Development

Set up the municipal investment fund of digital content industry, promote resources reorganization and structural adjustment, and drive social capital to invest in the digital content industry. Specific sources of funds, operation way and operating mode is as shown in figure 8.

Put the digital content industry credit financing into key areas of regional credit policy, encourage financial institutions to further innovate services, implement loans of referential interest rates and other financing policy to digital content industry project. Establish intangible assets evaluation system and credit guarantee system to provide intangible assets loan.

Encourage all kinds of digital content guarantee agencies offer project financing guarantee service for small and medium-sized enterprises. Actively attract domestic and foreign venture capital firms, encourage them to establish the risk investment company of a joint venture, explore to establish the "startup investment loan guarantees ten" business model, and provide guarantee funds for digital content companies.

Support digital content enterprises to finance and refinance by listing on the stock market. Reward digital content companies which complete financing in the listed capital market and raise enough funds ,or refinance through issue a rights, issue new shares, convertible bonds and other forms according to the elated policies and regulations of municipal government

Encourage digital content enterprises to issue bonds, give a one-off 1.5 % fee subsidy to digital content enterprise which issued Long-term bonds (including small and medium-sized enterprise debt collection) and medium-term notes, according to the actual financing amount.

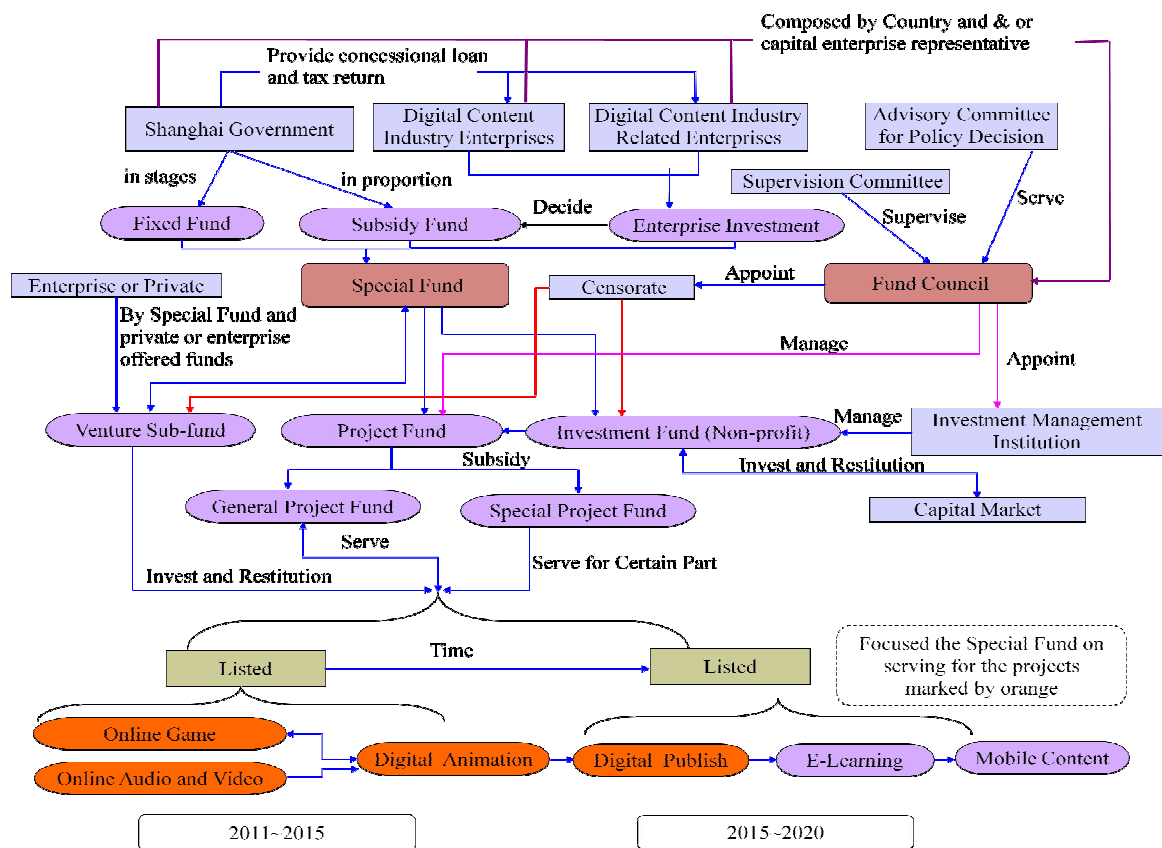


Fig.8 Digital Content Industry Investment Fund Operation in Shanghai

5.5 Talent Support Policy

Implement personnel training projects, speed up the training of specialists, strengthen the construction of digital content demonstration school, give certain subsidies to professional colleges and universities, scientific research and training institutions and cultural enterprises from special fund of the city digital content industry development every year.

Encourage social forces to set up digital content training institutions, build information management system of digital content network education training based on a training service platform, develop education platform construction of digital content network.

Strengthen the cultivation and introduction of talents, once identified as talent of high-tech enterprise digital content introduction can register in accordance with the relevant provisions of the "Shanghai introduce talents for the permanent residence try out method". Talents once identified as needed by software enterprises in the digital content field, can enjoy relevant preferential policies according to relevant provisions.

6. Conclusions

This paper analyzes the current situation of the Shanghai digital content industry development ,also the needs of digital content industry based on the opportunities brought by "three networks integration", and discusses the growth mechanism and development framework of digital content industry chain on the basis of theoretical analysis and deep research, from the formation ,the multidimensional extension and consolidation of the digital content industry chain, in the end, it studies countermeasures to promote the development of the Shanghai digital content industry from a series of existing problems, then provides decision-making reference to the relevant departments of the government.

References

- Bill Mickey. Special Report: State of the Content Industry[J].E-content,2001(24): 20-21
- Warren P, Greenop D, Crawley B. The Content Industry-Convergence and Diversity[J].Journal of the Institution of British Telecommunications Engineers, 2001(2):59-66.
- Liu Dawei. The Digital Content Industry and Virtual Cluster[J]. International Conference on Management Innovation, 2007, 1(2):1151-1154.
- Yong Gyu Joo, So Young Sohn . Structural Equation Model for Effective CRM of Digital Content Industry[J].Expert Systems with Applications, 2008, 34:63-71.
- Peng feng. Digital Content Industry Development Analysis under The Background of Three Networks Integration[M].Nanjing: Nanjing University of Posts and Telecommunications, 2008.
- Ran congjing, Zhao Ruihan. International Research Review on Information Content Industry [J]. Journal of intelligence journal, 2009, 29 (1) : 1-5.
- Peng Zhubin. Research on China's TV Content Industry Chain Growth[D]. Changsha: Hunan University, 2008.
- Luo Haijiao, Ma Hai. Forecast and Analysis on Shanghai Digital Content Industry[J]. Journal of Chinese information industry, 2010, 1:105-109.
- JinSong. Research on Creative Industry Chain Structure and Integration-take Animation Industry for Example [M]. Beijing: Beijing transportation university, 2006
- Li Jing Li Linghan. Problems Existing in The Development of China Digital Content Industry and Government Regulation [J]. Economic research Tribune, 2009, 4:21-22.
- Xu Xueyuan. The Problems Existing in The Digital Content Industry Development of China and Its Countermeasures [J]. Science and technology and economic development intelligence, 2006, 4:124-127.
- Wang Jin. Research on The Convergence of Digital Content Industry Development[M]. Beijing: Beijing University of posts and telecommunications, 2010.
- Fan Lili, Chan RuiFang. The Development Initiatives and Enlightenment of The Digital Content Industry in Taiwan .Theory and explore [J].2006, 6: 670-673.
- Hu zaihua. Research on Characteristics, Present Situation and Development Strategy of Digital Content Industry[M]. Wuhan: central China normal university, 2006.
- Lai Maosheng, Ye Yuanlin, Shuan Hui. See Development of Digital Content Industry from The Industry Integration[J]. Journal of intelligence science, 2009, 7:961-964.