

# The Innovative Pattern of Bulk Commodity Supply Chain Based on Internet Finance

Liyong Chen and Xinwei Gao

**Abstract** The development of electronic bulk commodity trading market is booming in China at present. The role of supply chain finance (SCF) financing business is increasingly important in commodities trading. It can solve the problem of financing difficulties, reduce financing costs and raise the efficiency of the trade by supply chain finance. With the flourish of Internet technology, such as E-commerce, Internet of things, big data, cloud computing and so on, supply chain finance has turned into the online financial supply chain from offline to online. As a new financial pattern, Internet Finance (ITFIN) is also appeared because of the organic collection of Internet technology and the financial function. This paper analyzes the pattern of Internet finance, the situation of electronic bulk commodity trading market and developmental history of bulk commodity chain finance in China. Finally it proposes the financial innovative pattern of SCF + ITFIN.

**Keywords** Bulk commodity · Supply chain finance · Internet finance · Financial pattern innovation

## 1 Introduction

Internet financial is one of the hot topic for scholars to study. The definition of interconnected financial has generalized and narrow meaning. In general meaning, as long as the financial activities are based on the Internet can be considered to the Internet finance (ITFI) in the world. It not only includes the Internet financial transactions and services, also includes Internet financial security and supervision in the related fields, and so on. While in a narrow sense of the Internet financial means only the network bank, securities, insurance, trust and other financial services

---

L. Chen (✉) · X. Gao  
School of Economics and Management,  
China University of Petroleum (East of China),  
Qindao 266580, Shandong, China  
e-mail: chenliyongde@163.com

network. Allen et al. [1] focus on the electronic third-party payment system, the operation that financial services companies on the network financial and the reaction that financial markets to the network financial. It shows the powerful influence of the Internet financial. Yang [2] thinks ITFI is a new financial system which is based on the Internet channel, and different from the traditional finance which uses the electronic computer technology.

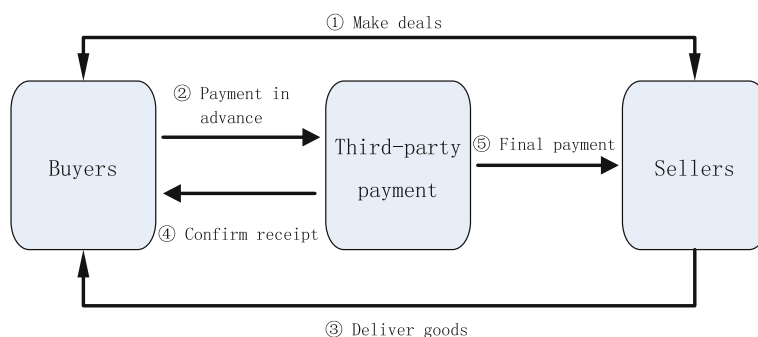
The Internet has been widely used and integrated into our society now. We can foresee that the next 10 years is the golden decade that is the innovation and development of Internet technology, E-commerce, Internet of things, big data, cloudy computing and so on. In such a background, electronic commodities trading market also showed a trend of vigorous development. With the support of national industrial policy guidance, many parts of the country and the enterprise started trying to informationize transformation of traditional commodity trading markets, trading and management innovation. The ecological chain including of online trading, third-party payment and the third party logistics has been gradually formed. The influence of Internet financial for commodities financing is also growing.

## 2 The Pattern of ITFI

ITFI is a new financial pattern with the aid of mobile payment, search engines, big data, cloudy computing and other information technology. It has some functions, such as financing, cash payment and information intermediary etc. [3] ITFI activities can break through the limit of time and space and greatly reduce the transaction costs of financial stores. Its form is Internet banking, peer to peer (P2P), network borrowing, electricity business financing, fund management, the third-party payment etc. There are three kinds of ITFI pattern which is suitable to combine with bulk commodity electronic trading.

### 2.1 *Third-Party Payment*

Third-party payment, as a trading platform, is the intermediate platform which can validly make those of merchants, consumers and various commercial banks together. Both buyer and seller can ensure their legitimate rights because the capital is supervised in the trading process by banks. With the prosperity of the Internet, third-party payment industry is also developing fast. There are very various third-party payment products such as Alipay, Tenpay, WangYiBao and so on in China. The third-party payment business process is shown in Fig. 1. As the Fig. 1 shows, there is the third-party pattern. Firstly buyers and sellers make business deals online by third-party payment platform. Secondly buyers take payment in advance for third-party payment platform. Then sellers sent out the goods and buyers confirm receipt. Finally third-party payment pays for the seller.



**Fig. 1** Third-party payment pattern

With the development of the Internet, the third-party payment is constantly innovating. Its payment method is turned from the online to the mobile payment and so it expands the pay channels. In essence, third-party payment is a credit guarantee service. It can make both sides fully trust through controlling the trading funds.

## 2.2 P2P Online Credit Loan

P2P (peer to peer) online credit loan is a new form of credit business in the Internet age. Capital providers and demanders can direct docking by P2P instead of bank. Not only can it increase income, but also reduce the cost. It relies on the Internet technology, emphasis on the cooperation between customer services, and its social influence gradually expands with the increasing number of people who take part in P2P. On the one hand, small investors who have large or sporadic extra cash need to look for investment channels through P2P. On the other hand, a large number of small and micro enterprises need to loan money. There is a very large private capital lending market. And the development of Internet banking makes this kind of private lending network and popular.

With the rise of the Internet credit platform such as PaiPai loan, RenRen loan, and so on, a growing number of people began to understand and contact with this new financial products in China. P2P online credit loan business process usually includes the following steps. ① Potential borrowers understand the relevant project loan interest rates through the network platform, find the right interest rates for registration and upload related applications for loan information. ② P2P platform reviews the projects and determine the final loan interest rate. ③ P2P platform publish news about the financing projects and financing rates to investors. Investors decided to invest by the comparison of those projects and take investment funds into the project's exclusive account. ④ P2P platform down money that all investors collect into N groups according to certain amount. P2P platform will sign an

agreement with the borrower and transfer money to the borrower after the financial raise. ⑤ After getting the loan, P2P platform manages the credit repayment and requires to remit the money to lenders. Investors can determine whether to continue lending or get their money back according to the payment situation.

We can learn from operational processes of P2P platform that P2P platform can reduce risks for investors and strengthen the risk management and control by itself.

## **2.3 Crowdfunding**

Crowdfunding financing which is developing rapidly in recent years is an important part of ITFI. The operation of crowdfunding financing can be divided into three stages: project preparation, project financing and project business. The stage of project preparation is preparatory work before the crowdfunding platform shows and raise money. Specifically the stage includes the promoter project application and crowdfunding platform review. The stage of project financing is the entire financing process which from the project to show to the harvest. This stage includes project evaluation, project support, financing management, commission harvesting, harvesting financing, etc. The stage of project business is the whole process of project management to the distribution of outcomes after completion of financing.

## **3 Analysis the Situation of Electronic Bulk Commodity Trading Market**

Electronic commodities trading also known as online spot trading and spot trading of shipping. It is based on the Internet and electronic trading platform as the basis. And the buyer and the seller must pay the security deposit before they enter the market. The means of exchange is centralized price bidding and electronic matching. There is the risk management system, which includes price limits, no debt settlement on the day, forced liquidation. Its delivery period normally deal within a year. The electronic trading market adequately solves the bottleneck problem of information source, customer source, online settlement, electronic business logistics, etc. But the development of commodity trade in China is not plain sailing in recent years. There are the main problems following:

### **3.1 Problem of Financing Is Exacerbate**

With the credit risk of steel trade surges, the defaulted behaviors are spreading, banks and investment institutions have been evacuated from the market, and banks

loan to companies delay. These conditions can make the problem of bulk commodity financing more difficult. So supply chain finance (SCF) gradually become bulk commodities financing solutions and new developmentally hot spot.

### ***3.2 Traditional Steel Trade Urgently Need to Fine the New Path to Develop***

There were almost 150000 steel business teams in China. But about half the teams have been out of the market at present, 20 % of the number of the teams which don't be leaved can't normal do business become the shell companies. These business teams who really able to maintain the business levels which like the levels before 2010 less than 40 % of them. So far, two-thirds have dropped out or are being withdrawn from the market. And the reshuffle will continue.

### ***3.3 Business Change with the Development of the Internet***

Platform of the Internet effects a positive impact as rapid development of mobile Internet and economy of Internet that make business change. As a new network economy activity, electronic commerce is developing rapidly in recent years. E-commerce has become an effective means to enhance the economic competitiveness of a country, to win the global allocation of resources advantage. The characteristics of lower cost, network more widely, aging faster, service better and more professional are driving steel industry to developing platform. Electric business platforms such as JinYinDao, XinYiLian and TianWuDazong have sprung up for rapid development.

Supply chain financial services appeared to repeat the pledge of warehouse receipts, false pledge and other issues In Chinese electronic commodities trading market because of these factors of the Macro economic growth which is slowing, supply and demand and the price of the bulk commodity weakness.

## **4 The Developmental History of Bulk Commodity SCF**

Supply chain finance (SCF) is a comprehensive service. It takes the core enterprise in the supply chain and its associated upstream and downstream enterprises as a whole, analyzes trading parties of supply chain and trading patterns with scientific method, protects core enterprise and upstream and downstream enterprises of supply chain normal production and operating activities through efficient capital allocation and provides different links and nodes in supply chain of the credit support, billing and financial services. The development of SCF is four stages: traditional credit financing period, SCF 1.0 era, SCF 2.0 era and SCF 3.0 era.

4.1 Traditional Credit Financing Period

The traditional credit financing is way of financing before SCH generated. It mainly includes: mortgage, guarantee loans and credit loans. Traditional bank credit pays attention to enterprise’s own operating conditions. The loan funds cannot be monitor the specific flow, loan link complex and long cycle. All these bring great difficulties for small and medium-sized enterprise financing. And it led to the financing pattern of SCF 1.0.

4.2 SCF 1.0 Era

The characteristic of SCF 1.0 era is the financing method which is around the each core enterprises of upstream and downstream of supply chain. SCF 1.0 pattern shows 1 + N pattern. As the Fig. 2 shows, ‘1’ means core enterprise and ‘N’ means each enterprise which is around the core enterprise upstream and downstream of supply chain. The pattern of SCF ‘1 + N’ solve the financial problem of the chain upstream and downstream enterprises by using credit standing and respectability of the core enterprise. But its efficiency is too low because bank financing services with the method of off-line manual. It is also failing to form a network service because the service is perpendicular to the core enterprise chain and lack of deep understanding of industry. Then SCF 1.0 come to the SCF 2.0 era.

4.3 SCF 2.0 Era

SCF 2.0 era is online supply chain finance (OSCF) M + 1 + N pattern. OSCF M + 1 + N pattern makes the supply chain finance by chain to change into platform and online and improves financial efficiency of SCF. Because it bases on third-party electronic business platform as the core, combines many of the core business, finance companies and banks cross on the chain. And it is unified management and

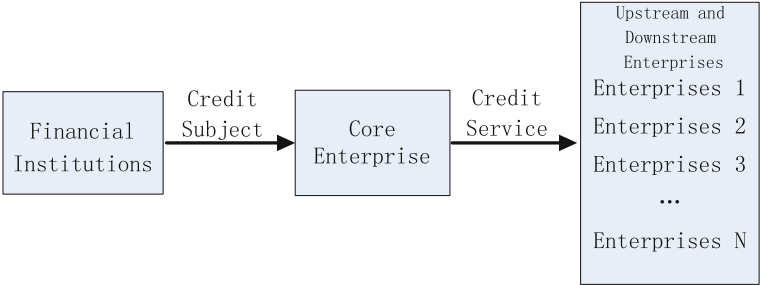
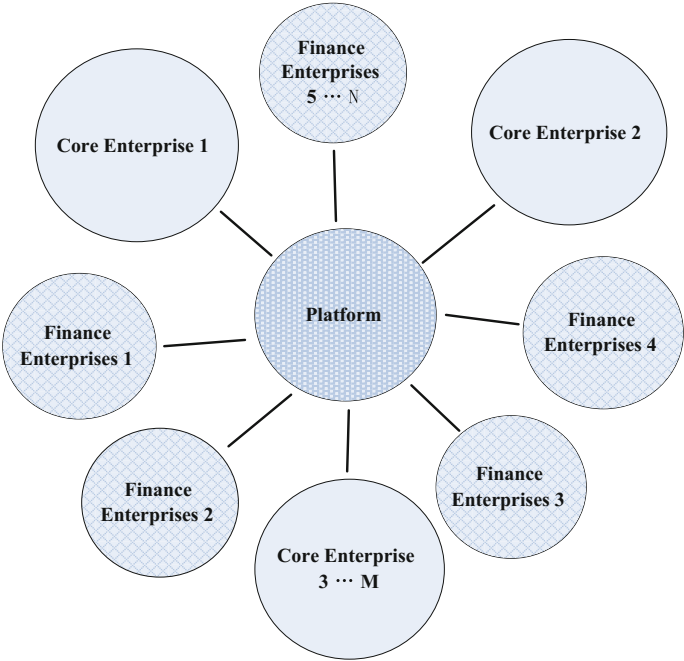


Fig. 2 SCF 1 + N pattern



**Fig. 3** OSCF M + 1 + N pattern

reviewed information of the chain by the third-party electronic business platform. As the Fig. 3 shows, ‘1’ means the third-party electronic business platform, ‘M’ means all kinds of core enterprise and ‘N’ means the various kinds of finance enterprises of the upstream and downstream chain.

**4.4 SCF 3.0 Era**

SCF 3.0 era is OSCF + ITFIN pattern. SCF + ITFIN is a new financial pattern in the future because it is driving by ‘Internet +’ and it faces the current demand and the problem of the financial environment of bulk commodity.

**5 Innovative Pattern of the SCF + ITFIN**

**5.1 The Concept of SCF + ITFIN Pattern**

SCF + ITFIN pattern is a comprehensive financial service which combines supply chain finance and Internet finance and provides the services of P2P, crowdfunding,

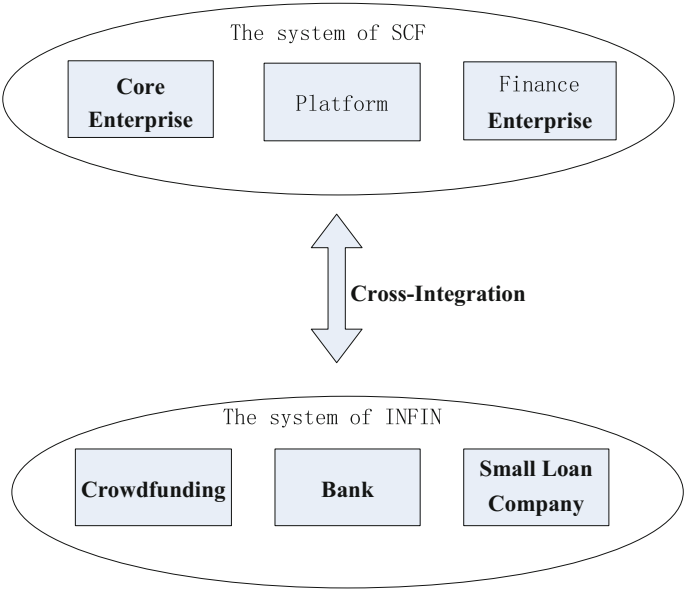


Fig. 4 SCF + ITFIN pattern

settlement funds and factoring, etc. It relies on Internet technology and Internet of things technology, comprehensively utilizes the relevant data of the chain and industrial resources and makes institutions such as financing businesses (individuals), logistics companies, banks, third-party payment, P2P platform and small loan companies cross-integration. As shown in Fig. 4.

5.2 Innovative SCF + ITFIN Pattern

Supply chain finance and the Internet finance are Continuous converging and innovation. And it shows a new developmental model because of the shock of ‘Internet +’.

5.2.1 Developmental Pattern of Electric Business Platform

The developmental pattern of electric business platform mainly means that the electronic business platform analyzes the trading date of the customers on the platform comprehensively. And it provides financial services to upstream and downstream customers of supply chain according to customers’ demand. For example, SCF business of Suning Appliance is full use of the customers’ resources and customers’ information of the Internet. And it forms the ecological chain



Suning on the basis of convenient customer service and experience. So Suning can achieve to provide services of SCF to upstream and downstream customers of the supply chain by Suning XiaoDai. The first half of 2015, Suning Appliance had paid nearly 7 million in loans to the suppliers and consumers through Suning XiaoDai.

### **5.2.2 The Developmental Pattern of Industry Consulting Firm**

The developmental pattern of industry consulting firm means that consulting firm of industry uses platform to provide products and services of SCF to upstream and downstream customers of the chain. For example, Mysteel of Shanghai is an integrated information services company of Internet, which engages in business information services and value-added services of steel and relevant industry. Revenue of Mysteel mainly comes from membership information services, training services and consulting services. Mysteel set up a spot trading platform of steel and silver. And the platform develops the SCF through accumulation of trading information and the support of big data. It also introduces banking, increases investment and takes other ways to support the service of the SCF.

### **5.2.3 The Developmental Pattern of Information Management Service Provider**

The developmental pattern of Information management service provider means that some software systems and services and developmental corporation use advanced software products of enterprise information management. On the basis of helping companies achieve intelligence of production and operation, office and other data, it provides supply chain finance service to the upstream and downstream businesses by accumulating the information superiority of customers and increasing the industry reputation. For example, the company of HanDeXin earned the main income because of the business of software implementation services in the first half of 2015.

### **5.2.4 The Pattern of the Industry's Core Enterprises**

The pattern of the industry's core enterprises means traditional industry's core enterprises provide SCF service by integrating within the industry and the upstream and downstream customers and information, building or buying electric business platform for increasing import trade flows and carrying out some service such as storage, transportation, supervision, logistics and factoring, etc. For example, the joint-stock company of ChuanHua purchases the ChuanHua's logistics of the major shareholder. And ChuanHua make a platform of Internet, logistics supply chain and finance services.

## References

1. Allen F, Mc Andrews J, Strahan P (2002) E-finance: an introduction [J]. *J Financ Serv Res* 22:5–27
2. Yang D (2014) Analysis of the internet financial supervision system [J]. *China Finance* 8:45–46
3. Yan H, Wang WL (2015) Financial supply chain innovation at the internet financial perspective [J]. *Acc Finance* 3:78–95

Proceedings of the Fourth International Forum on  
Decision Sciences

Li, X.; Xu, X. (Eds.)

2017, XI, 899 p. 111 illus., 64 illus. in color., Softcover

ISBN: 978-981-10-2919-6