Computerization of Settlement Systems and Changes in Legal Theories of Settlement

A tentative argument about changes and influence on the legal theories of settlement incidental to the computerization of settlement systems

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Abstract

The emergence of the Internet has had a great impact on the world of commercial transactions. Looking at means of payment, it became easy to make an online credit card payment, and it also became possible to make a payment directly from an account through Internet banking services, etc. Due to these, e-commerce has been rapidly spreading not only in business-to-business transactions but also in business-to-consumer transactions while the market has been ever-expanding. At the same time, the rapid expansion of e-commerce has brought about major changes in the territory of "settlement," which is necessarily incidental to transactions. Paper-based payment by check, which is a typically conventional method of settlement, has been used in less cases due to a changing connection between sales transactions and settlement with the progress of information technology and the expansion of Internet-based financial transactions. In place of that, some sort of electronic means or methods have been used for transfers and credit card payments. Computerization is also leading securities transactions to become paperless. New ideas have emerged in terms of legal concepts, legal theories and legal constitutions concerning conventional settlement. Based on the above basic recognitions, this paper first considers the details and process of specific changes in methods of settlement due to computerization of settlement.

This paper next compares new theories with old ones to make clear that conventional legal theories of settlement are transforming with the computerization of means and methods. Through that process, this paper analyzes and considers the concept of "information," including as financial data and commercial data, and the transfer thereof, from a legal viewpoint while looking at recent movements toward introducing the legal theories of property rights in a new sense. In addition, this paper points out the new trend of legal theories of settlement by introducing the latest "data ownership theories" and ideas based on property rights, which serve as a basis for the mechanism of the Law Concerning the Transfer of Short-Term Corporate Bonds, and by tracking the development of various theories. However, this paper does not easily rely

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on property right-based theoretical framework, but again looks at conventional legal theories of settlement, which have been explained in the credit-based theoretical framework, and points out from the viewpoint of the link between settlement and commercial transactions, etc. which are underlying relationships of settlement, that the original purpose of settlement is to eliminate debtor-creditor relationship. This paper then argues tentatively that the legal constitution of data flow in the settlement process should be explained while considering both legal theories—debt-credit theories and property right theories—in parallel.

Introduction

Paying for goods or services by electronic means is not a new idea at all. In our everyday life, there are already many cases in which part of the payment process is carried out by electronic means. From the 1970s onward, means of settlement have been computerized rapidly with the advance of computer networks. The emergence of the Internet further pushed forward such move, leading to abrupt globalization. This had a great impact especially in the world of commercial transactions. Since it became easy to make an online credit card payment and it also became possible to make a payment directly from an account through Internet banking services, e-commerce has rapidly spread in business-to-business (B2B) transactions and business-to-consumer (B2C) transactions, and the market has been rapidly expanding. This can also be known from the following fact: in the "Survey on the Market Size and Status of e-Commerce" conducted every year (joint survey by the Electronic Commerce Promotion Council of Japan (ECOM), the Ministry of Economy, Trade and Industry and the NTT Data Institute of Management Consulting, Inc.), the value of B2B transactions exceeded ¥77 trillion (previous fiscal year: ¥46 trillion) and that of B2C transactions exceeded ¥4.43 trillion (previous fiscal year: ¥2.685 trillion) in fiscal 2003, and the value increased by 67.2% and by 65% respectively compared to the previous fiscal year as well as the market expanded nearly nine-fold for B2B transactions and nearly 69-fold for B2C transactions for the last five years. (Incidentally, these values far exceeded the numerical targets for 2003 (¥70 trillion for B2B and ¥3 trillion for B2C), which were set in the e-Japan Priority Policy Program).

Such a rapid expansion of e-commerce has also brought about major changes in the territory of "settlement," which is necessarily incidental to transactions. Due to the changing connection between purchase and settlement with the progress of information technology and the expansion of Internet-based financial transactions, paper-based payment by check has been used in fewer cases worldwide, and some sort of electronic means or other measures, including transfers and credit card payments, have been increasingly used.[1] Online financial settlement using the Internet, IC card or other means is no longer special for users, including general consumers. This can be

[1] The following statistics are also available, though they are a little old.
<Table Changes in Means of Payment in Major Countries> <based on the number of transactions; 1999) (Figures in parentheses are those from 1995.)

	Check	Account transfer	Credit card payment	Automatic withdrawal
U.S.	68% (76%)	3.2% (2.4%)	26.3% (20%)	1.6% (1.2%)
U.K.	20% (40%)	17% (18%)	35% (24%)	19% (16%)
Germany	3% (7%)	50% (48%)	4.8% (3.5%)	40% (41%)
Sweden	0.3% (n.a.)	94% (95.6%)	2.2% (1.3%)	3% (3%)

Note: For Japan, no statistics are available on the number of overall transactions, so ratios are unknown. However, the table below shows the increase and decrease of the number of transactions for each means. Figures in parentheses are those from 1995.
Unit: ¥ million

	Check	Account transfer	Credit card payment	Automatic withdrawal
Japan	239.3 (305.8)	2,136 (1,842)	824.8 (3,671.8)	n.a.

Source: Statistics on payment systems in the Group of Ten countries (Figure for 1999), etc.

seen from the fact that the number of accounts subject to Internet banking services (at that time, Internet banking services were called “personal computer banking” or “firm banking,” and ordinary telephone lines were often used instead of the Internet), which was only about 0.3 million in 1998, increased to about 6.65 million in 2002 as shown in Figure 1 (result of survey by the Center for Financial Industry Information Systems[2]).[3]

<Figure 1　Changes in the Number of Internet Banking Accounts (Accounts Subject to Firm Banking Services) in Japan>

Year	1998	1999	2000	2001	2002
Number of financial institutions providing Internet banking services	445	436	481	575	498
Number of Internet banking accounts	297,405	348,119	364,739	1,497,937	6,647,735

Source: Extracted from the White Paper on Financial Information Systems (Center for Financial Industry Information Systems) for each fiscal year.

These Internet-based electronic financial services have spread not only because the volume of processed settlement increased due to an increase in settlement cases with the expansion of e-commerce, but also because a wide range of menus were prepared to meet various needs, and diverse settlement services became available due to connection to the Internet and technological progress, including those involving the exchange of not only monetary data relating to credits and debts in transactions but also information (data) on the overall transactions showing a underlying relationship of the transactions. In such a situation, however, computerization of commercial transactions and payment as well as the legal constitution thereof were more likely to be discussed in several parts with respect to each specialized territory, and there has not been much comprehensive consideration. Therefore, this paper considers the questions of how the computerization of settlement and the form of settlement change with the emergence and development of e-commerce, what impact they have on the legal theories of settlement, and by what

[2] Center for Financial Industry Information Systems, White Paper on Financial Information Systems (for each fiscal year).

[3] According to a survey on experience in Internet banking (as of March 2004) by Info Plant Co., Ltd. (hereinafter referred to as Company I (http://www.info-plant.com/)), 78.3% answered that they have “used” while 21.7% answered they have “never used,” showing about a 59-point increase in four years. Regarding the intention to use Internet banking in the future among those who have never used it (65 persons, accounting for 21.7%), 39.1% of them answered that they “want to use it if the occasion arises,” 48.4% answered they “don’t know” and 12.5% answered that they “will never use it.” About 40% showed a positive attitude. Based on this result, Company I predicts that Internet banking users will further increase in the future.

legal theories they are rationalized. For that purpose, this paper first mentions changes in the business model, i.e. how the forms of settlement have actually changed. This paper explains and considers these changes while introducing a legal constitution of remittance and transfer based on conventional debt-credit theories, as well as the legal theories of property right theories in securities settlement, which are often seen in discussion over the Law Concerning Transfer of Short-Term Corporate Bond (Law No. 75 of 2001; hereinafter referred to as Corporate Bond Transfer Law) and the legal theories of property rights such as information property right theories, which is a relatively new concept, in addition to the trend toward computerization of settlements. On that basis, this paper develops a tentative argument focusing on relative relationships between the legal theories of fund settlement and the legal theories of credits, which have been transfiguring to the legal theories of property rights (ownership) in the computerization of settlement, on the premise that credits and debts exist in casual relations in transactions.

Incidentally, although this paper mentions various views that are different from conventional views and interpretations, these views belong to the author and not the organizations to which he belongs.

Chapter 1 Electronic Settlement Systems and Changes in Settlement Business Models

1-1. Definition and Concept of Settlement

1-1-1. Definition and Concept of Settlement in Business

It is important to review the concept and definition of a settlement, i.e. "what a settlement is," before arguing the electronic settlement system. The theme of this paper is the legal analysis of settlement using electronic means. Firstly, this part mentions the concept of settlement in business, which is somewhat different from that in jurisprudence. (The legal concept of settlement is bound by the philosophy of business law, though it is based on the concept in business. Therefore, a legal definition of "settlement" is mentioned in Chapter 2 separately from the definition thereof in business.)

Looking at the meaning of the term "settlement" in Japanese dictionaries, etc., "settlement" means "terminating sales transactions by delivering and receiving payment, securities, goods or margins" (Daijisen). In the contemporary commercial transactions, settlement is made through delivery and receipt of cash, sending of bills and checks, or remittance, etc. According to the analysis of actual settlement, settlement is considered to consist of four hierarchical concepts (see Figure 2: Conceptual Diagram of Settlement). The first concept is the definition "settlement = termination of sales transactions = elimination of credits and debts." The second is specific means of settlement, that is, cash transfer, remittance, direct debit, check, bill payment, credit card, etc. The third is a settlement scheme using these means, for example, ordinary settlement netting, credit settlement, bill payment, factoring, and lump sum payment. The fourth is the concept of media used in settlement (that is, what tools are used). Regarding media, it is possible to divide them in detail, for example, electronic ones or non-electronic ones, network-based or magnetic card-based, and open or closed. In actual settlement, these concepts connect with each other. For example, in the case of "payment by remittance," settlement is made by using a means called "remittance." In the case of factoring, one transaction is completed by two means, notification of payment data and remittance.

<Figure 2 Conceptual Diagram of Settlement>

<table>
<tr><td rowspan="5">Concept of settlement</td><td>Scheme</td><td colspan="4">Ordinary settlement, netting, credit, bill payment, collection service, re-invoicing, factoring, lump sum payment, etc.</td></tr>
<tr><td>Means</td><td colspan="4">Cash, remittance, direct debit, check, bill, credit card, etc.</td></tr>
<tr><td rowspan="3">Media</td><td>Open</td><td>Closed</td><td>Card</td><td rowspan="2">Paper</td></tr>
<tr><td colspan="2">Network (cell phone, computer, etc.)</td><td>Magnetic/ IC card</td></tr>
<tr><td colspan="3">Electronic</td><td>Non-electronic</td></tr>
<tr><td>Definition</td><td colspan="4">Settlement = elimination of credits and debts</td></tr>
</table>

Source: Prepared by referring to the conceptual diagram, etc. in "Report of (3rd) Study Group on Electronic Settlement" (1999), Center for Financial Industry Information Systems.

1-1-2. Concept of Electronic Settlement

When considering the concept of "electronic settlement" in terms of a broad concept of settlement as above, attention has to be paid to the existence of two elements.

Firstly, electronic settlement is generally defined in a narrow sense[4] as "transmitting information on settlement" by electronic means in an open network, though settlement originally fulfills two functions, (i) transmitting information on settlement and (ii) transferring funds. (On the contrary, even though settlement is made by electronic means, settlement between financial institutions does not fall under electronic settlement in this sense since the method of transmission is closed.)

Furthermore, there is a definition in a broad sense, which covers electronic money, etc. In general, this broader definition is used as a meaning of electronic settlement. According to the methods of classification of concepts as above, electronic money is considered to be one for IC cards/Internet-based deliveries and receipts using the electronic record of value as media, in terms of (2) transferring funds.

The next part looks at the process of computerization of settlement while taking up individual specific settlement systems with the above-mentioned scope and concept of settlement in mind.

1-2. Computerization of Settlement Systems and Classification Thereof

1-2-1. Existing Methods of Settlement

(1) Cash Settlement

Cash settlement has the following advantages: (1) it is the simplest and most effective means of settlement, (2) cash is easy to transfer and carry along, (3) no cost is required for transactions, and (4) no audit trail of a transfer route is left. On the other hand, cash settlement is preferred in transferring crime-related funds. At the present stage, it is estimated that about 80% of settlement transactions in the world are settled by cash. Cash is used mainly in purchasing small-value goods. As proof of that, there is statistical data showing that the average value of cash transactions is 11 dollars in the case of the United States.[5]

Users' access to cash has recently become easier due to dissemination of automated teller machines (ATMs). However, from recent moves over electronic financial services (that is, moves for expanding use of Internet financial services) as introduced at the beginning of this paper, it is obvious that users have shifted from cash settlement to settlement by electronic means due to disadvantages, such as costs for card replacement and cash storage as well as the risk of card counterfeiting and that the banking industry is making various efforts.

(2) Settlement via Financial Institution (Mainly Banks)

As methods of settlement via bank, there are: (i) settlement by bill or check and (ii) settlement by remittance or transfer, as well as the recently available (iii) debit

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[4] Center for Financial Industry Information Systems, Report of (3rd) Study Group on Electronic Settlement (2000), p. 7.

[5] Miller, R., and D. VanHoose, Modern Money and Banking, 3rd ed. New York, McGraw-Hill International, 1993.

settlement in which the amount of payment is withdrawn from the outstanding amount of relevant bank accounts. Of these, (i) settlement by bill or check is now used for fewer cases as is known from the table in the Introductory Chapter, but it is still used in many fields of banking. Seen from customers, those who possess bills or checks request that money be deposited into their checking accounts or savings accounts for collection or the amount of payment be collected in order to get these bills and checks cashed. On the other hand, banks pay the amount of bills and checks, which are presented by other banks or the possessors thereof to get cashed, from relevant current accounts on the basis of customer's consignment.[6]

In (ii) remittance, payers instruct (request) their banks (paying banks) to pay the amount of payment to banks where payees have their accounts (receiving banks), and the paying banks give similar instructions to receiving banks, and thereby the amount of payment is deposited into the payees' accounts. Payers' purchase-money debts are settled by this deposited money. This is a form of settlement led by payers who are debtors. For this form, payers brought funds for payment to their banks or handed over a written request for withdrawal from their own accounts to request remittance in the past. However, it has become recently possible to request remittance via the Internet due to Internet banking services. (Even in this case, a mechanism of remittance is the same as in the past, though the Internet is used as a means of transmitting instructions.)

On the contrary, in the case of transfers, payees instruct paying banks where the payers have their accounts to withdraw the amount of payment from the payers' accounts and deposit that payment amount into their accounts. Since the payees instruct withdrawal from the payers' accounts, they are considered to be authorized to give instructions, and paying banks are considered to be authorized to withdraw money from the payers' accounts according to the payees' instructions. Unlike remittance, settlement is made at the initiative of the payees, who are creditors. This method is characterized by the fact that the payers' declaration of intention is not required with respect to every individual withdrawal in settlement.

Remittances and transfers are the same in the point that they are methods of settlement by sending cash. However, a transfer is used in paying debts that arise from continuous transaction, such as phone bills, electric bills and other utility payments and house rent, for a certain period of time. Normally, payers submit in advance a written request stating that they admit payees' authority to give instructions and grant the payees the authority to withdraw from their account. (However, to prevent unjust withdrawals, payees notify payers of the details of withdrawals in advance of the withdrawals.) Remittances and transfers are now most heavily used in settlement. In fact, many electronic settlement services, including requests for remittances through Internet banking services, are different from conventional methods only in the point that the method of giving instructions is computerized.

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[6] However, bills are now heavily used in the field of loans rather than in settlements. The following are still representative loaning methods for small business finance: loan on bills in which a promissory bill is issued before the loan, discount of bills in which commercial bills are discounted at the time of maturity, and loans secured by commercial bills in which loans are made on security of commercial bills. In that regard, the important functions of bills and checks are the payment function, remittance function and collection function, as well as the credit (guarantee) function in terms of loans.

(3) Debit settlement is a mechanism in which money is withdrawn from accounts at paying banks and is deposited into payees' accounts based on payers' cards and passwords. This is a form very similar to remittance. It is different from remittance in the point that payers' instructions are transmitted to paying banks through terminals installed at payees (outlets).

1-2-2. Electronic Settlement Systems

In addition to settlement systems by cash or via bank as mentioned above, various electronic settlement systems are now offered and planned in a reflection of technological advances. These systems can be classified into four types, (i) electronic bills and Internet payment, (ii) electronic money, (iii) mobile payment and (iv) open EDI. The following part presents a brief outline of them.

(1) Electronic Bill and Internet Payment

Electronic bill refers to a service in which the circulation of notes, which has been based on paper in the past, is conducted electronically.[7] In Japan, Shinkin Central Bank partly started an electronic bill service in 2002 (needless to say, transactions are based on agreements since there is no law concerning electronic bills).[8] This service was devised as one of the methods of solving problems in paper bills—(i) the burden of the stamp tax, (ii) storage and transportation risks and (iii) risk of loss and theft—in addition to the reality of decreasing the volume of bills circulated[9] and the points at issue, which are common to accounts receivable, such as increasing corporate bankruptcies and rising credit risk. (For the details of the electronic bill system, see http://www.sinkin.co.jp/scb/taikennbann/tegata1/htm.) Although a means of settlement evolved from this service is advocated as electronic credits, there is not yet a definite business model thereof. (For electronic credits, see "Report of the Subcommittee to Study Financial Systematization—Concerning Electronic Credits" by the Subcommittee to Study Financial Systematization, Industrial Finance Committee, Industrial Structure Council.)

On the other hand, Internet payment refers not to ordinary transactions between bank accounts but to settlement through payment services called "Paypal" or "Paydirect." This is a mechanism in which money is deposited and withdrawn by using various traditional means of settlement, including credit cards, commercial bank accounts and prepaid cards, based on the idea that the fund transfer will be simplified if payers and payees have their accounts at the same institution online. In the mechanism, a simple system is adopted in which e-mail addresses are used for the confirmation of the account ID. However, although the certainty of settlement is enhanced with the use

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[7] In that sense, electronic bills are different from check truncation, which had been examined by the Japanese Bankers Association until December 2000, in which paper bills are put into electronic data by a scanner, etc. (see Japanese Bankers Association, Concerning Basic Policies for the Introduction of Check Truncation (March 19, 2002)).

[8] Incidentally, regarding electronic bills, legal issues are considered in the following while referring to the electronic bill services of the Shinkin Central Bank: Sugiura, Matsuda, Ohtani, Morishita and Ikemura, Legal Study over Computerization (Paperless Transaction) of Bills and Checks, Financial Research and Training Center of the Financial Services Agency, vol. 5 (2003).

[9] In 1992, about 3.5 million bills were brought into clearing houses, but the number of bills brought decreased to about 1.7 million in 2002.

of traditional settlement systems at the mid point, some users doubt that financial institutions conduct exchange transactions or deposit affairs without a banking license since they cannot see the figure of these institutions. Therefore, some states in the United States still prohibit such business operations from the viewpoint of protection of users. In the United Kingdom, banks were recently permitted to provide Internet payment services to users as part of their services,[10] and this service now serves as one of the banks' strategies for taking in IT-savvy customers (customers who frequently access banks via the Internet and do not spend much money at bank counters). In Japan, this transaction is carried out as one form of bank services since it is considered to fall under the "exchange business" under the Banking Law.[11]

Internet payment is particularly used in settlement for Internet auctions and online shopping. The reconciliation of credits and debts in transactions established through action and the completion of actual settlement are linked to each other within the system.

(2) Electronic Money

Electronic money is a tool for small-value payment. Monetary value is electronically accumulated in IC cards, etc. and settlement is made with the use of that value. Although trial runs were actively conducted for electronic money in Europe and the United States as well as in Japan during a certain period, most demonstration trials were terminated in a short time because the concept of electronic money and the position thereof as a means of payment were not clear and also because electronic money was just not convenient enough. However, recently, electronic money has been rapidly spreading due to integration with a railway ticket or commuter pass and collaboration with mileage services. Electronic money services are thus on an expanding trend. Looking at foreign countries, electronic money integrated with a transportation card already started operating in Hong Kong and Singapore. In Germany and France, there is a move to promote electronic money as a tool for small-value payments.

(3) Mobile Payment

Mobile payment is a means of payment using a cell phone or PDA. The following two types compose the large framework thereof: (i) a type in which a communication device is used as a means of transmitting instructions in the same way as a computer in Internet banking services; and (ii) a type in which electronic value is recorded on a built-in IC chip and that value is used. Type (i) already started operating a few years ago. However, type (ii) has come to attract attention recently, and its operation as electronic money started this fiscal year.[12] Against the backdrop of a high diffusion rate of cell phones, the electronic money of type (ii) is planned to be used as a means of payment at retail stores and for public transport. It is appropriate to think of (i) together with (1) above since (i) is a new type of the method of transmitting instructions, while thinking of (ii) together with (2) since (ii) is considered to be equal to electronic money. (At the moment, mobile payment is also a tool for payment to stores and service

[10] Specifically, HSBC PayDirect Service. Through this service, the HSBC, a bank in the United Kingdom, aims to acquire customers with high IT literacy.
[11] For details, see the website of eBank Corporation (http://www.ebank.co.jp).
[12] http://www.nttdocomo.co.jp/p_s/service/felica/.

providers, but if it is used for payment between individuals (such use is already technically possible), it must be reconsidered from the legal aspect, such as the question of whether it falls under exchange.)

(4) Open EDI (Electronic Data Interchange)

Open EDI is a system in which banks receive payment instructions, etc. from users through an open network and carry out transfers between deposit accounts through electronic fund settlement, etc. This is a mechanism of conducting exchanges of electronic data on commercial transactions, which are underlying relationships of settlement, and exchanges of electronic data on fund transactions in an interlocking manner. For increased efficiency of fund operations and distribution as well as better inventory management, most large companies now adopt a mechanism in which differences are settled, through netting within their own business groups by connecting their EDI systems with a fund settlement center or a logistics center. In such a mechanism, sellers' needs are met through conversion to purchase-linked settlement by adjusting the timing of the settlement or through transmission of information on the underlying relationship of the settlement to sellers. In addition, since the number of payments is reduced, it is not necessary to access a bank's host computer for individual payments. Therefore, this is a way of giving consideration to economic efficiency. In other worlds, in EDI, the following two kinds of data are processed in an interlocking manner: (1) "financial (fund) data," which is a message about delivery of funds between parties to a transaction based on which monetary data is substantively transferred, and (2) "commercial transaction data," which is a message, including orders, claims and delivery concerning commercial transactions, between parties to a transaction. Financial data and commercial transaction data are not circulated around the same time, but they are relevant to each other to a certain extent.[13]

1-3. Introduction of Electronic Settlement Systems and Changes in Methods of Settlement

How has the emergence of such electronic settlement systems changed settlement systems as a whole?

Roughly summarized, the following four points are considered to be major changes. The first point is that the dramatic improvement in infrastructure, as represented by the development of computer technology and the Internet, significantly increased the processing capacity and the speed of settlement operations. In addition, operations requiring human procedure are minimized, which not only solved the issue of processing capacity and speed but also contributed to reducing costs for settlement. The second point is the issue of channel. In conventional settlements, service users have to go to a bank counter or ATM. Due to the spread of the Internet, however, users' computers and cell phones as well as multifunctional IC cards came to serve as channels, and thereby the world of settlement is moving into an wide-spread condition where settlement can be made anytime and anywhere. The third point is that a wide variety of enterprises are entering the settlement business. The emergence of Internet-based settlement systems remarkably reduced costs for the settlement business, leading to the

[13] Regarding relativity between "fund data" and "commercial transaction data" through open EDI, see Kinoshita Nobuyuki, Higano Mikinari and Kitora Junichi, Electronic Settlement and Evolution of Banks) (Nihon Keizai Shimbun, 1997), p. 137-.

foundation of Internet securities companies and pure-Internet-play banks in 2003 due to entry from outside. In addition, various companies started entering the world of electronic money in the form of prepaid cards, as is known from an example of the emergence of electronic money integrated with a transportation card. Moreover, financial systems are increasingly unbundled to reduce the burden arising as a result of the fact that settlement systems have recently become more complicated and diversified in the course of the introduction of IT. Companies which undertake the management and maintenance of systems for settlement business as well as these systems themselves are exercising great influence on the operations of settlement businesses, even if these companies do not directly participate in the entire process of the settlement business. Lastly, the fourth point is the progress of integration between fund transfer data (monetary data) and commercial transaction data, as is the case of financial EDI. The integration of these data not only increase efficiency in clerical work by interlocking the timing of payment in commercial transactions (advance payment, immediate payment and deferred payment) with information on the deposit of payment to facilitate checking with sales/purchase data (credits and debts) in ledgers, but also increases the efficiency of fund operations by companies. The third and fourth points refer to changes in the role of intermediaries who have engaged in settlement up to now. In short, intermediaries in settlement were banks in the past and they just let the fund transfer data go from right to left. However, new intermediary businesses, such as escrow services and online markets, emerged through interlocking with various commercial transaction data. In some businesses, commercial transaction data and fund transfer data are transferred in a package, showing expansionary changes in the scope and role of intermediaries who widely engage in the transfer of transaction data as well as financial transfer data. Of these two points, the third point is understood as the issue of the review of qualifications to enter. The fourth point is considered to be a new move to connect the flows of two types of data (fund data and commercial transaction data), which have been understood separately in a flow of “settlement.”

The next chapter considers how “settlement” was understood in the world of law in the past and how the progress of computerization of settlement will influence (or has influenced) conventional legal theories of settlement.

Chapter 2 Traditional Legal Theories Regarding Electronic Settlement

2-1. Legal Concept of Settlement and Existing Settlement Systems

2-1-1. Legal Concept of Settlement

"Settlement" and "settlement service," the terms that are frequently used in commercial transactions, have never been defined by law. Various descriptions of these terms exist. Generally, however, "settlement" is defined as the "termination of debtor-creditor relationships for a sales or financial transaction." "Termination" here means that the parties to the transaction are satisfied with the finality established as the whole of the transaction process ends[14]. This may mean that the debtor makes a payment to the creditor to end their relationship. Two companies may mutually offset debts and credits to terminate their debtor-creditor relationship and realize the finality. This may amount to a "settlement."

The term "settlement service" is also used frequently. This means that a third party conducts a business act to mediate the termination of the debtor-creditor relationships for a sales or financial transaction[15]." "Third parties" for electronic settlement include not only banks and other traditional financial institutions but also new "mediators" that provide settlement mediation services. Comprehensively, the scope of the settlement service participants may expand to include "funds for settlements" and "those involved in settlements including the parties (debtors and creditors) to transactions."

2-1-2. Legal Concept of Exchange Transaction

One reason that views are divided over settlements is that the settlements are confused with exchange transactions as provided in Article 10 of the Banking Law (in fact, some forms of settlements hardly differ from exchange transactions, as noted in 1-2-2 (3) Mobile Payment). An exchange transaction is generally defined as "a fund remittance without direct cash remittance between two locations that are physically and spatially distant from each other.[16]" Using an exchange transaction, a debtor can remit funds to a creditor safely and promptly, without conducting a dangerous act to bring cash or bills to the creditor.

Article 10 of the Banking Law apparently covers all kinds of exchange

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[14] Yoshiaki Koyama, Details of Banking Law, pp.154-155, Kinzai Institute for Financial Affairs (2994). Apart from this definition, Hoji Sugawara broadly defines the payment as "the accomplishment of the remittance of funds in a case where the remittance from one party to another is required for the settlement of obligations or another purpose" (Hoji Sugawara, Remittance and Underlying Relationship (1)—Reconstructing Payment, Exchange and Remittance Theories, Kinyu Homu Jijo Vol. 1358, p.44 (1993)). This definition may be easier to understand.

[15] Yoshiaki Koyama, Revision—Banking Law, p. 206, Okura Zaimu Kyokai (1995)

[16] Yoshiaki Koyama, ibid. p.203. When looking at this definition, it may be difficult to specify a transaction between two locations that are distant from each other. Nobuhiko Kiuchi Financial Law, p.151, Seirin Shoin (1989)) defines an exchange transaction as "a termination of debtor-creditor relationships or a fund remittance through financial institutions without cash transportation between two locations that are distant from each other." Prof. Seiichi Tanaka defines an exchange transaction as "a termination of debtor-creditor relationships without cash remittance between two locations that are distant from each other" (Seiichi Tanaka, New Banking Law—Third Revision, Economic Legal Research Institute (1984)). This is a broad definition that meets business practices.

transactions comprehensively. In a basic exchange transaction, a person (payee or payer) who has to terminate the debtor-creditor relationship or remit money) asks a Location A bank to collect or remit a payment and then a Location B bank collects or receives the payment. In such case, the remitter and remittee must have the bilateral debtor-creditor relationship and business relations with the banks in which they have their respective accounts. In addition, these banks must have a special relationship. (In this case, the Location A bank that remits the payment is called the "transferor bank." The Location B bank that receives the payment is called the "transferee bank.") In this way, legal relationships involving an exchange transaction are established between the payer and the transferor bank, between the transferor and transferee banks, and between the transferee bank and the payee.

What is the relationship between exchange transactions and settlements (or settlement services)? First, settlements that are done through fund remittances between different persons can be considered to be a form of exchange transactions. Second, settlements are always linked to financial credits and debts, while exchange transactions include fund remittances that are not linked to credits or debts (including a parent's money remittance to a child and fund remittances between one person's different bank accounts). Third, exchange transactions are always accompanied by fund remittances, while settlements include offsetting and the like[17] without fund remittances. Overall, settlements and exchange transactions are mostly overlapping. One simple conceptual difference is that offsetting as part of settlements is not any exchange transaction. Another difference is that settlements do not include one person's remittance between his own accounts or a parent's remittance to a child.

2-2. Legal Constitution of Remittances and Fund Settlements, and Relevant Issues

As noted above, settlements (exchange transactions) have mostly been done through remittances in Japan. The author here would like to review the legal constitution of remittances first.

2-2-1. Legal Mechanism of Remittances

Assume a typical settlement through a remittance. Here, the remitter is named A, the bank accepting a remittance instruction from A is X, the remittee is B, and the bank where B has a deposit account is Y. A debtor-creditor relationship is assumed between A and B. (For example, A is required to make a payment for a good purchased from B.) This means that there is a debtor-creditor relationship leading to a remittance. (In this case, A is the payer or remitter, and B is the payee or remittee. X, which is the bank that makes a remittance as instructed, has an account for A as the payer or remitter. Y is the bank that receives the remittance and has an account for B as the payee or remittee.)

In a bid to pay a debt to B, A goes to Bank X to specify the remittance-receiving bank, the remittee and the amount on a remittance instruction form and submit the form and the money for remittance (or request a withdrawal of the

[17] Offsetting means that two or more parties have similar claims to each other and eliminate equivalent claims without payments. "Offsetting and the like" are meant to include open account transactions under the Commercial Code. (In open account transactions, credits and debts emerging between parties engaged in continuous transactions in goods for a certain period of time are offset for payment of net debts.) Such transactions belong to offsetting as broadly defined.

money from an account for the remittance). If using Internet banking, A may put in such data. As a result, a contract (the commissioning agreement under Article 643 of the Civil Code) is created for A as the remittance instructor to commission Bank X to remit the money to the account of B at Y as the remittance-receiving bank. Bank X is then required to give a notice of remittance to A and Bank Y to B. Under a bilateral exchange contract[18] between Banks X and Y, Bank X notifies Bank Y of the remittance and Bank Y books the remittance on B's account and notifies B of the remittance. This allows B to establish or acquire a claim to the remittance put into B's deposit account, completing the exchange procedures. Then, the debtor-creditor relationship as the underlying relationship between A and B is cleared or terminated through a substitute payment under Article 483 of the Civil Code, instead of a due cash payment. As indicated by this remittance case, a settlement, though seeming to be a single transaction, involves a complex array of multiple contracts. Prof. Shinsaku Iwahara has described a settlement as consisting of seven components – (i) the underlying relation (debtor-creditor relation) between the fund remitter and the remittee, (ii) the remittance transaction agreement between the remitter and the remittance-sending bank (transferor bank), (iii) the remitter's remittance instruction to the remittance service bank, (iv) the remittance reception approval contract between the remittee and the remittance-receiving bank (transferee bank), (v) the remittance-sending bank's exchange notice to the remittance-receiving bank, (vi) the exchange contract between the remittance-sending and remittance-receiving banks, and (vii) the settlement of the remittance between the two banks based on the exchange contract[19]. From the viewpoint of the remitter and remittee, the remitter makes instruction (iii) on the precondition of the (ii), (iv) and (v) contracts, and the remittance-receiving bank books the remittance to complete the (vii) settlement. (Through Internet banking services and securities transactions, the transaction instruction means has shifted from the over-the-counter procedure, telephone or facsimile instruction to the Internet. Remittance instructions can be processed by automatic teller machines for settlements between banks. Settlements have thus been covered by a digital network. The computerization of settlements has been completed. But the network is a closed one and has only computerized the traditional settlement system. The settlement system has thus basically remained unchanged. Therefore, the computerization does not affect the legal constitution and theory of settlements.)

Although the settlement system using remittances seems likely to cause no special problems, the legal issues regarding the settlement system are affected by the specific relationship between deposit and exchange transaction contracts existing between the payer, payee, transferor bank and transferee bank. There have been some traditional theories regarding these issues. The multi-stage commissioning contract theory interprets the remitter as concluding a contract (under Article 643 of the Civil Code) to commission the remittance-sending bank to deposit the remittance amount into

[18] In the past, banks had had bilateral correspondent agreements for exchange transactions and any remitter or remitter had been required to identify the existence of such agreements before requesting a remittance. At present, banks have contracts with clearing houses (of various forms including public and private ones), which are considered to be part of the common rules for exchange transactions.

[19] Shinsaku Iwahara, Computer-Using Financial Settlement and Law, Financial Law, Vol. 1, p. 9 (1985)

the remittee's account at the remittance-receiving bank, and interbank transactions as linked to the contract. The theory of contracts for third parties looks at the remittee's acquisition of a deposit claim as the final purpose of the remittance and interprets the remittance-sending and remittance-receiving banks as having a contract to benefit the remittee as the third party (under Article 537 of the Civil Code). The payment instruction theory (the idea of Anweisung under Article 783 and successive articles of the German civil code [20]) interprets the remitter as only instructing the remittance-sending bank to put the money into the remittee's account. The remittance-linked settlement theory[21] focuses on practical aspects and interprets the exchange transaction as linked to a settlement through a deposit claim between the remitter (payer) and the remittee. Whichever theory is adopted, one may have to consider the whole of the transactions when any problems emerge. The dominant theory in Japan at present is the multi-stage commissioning contract theory that is relatively closer to a practical sense[22].

There are various legal problems involving remittances, including the time of receiving[23], the time of the remittance establishment and the relationship between remittance-sending and remittance-receiving banks[24]. Judicial precedents regarding

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[20] Kiichi Goto, Legal Remittance Theory and Payments, p.25, Shinzansha (1986)

[21] Hoji Sugawara, Remittance and Underlying Relationship (3)—Reconstructing Payment, Exchange and Remittance Theories, Kinyu Homu Jijo Vol. 1361, p.117 (1993)

[22] Seiichi Tanaka, New Banking Law—Fourth Revision, p.263, Economic Legal Research Institute (1990)

[23] Remittance problems include the time of receiving and legal reasons for determining the time. Solutions are dominantly based on the current account, ordinary account, comprehensive account covenants that specify the times when deposit claims are established.

[24] As for the time when a remittance is completed, one theory says the remittance is completed when the transferee bank books the remittance. Another theory says the remittance is completed when the transferee bank acquires the transferred money. If the deposit claim is considered to emerge when the remittance is booked, there may be a temporary period where the transferee bank acquires the transferred money and has yet to accept the deposit claim. During the temporary period, the remittee has yet to acquire the deposit claim while the remitter has cleared the debt under their debtor-creditor relationship. In order to avoid such an unfavorable period for the remittee, we must interpret the deposit claim as being established when the transferee bank receives the transferred money or the remittance notice from the transferor bank. Under this interpretation, booking the remittance in the account of the remittee is only a condition for making the transferred money available to the remittee. The problem is that the time for booking the remittance may fail to physically and legally match the time when withdrawal of the transferred money has yet to be allowed or the time when the transferred money is made available for the remittee.

As for the relationship between the transferor bank and the transferee bank, the transferee bank is interpreted as a duplicated representative, a representative under an independent commissioning contract, or a remittance assistant. The duplicated representative and remittance assistant theories are designed for the remittee to hold the transferee bank responsible for the remittance and to hold the transferor bank responsible for the transferee bank's negligence. Conversely, the independent commissioning contract theory allows each bank to be independent in engaging in the remittance and specify the scope of responsibility. In this respect, a judicial precedent (A Tokyo High Court ruling on February 14, 1984, from Kinyu Homu Jijo, Vol. 1066, p.36) interprets the transferee bank as the duplicated representative of the transferor bank and denies the transferor bank's responsibility through analogical application of Article 106-2 of the Civil Code for a case where a remitter was subjected to a disadvantage as a transferee bank failed to make a notice of a remittance to the remittee as commissioned by the transferor bank even after the remitter instructed the transferor

traditionally controversial erroneous remittances help explain the linkage between the remittance and the underlying relationship. Judicial precedents and theories that endorse the remittance's linkage to the underlying relationship had deviated far from banking practices that view underlying relationships as unnecessary. In this respect, a Supreme Court ruling (Second Petty Bench ruling on April 26, 1996) gave specific instructions[25].

The first trial ruling (Tokyo District Court ruling on October 25, 1990) interpreted Article 38-1 of the Civil Execution Law as analogically applicable to the case. The second trial ruling (Tokyo High Court ruling on November 28, 1991) said due business relations should exist between the remitter and remittee for the valid establishment of the deposit claim.

The Supreme Court ruling noted ordinary deposit rules had no provision indicating any linkage between deposits and the underlying relationship. Given remittances' function as a safe, prompt means to move funds, it said, the presence or absence of the debtor-creditor relationship should have no linkage to the valid establishment of deposits. The ruling eventually turned down the lower court judgment, concluding that as long as the deposit claim was validly established in Company A's account, Company X did not have the right to impede the deposit claim's transfer, only to ask Company A to return an unjustifiable gain.

This ruling meant that the presence or absence of any debtor-creditor relationship had no direct linkage to the valid establishment of the deposit claim. The controversy depends on whether the remittance is considered to be the means to clear the debtor-creditor relationship or whether banks do not have to be responsible for debtor-creditor relationships that are between the remitter and the remittee. In fact, the remittance instruction form at a bank (the remittance instruction form on a screen for Internet banking services) has a column for specifying reasons for the remittance. The column is set up for identification purposes including those under the Foreign Exchange Law and for preventing money laundering. The presence of such column does not require banks to link remittances to any reasons. Banks, though being in a position to

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bank to make the notice in question.

[25] In the case subject to the ruling, Company X prepared instructions for a remittance via a computer in a bid to remit some ¥5.58 million in rent and provided the instruction to Branch O of Bank D, and then the money was transferred to Branch U of the same bank where Company A, which was specified as the remittee, has an account. But Company B, which was the real creditor set to receive the rent, had an account in another bank. (Companies A and B had names that were the same in pronunciation, with the difference identified with one Chinese character.) The remittance to Company A to which Company X had no debt took place as an employee of Company X prepared erroneous remittance instructions. Company X found the error and asked Bank D to recover the money. When Bank D tried to get approval from Company A, however, Company A was bankrupt and missing. Company X then filed for a seizure on Company A's deposit claim. But Company Y as a creditor of Company A filed for the same seizure. In order to prevent Company Y's compulsory execution of the seizure, Company X filed a lawsuit against Company Y's seizure.

There are a great number of commentaries about this ruling, including: Shinsaku Iwahara, Criticism, Kinyu Homu Jijo, Vol.1455, p.11 (1996); Atsushi Kinami, Erroneous Remittance and Validity of Deposit – Regarding Supreme Court Second Petty Bench Ruling on April 25, 1996, Kinyu Homu Jijo, Vol. 1455, p.11 (1996); Etsuo Kawada, Validity of Deposit through Erroneous Remittance by Remitter (Positive), Kinyu Homu Jijo, Vol.1452, p.4 (1996). These theories are put in order and reviewed by Hiroki Morita in Legal Structure of Remittance Transactions – Reviewing Erroneous Remittance Case, Financial Transactions and Civil Law Theories, pp. 123~, Yuhikaka Publishing Co. (2000).

know reasons for remittances, are not required to estimate such reasons.

Unlike German law (and British law), which admits no linkage between booking of deposits and reasons for booking, the present Japanese law interpretation basically admits that reasons for the remittance could be linked to the cancellation or invalidity of the remittance, or that a defect of an act underlying a remittance could lead to a defect of remittance instructions. (However, erroneous remittance problems are mostly attributable to defects of remittance instructions rather than those of relationships underlying remittances. We must take note of the fact that defects of relationships underlying remittances have not been separated from those of remittance instructions.[26]) The U.S. Uniform Commercial Code 4A provides that a deposit claim is validly established after booking a relevant deposit, irrespective of relationships underlying the deposit. At present, the remittance and the underlying relationships are theoretically separated. In this sense, the legal remittance theory has difficulties in being applied to electronic settlements that integrate settlement data with underlying transactions data.

[26] Kazuyuki Takahashi & Shigeki Matsui, “Internet and Law” (Second Edition), p.171, Yuhikaku Publishing Co. (2001).

Chapter 3 Electronic Settlements and Possible Changes in Legal Theories — Legal System for Messages and Financial Asset Transfers —

3-1. Electronic Settlement Systems' Linkage to Underlying Relationships and Messages

After theories are put in order, electronic settlement systems can be broken down by settlement pattern in the following table (see Table 3):

<Figure 3 Electronic Settlement Patterns and Legal Problems>

Settlement pattern	Remittance	Transfer	Debit	Electronic money
Electronic settlement	(i) Cash on delivery, collection service	(i) Account transfer, collection service	(i) Debit	(i) Electronic money
	(ii) Collection service	(ii) Credit settlement (plus credit collection service)		
	(iii) Escrow	(iii) E-mail settlement		
	(iv) Prepaid settlement, e-mail settlement, Internet bank settlement	(iv) Internet bank settlement		

Source: Masaki Honda, Settlement of Internet-Based Transactions, Kinyu Homu Jijo No. 1608, 1609

As in the table, various electronic settlements can be broken down by traditional settlement pattern. These settlements are reclassified by the degree of linkage to underlying relationships as in the following table (Table 4):

<Figure 4 Electronic Settlements' Linkage to Underlying Transaction Relationships>

Linkage to underlying relationship Strong ←——————————————————→Weak
Cash on delivery (collection at convenience stores) E-mail settlement Collection service Electronic money Escrow settlement Credit settlement Transfer
Simple remittance instructions (including those through Internet banking services) → Linkage to underlying relationships is difficult to estimate.

As shown in the table above, electronic settlements feature a closer linkage to underlying transaction relationships. For example, financial data as payment messages for parties to transactions overlap commercial data as ordering, order-receiving, acceptance and billing messages for the parties when bill payments are made. In the open network for electronic commerce, exchanges of messages on original transactions (underlying relationships) and financial settlements are integrated for simultaneous processing of financial and commercial data as the financial electronic data interchange[27]. In fact, the financial EDI has diffused considerably in the trade finance area.

Discussions might have deviated from law. As for the linkage between financial settlements and underlying relationships, some legal scholars considered the EDI to integrate business transactions data and relevant financial data for business group members or cooperating companies before the Internet diffused[28]. But no firm theories were established. Irrespective of the Supreme Court ruling in 1996, the present Japanese law interpretation basically admits that a relationship underlying a remittance could be linked to the cancellation or invalidity of the remittance, or that a defect of an act underlying a remittance could lead to a defect of a remittance instruction. Therefore, any third party incurring a loss on such defect should be allowed to recover such a loss through a reduction of existing gains. As indicated by the classification of settlements above, the development of electronic settlements has not only led to electronic instructions on transfers of financial claims for conventional remittances but also allowed more efficient provision of goods and services by integrating distribution and finance, or commercial transactions and financial data, or linking various customer data (including purchasing and attribution data) to financial data such as remittances. At the same time, promotion and advertisement through various media and means (including advertisement through salesmen's home visits and direct mail) have grown more efficient in response to improvements in the distribution process including inventory reductions and a wider range of products, making it difficult to separate financial settlements from underlying transaction relationships. As data are integrated to link financial settlements to underlying transaction relationships, data themselves are valuable and owners of such data have absolute rights. Therefore, the legal constitution of electronic financial settlement systems should depend on how close the linkage is between financial settlements and underlying transaction relationships. (Since the degree or the timing of such linkage differs from one system to another, it is very difficult to create any uniform rules for all systems.)

3-2. Consideration from Viewpoints of Data Ownership

In EDI transactions where financial data move along with data about underlying transaction relationships, excluding pure capital transactions, valuable financial data and transaction (distribution) data are considered to be valuable data as goods owned by parties to the transactions. In this respect, we may be able to relate the integrity of financial settlements and underlying transaction relationships to recent legal theories on digital data transactions (including data ownership theories). Such theories define financial and other intangible data as valuable data, or goods available for buying

[27] Kinoshita, Hinatano, Kitora, ibid, p.137

[28] Takashi Uchida, Continuous Transactions in Information Age, Formation and Problems of Japan's Civil Law (Koki Hoshino) Part II, p.725, Yuhikaku Publishing Co. (1996).

and selling. (These theories here are called “data ownership theories.”)

If a good were to benefit from its economic value, it should desirably be scarce and effectively controllable for owners. Measures have already been taken for the present legal system to give data visibly identifiable symbols to demonstrate ownership of data. Data goods have thus been given scarcity and controllability. (A typical example is the intellectual property right system for data goods that can coexist and be shared , be reproduced at a low cost, and are difficult to make scarce and controllable. The system is designed to solve right protection and usage problems emerging from characteristic differences between tangible goods and data goods.)

However, the creation of any system to restrict distribution and usage of intangible data goods like electronic financial data may affect free movements as the basic characteristics of data goods. If data were to be goods, rights to data should be exclusive. The problem is whether data goods that are characteristically different from tangible goods should have the same absolute exclusivity as that given to tangible goods[29]. Unlike tangible goods, data goods, including financial data such as pecuniary value, often fail to have identifiableness, independence or unity, can coexist and can be shared and transformed. In electronic settlements, financial data and commercial transaction data, which are characteristically different from each other, are mixed. Therefore, it is difficult to adopt legal constitutions fixing uniform rights for data goods. Details of rights should be relatively and dynamically provided in contracts in accordance with characteristics and forms of data goods. This would allow data goods to be efficiently used and distributed in accordance with their realities.

Conceptually, the precondition for modern society is that there are owners for all goods with borders specified between owners so that ownership borders and rights are identified and protected under contracts. Since unlimited expansion of private ownership under the principle of absolute ownership can cause various social and personal problems, however, legal systems have been developed to solve ownership problems and conflicts and coordinate interests. (For example, the scope of property rights including ownerships is limited under the principle of legal property rights since these rights’ exclusivity is too strong.) Notably, whether absolute ownerships can exist is a problem, since ownerships of goods are rights to utilize the goods for making gains and dispose of them and are deemed to be exchangeable, transferable and replaceable. Reconsidering the concept of ownership roughly, we may be able to define the ownership as the right to use a good within a limited period of time[30]. Under this definition, the real value of the ownership may be interpreted as resting with the functionality of a good for usage. In this sense, data (including pecuniary value data) can be deemed similar to tangible goods. Generally, however, the value of the functionality is given a greater emphasis for data than for tangible goods. At the same time, data (particularly, financial data) feature faster distribution, shorter periods of time for usage and a narrower scope of usage than tangible goods. In trade EDI settlements,

[29] In fact, the present intellectual property right system (including Article 1 of the Copyright Law and Article 1 of the Patent Law) does not necessarily give data goods the same exclusivity as that for tangible goods. Generally, the exclusivity of data goods is weaker than that of tangible goods. (However, data goods feature the law-provided exclusivity that can be strengthened through enhancement of technical security.)

[30] The period of time and the scope of usage may depend on the characteristics and quality of goods and users.

financial and transaction data for sellers and buyers are stored in computers, distributed simultaneously and verified by machines in the absence of title deeds. In this sense, the transfer of pecuniary data may be treated as the transfer of data goods or property rights, rather than pecuniary claims.

Electronic settlements mean the flow of data for transactions and settlement. As far as data goods as the key factor of the digital economic society are intangible (not tangible goods), a paradigm shift may be required from the concept pursuing value in tangible goods alone to that pursuing value in functionality of goods (as indicated by downloading of digital music MP3 files). Since the presence of electronic pecuniary value as invisible pecuniary value has been widely accepted in prepaid cards and other areas[31], such legal data system may be applied to financial data in order to provide the ground for their availability for ownerships[32].

3-3. Electronic Financial Transactions and Legal Theory on Account Systems

The above insisted on pecuniary data ownerships (property rights) under the concept of the linkage between pecuniary data and commercial distribution data (underlying relationships) and of data ownerships, using EDI as an example. Based on the concept regarding the "relativity of goods and money," however, some people have insisted on theories that are different from conventional ones that interpret goods as subject to property rights and money as subject to claims. They are not necessarily reigning theories. These theories include the Shinomiya theory ("claim to property right value")[33] that attempts to give pecuniary ownerships greater property right protection

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[31] Actually, it is widely realized that those who possess prepaid cards upon their usage can use these cards (conversely, those who lost prepaid cards cannot be allowed to use these cards).

[32] Data can coexist and be shared. They can be reproduced at a low cost. They are not scarce or controllable. They are difficult to monopolize or exclude. They lack identifiableness, independence and unity. They can also wipe out various borders.

In the digital economic society where information gaps and time lags are eliminated to create a comprehensive market, it is important to further enhance the dynamic legal stability of various systems. The base for legal systems has already made a paradigm shift.

Susumu Fujinami has utilized a sociology-of-law analytical method to contend that legal systems that respond to social and market mechanism changes meeting data goods should be designed to achieve distribution of rights and obligations and efficient utilization and distribution of resources in the digital economic society. To this end, a mechanism is required to allow data to be appropriately created, distributed and utilized. The problem is how to legally secure such mechanism. In a society where individualism is emphasized more and more, disputes tend to be diversified. Fixed legal systems as basic rules are thus required to become intermediate. In this respect, Fujinami has predicted that disputes would be settled through assessment of facts according to legislative purposes of basic laws and that dispute settlements would be made at arbitration bodies free from national border constraints (Susumu Fujinami, Legal Systems in a Digital Economic Society: NTT Open Laboratory Plan, Osamu Sudo & Hiroshi Deguchi, Principle for Formation of Digital Society – State, Market, NPO, NTT Publishing Co. (2003), p.80-). A similar idea has been provided by David R. Koepsell, The Ontology of Cyberspace Law, Philosophy, and the Future of Intellectual Property, (translated by Akio Tabata), Seidosha (2003). The idea of data ownership in 3-2 depends heavily on indications by the Fujiname article.

[33] Kazuo Shinomiya, Claim to Property Right Value, New Development of Private Law Association – Festschrift in Memory of Wagatsuma, p. 183-, Yuhikaku Publishing Co. (1975). Traditional special legal positions of money have been put in order by Yoshihisa Nomi, Legal Positions of Money, Civil Code Course – Separate Volume 1 (compiled by Eiichi Hoshino), p. 101-, Yuhikaku Publishing Co. (1990).

than given to other ownerships. There are many other such theories[34]. In addition, some theories have recently emerged that focus on changes in settlements through the advancement of electronic and information technologies for settlements. For example, Prof. Honda's theory focuses on electronic settlements and "information" in discussing mainly securities transactions. "The advancement of information technology has increased the relativity between money and goods," he says[35]. Prof. Honda calls for giving considerations to a new financial law system that meets the advancement of information technology, noting (i) that money and goods have deviated from tangibles and turned conceptual as indicated by cashless and paperless transactions in electronic securities, (ii) that fund transfers through non-deposit financial assets have become available, and (iii) that the advancement of information technology has increased the relativity between money and goods as securities and other transactions have enhanced the liquidity of goods.

Assistant Prof. Morishita also looks at paperless money and securities transactions and discusses attributions of pecuniary values in the account system where paperless transactions are mainly designed for account data to be used for indicating attributions of values and rights[36]. Realizing that "pecuniary values as indicated by account data, rather than claims to account-managing institutions, are subject to

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[34] Among them, Prof. Kato insisted on the Value Winkatio" theory that points to the close, inseparable relationship between attributes of claims and property rights and interprets goods as having the characteristics of property rights (Masanobu Kato, New Civil Code System II – Law of Realty, p. 28-, Yuhikaku Publishing Co. (2033); Birth of Ownership, p.35-, p.57-, p.91-, Sanseido Publishing Co. (2001)). Prof. Kanda says, "In exchange, forward and other financial transactions where currencies are subjected to trading as goods rather than money, some legal theories affirming rights of recovery for such currencies on certain conditions should be affirmed.'' As for whether public notice is required to add identifiableness to such currencies to secure the rights of recovery, he says, "Given that reservation of ownerships for personal property articles is not suitable for public notice and that agreements between parties to transactions can bind third parties as well, such public notice may not be necessary" (Hideki Kanda, Legal Problems Regarding International Financial Transactions, Kinyu October 1992, pp.5-6). Prof. Iwahara says, "Although foreign exchange funds are pecuniary and unidentifiable, legislation theories endorsing the preferential performance of exchange claims may be established" (Shinsaku Iwahara, Need for and Problems with Development of Legislation for Electronic Fund Transactions – Interim Report by Electronic Banking Panel of Financial System Council – III, p.10-11, Kinyu Homu Jijo, December 5, 1988.) Recently, Assistant Prof. Kubota has considered whether existing law could be interpreted to enhance claims as property rights. But he insists on new legislation for that purpose, noting that the endorsement of the lien and right of recovery through interpretation of existing law should be balanced with protection of third parties and ordinary creditors (Legal Problems with Settlement Systems, p. 84-, Kokusai Shoin Co. (2003)).

These theories interpreting pecuniary claims as ownerships may be based on some points of ownership theories emerging from arguments over bills under the law on bills. For example, Prof. Takakubo's new ownership theory says, "Systematically stereotyped ownerships of bills are established through production of bills and transferred physically (for transfer of possession for securities) under bill transfer contracts" (Toshikazu Takakubo, Modern Bill and Check Laws, p.164, Economic and Legal Research Institute (1979)). He thus proposes a theory interpreting pecuniary claims as ownerships, irrespective of specific transfer methods.

[35] Masaki Honda, Legal System Regarding Information Technology and Transfer of Financial Assets, pp.100-105, Jurist Vol. 1195 (2001)

[36] Tetsuo Morishita, Electronic Society and Finance – Private Law Theory for the Paperless Age, Electronic Society and Legal System, pp.206~, Shinsei-Sha Co. (2002)

transactions for most parties to transactions[37]," he has developed a theory for subjecting pecuniary values to property rights law rules through the identifiableness of values and the concept of bona fide acquisitions under the Corporate Bond Transfer Law[38].

Behind these theories are discussions and studies on the revised Corporate Bond Transfer Law[39] enacted in 2002. As noted by Assistant Prof. Morishita, fund and securities transfers represent transfers of rights through data entries into accounts at account-managing institutions. Transfers between account-managing institutions can be done through data entries into accounts they have in transfer agents. The Corporate Bond Transfer Law has introduced a multi-level system for corporate and government bonds (when an owner of securities possesses them indirectly, an account-managing institution that has an account in another account-managing institution while having no account in a transfer agent is allowed to make a transfer through an account that the other account-managing institution has at the transfer agent[40] (see Article 2-7 of the Corporate Bond Transfer Law and Table 4). Even if a securities transferor and transferee have accounts in different account-managing institutions, the system will allow the different institutions to make a relevant transfer through entries into accounts that these institutions have in the same transfer agent. This means that this system is similar to the above-discussed system for transfers through intermediary banks[41].

[37] Morishita, ibid, p.211

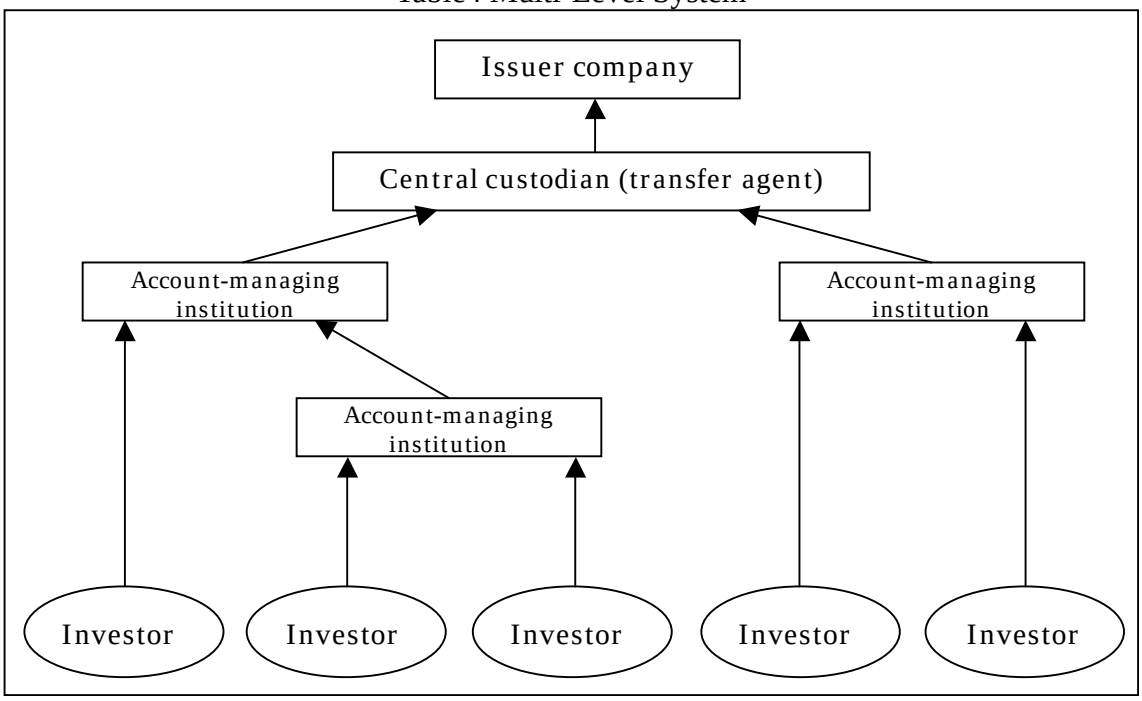
[38] In recent discussions on the deposit payoff system, the development of theories using accounts can be linked apparently to recent discussions on court precedents regarding attributions of accounts (see Feature – Deposit Attributions and Financial Practices, Kinyu Homu Jijo Vo. 1686 (2003)), as well as the fact that few depositors realize that their deposits in accounts are their possessions and their claims to banks.

[39] Regarding the corporate bond transfer law, Takuya Shima, Discussions on Government Bond Book-Entry System under Substantive Law I-IV, Shoji Homu Nos. 1692, 1693, 1694, 1695 (2004) reviews legal discussions on the government bond book-entry system in the past, discusses changes in the system and presents key legal points of the system in comparison with foreign systems from the viewpoint of substantive law. Shima, deputy chief of the Financial Markets Division, Planning and Coordination Bureau, Financial Services Agency, has compiled theories and legislative steps in this report.

[40] Shinsaku Iwahara, Electronic Settlements and Law, p.79, Yuhikaku Publishing Co. (2003)

[41] Shinsaku Iwahara, ibid, pp.36-37. Some proposals (including Masaki Honda, ibid, p.100) have emerged for interpreting fund and securities transfers as being done under a common account system.

<Table4 Multi-Level System>



As discussed earlier, however, the legal system for remittances treats a transfer as termination of a remitter's claim to a transferor bank and creation of a remittee's claim to a transferee bank, rather than a transfer of identifiable and identical deposits or a deposit transfer from a remitter to a transferee bank for a remittee. In contrast, the legal system for securities identifies customer-held securities as property rights and allows transferred securities to have the same identity (Articles 66 and 76 of the Corporate Bond Transfer Law). This means that account-managing institutions' failures do not immediately affect customers' property rights[42]. Such difference indicates that remittances have been interpreted as losses or gains for banks, while securities for transfers are treated as specific property rights. In some recent cases, however, the difference based on the identifiableness has been denied. For example, the eighth edition of the U.S. Uniform Commercial Code (revised in 1994) denies the identifiableness of indirectly held securities deposited at account-managing institutions and provides that owners of financial assets on accounts may see their rights to assets of the institutions managing these accounts as comparative property rights or security entitlements and that entitlement owners may depend on the account-managing institutions and their financial assets as security (Article 503 of the eighth UCC edition). In this case, entitlement owners' rights are subordinate to collateral property rights to security. Entitlement owners must thus shoulder losses on security shortfalls and such losses are protected under the securities investor protection act. Such system is close to fund transfers protected under the deposit insurance system. Indications are that the legal system for securities transfers has grown closer to that for fund transfers[43].

[42] In case of remittances, however, bank failures could seriously affect the rights of remitters and remittees. Although there is the deposit insurance system, depositors' understanding about deposits deviates far from the legal system (as discussed earlier).

[43] Shinsaku Iwahara, ibid, pp.80-81. Conversely, the possibility of deposit transfers being interpreted

3-4. Possible Coexistence of Debt-Credit and Property Right Theories (Parallel Theory Covering Debt-Credit and Property Right Theories)

Past theories, excluding the new concept of data ownership in 3-2, have mostly been developed by financial law scholars conscious of fund and securities transfers. Through these analyses, changes in settlements have more clearly indicated property right theories' involvement in settlements that had been traditionally explained with debt and credit theories. This means that new legal constitutions could be developed for settlements. Behind such possibility, the advancement of electronic settlements has allowed pecuniary data to be sent simultaneously with various other data. In EDI, pecuniary and distribution data coexist, allowing overall settlements and relevant distribution to be finished altogether. Such developments have been pointed out in recent theories as reviewed above, although entries into these theories have been various.

However, such recent theories are nothing other than trial balloons and imaginary concepts failing to meet realities under the present legal system, given (i) that under the principle of legal property rights, no law exists to interpret pecuniary value data as tangibles or secure their exclusivity, (ii) that even if such data are designated as tangibles as part of property rights under the Civil Code, the abstractive concept of data is difficult to specify in terms of scope in some cases, (iii) that the principle of one right to one property under the property rights law may fail to stand since it is convenient for data as goods in EDI to be shared by transaction participants, rather than being owned exclusively, and (iv) that underlying transactions are designed to terminate the debtor-creditor relationships between relevant parties.

In practice, the property right theory using the multi-level system as considered above may be effective for securities and fund transfers in financial markets assumed under the Corporate Bond Transfer Law, or in transactions mainly between financial institutions. In transactions between individuals including ordinary merchants, however, the problem is the termination of basic underlying relationship for transactions, or the extinction of debts and credits through payments including net payments (the finality of settlements), although pecuniary and distribution data as valuable data are distributed electronically in EDI. We may be able to develop a "parallel theory" that treats transfers of data between accounts at account-managing institutions and transfer agents under property rights theories while using debt-credit theories for entire transactions (as illustrated in Figure 2). This could allow property rights theories for the settlement system to be comprehensively integrated with debt-credit theories for underlying transactions.

Close to the parallel theory is the dualistic theory, a leading German legal securities theory that has been considered and studied long in Japan[44]. This may be applicable to the parallel theory. The dualistic theory begins with separating the rights

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as close to securities transfers is indicated by Masaki Honda, Legal System Regarding Transfers of Financial Assets – Horizontal Analysis of Money and Goods, Civil and Commercial Code Magazine, Vol. 123 No. 6, p.811- (2002).

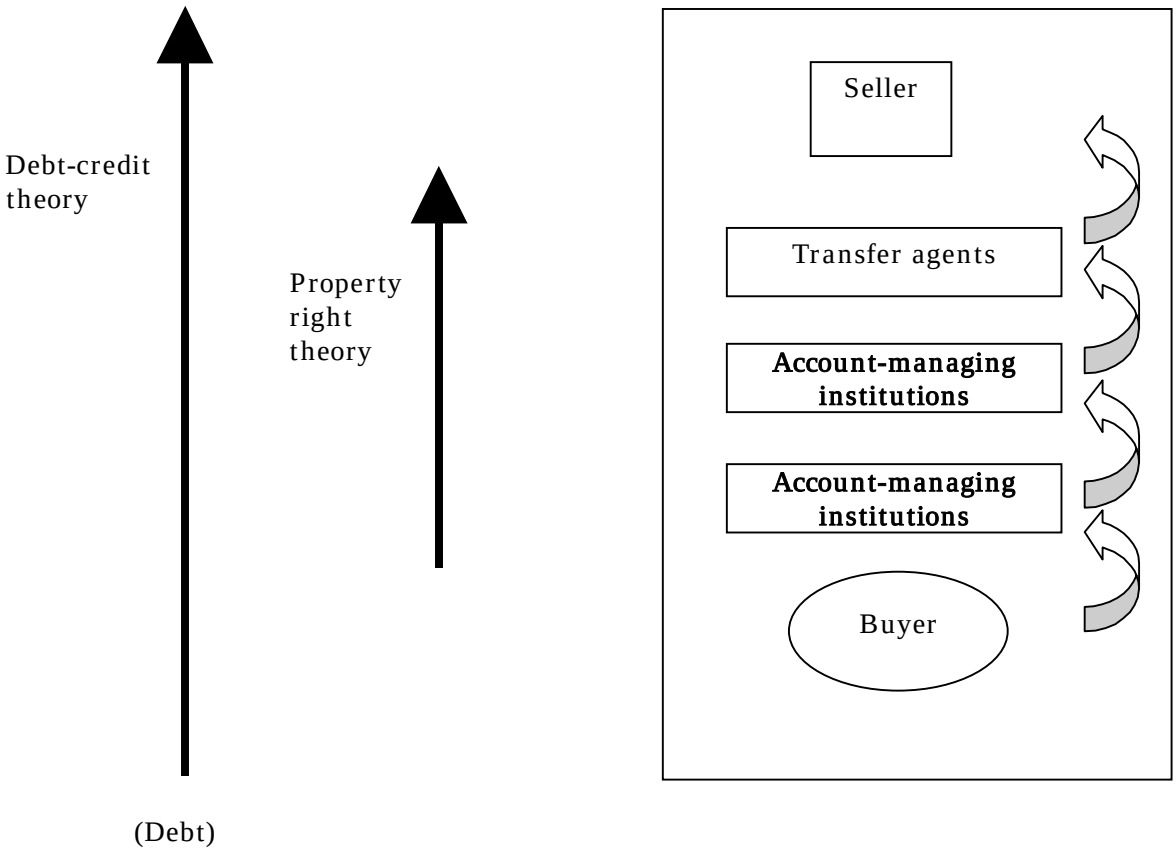
[44] Ichiro Komoto, Securities Law Study – Commercial Law Study Volume 1, p.229, Seibundoh (2000). Sakae Wgatsuma, Non-inscribed Bonds as Personal Property and Claims, Basic Problems on Commercial Code in Memory of Prof. Tanaka's 60th Birthday, p.378, Yuhikaku Publishing Co. (1952).

on securities (Recht am Papier) for property right theories from rights out of securities (Recht aus dem Papier) for debt-credit theories, and analyzes modifications emerging from their relationship and integration. Based on the Civil Code's Article 86-3 provision that non-inscribed bonds are considered to be personal property articles, the theory concludes that creditors having any rights on securities are limited to owners of the securities[45]. Rights on securities may be replaced with pecuniary data and rights out of securities with commercial distribution data. We may be able to estimate that pecuniary data are transferred as property rights as under the corporate bond transfer system (in remittances, data go through transfer agents and reach final transferee banks) and that the presence of commercial distribution data (remittance instructions' details) accompanying pecuniary data can prevent illegal occupants from abusing relevant rights.

Without ignoring debt-credit theories covering underlying transaction relationships, this legal constitution uses property rights theories to explain relationships between account-managing institutions and transfer agents that link creditors to debtors. In this sense, funds that creditors may receive may be protected as property rights, even if account-managing institutions and transfer agents (that are financial institutions) go bankrupt. Creditors' rights may never be affected. Even if processes for overseas remittances from remitters to remittees are unknown, funds will be prevented from missing or being lost upon failures of transfer agents during the processes. We thus expect to develop a legal theory that is relatively safe and stable.

[45] Wagatsuma, ibid (Note 45), p.411-.

<Figure 2. Parallel Theory Covering Debt-Credit and Property Right Theories>



Even under this legal constitution, however, we may have to consider some problems including how to cope with the cancellation of transactions after remittances and determine who is responsible for delays in remittees' receipts of funds that could be caused by account-managing institutions' bankruptcies that fall short of leading to immediate fund losses. (But new legislation to comprehensively cover settlements may not be necessary since there are various patterns of settlements with the scope of settlements for the new legislation being difficult to specify. Solutions to these problems should be analyzed through interpretation of present law.)

Conclusion

As introduced above, new legal theories and points of discussion do not necessarily represent new problems. Problems underlying electronic transactions might have begun to emerge as clearer problems. As discussed in 3-4, this report proposes the possible coexistence of property right and debt-credit theories, while settlement theories are generally coming closer to property right theories. It calls for accepting the introduction of property right theories for pecuniary data transfers while being based on the definition of settlements as the "termination of debts and credits." At a time when property right theories under common law are being planned to be introduced into legal

systems regarding financial transactions (particularly securities transfers), this proposal may be worthy as a compromise, given the balance between common law and Japan's entire legal system.

Like discussions on traditional topics including claims to money as property rights, this report begins with discussions on electronic settlements and finally aims at leading to the challenge of theoretical and institutional reconstruction of property rights and credits in respect to legal characteristics of pecuniary values. But this report is nothing but the introduction. At the same time, this report is based on existing settlement systems. As new settlement systems emerge one after another, we will have to continue analyses to consider whether these old but new problems could be solved in an integrated fashion.