

Accounting: Continuity and Transition¹

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(Slide 1) I am delighted to attend the International Symposium on Chinese Accounting in the New Century. Professor Wei suggested that I speak about the future of accounting in the United States. Future is difficult to predict. A Chinese friend told me: you never know at whose hands a deer will die. As recently as twenty years ago, even Bill Gates could not think of why anyone would need more than 56 kilobytes of memory in their computer! Most predictions become obsolete within a short period of time.

(S2) On the other hand, the Spanish like to say: he who does not look ahead remains behind. In spite of its risks, we must evaluate the past and make judgments about the future. I would, therefore, like to talk about both continuity as well as changes in accounting. Because my knowledge of the long history of accounting in China is limited, I shall confine myself to the U.S. experience.

(S3) First, I shall outline my perspective on accounting in the context of the theory of organizations. I shall use this perspective to create a taxonomy of organizations on the basis of markets in which they operate, and the accounting systems developed to serve the needs of each type of organization. These types of organizations have survived over the history, and are likely to remain. I shall list the functions of accounting, which serve organizations' needs. Accounting is not only the oldest but also the most stable of the management disciplines.

(S4) In spite of its stability and continuity, accounting has seen major changes during the past hundred years. It would be surprising if a hundred years from now, accounting is the same as today. Although we cannot look so far ahead, but we can analyze the current conditions for clues about what to expect in the next decade or two. The second part of my remarks will be focused on current transitions and expected changes in accounting induced by the new information economy. I shall conclude my remarks by listing some interesting areas of study and research for scholars as well as the practitioners and the accounting rule makers around the world.

Continuity

(S5) Things change, and yet they stay the same. To gain perspective, let us first look at the theory of organizations, and the role of accounting and control in functioning of the organizations. Organizations vary in many respects. However, it is useful to classify them by the market criteria because such distinctions have existed for a long, and are likely to persist.

Corresponding to each type of organization is a form of accounting effectively to serve its needs. So accounting and control systems can also be classified by the same three market criteria. I shall examine the reasonably stable correspondence between organizations and accounting systems before discussing transitions in accounting likely to be induced by the information economy.

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1. Contract View of Organizations

(S6) We can think about each organization as a set of contracts among various participants. The basic idea was introduced to the management literature in a book, Functions of the Executive, by Chester Barnard over sixty years ago. In a business organization, for example, the participants are employees, shareholders, customers, vendors, managers, creditors, auditors, government, etc. (S7) In a university, they are students, professors, staff, administration, government, etc. In a city, the participants are citizens, business organizations, political leaders, and civil servants. With some adjustment, this basic idea can be applied to all types of organizations.

(S8) Contracting individuals pursue their own goals. They join an organization only when they prefer the expected consequences of their participation. In this concept of organizations it is not necessary to assign a goal to the organization itself.

(S9) Each party in the contract agrees to contribute resources. For example, in a business firm, employees and managers contribute skills, shareholders and creditors contribute capital, vendors provide machinery and materials, and customers provide cash. (S10) Each participant demands an inducement at least as large as the opportunity value of his contribution to the organization. For an organization to succeed, its production technology and set of contracts must satisfy each one of its participants. If she can get more else where, she will quit the organization. If enough people quit, the organization collapses.

2. Role of Accounting and Control in Organizations

(S11) Accounting is necessary to assemble, implement, enforce, modify, and maintain the contract set of organization. How does accounting perform these functions? How do these functions relate to what we know about accounting systems in business organizations?

(S12) Contributions from and incentives to participants take a variety of forms. The first requirement of control is to devise a system of measuring the contributions made by each agent. It should also determine the amount of incentive due to them, and monitor the distribution of inducements so that each agent receives his due, no more and no less. In addition, accounting helps compare the contributions made and the incentives received by each participant and distributing this information. Fourth, accounting distributes information to various factor markets to keep them liquid and find replacements for participants who leave. Finally, accounting makes some information available in the form of common knowledge or public disclosure to help reduce conflict among participants at the time they renegotiate their contracts.

(S13) In business organizations contributions of goods and supplies are reckoned and recorded into the accounting system at the receiving dock. Money from the customers is handled by the cashier, the accounts receivables, and customer accounts. Contributions of labor might be measured at the punch clock, inspection, or the point of transfer of goods from factory to the finished goods warehouse.

(S14) In its second function, the accounting system measures, records, and controls the outflow of resources from the organization. Payroll and benefit accounts for employees, shipping to customers, accounts payable to suppliers, and tax accounts measure the outflow of resources to the government.

(S15) In its third function, the accounting system compares the data on resource inflows and outflows to determine who has fulfilled his contract and to what degree. The accounting system prepares comparative reports on resource inflows and outflows related to various

individuals in the organization. These statements are used to evaluate and adjust the contracts of these individuals.

(S16) In a fourth function, accounting helps assemble and maintain the contract set by finding the appropriate participants in the factor markets for labor, managers, customers, supplies, and investors etc. All these people must be convinced that participating in such an enterprise is in their own best interests. Pro forma financial statements, business plans, and budgets prepared by the entrepreneur before the enterprise starts functioning help agents assess the costs and benefits of participating in the proposed enterprise in various roles. When contractual slots fall vacant, they must be filled from the factor markets.

(S17) Finally, when contract terms expire, they are often renegotiated under changed circumstances. Agents are tempted to issue threats, to quit their position in the organization if their terms were not revised in their favor. Such bluffs and threats sometimes lead to deadlock in negotiations, strikes, and therefore deadweight losses to society. Accounting performs its fifth function by sharing at least a minimal set of information among the negotiating parties to make it common knowledge, and help reduce the chances of breakdown. This is the primary purpose of public disclosure in larger organizations.

To summarize, we can think of all organizations as a set of contracts or alliances among many people who join them with the expectation of gain. We can think about accounting as the mechanism to define, implement, enforce, modify, and maintain this system of contracts. Organizations differ in their design, depending on the goals and resources of their participants and the markets in which they operate. So do their accounting systems.

3. A Taxonomy of Organizations and Their Accounting

(S18) Organizations and their accounting systems can be classified by the extent of development of the markets in which they operate. Just like different kinds of buildings need different electrical systems, different kinds of organizations need different kinds of accounting and control. In our taxonomy, we classify organizations on the basis of markets for managers and capital, as suggested by Hatfield (1924), and markets for their products.

Classification by Market for Managers

(S19) When there is no market for managers, owners of business must manage it themselves. When there is a liquid market for services of managers, it is possible for proprietors to hire professional managers.

(S20) The classical double entry bookkeeping model of accounting serves the needs of proprietorships. Accounting originated with traders who traded with many people, often repeatedly or on credit. Accounting was differentiated from mere counting by establishing the cause-and-effect relationship between the sacrifice and benefit aspects of each transaction (see Ijiri, 1975). This cause-and-effect-driven organization of transactions in double-entry bookkeeping gave it balance and usefulness as a powerful instrument of control over the flow of resources. This form of accounting, designed to implement the contract set of simple organizations, is bookkeeping. Most firms belong to this category.

(S21) When an organization expands to include two or more levels of management, its accounting must be adjusted to stewardship form to manage their divergent interests. This form of accounting developed to handle the accounts of temples and sovereigns since antiquity, as well as merchants or landed gentry who employed stewards to handle their estates. Organizations

involve actions, thoughts, information, and motives of more than one person. Stewardship accounting handles this problem.

Planning and budgeting, divisional and managerial performance evaluation and compensation, decentralization, transfer pricing, capital budgeting, and activity-based costing are all concerned with the problem of control in organizations with managerial hierarchy. Stewardship or managerial accounting is built on the foundation of bookkeeping. But accounting needs of hierarchical organizations include the above-mentioned additional features absent in Paciolo's description of the fifteenth-century European accounting practice.

With the development of labor markets, of managerial labor market in particular, with commerce and business schools to supply this market, this form of hierarchical organization and stewardship accounting becomes more common and important in the economy. Over the past century, development of this aspect of accounting in U.S. has closely paralleled the development of the managerial market.

Classification by Market for Capital

(S22) When there is no market for capital, a single owner, or his personal friends, must provide all the capital. They can directly manage the firm, or to give effective direction and supervision to hired managers. As the capital markets develop and become more liquid, the number of individual sources of capital multiply. It is difficult for a large group of shareholders to manage the firm themselves, or to give effective direction to hired managers. Financial reporting model of accounting developed to meet this need.

(S23) Publicly held corporations place new demands on accounting systems. Investors who are distant from the operations of the firm need an accounting system to protect their capital and to enforce the contract set. To protect themselves against nonperformance or malfeasance by managers they hardly know, they resort to rules and standards of financial reporting. Use of rules and standards limits the exercise of judgment by managers, and therefore the informativeness of the reports, even as the rule makers strive to improve the value of financial reports. Fearing self-serving manipulation by managers, financial reporting rule makers have progressively narrowed the bands of managerial discretion. Elimination of discretionary reporting is a double-edged sword; even self-serving reports by managers in a discretionary regime end up revealing what kind of managers they are (Levine, 1996).

(S24) In active capital markets investors search for information about the prospects of the firm. Financial reports remain an important source of information, but there are other sources also. This competition attenuates, but does not eliminate the investor reliance on financial reports as a source of information.

When shares of stock are actively traded in low transaction cost capital markets, stock price can respond to information about the firm within minutes or hours. In the early years of development of the financial reporting model, corporate managers use secret reserves to smooth out the financial reports over time to minimize share price movements in response to transient events. As capital markets develop, such practices become increasingly impermissible.

A third consequence of the financial reporting model has been the shift of emphasis from stock to flow variables (balance sheet to income and cash flow statements). When markets for fixed assets of industrial corporations are imperfect, their historical book values become poor indicators of the future earning power of the corporation. Projection of current earnings and cash flows into future for the purpose of security valuation carries its own significant risks. Investors' and analysts' need for a sustainable earnings figure that can be projected into the future gives rise

to lengthy debates and detailed rules on isolation of nonrecurring elements of income from the others.

Market-based research has influenced accounting thought by making the accountants aware of the existence of the alternative sources of information for the stock market, the complex interaction among these sources, and the behavior of stock markets. It has replaced mechanical thinking by economic thinking about information. Accounting reports can mislead investors, but the existence of the market limits the extent to which this can happen.

(S25) Development of markets for securities as well as for goods and services has led some to argue, especially during periods of significant price movements, that the historical cost valuation be replaced by market valuation of assets and liabilities. Because all markets are imperfect in varying degrees, errors of measurement in market-based prices must be weighed against the errors of ignoring inflation (Lim and Sunder, 1990, 1991). Second, the benefits of inflation accounting for security valuation must be weighed against any reduction in the effectiveness of the financial reporting system for implementing and enforcing the firm's contract set. While several proposals for market valuation have been tried out in the United States, none have survived.

Vast majority of firms in the United States, or in any other economy, ownership shares are not traded in liquid markets. They do not use the financial reporting model of accounting.

Classification by Markets for Products

(S26) Accounting and control for organizations that produce private goods, such as cars or furniture, is different from accounting for organizations that produce public goods such as security or clean air. Organizations that produce private goods have customers who can withhold revenue from the firm if they are not satisfied with the good or services they receive. Organizations that produce public goods have beneficiaries, instead of customers, who do not have the power to directly withhold revenue. Therefore, the beneficiaries are not able to impose the kind of direct discipline on the managers that the customers can impose. Such organizations use a bureaucratic management. This fundamental difference leads to very different organizational structures and accounting and control systems in the two types of organizations.

(S27) More generally, the design of organization and its accounting and control system depends on the amount of market power the organization has in its product market. The lower the market power, easier it is for the organization to use the techniques of private good organizations. As the market power increases, alternative designs become necessary to install adequate control on management to ensure efficiency of operations. Accounting for private and public good organizations provide the two ends of the spectrum.

(S28) The basic framework of accounting—view of organizations as a set of contracts, functions of accounting in operating organizations, and the variations in organizations according to the managerial, capital and product markets in which they operate—are not likely to change. These aspects of accounting will continue into the future.

Transition

(S29) What will change is the extent to which various markets develop in different economies. (S30) Markets, organizations and accounting have an organic relationship in which it is not always easy to disentangle the direction of causes and the effects. They develop in step, influencing one another. What are the changes we have seen, and what more might be ahead of us?

(S31) So many changes are taking place in business and accounting. I shall limit my attention to five aspects of accounting associated with the information economy: technology, information, and efficiency, new organization designs, accounting for web commerce, new cost structures and management, and experimentation with market for standards.

1. Technology, Information and Market Efficiency

(S32) Advances in computer and communications technology have been called an information revolution. We now have access to more information from more sources. Are the investors better informed as a result? Has the stock market become more efficient?

I read many newspapers on my computer every day. I can get the stock price quotations, the price and financial statistics, and detailed reports of analysts, on many securities within seconds. I can trade stocks through my computer within seconds of placing an order. So can millions of others who have the same information and technological capability.

What is the impact of cheap and abundant information on market efficiency? There are good reasons for speculating why efficiency may, and may not improve. I shall focus on why not. Supply is only one side of the information equation, demand and use being the other. While the computing and communications technology has made it easier to produce and distribute more information and to lower its price, it has had less impact on the ability of human brain to process the information. Herbert Simon suggests that the real bottleneck for most people is not the lack of information but the time and ability to process the information. Unless more information is incorporated into investment decisions, market efficiency will not improve.

A second problem is the quality of the data made available for free or very cheaply. As vendors of information compete with each other to gain customers for their wares, they may lower the price as well as quality, because the quality of information is not easily observable to the customers.

Even if the information technology increases the efficiency of existing markets, through lower costs it induces more markets to be opened. Just like the effect of building fast highways in big cities is to encourage people to live at and commute from longer distances, the gains of information technology may also be used up through opening of newer, albeit thinly traded, markets.

Fourth, the same technology that makes it easier to disseminate information also makes it easier to disseminate misinformation. This is what has happened to the “free” information provided on the world wide web and the chat rooms.

We cannot assume, without evidence, that cheaper computers will necessarily lead to better accounting, stock market information, or more efficient stock markets. We need to investigate and find out.

2. New Organizational Designs

(S33) Information technology has had a major impact on the development of existing and new capital as well as managerial labor markets. These developments have multiple consequences for design and governance of organizations.

On one hand, the technology has thinned out the ranks of middle managers and clerical staff from corporations, who layoff employees no longer needed to deliver a given amount of goods or services. These employment cuts and savings in labor costs have increased the profitability of many corporations. The unprecedented increase in the U.S. stock prices over a long period of time is attributed to these operational efficiencies driven by technology.

Second, information technology has made it possible to harvest large gains from economies of scale in operations. Once a bank or a mutual fund develops a computer program to run its operations by spending, say, a billion dollars on software, the same program can be used to run two or three or ten banks or mutual funds without additional costs. The result of these economies of scale has been the mergers of the recent years, which have now reached the scale of 100 billion dollars for a single transaction, creating giant-sized corporations.

(S34) On the other hand, the development of venture capital markets, again encouraged by the same technology, is making it easier for entrepreneurs with ideas to go into business themselves using other people's money. Existence of a large and liquid labor market of well-trained scientists, engineers, programmers and M.B.A.s is the other driver in this phenomenon. Such small-scale technology startup firms have become an important engine of economic growth in the U.S. Their small size, flexibility, quick decision-making, and performance-oriented incentives have resulted in a large number of rag-to-riches legends. For the first time in many years, and in spite of a booming U.S. economy, several prestigious U.S. business schools reported a drop in applications or rise in the number of students who do not return for the second year of their education.

(S35) At the heart of the enormous creation of wealth through small entrepreneurial firms in U.S. is the greater transparency of accounting that makes it possible for small new upstarts to gain confidence of investors. As reliable information becomes available widely, and barriers to movement of capital are lowered, new companies can attract investment capital from around the world because of the confidence created in the information they provide.

These developments suggest a movement toward an economy consisting of a large number of small sized, fast-moving, well-financed entrepreneurial firms, even as large corporations grow in the banking, pharmaceutical, telephone, and oil industries. Technology does not necessarily mean larger or smaller organizations, just different organizations, and different accounting and control systems to run them.

3. Accounting for Web-Commerce

(S36) Electronic commerce presents many new challenges for accounting and auditing. In accounting, the well-established delivery based revenue recognition criterion is likely to continue. However, in web-based transactions, the questions about what is to be regarded as the time of transaction and delivery will have to be addressed again.

Under the current accounting standards, all research and development costs are capitalized. Given the intangible nature of web-related assets, on which firms spend huge amounts of developmental funds, questions about capitalization and amortization of such costs will present thorny problems for the industry and the accountants.

Definition of the revenue for web-based merchants itself has become a matter of some controversy. On December 3, 1999, the U.S. Securities and Exchange Commission issued a bulletin clarifying that web-based merchants who simply gather and transfer orders can take only their commission as revenue, and not the total price of the merchandise. Thus, if a web-merchant obtains and transmits an order for a \$100 piece of merchandise to earn a \$10 commission, it would be permitted to show only \$10 as revenue, unless it bears the risk and rewards of ownership of the merchandise. Other such questions will crop up about accounting for web-commerce.

In U.S., FASB is currently considering elimination of pooling of interest accounting. This means that accounting for mergers and acquisitions of companies engaged in web-

commerce, using purchase method of accounting will create a large amortizable asset on the post-merger balance sheets. Given the precarious nature of the balance sheets of most web-commerce firms, and the high prices they tend to command in the mergers and acquisition market, this accounting change may dampen the enthusiasm for such investments. However, the political muscle of these firms may make it difficult to enact an accounting standard which is so distasteful to them.

4. New Cost Structures and Management

(S37) Cost and asset structure of high technology industries is different, giving rise to important new accounting and management issues. Consider two such changes.

First, consider the changes in the ratio of variable to fixed costs. In software industry for example, the cost of development of software is fixed; it does not depend on the number of copies of the software to be made. The variable cost of software is practically zero. Our current management and accounting control practices were developed for industries with substantially higher (e.g., 40-60 percent) variable costs. Techniques of tracking factory costs, building cost standards, measuring variances with a view to control managerial performance, analyzing financial reports, profit margins, and valuation are all based on a significant part of the costs being variable. By contrast, in the software industry, virtually all costs are incurred in development, and there is no guarantee of any revenue when these costs are incurred. Furthermore, it is difficult to forecast and control these costs. Lack of familiarity with accounting and control for management of such industries may be one reason for the high level of prices of Internet stocks currently prevailing in the U.S. markets.

(S38) Second, consider the structure of assets in the new industries. As compared to more traditional industries, assets of high tech industries tend to be more specialized, less marketable, and often intangible. The most important resources of such firms may take the form of software, personnel, or contractual arrangements with other organizations, none of them capitalizable for most part. As a result, the balance sheet of such firms is not particularly informative of their financial status. There is little for a creditor to hold on to in case of default. Fast cycle time in such industries renders revenue stream volatile and difficult to project into the future. A new, better or faster product from a competitor may make the investment in plant of software worthless overnight.

A new challenge for accounting is to develop effective controls and methods of reporting on the finances of such organizations.

5. A Market for Accounting Standards

(S39) Until not too long ago, most countries of the world allowed legal or de facto monopoly for their own national accounting standards. In U.S., this is still the case. Globalization of capital flows calls for better harmonization of accounting standards across national jurisdictions in order to reduce the cost of capital. International Accounting Standards Committee was set up to address this problem, and many countries have permitted their own firms to report under IASC's standards, and in some case, incorporated IASC's standards into their own.

In United States the Financial Accounting Standards Board, and its predecessor bodies, have developed their own set of comprehensive standards. Difficult as it is to obtain agreement at FASB, agreement on common standards at IASC is even more difficult, given the diversity of

business environments in its member countries. Not surprisingly, many people in U.S. see IASC's standards as weak, and inappropriate for use in the U.S.

(S40) Development of the new information economy is also the time to review the benefits and costs of the monopoly approach to accounting standards, and think about the consequences of using possible alternatives. Some forty years ago, George Sorter suggested events approach to accounting. He anticipated a time when a firm could maintain a database of its transactions, and the software would permit different users with different needs to aggregate that data in different ways to arrive at financial statements best suited to their own needs.

We could also think about a competitive model for accounting standards. Countries could permit some two or three sets of financial reporting standards to compete for the attention of their firms (who will have to clearly mark their financial statements with the standards they conform to) and investors. Such an arrangement will encourage standard setters to think hard about the costs and benefits of standards they issue, and to experiment with newer approaches in an orderly fashion. In United States, development of laws that govern corporate charters was greatly facilitated by competition among the fifty states because this was a subject left to them by the constitution. Is it not the time for us to allow the market to decide which of the few well-thought out and available standards provides more valuable information to the investors. Investors should lower the cost of capital of firms using better standards, and such standards should attract more adherents from the industry.

Concluding Remarks

(S41) Consideration of transition and changes reveals more of our ignorance than knowledge. The new information economy presents scholars with the challenges to find answers to important new questions. For example, What are the effects on market efficiency? Since it is often assumed that the effect of cheaper information on market efficiency should be positive, I mentioned a few reasons why it may go the other way. We need to find out.

Second, are there better models of accounting for the new entrepreneurial part of the economy? Rick Antle once said, only half jokingly, "losses are good for Internet companies; larger the losses, greater the value." Was he totally wrong? How do we explain and understand the valuation of Internet firms given the nature of their assets and cost structures. Do we have a financial reporting model that will give reasonable information about such firms?

Third, how will control be established, and how will contracts be defined for this part of the economy, which is characterized by firms with low variable costs, high intangible assets?

Fourth, what are the possible alternatives to national or international monopolies in the field of financial accounting standards? What are the alternatives, and what are the likely consequences of implementing such alternative standards?

(S42) Let me summarize. The basic framework of accounting in which firms operate as a set of contracts among various participants, and accounting helps define, implement and enforce these contracts is stable, and unlikely to change soon.

However, the new information technology has been transforming the markets in which firms operate, and opening up new markets. Development of these markets gives rise to new organizational forms. The need for innovative solutions to establish effective accounting control and management in such organizations follows.

Scholars must address the questions that arise from these developments, help understand their consequences, and perhaps assist policy makers. The challenge for the policy makers is to avoid getting stuck in solutions that may have worked well in the past, but are inappropriate for

the new environment. It is equally important for them to stay away from making unnecessary rules, or imposing them without careful evaluation of their efficacy.

Accounting has played a key role in creating and sustaining the modern industrial economy. Accounting is what makes organization possible. If scholars, accountants and policy makers help make the right decisions, accounting will continue to improve the welfare of society in the new information economy.

(S43) Thank you for your kind attention, and the opportunity to share these thoughts.

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