IDEA GROUP PUBLISHING
701 E. Chocolate Avenue, Hershey PA 17033-1117, USA
Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.idea-group.com
ITP4171

The Coming Infocracy: New Organizational Forms For the Delivery of Personal Financial Services

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INTRODUCTION

In recent years, two factors — a relaxed regulatory environment and the growth of the Internet — have changed the competitive landscape of the personal financial services industry. Prior to the mid-1990s, active Federal enforcement in the United States of the 1933 Glass-Steagall Act prohibited joint ownership of banking, insurance, and security trading companies. Similar laws hindered horizontal integration in the industry abroad. As the regulatory environment eased in the late 1990s, mergers, such as that between Citibank and the Travelers Group, occurred as financial service companies sought to increase their market reach. But it was not until 1999 that the passage of the Financial Modernization Act finally allowed bank holding companies, securities firms, and insurance companies to combine operations. Subsequently, consolidation in the industry accelerated as businesses prepared to take advantage of potential economies of scale and reach and the promise of providing an integrated financial environment for their customers.

The growth of the Internet has also changed the delivery of personal financial services. People are beginning to surf the Internet with their money and are not afraid to use it for banking, investment, and insurance. Pure Internet banks have emerged, and traditional banks have endeavored to design effective strategies for integrating Internet and conventional channels, also known as bricks-and-clicks.

It is natural to assume that advances in the Internet and other information and communication technologies might affect how financial service companies address the potentiality of horizontal integration subsequent to deregulation. Had financial regulation eased ten years ago, most companies would have had little choice but to pursue a strategy of acquisition and merger to attain the capacity for providing integrated financial services. However, the Internet creates opportunities to build organizations, real and virtual, based on the control of information rather than the ownership of assets. Through this means, the structure of financial organizations in the post-Glass-Steagall world has begun to reflect their strategy, their origins, and their beliefs regarding the role of information in organizational control.

HOW IT AFFECTS ORGANIZATIONAL STRUCTURE: A HISTORICAL PERSPECTIVE

Researchers have widely observed that information technology plays an important role in shaping organizations and molding the nature of work (Bartezzaghi et al., 1981; Benjamin & Levinson, 1993; Drucker, 1988; Huber, 1990; Malone & Rockart, 1993; Wang, 1997; Whisler, 1970). Naturally, this role is indirect: Changes in technology affect information flow and the potential for information flow, and these, in turn, affect organizational structure.

Nearly half a century ago, Leavitt and Whisler (1958) proposed that advances in information technology would allow large industrial organizations to centralize control and decision making, and that it would radically alter the nature and organization of middle management jobs. The authors theorized that top executives would be less dependent on subordinates because computers would allow these top executives to recognize and react to everything of importance that occurred even in the most dispersed and complex organizations. Middle management tasks would be routinized and business groups would be merged. Roughly ten years later, when the predicted trend toward re-centralization failed to materialize, Dearden (1967), responded that although computers might centralize logistics, top management lacked both the time and the expertise to centralize all but the most important decisions. However, with the further development of communication infrastructure and computer networking in the early 1980s, Leavitt and Whistler's argument seemed to reassert itself. Researchers argued, for example, that information systems could extend the control of headquarters over foreign subsidiaries that would otherwise distance themselves from the home office as they matured (Prahalad & Doz, 1981).

The computer's role in automation was also recognized as affecting the organizational structure of manufacturing firms (Bartezzaghi et al., 1981). Clutterback (1979) hypothesized that the increasing power of information processing would narrow the distinction between blue-collar and white-collar workers and could reduce or eliminate the need for middle management. Attewell and Rule (1984), in a meta-study of research addressing the impact of computerization on factors such as job satisfaction, unemployment, inter-occupational change, and work redesign, concluded that the impact of IT is inconclusive.

Wide area networks made possible inter-organizational information systems, which increased the opportunities for competitive alliances crossing organizational boundaries (Cash & Kosynski, 1985). By the late 1980s and early '90s, information technology was blamed for industry trends towards decentralization and downsizing (McDowall, 1985), and praised for enabling efficiencies through business process redesign (Brynjolfsson et al., 1994; Hammer, 1990). Later, researchers argued that the widespread acceptance of client server computing precipitated movement from a command-and-control structure to decentralized authority and growth in teamwork and team-based management (Hitt & Brynjolfsson, 1997).

Clayton Christensen (Christensen, 1998; Christensen & Tedlow, 2000) has popularized the term "disruptive technology" as one that enables innovative companies to create new business models that alter the economics of their industry. The technology of electronic commerce is clearly such a force in many industries. It has not only changed business models, but in so doing, it has also affected the structure of companies competing in this environment.

The concept of the virtual organization (Davidow & Malone, 1992) predated but anticipated the widespread use of the Internet for electronic commerce. Other models, such as the creative Web (Conklin & Tapp, 2000), e-network (Davenport, 2000), value net (Brandenburger & Nalebuff, 1997; Nalebuff & Brandenburger, 1997), and e-lance structure (Malone & Laubacher, 1998), although differing in details, share the concept of a dynamic, flexible structure with blurred organizational boundaries.

HOW IT AFFECTS ORGANIZATIONAL STRUCTURE: A THEORETICAL PERSPECTIVE

There is a significant body of research that examines the relationship between structure and technology but the *mechanism* by which information technology affects organizational structure is scantily studied and poorly understood. One theory holds that organizational hierarchy is affected by the human inability to attend to more than a few bits of information at once (Simon, 1973). Central to this theory is the idea that organizations obtain or generate more data than any one person can assimilate to make informed decisions. As information flows to the tops of organizations, this "attention bottleneck," as it is called, becomes narrower and narrower. Information technology can theoretically loosen this bottleneck by processing, summarizing, and indexing the information. By contributing to managers' abilities to process more information, IT increases their potential span of control.

Bolton and Dewatripont move this theory out of its hierarchical context by proposing that firms organize to minimize the costs of processing and communicating information among its members (Bolton & Dewatripont, 1994). Specialized agents (human or computer) process data creating information with more specificity and relevance to the decision maker. The organizational structure, then, reflects returns to specialization and a tradeoff between specialization and communication. Information technology affects organizational structure by affecting the cost of creating or automating the specialization agent and the cost of communication.

Another theory holds that information technology affects organizational structure by changing the differential between internal and market transaction and coordination costs (Malone et al., 1987). The theory is based on the hypothesis that market coordination costs are higher than internal coordination costs. As information technology reduces the costs of market coordination, market transactions should become more desirable relative to internal transactions, thereby reducing firm size and the degree of vertical and horizontal integration.

The implication of these theories is that the growth of the Internet should enable partnerships and other virtual organizational forms, and improve their viability relative to more hierarchically controlled structures. As the relative costs of coordination, transaction support, communication, and agent automation change, we would expect to find evidence of structural change among firms in the financial service industry.

INTEGRATION OF PERSONAL FINANCIAL SERVICES – THREE MODELS

The response of the financial service industry to deregulation is predicated, in part, on the will of companies to respond to consumer expectations and preferences. Pundits in the industry believe that consumers will demand a full integration of personal financial services. They believe, for example, that the consumer of the not-too-distant future would like, at a single web site, to pay her bills, check her account balance, add money to her smart-cash card, check her credit card balance, check the current value of securities in her portfolio, buy and sell stocks and bonds, buy insurance, and issue instructions to reallocate the investment mix of payroll-deducted deposits into her 401K plan.

The quality of the integrated service experience will depend not only on the quality of the user interface, but also on the completeness of information and access to all the user's financial resources and on the features provided. Ideally, every financial instrument owned by a customer will be internally liquid and appear to be centrally located and controlled, restricted only by the legal and financial parameters of the instrument.

Three models suffice to describe the strategies of companies that have begun to offer integrated personal financial services (IPFS). The first model, which we call the Unified IPFS, describes companies that provide all or most of the services a consumer might want within a single corporate structure. Today, most Unified IPFS companies exist as holding companies, and, while their services are not yet well integrated, they are attempting to achieve a more seamless service delivery system through expanded investments in information technology. Unified IPFS providers currently differ in their degree of integration and the extent to which they can provide a full range of financial services.

The second model, which we call Allied IPFS, describes companies that provide diverse services through inter-organizational alliances. These companies focus on one primary area, such as banking, but provide a broad range of services through alliances with other companies. An example of such a company is Sovereign Bank, which provides, for example, investment products through their partner Lantern Investment Services and annuity products through IFS Agencies, Inc.

The third category, which we call Portal IPFS, describes companies that provide no direct, transactional services of their own but act as portals through which consumers can manage all of their financial services. An example of such a company might be Quicken, with its relationships with Ameritrade for brokerage services and Firstib.com for banking services. Although Quicken does not currently provide the seamless integration that we expect from the Portal IPFS firm of the future, it clearly hints at what this future might be.

Unified IPFS

A distinct advantage of the Unified approach is that a single corporate entity captures all revenues and maximizes its 'share of wallet' with the customer. The opportunity to establish brand recognition is also a benefit for the Unified IPFS provider.

The major disadvantage of the Unified IPFS strategy is the potential for a loss of corporate focus. The current diversity in investment products and continued advances in information technology make it difficult to be best in class for all products and services. The Unified providers compete directly with each other but also compete with more focused allied and portal players who, by incorporating product specialists into their networks, seek to provide premier service in a single product or market.

The ability of Unified IPFS providers to offer a seamless integration of accounts may sway customers to opt for a single provider. However, if an Allied or Portal IFPS company can offer both integration and a choice of providers, the Unified IFPS provider may find itself at a disadvantage.

Allied IPFS

The primary benefits of the Allied approach are internal focus and external provision of choice to consumers. The enhanced focus gained by concentrating on a limited product-market offering eliminates resource deployment conflicts that may arise in more diverse, Unified organizations. The firm can acquire, develop and deploy human, capital, and technological resources in the development of a narrower set of competencies that are specific to their line of business.

Proponents of the Allied model often boast of its apparent flexibility. Stronger partners can simply replace poor performing alliance members. However, this benefit is more illusory than real. Removing a partner for the alliance is extremely difficult unless all consumers opt to shift to the new alliance member. Adding a new member to provide alternatives to weak partners may violate contractual agreements or create confusion for customers. One cannot help but be reminded of the old cliché, 'a chain is only as strong as its weakest link'.

The Allied model's major weakness for consumers, relative to the Unified strategy, is the challenge of providing a seamless integrative experience for the customer. Unified providers may find crossing internal *functional* boundaries difficult but the Allied firms face greater obstacles when crossing *organizational* boundaries. The coordination costs inherent in these relationships may impact financial performance by either shrinking margins, if prices are fixed, or compromising competitive position if the alliance raises prices to preserve margins. The goal for alliance members is to leverage focus such that the cost savings from internal operating efficiencies and excess returns earned by product specialists outweigh the added coordination costs.

Portal IPFS

The advantages of the Portal IPFS provider is that the choice of provider rests with the customer, as opposed to the Allied model in which the dominant provider pre-selects alliance partners. Furthermore, the portal model allows for multiple providers for the same product-service, which maximizes consumer freedom of choice. Portal IPFS providers also have the capability to incorporate non-financial services, such as frequent flyer accounts, news and e-mail.

The major challenge for Portal providers is to placate consumer anxiety regarding privacy and security. The account consolidation benefits delivered by the Portal model also raise fears about identity theft. Customer servicing and accountability are also significant issues for this model. Today's Portal providers are not capable of providing customers service for such things as account registration changes, address changes and problem resolution. The technical standards imposed by the Internet enable this model but further establishment and maintenance of business process standards will be necessary to facilitate delivery on the Portal concept's full potential.

The Portal model is the newest of the three and currently services the smallest customer base. However, adoption rates continue to accelerate as service levels improve and privacy concerns dissipate. The true power of the Portal will be realized when providers fully integrate account processing and augment transactional services with comprehensive add-on services.

THE COMING INFOCRACY

Science fiction writers have long used the term "infocracy" to describe a Cyborghian or Gaia society composed of beings that have no concept of self other than as a component of a functioning community. The term seems to have first been used to describe organizational forms by Zuurmond, who defined it in a government setting as the virtualization of bureaucracy (Zuurmond, 1996). Zuurmond's infocracy describes an organization that appears to have become flat, lean, less hierarchical, more open, and more flexible, but only because its bureaucratic structure, rules, and standards are translated into and enforced by the information systems. Zuurmond's infocracy retains a bureaucratic structure.

Clawson has popularized another definition of infocracy — a form of organization in which the basis of power is information (Clawson, 1999; Clawson, 2000). Clawson observes that the industrial revolution generated a shift in the dominant management paradigm from aristocracy to bureaucracy, and he suggests that the information revolution is spawning a similar shift from bureaucracy to infocracy. In an infocracy, decisions are made on the basis of data by those best equipped to interpret the data, rather than on the whims of those empowered to make decisions by their positions. Clawson believes that the transition from bureaucracy to infocracy is underway, and that it will be more rapid than the slow transition from aristocracy to bureaucracy, as the information revolution has proceeded at a faster pace than the industrial revolution. The transition from bureaucracy to infocracy could have significant implications for how organizations operate. For example, Clawson hypothesizes that the most effective leadership styles will be those relying on data-based persuasion rather than command and control behavior.

Clawson was not the first to predict the demise of bureaucracy as an effective management structure. As early as 1966, Bennis had forecast the "coming death of bureaucracy" (Bennis, 1966). Bureaucracies, with their functional divisions, and hierarchical structures, seemed too slow to compete at the speed of information.

Yet there remains considerable research that affirms the value of bureaucracy in providing direction, structure, stability, and control (Adler, 1999), even in turbulent conditions. (Perrow, 1970; Schellenberg & Miller, 1998) Despite predictions to the contrary, identifying any reduction in the bureaucratic structure of today's industry has proved to be devilishly difficult. (Collins, 1998)

HYPOTHESIS DEVELOPMENT

It is reasonable to hypothesize a fit between a company's product strategy and its organizational structure. A Unified IPFS might be expected to have a divisional structure, probably based on product to those in charge of each division. Although some matrix structures might be necessary to motivate and control cross-selling and joint product development, the overall organizational structure is likely to be highly bureaucratic. An Allied IPFS would seem to require a more dynamic structure to respond to and nurture the inter-organizational fluidity inherent in its strategy. While each of the individual partners in the alliance might be somewhat bureaucratic, the governance of the alliance as a whole must have power both within and across organizational boundaries and must be sufficiently democratic to satisfy its respective partners. One might expect an Allied IPFS to exhibit a semi-bureaucratic or adhocratic structure, with distributed decision making, some degree of democracy, and less control than one would find in a bureaucracy. A Portal IPFS, built solely on the flow of data with little to no control over its customers, would seem to require an infocracy if its internal structure, leadership, and decision making parallels the face it presents to the consumer. Thus, our null hypothesis:

H1: Bureaucracy decreases and infocracy increases as IPFS strategy moves from Unified to Allied to Portal.

Yet, it is also reasonable to argue for the opposite hypothesis. A Portal IPFS might demand a bureaucratic structure to counterbalance the fluidity of its customer/supplier relationships by tightly controlling procedures and management oversight. A Unified IPFS might need to operate as an infocracy to become nimble enough to compete with a Portal IPFS. Thus, the alternative hypothesis:

H12 : Bureaucracy increases and infocracy decreases as IPFS strategy moves from Unified to Allied to Portal.

These hypotheses have been stated in a form that is potentially verifiable, in the sense that they propose a relationship between the structure and strategies of existing organizations. One might also ask the hypothetical: Should there be such a relationship if one doesn't exist at the current time? If so, which relationship should exist for companies to achieve the greatest success? These questions motivate hypotheses H2 and its opposite H22:

H2(2): Bureaucracy should decrease (increase) and infocracy increase (decrease) as IPFS strategy moves from Unified to Allied to Portal.

Testing these hypotheses is complicated by three significant problems. First, the concept of IPFS is relatively young, as is the technology to achieve cross-organizational coordination. As a result, few Allied IPFS providers and even fewer Portal providers exist. Whether more will arise as time passes and technology improves remains to be seen. Second, the concept of infocracy has only recently been proposed. To the best of our knowledge, it has never been operationalized, and no instruments exist to measure it. Finally, it is likely to prove difficult even to identify a company's IPFS strategy. We are beginning to see hybrid strategies, with Unified companies, for example, outsourcing some products to selected Allies, while attempting, at the same time, to provide some Portal functions. These problems give rise to opportunities for future research.

DIRECTIONS FOR FUTURE RESEARCH

The current research has motivated several directions for future research. First, as a prerequisite for study in this area, techniques are needed to classify company strategies as Unified, Allied, or Portal. Although the pure strategies are easy to classify, mixed strategies will likely prevail. What percentage of a company's functions should be in-house for it to be classified as Unified? What percentage should be provided by an ally in order for it to be classified as Allied? Should company IPFS strategy be measured on a continuum?

Second, the concept of an infocracy must be operationalized. How can the degree of infocracy be measured? Can one develop a scale on which an organization can be rated as somewhere between bureaucratic and infocratic? Or, is infocracy, to some extent, orthogonal to bureaucracy, so that it is possible to incorporate both within an organization?

Finally, research needs to be done on the relationship between strategy and structure. Hypotheses H1 and H2 can be tested and their implications examined.

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