kets. From standardizing contracts and commercial measures to establishing the city as a commercial space, creating circulation is a project based in the manipulation of the physical world through technology and architecture. Revising the material form of the market to conform to the shifting ideals of abstraction can never be complete.

* CHAPTER TWO
Trapped in the Pits

In July 1998, Pat Arbor, the chairman of the CBOT, called a members' meeting to discuss rumors circulating in the pits, lunchrooms, and bars in and around the CBOT. Every day new tales surfaced about Arbor and his supporters pursuing electronic trading and creating a global trading network with other exchanges. The CBOT had already instituted its own electronic trading system, Project A, which operated after the trading floor closed, and word was that the managers were considering leaving it on all the time. More worrisome were Arbor's reputed intentions to bring European-style electronic trading to Chicago. He was pursuing an alliance with the all-electronic German-Swiss Exchange, which had recently wiped out the pits in London. The Chicago traders knew their chairman was making plans, and the traders speculated constantly on exactly what they were and what kind of changes they would bring. Each bit of gossip stirred up their anxieties. What costs would this transition involve? How would they train themselves to work on screens when their work had been rooted in the human action of the pits? Was Arbor going to give their German rival power over the course of the CBOT? Was their way of life and labor at risk? The outcome of arguments over the implementation of electronic technologies and cross-Atlantic alliances would shape the exchange's trading networks. The history of Chicago, allegiances to the trading pit, and the close ties of CBOT members came together to direct the actions of the largest futures market in the world.

The thirty-year Treasury Bond futures pit was the stage for the meeting. That July day, scraps of paper from the last hours of trading littered the floor as the clerks and other employees filed out, leaving only members in the quiet pits. Traders from the grain room across the hall joined the financial dealers. Arbor was already waiting to preside over the meeting, literally, from his perch atop the market reporters' stand, which hung over the pit. From the outset, the members were tense and their chairman was defensive. Arbor opened the meeting saying that he wanted to dispel the "rumors du jour" and allow the members to ask questions in the open, bringing what was already being talked about into the official discourse of the exchange.

First, he said, the CBOT would use its reserves to update its technology. Members would not be required to pay out of pocket for the electronic technologies they feared would relieve them of their livelihoods. The next rumor was wishful thinking. "Hasn't the Eurex agreement fallen apart," someone asked. No, it had not foundered, Arbor told them. The members noted that the wider public lacked confidence in the CBOT's future course. Over the last year, the value of CBOT "seats" had fallen almost half a million dollars off their peak. This loss in value symbolized the declining significance of the exchange, but it also meant that each full member of the CBOT had lost $500,000 (in paper value, at least) in this collapse. Arbor had to dispel the hope of the next questioner, explaining that the CBOT was not buying up seats to boost prices.

Other questions danced around the central issue, and then someone raised it directly: "What good is a seat without open outcry?" Another asked rhetorically, "What is the appeal of computer trading, besides some cost savings? Traders can get into the pit and *see* a true bid/ask. They can *see* exact size. Bigger, deeper, better markets is what open outcry can give." But Arbor refused to acknowledge what the speaker meant to pass off as a self-evident truth. He replied curtly that computers could provide deep and liquid markets and then pushed ahead. The members were committed to open outcry, but they had never before had to justify or defend their trading system. Traders' allegiances and profits were tied intractably to the trading pit, but, until recently in the history of the CBOT, these attachments had remained in the background, part of the invisible structure of assumptions. The threat of electronic trading, even in its vaguest forms, forced them to consider where open outcry fit in the nascent technological future. The members fought over the implementation of electronic technologies and cross-Atlantic alliances to preserve the place of the pits, the future of their craft, and, they hoped, the role of Chicago as a center of global trading. The stakes could not have been higher.

When they spoke among themselves, traders defended open outcry by saying it created efficiencies in the market that no electronic technology could ever replicate. They believed that the "liquidity" of the pits was deep: any bank or strategist could do business at any time, no matter how large the order, ensuring the circulation of capital through its markets. The pits provided speculators, and speculators would always trade. Chicago traders also believed that the open-outcry system of the pits protected markets from catastrophe, since people working face-to-face could maintain stability in turbulent times.

In its advertisements, the CBOT reminded the world's financial managers that these markets were the only ones to stay open during the 1987 crash. Their strength, they argued, came from a potent source—the dedication of the Chicago floor trader. Their perseverance in making markets, even in the face of their personal financial peril, kept the exchange sailing through the storm. The relationship between Chicago's traders and their distinctive technology is reciprocal—just as the men make the pits work, work in the pits shapes these men, creating a process that solders self, technology, and organization together to forge a market.[1]

They asserted that it was the relationships among the traders and the roots of the market in open outcry technology and in the city of Chicago that created the deep, liquid markets that had always drawn business to the CBOT. In other words, they believed that the premodern elements of the CBOT were still at the heart of this modern financial exchange.[2] The impersonal nature of electronic trading posed the greatest danger to the market, they argued. New technologies that linked actors who were decentralized and dispersed would remove the energy and excitement that could only come from face-to-face competition. Traders worried that with rivalries and friendships far removed, computer trading would not give the rush or provide the intensity of competition they experienced in the crowded pit. They insisted that the more abstract and analytic approach to the market would cause screen-based markets to be illiquid; that is, the online exchange would be unable to provide continuous circulation.

Defenders of the CBOT pit technology also argued that the open-outcry tradition was better suited to handle the human irrationalities that cause panics in the market. Even the forward-thinking Arbor declared, "Nobody does it better in times of market stress." Traders inhabit, identify with, and develop responsibilities to the market. The conservative traders argued that this unique combination of attachments kept the CBOT markets liquid. Sean Curley Jr. told a story from the bond pit that illustrated the responsibilities of the trader and his professional identification with the market. It was March 1995 and the government was about to release employment statistics for February. Even though traders were expecting a stronger job market by about a hundred thousand jobs, the number that appeared on the electronic ticker tape showed an additional five hundred thousand jobs. Conventionally, bond prices drop a when economic signs, such as unemployment data, indicate a healthy economy. When job growth is strong, investors see more profit opportunities in the stock market. They sell treasury bonds, driving down the price, and reinvest the money in the equity markets, a logic that can be dangerous for bond-futures traders.

Sean remembered the day vividly: "And the bonds traded down, down, all the way to limit down. . . . The big bond locals didn't leave the bond pit. They *couldn't.* You can't. That's what you're there for. Certain bond guys won't leave, even when they're losing a lot of money, until their friends pull them out of the pit. But, you know, they just were there to make markets, that's what their job is."

Advocates of open outcry even contested claims that electronic markets provide greater transparency. They argued that the social environment of the pit, where traders know and watch each other, is a more effective forum for identifying illicit market activity. The responsibility shared by competitors and friends alike creates a social transparency that no accounting procedure can match. "With the eyes of competitors on you, you are unlikely to do something dishonest. . . . On the screen, how do you know who the criminals are?"[3]

The traders argued that the technological tools of market abstraction, the direct connections between electronic trading screens, would hinder the market's operation. This discussion positions technology as a force of efficiency that dampens emotion and facilitates calculation based solely on prices and other financial abstractions. The argument belies how social ties and emotions are always part of the market. The market ideal of technological abstraction sets the terms of the debate—one that the floor traders were sure to lose as the market made the transition from an earlier modern form to a contemporary one.

On regular work days, though, the scene on the financial trading floor gave no hint of the threat the traders were facing. The Chicago Board of Trade markets had a banner year in 1998. The pits were packed. The thirty-year U.S. Treasury Bond futures pit, the largest in the industry, hit its daily record on August 27—1,121,634 contracts. The hall vibrated with the shouts of active business. The traders did not fear that the CBOT would fail but that the pits and their jobs would be swallowed up by the new logic of world markets they had helped to create. The members and the exchange leadership faced a vexing problem. How could the CBOT update its technologies and remain a global player while maintaining its commitments to Chicago and its traders?

Traders and managers had a set of fierce and contradictory commitments, first to the market and then to their way of making the market—the trading pit. In their vision of the trading nexus, the pit was the physical location for the market, putting flesh and bones on the abstract market, peopling it with bodies, voices, personalities, and colors. Digital technologies

upset the delicate balance between the abstraction of markets and the materiality of the pit. Yet proponents of the new information technologies asked what seemed to be a straightforward question about efficiency. Why should big banks pay fees to Chicago's brokers for carrying out their orders when electronic networks could connect traders directly? Electronic networks could obviate trading pits entirely and provide direct access to the market. The possibility of electronic trading undermined the traders' working assumptions about the production of markets by challenging their efficiency—the fundamental reason given in favor of the CBOT pits. In response to this threat, the members and managers of the CBOT defended their form of exchange.

The technologies of digital trading "problematized" the reigning market form and forced market planners and managers to reimagine and reconstruct what markets should be in light of the new possibilities of technology and geography. The mere *idea* of electronic trading made the constitution of the market—the trading pits and the personal interaction that brought them to life—"into an object of reflection" and made it "available for analysis of its meanings, its conditions and its goals" when it had not been before.[4]

The screen would replace personal relations with abstract associations. Men laboring to create liquidity with their voices and bodies in the pit would be replaced by numbers. The logic of this process of "disintermediation" redefined the landscape of the futures markets. Everyone knew, and many feared, that digital technologies could circumvent the trading floor entirely, setting the market loose from the pits. Traders' on-screen interactions would be recorded on servers they never saw or felt, allowing the market to float freely among the electronic nodes of a global network. Screen-based trading not only threatened the traders' links with the market but also put the identity, economy, and business culture of Chicago at risk.[5] Electronic technologies could remove the market from the marketplace and relocate it outside the Chicago nexus. According to estimates at the time, Chicago's exchanges provided, either directly or indirectly, more than a hundred thousand local jobs—many of them high-end service functions such as banking, law, and insurance.

The traders themselves were wedded not only to open outcry but also to the cultural practices and forms of social organization associated with it, from the skills honed over generations to the institutions that brought it to life. Traders growing up in Chicago and its suburbs learned specific ways of engaging the market through networks of friends, family, and neighborhood ties. Members of Chicago's "trading families" learned about open-outcry methods of competition and strategies in their youth. Thousands of others are connected to the market through looser ties with friends, colleagues, or clients who work at the exchange. People who work downtown saw the garish, colorful coats that traders wore to make themselves visible in the crowded pits. The CBOT building was just one of the ways that the marketplace made a visible contribution to the city's atmosphere.

During its hundred-and-fifty-year history, the pit had garnered a singular place among trading technologies, too. The CBOT defined the market in futures every day. Chicago traders were proud of their part in modern market history. Losing open outcry threatened their role in global finance. The Chicago Board of Trade resisted digital technology when other central financial institutions in global cities were willing to submit themselves to rapid change.[6] The CBOT's fight for the distinctive technology at the center of its exchanges was a struggle to define the singularity of Chicago and establish its special importance in the systems of global finance and among global cities, as well as to establish its own terms for how the markets in financial futures would be spun into a web of global markets.[7]

How did the CBOT become so entangled with open-outcry technology? To understand this, we must first understand how traders' techniques are wedded to a single technology of exchange. But this is not a simple question of skill. The affective ties of the members to family and to Chicago extended to their method of trading. When new technologies and exchange techniques presented a global challenge to open outcry trading, traders struggled to find a viable way to navigate the terrain of electronic efficiency that digital technologies carved out. The combination of technological conflict and local history played out in the 1998 contest for chairman of the CBOT, the man who would plot the organization's course in the new technological landscape.[8] To understand this decisive moment in CBOT history, it is helpful to examine the layers of technology, social institutions, and cultural practices that formed the market's foundations.

Technology and Performance

Open outcry trading brings the market to life.[9] The pit's steps arrange the market as it organizes traders' shouts and hand signals. Each trader brings his bids to buy and offers to sell to the open pit. The auction that follows does not have a central coordinator. Each deal is a communication between the individual trader and the market as a whole. Brokers and local traders, or "market makers," form agreements that move contracts. If the trade is not accomplished inside the pit according to the specific set of performances that qualify as a trade, the exchange does not legally occur. This specific performance unites the physical location of the CBOT and the particular skill

of the traders and brokers who work in the pits. The physical and social organization of the pits supports the technology of open outcry trading.

For the CBOT's believers in open outcry trading, the market begins and ends on the trading floor. The space of the pit defines the market, and its octagonal steps organize the arena of exchange. Temporally, the market is what is happening that moment in the pit, and is apparent in whatever deals are being made. Once trades have been written and verified and their prices inscribed on the quotations board and sent out on the electronic ticker tape—all of which takes only seconds—the market has moved on. The traders' work is to locate the market, a process that discovers the price of a commodity, and it can be found only within the boundaries of the pit. But the work of the pit does not end here. As an economic device it is a site for identifying the contours of the market, but that process is entwined with trading hierarchies, and the pit operates as symbol for the CBOT, not just as a mark of the organization. It is a defining object that must be defended.

The abstracted image of three concentric octagonal rings is the official symbol of the CBOT. The pit wrapped the commercial glory of Chicago within its concentric steps; it tamed the swirl of commerce and sucked it in to return market information as concrete prices. It is the commercial nexus of Chicago's financial world. The pit is more than a place where prices were set; it is a symbol of a city and its global connections.

Since 1870, the stepped, ringed structures have been the distinctive feature of the Board Room. Just as redesigning the trading floor of the 1930 building offered an opportunity to rationalize the marketplace, the pit itself was originally an effort to rationalize the space of the market. Its design worked to solve a problem of the fragmentation of the marketplace. Within twenty years of its founding, trading at the CBOT became so popular that crowds inundated the CBOT space. Unable to see potential deals across the room, traders scaled heights to improve their sight lines. Market reporters began to complain in the pages of their daily papers that traders were climbing onto their desks and obstructing the reporters' vision.[10] As auctions, futures markets are effective for manufacturing prices and producing profits when all the participants can see and hear all bids on offer. The crowded trading room hindered speculators from getting to all the available trades. Since traders could do business only with partners in their immediate reach, the market broke up into cliques, each producing its own price based on whatever information was available from its vantage point. This was a weakness both for individual traders and for the CBOT, whose mission was to create a central marketplace that set a single price for a commodity.

The pit offered a solution to the problem by rearranging the space of the market. Rather than distributing participants over the flat surface of the floor, the pit raised them up in tiers, as in a stadium, an arrangement that produced considerably better views. After trying out several shapes for the raised structure, the CBOT introduced the octagonal pits in 1870, and these tiered steps have organized the open outcry market ever since.

Within this trading arena, the choreography of a trade links the pit technology to traders' techniques. The fixed steps of open outcry trading shape shouted numbers into a legally enforceable contract between traders. Material devices structure trading, but just as important are the systems of conventions regarding their use. Formal regulations require certain movements to offer and close a trade. Within the physical confines of the pit, these movements seal a legal reality, a binding, enforceable contract. The action of the pit rests on them as much as on the rubber-clad steps. But the requirements are flexible, and traders use these limitations creatively. Practitioners manipulate the conventions and their bodies in ways that sometimes support and sometimes subvert the choreography of a trade. Norms of use among traders grew up around the pit and became fused with it and the Chicago trading floor. These norms of use can change over time, but while they last, they seem necessary and intractable, the only methods that work.

The norms and legal regulations came together at the CBOT and fused into the open-outcry system, a complicated mix of material objects—the trading pit, paper records—and the specific physical motions that create futures prices. The choreography of a trade is a technology because this set of movements is a device for producing a binding trade. This procedure, embedded in particular motions (discussed in the following section) that accomplish a task, is a legally defined technique.

Choreography brings legal and material technologies together with individual and collective techniques: the dance of dealing uses not only the prescribed movements but also the artistry necessary to bring that performance to life. There is room for creative play within the binding rules in the tone of the voice, the flair of the hands, and the timing of shouts. In the pit, the legal rules that define the movements of a trade both circumscribe technique, by constraining traders' bodies to certain moves, and establish the boundaries for inventive work. Not any movement can create a trade; only a limited set of actions can do this. Yet, there is still room for trading norms and individual manipulations to develop.

This interpenetration of technology and members' performances ties the fate of the CBOT to the vitality of open outcry. Tom Donovan, the president and CEO of the CBOT in 1998, expressed this intertwining in a powerful statement marking the exchange's one hundred and fiftieth anniversary: "To be number one, number one for the past 150 years. Not a day, not

a week, not a year. Every year. Number one—this says something. This says that the world, and this is a global market, comes to the Board of Trade daily because they believe in us. They believe in the members and they believe in the Chicago Board of Trade."

He directs the listener to recognize that the success of the organization and its markets is directly tied to the skills of the membership. In order to understand how the success of these markets became coupled with the specific, fixed skills of the locals, we must first understand the structure of trading and the rich social life of the pits.

How Trading Works

The succession of stages that make up a trade rely upon the tight orchestration of individuals. Each person controls diverse types of information and operates with a different communications system. The ordered interaction among the players is built on and generates relations of dependence, familiarity, and apprenticeship that shape traders' networks and create channels for career advancement. Learning to master the intricate interplay between traders, clerks, phone-bank managers, and outside clients is the secret of pit traders' success and a key to profit. The interactional order of the pit is as important to the economic reasoning of floor traders as the price information they acquire. To understand how traders became so tightly entwined with the pit, we must examine the performance of trading.

Into the Pit

A trade originates outside the pits with managers and traders from banks and hedge funds. From their bases in major financial institutions, strategists monitor financial markets in search of profit opportunities, either within a single market or between financial markets. One common tactic used by strategists is to exploit differences in the pricing of bonds for sale in the present against the price of bonds offered in months ahead in the futures markets. For example, the strategist might consult a mathematically complex bond-pricing model and see a discrepancy between past and future price. The price of a futures contract for thirty-year treasury bonds might be high in comparison to the price for the same bonds in the present. Perhaps the futures contract is trading at nine when it should be trading at three, according to the model. Deciding quickly that the price of the futures contract is about to fall, this heavily funded player presses the speed dial buttons on his telephone to call the desk managers or clerks who manage business for his firm on the floor of the CBOT.

The clerks are usually high-school educated workers who act as channels to the brokers in the pits. Desk managers are traders themselves who may trade company accounts in addition to serving clients. Whoever answers the strategist's phone call will "flash" the order to a broker's clerk in the pit. A series of hand gestures at the level of chin, brow, or crown of the head indicates the exact price and numbers of contracts to be bought or sold. If the trade is above or below the current price, the clerk writes the order on a slip of paper, stamps it with a "time in" mark, and hands it to a runner. Runners, the lowest paid of the floor staff, weave their way through the maze of phone banks to bring the order to a broker's clerks. They may be traders in training, learning the inner workings of the markets by moving through the apprenticeship system. In contrast to these usually white, male runners who have connections in the pits, there is also a few "career" runners, whose minimum wage and outsider status leave them navigating the packed pathways between the pits without the possibility of becoming traders.

After receiving the order, the clerk taps his broker, or shouts in his ear, communicating the new order. The broker either executes the transaction immediately at the current market price, or slips the order form into his deck, a fat pile of paper slips indicating at what price customers have commissioned him to buy or sell contracts. He holds the deck, folded in half like a hot dog bun, close to his body. The flow of orders in the deck contains valuable information. A large order could push the price of a bond down. A trader who knows such an order exists before it is brought to the market could sell ahead of the lowered price and profit from his insider access.[11]

Inside the pit, there are two levels of trading choreography—the legal requirements for a trade to occur and another level of verbal communication and physical action that sets agreements into motion. The legal template for the actions of a trade is brief: one trader signals an offer or a bid with his voice. The responding trader vocally agrees to fill the opposite side of the trade. After one check for price and quantity ("I sold you 5 contracts at a half") the trade is legally completed and enforceable.

In practice, however, this short sequence is elaborated by the local methods of communicating and occurs in the context of a pit packed with six hundred men. The initiating trader yells his bid or offer into the pit, using the leverage of the stiff soles of his steel-reinforced shoes to push past any obstacles on the step that would block him from the view of other traders. Thrusting his arms forward over the shoulders of traders on the steps below, the trader curls his hands into position, indicating the number of contracts he would like to bid or offer. In a "fast," or busy, market, where prices are rapidly rising or falling, the trader may be joined in his bid by hundreds of other bodies and voices. A trader who wants to "hit the bid" or "take the

offer," strains his neck toward the initiating trader. He tries to make eye contact while yelling a terse agreement: "Sold." According to the CBOT's rule 335.00, known as the "first" rule, the initiating trader is legally bound to give the desired number of contracts to the trader whom he perceives as having responded first, distributing the remaining contracts among the other bidders. Because the trader can exercise discretion in his perception, personal relationships between traders are significant in gaining (or losing) access to crucial trades.

The successful respondent verifies the trade with a flick of the wrist, check mark in the air. The initiating trader responds with a nod. Each trader marks down the three-letter identifying code imprinted in bold letters on the other trader's membership badge. Because this system relies on verbal agreements between members to cement each trade, it also requires trust and honor between members. The worst offense against both the formal and informal honor codes of the pit is for a trader to deny a trade on which both parties have agreed. As Sean, a broker for twelve years, told me, "I trust that you are going to card it up that I sold you ten. I have faith in you that you are going to make that trade good." Pat Arbor described it in another way: "Honor is the lifeblood of the system." Trust and technology are tied together in the face-to-face exchange.

This choreography is not simply a *pas de deux*. As the trade makes its way back out of the pit, another set of players launches into action. If he employs a clerk to check his trades, the trader hands his trading cards, marked with his three-letter code and the name of the clearing firm responsible for his accounts, to his trade checker, who circles the pit to find the initiating trader's clerk. Leaning over an empty trading desk or supporting the cards on an available knee, the two confirm the trade. The trade checker then deposits the cards in a basket for desk clerks to bring upstairs to the company's office. There the flying fingers of back office staff will enter the trades into the clearing apparatus of the CBOT, where the deals will be matched and accounts settled. These skills do not come automatically. Learning to use these sets of signals is a challenge everyone working in Chicago's futures pits must meet.

Locals and Brokers

From the perspective of the outside observer, the trading floor seems chaotic, but in fact the frenetic activity of the pits masks a finely tuned organization. Open outcry trading is based on the relationships between locals and brokers in the pits, the most important connection in the arena of trade. Brokers are traders who accept orders from outside the market and complete these transactions in the pits in exchange for a commission on each trade.

They execute buy and sell orders for brokerage houses or corporations for whom they generally work on informal, fee-based contracts. Desk managers are free to direct their business to any broker working in the pit. Brokers are the link between outside market participants and the trade in the pits, the conduits for orders from traders outside the pit to the speculators inside.

The locals, also known as "market makers," are concerned with risking money for profit. They are traders who deal for their own accounts, speculating on price changes in the market. The presence of locals allows outside market participants to trade at any time because they are always there to buy and sell. In the market's own terms, the locals provide liquidity. They are entrusted with responding to any bid or offer that money managers bring to the marketplace. Locals are "market makers" because they support the central assumption of the marketplace—for every buyer there is a seller, and for every seller there is a buyer. In exchange for this service, they gain a time and place advantage by inhabiting the heart of the market.[12]

Local traders hope to profit from correctly predicting the movement of the market up or down and risk losing their own money in the process. They are speculators in the most pure sense—individuals making money purely on the changing prices of financial commodities. Although locals have a variety of trading strategies, most of them are known as "scalpers." Scalpers trade in and out of the market within seconds or minutes, profiting from small price fluctuations. Making hundreds of trades during the course of the day, the scalper never goes home owning contracts.

The word *local* makes this type of trader sound small and provincial, but this is often not the case in the CBOT pits. The skills and wealth of the major traders at the CBOT are especially important when markets are plunging. If there are no buyers in the outside market, the locals can take command and support the market. As the market weakens, the professional ethic of the trader fills the breach. One bond trader described the job and attitude of the market maker:

> When you're a local, your job is to make a market. So make the damn market. What is [the bid/ask]? Give me a number. [Using the voice of a broker] "I got a customer here who needs to be filled." When you get a cascading market or a rallying market, [the challenge is] who's going to be the first one to step in and say "no more"? Who's going to be the first one to say when the market is breaking? . . . OK, that's . . . where the market is. Here is where it is going to stop. In the pit, you look to the guys that you know are going to be the ones to do it. You know when you are in the bond pit that everyone looks to Tom Baldwin. . . . There wouldn't have been a trade there without a local there to "step up," that's what they call it on the floor. Who's going to step up and be the market?

Locals and brokers cultivate relationships with each other and generate a flow of trades from friends and colleagues that is strong enough to support traders in tough times. Trading regulations allow for gray areas, where traders can use their networks and their judgment to assist friends and cultivate bonds. At times brokers rely on locals to take on trades even when the local will lose money, cultivating a relationship with an implied, if nonspecific, reciprocity.

The interpersonal organization of the pits is tied to the social universe of Chicago. Membership at the CBOT is mediated through the networks of traders. Buying a seat in the CBOT that allows access to the trading floor is a large investment. For example, a full membership traded for $350,000 in October 2001. In addition to finding the capital to purchase a seat and set up a trading account, aspiring members must get sponsorship from an existing member.

Within the hierarchy of runners, clerks, traders, and brokers on the floor, a system of apprenticeship creates a channel for vertical mobility. Traders often train their clerks in trading techniques. Clerks watch the traders, learn the signals, and plug into their networks. Under the supervision of the broker, a broker's clerk can take his first steps into the pit by executing a few trades during slower periods in the market. Traders can "back" younger, promising traders by lending them capital for their accounts and "guaranteeing" their trades. The backers agree to cover their losses in return for a (usually very high) percentage of the profits they make. These arrangements are often quite informal, arrived at through mentoring relationships or by ties of family and friendship.

Given the informality of these ties, it is not surprising that the CBOT is an insular environment. Knowing a family member or someone from the neighborhood who can give you a job as a runner or a clerk (a low-paying, entry-level job) can put a hopeful trader's foot on the first rung of the ladder.[13] Ethnic loyalties and family ties run strong. The CBOT has spawned many trading families, and Irish surnames like Brennan, Hennessey, McBride, Cox, O'Daugherty, and O'Brian head the list.

For example, Sean Curley and his father Sean Curley Sr. share an office in the older portion of the CBOT building. A laminated feature article about the older Curley published in *Futures* magazine decorates the walls. On his desk are two gifts recognizing his contributions to the CBOT—one is a miniature version of the statue of the Roman goddess of grain that tops the CBOT building, the other a Mont Blanc pen in an inscribed marble stand. Both Curleys are dedicated to the institutional life of the CBOT and have served on the organization's board of directors. The clothes of the majority of traders in the pit reflect their maverick attitudes, but the Curleys wear neatly pressed shirts and ties under their oversized trading jackets.

The Curleys trade soybeans. Sean Sr. has been a member at the CBOT since 1962 and Sean Jr. since 1996, when he left an unsatisfying career in law. The father described his family's involvement from with the CBOT.

> My Uncle Matthew and Geoff Curley were the first two who came down here. My Uncle Geoff came down in the early 1950s. And a third uncle, John. Several nieces and nephews have followed. So we have probably fifteen family members down here—if I were going to enumerate—most of them in different parts of the business. Sean and I work in the bean pit. We have two girl cousins who work in the [soybean] oil pit. We have two other cousins in the bean pit. We have three cousins in the meal pit. So just on the grain floor in oil, meal, and beans, we have nine . . . and a couple in the financials.

The Curley family has branched out, helping each other to secure the necessary capital and learn the business.

Traders' ties can keep them in the business when losses and frustration take over. Henry Mueller runs his own small brokerage business in the Dow Jones pit and has sustained his trading through the connections and dependencies that support open-outcry technology. The Mueller family's roots in the trading business and agriculture brought him to the CBOT. Through years of successes and failures, his connections within the exchange have supported him and allowed him to survive his mistakes in the business. Henry's father was a wheat broker for thirty-five years at the CBOT, so Henry got to know the markets over conversation at the dinner table. He knew he wanted to make a career in the pits, and when, after his third year of college, a family member fell ill, Henry left school and never returned. For a while he worked on the family farm in western Illinois, where his father was trying to perfect a breed of cattle. But he quickly migrated back to the city to become a trader.

Henry held a series of jobs and traded in many different products and across exchanges before landing in the pit, where he now makes his living. When he first arrived at the CBOT, he leased a membership and tried his skill in the index, debt, gold, and energy markets. Trading did not come easily to him, and he lost steadily. A job in the back office offered an opportunity to learn the business from the accounting perspective and to make some risk-free money. He checked "out trades," beginning at 5 a.m., before the day's trading bell sounded, untangling problems in matching buyer and seller to specific quantities and prices. He traded in the afternoon and checked more out trades in the evening. After another series of losses, he abandoned trading completely and took a 5 p.m. to 5 a.m. job in the back office of a brokerage firm. He saved his money until he had enough to begin trading wheat options in the slower-moving grain room. He lost everything and then some; it took him about seven years to pay off his debt from those trades. After managing to gather another trading stake, he went to work as a clerk in the Eurodollars pit at the Chicago Mercantile Exchange.

When the CBOT announced that it would open a pit to trade in futures on the Dow Jones Industrial Average, where trades would come in smaller denominations than the established (and more lucrative) bond futures complex, Henry saw his opportunity to reenter the pit without the risks of trading outright for his own accounts. Like his father, he would become a broker, gathering commissions on trades executed for the brokerage firms whose trading desks surrounded the pit. Many people with whom he had traded were now moving to the Dow Jones. He felt he could rely on them for business.

To generate a coterie of brokers who would "fill paper" for the surrounding desks, the CBOT required each broker to show that he had enough clients to command a top step position. Henry approached Iowa grain and negotiated with them to fill their orders. The owners knew his father. As a kid, Henry was a fixture in their offices. They were happy to give him their business. Henry used their business to argue that he needed a good spot in the pit. His location in the pit gives his clerks sightlines to the desks of two other firms. They have directed their business to him and he has finally assembled a stable place in the trading business.

Such ties develop over the course of a trader's career both in and out of the pit as well as between pits and exchanges, and tie the technology to the individuals who make that pit work. The interpenetration of organization, family, friends, and neighborhoods links the CBOT to open-outcry trading as a way of life.

On the August 13 edition of *Chicago Tonight*, a local PBS television show, Pat Arbor put this point bluntly. "Chicago breeds futures traders," he said. Citing the family connections that support the market and create allegiance to open outcry, he stated, "There is a great deal of tradition attached to open outcry trading in Chicago, and that will help sustain this form of trade. . . . Chicago is truly the open-outcry exchange capital."

Leo, a veteran of the Bond pit, agrees: "We all started here. It's really become an industry in Chicago. There's like nine thousand traders who are part of the industry, and it's gone from generation to generation. . . . So it's become part of Chicago. I mean you could go to a city like Atlanta, Georgia, wonderful city. You can't open an exchange there—or you could, but where are you going to get the traders from?" Sean Curley points out that the fine-tuned operation of the pits leans on a group of men he calls "pit rats," with a mix of admiration and revulsion. To Sean, it is as if these men, Chicago locals, "can smell where the next trade is coming from. [These are] the kind of guys who you wonder if [the pits] weren't here what these guys would be doing."

Chicago's traders have much in common—particularly their choreography and a technology of trading—but there are also deep rifts that divide the membership of the CBOT. The corridor that divides the financial room from the grain room defines a split along lines of age, voting rights, and trading etiquette. Most important for the fate of the CBOT are the splits in membership categories that define each room. Traders at the CBOT can invest in different types of memberships that give them access to markets in specific products and exclude them from trading others. Political rights are also tied to each type of membership. Full members, who can trade in any pit at the CBOT, dominate in the grain room, their yellow badges showing their investment in full voting rights. The Associate members, who can trade any of the financial products, but whose votes are worth only one-sixth of a full share, show little deference to the grain room traders despite their power within the organization. Whereas a gentlemanly trade rules in the grains, an aggressive style and hyper-masculine ideals mark the ethos of the financial room. The macho bond traders refer to the floor that lies on the other side of the corridor as the "old man's room." Yet the weighting of votes engineered by the grain room traders allows them to control the politics as the exchange.

Because the membership ultimately ratifies major decisions of the CBOT board of directors, threats to the value of full members' seats generally have a short life at the Board of Trade. The members value their investments in the price of the seats and in their relationships in the pits. Any decision that would change the fundamental structure of the CBOT or weaken open-outcry trading opens the door to conflict. So when the abstract and anonymous forces of electronic technologies threatened their technologically and socially bounded world, Chicago's open-outcry traders were apprehensive.

Politics

With trading setting a record pace, the CBOT seemed very much in a position to control its fate. Open outcry was strong, but developments in the European exchanges were sending undeniable signals that the supremacy of pit trading was in jeopardy. Earlier that year the French futures exchange, MATIF, had closed its open-outcry floor. The introduction of electronic trading had drained the flow of orders from the pits. Soon thereafter the London exchange, LIFFE, had lost its most-traded contract, the ten-year German bond future, to an all-electronic German exchange. The Deutscheterminebourse (DTB) then merged with its Swiss counterpart to form Eurex, the CBOT's most threatening competitor. The growing volumes at CBOT affirmed the vigor of its markets, but faster growth in Europe raised questions about how long its dominance would last. By the end of 1998, the CBOT had traded 281 million contracts, an increase of 16 percent over the year before. Despite the impressive growth of trading volumes, seat values were plummeting. Falling from their 1997 high of $857,500 for a full membership, values stabilized around $490,000 in 1998. The even more astonishing growth at the all-electronic Eurex was partially to blame. Although the German-Swiss exchange still lagged behind the CBOT at 248 million contracts in 1998, the German-Swiss exchange's 63 percent growth over the prior year swamped the board's expansion. At the same time, a company that kept an office on the twelfth floor of the CBOT addition initiated a challenge to its host's monopoly in the U.S. Treasury bond futures market. At the end of September, Cantor Fitzgerald, one of the world's largest dealers in the primary bond market, launched its online T-bond futures market. At home and abroad, the CBOT's hegemony was under assault.

Floor traders and financial experts alike began to question the traditional methods of exchange. The speed and efficiency of electronic trading set the standard against which even the traders now measured their own work. The CBOT traders could no longer absorb the technological challenge of electronic systems into preestablished ideas about the consummate effectiveness of their local open outcry system and the self-evident superiority of the CBOT as a trading institution. The force of the technological disruption required the CBOT to take a new stance toward its most fundamental trading operations. However, it was slow in responding to external pressures and inconsistent in its actions. As the members tried to protect their place in the industry, divisions reflecting seat values and voting rights emerged within the Board of Trade.

Since 1998, the CBOT has struggled to remain in control of its own entry into the electronic marketplace and at the same time define the shape of electronic markets for the global futures industry. The CBOT's functional monopoly on trading T-bond futures, a key tool for financial managers, along with the sheer size and prominence of the organization, positioned it to be a key player. However, the membership of the CBOT had yet to decide on a way to balance their interests and the market values of technological efficiency. The future of futures trading was in the balance.

Given the deep ties between the Chicago traders and their technology of exchange, it is not surprising that the challenge of electronic systems spilled over into institutional politics during the 1998 election for the chairmanship of the CBOT. Advocates of electronic trading were set against the defenders of the open outcry pits, and the conflict peaked in the weeks leading up to the December 9 election. Both contenders were soybean traders. Patrick Arbor, the chairman of the Chicago Board of Trade for three consecutive two-year terms, was running on petition after the board of directors denied him their nomination because of his pro-electronic trading stance. Instead, they endorsed David Brennan, a third-generation member of a prominent CBOT trading family and a staunch defender of the open outcry system.

The contest for chairman was played out in halls, offices, trading floors, and wherever traders met to debate the fate of the CBOT. But discussions of the issues were not limited to the organization's boundaries. The Board of Trade's business came from around the world and was affected by market events in Frankfurt and Sydney, and the political contestants also used a global stage. The financial media provided a forum where CBOT leaders and members could voice their ideas about their piece of the global marketplace. Coverage in the financial media is important for the CBOT, especially for the chairman, who is an envoy to the financial world.

Pat Arbor, whom CBOT traders alternately lauded and derided for his media savvy, made ample use of this forum. He had already taken a stance on the role of the CBOT in the emerging shape of the futures industry. This included championing the introduction of more digital technologies into the CBOT marketplace and pursing alliances that would enhance the exchange's ability to compete in electronic markets. However, exchange politics demanded that he hedge his strong support for electronic technologies by reaffirming his commitment to open outcry. In the June 20 edition of the London-based *Financial Times*, he played to these politics while sending a message to Board of Trade clients that their demands for efficiency would not be subjugated to the will of the local traders: "The Chicago Board of Trade, the world's largest futures exchange, is positioning itself for a move to full electronic futures dealing if its customers demand a switch from traditional open-outcry trading. 'We see no reason to change from open-outcry trading. But we will make certain we are ready so that if we have to move to electronic dealing, we can,' Pat Arbor, CBOT chairman, said."[14]

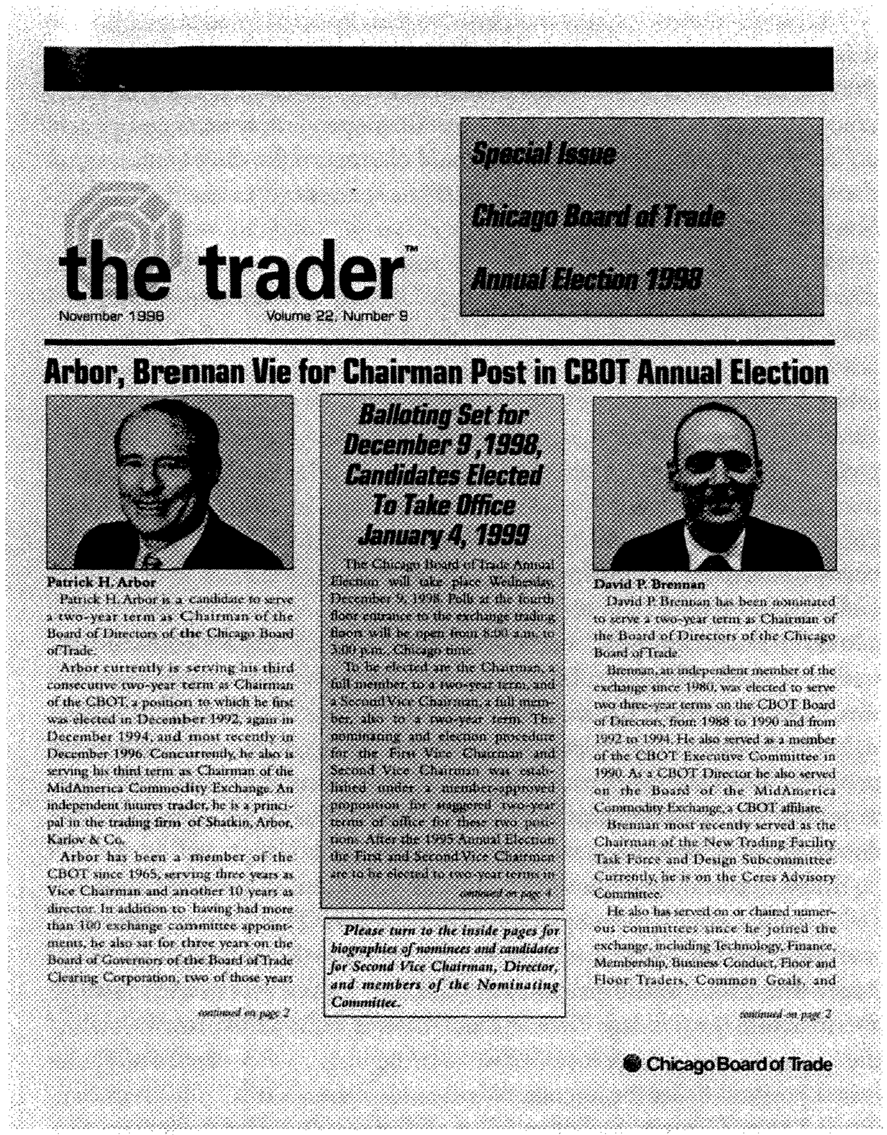
As both the CBOT and Eurex were registering record trading volumes, Arbor began to roll out details for a proposed alliance with Eurex. Arbor's goals for an alliance between the world's two largest exchanges were to expand the reach of the CBOT across the globe by increasing traders' access to its products, to improve technology, and to prevent Eurex from competing in the U.S. debt futures market. The CBOT and Eurex would collaborate to develop a platform that would carry both exchanges' products and share the cost of improving and expanding their electronic networks. Arbor was poised to bring institutional life to the idea that markets should connect participants around the globe into a single, real-time market.

In contrast to Arbor, many members, especially in the grain room, began voicing fears that an alliance would compromise their autonomy and leave the Chicago exchange beholden to the Germans' superior electronic technology. The floor traders' desire to protect their open-outcry markets opened an opportunity for a candidate who would champion the direct interests of the membership. David Brennan, already experienced in exchange politics, filled the available slot.

During the melee that led up to the vote, Pat Arbor called David Brennan "President of the Flat Earth Society." The slur referred to a disagreement between the two over the pitch of the trading desks on the new floor, but the comment was equally useful in characterizing Brennan as turning a blind eye to the pressures of electronic markets. Arbor remained concerned with how the exchange would maintain its competitiveness in the global environment. He believed the CBOT would benefit by treating the markets as an expanding global network. Arbor took a long-term view that could, in the short term, imperil the interests of some of the CBOT members who were committed to their daily work in the pits. Arbor advocated embracing the new technologies and moving toward alliances that would extend the organization's reach while creating markets that would link traders together through CBOT terminals across the globe. However, the structure of the membership organization and the distribution of voting rights made this a difficult position for an elected leader to sustain. Arbor's main constituents, the Financial Commission Merchants (FCM), large firms that hold memberships in the CBOT, and the associate members who dominated the financial room, were at a political disadvantage.

Brennan committed himself to protecting the value of the full members' yellow badge, which meant defending open outcry. The more conservative members agreed. These traders were also concerned that the proposed alliance with Eurex would give away the CBOT's control over its own destiny. Brennan told the *Chicago Tribune* that "[n]ow it looks like we are following the Germans around. We look like we're struggling. . . . The Board of Trade is in a position to set the agenda. We should pounce on it." This nativism opened an opportunity for Arbor. He spun Brennan's die-hard allegiance to open outcry as evidence of his Luddite nature. The press exploited the clear division that Arbor had drawn. Yet this depiction did not fairly represent Brennan's policy positions or experience. Brennan had served on committees for implementing Project A, the exchange's electronic system for after-hours trading, and on the designing committee for the new $182-million trading facility.

His position did not waver from assignment to assignment. Brennan always fought to secure members' advantages by strengthening the open-outcry



Special Issue

Chicago Board of Trade

Annual Election 1998

the trader™

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Arbor, Brennan Vie for Chairman Post in CBOT Annual Election

Patrick H. Arbor

Patrick H. Arbor is a candidate to serve a two-year term as Chairman of the Board of Directors of the Chicago Board of Trade.

Arbor currently is serving his third consecutive two-year term as Chairman of the CBOT, a position to which he first was elected in December 1992, again in December 1994, and most recently in December 1996. Concurrently, he also is serving his third term as Chairman of the MidAmerica Commodity Exchange. An independent futures trader, he is a principal in the trading firm of Shatkin, Arbor, Karlov & Co.

Arbor has been a member of the CBOT since 1965, serving three years as Vice Chairman and another 10 years as director. In addition to having had more than 100 exchange committee appointments, he also sat for three years on the Board of Governors of the Board of Trade Clearing Corporation, two of those years

continued on page 2

Balloting Set for December 9, 1998, Candidates Elected To Take Office January 4, 1999

The Chicago Board of Trade Annual Election will take place Wednesday, December 9, 1998. Polls at the fourth floor entrance to the exchange trading floors will be open from 8:00 a.m. to 3:00 p.m., Chicago time.

To be elected are the Chairman, a full member, to a two-year term, and a Second Vice Chairman, a full member, also to a two-year term. The nominating and election procedure for the First Vice Chairman and Second Vice Chairman was established under a member-approved proposition for staggered two-year terms of office for these two positions. After the 1995 Annual Election the First and Second Vice Chairmen are to be elected to two-year terms in

continued on page 4

Please turn to the inside pages for biographies of nominees and candidates for Second Vice Chairman, Director, and members of the Nominating Committee.

David P. Brennan

David P. Brennan has been nominated to serve a two-year term as Chairman of the Board of Directors of the Chicago Board of Trade.

Brennan, an independent member of the exchange since 1980, was elected to serve two three-year terms on the CBOT Board of Directors, from 1988 to 1990 and from 1992 to 1994. He also served as a member of the CBOT Executive Committee in 1990. As a CBOT Director he also served on the Board of the MidAmerica Commodity Exchange, a CBOT affiliate.

Brennan most recently served as the Chairman of the New Trading Facility Task Force and Design Subcommittee. Currently, he is on the Ceres Advisory Committee.

He also has served on or chaired numerous committees since he joined the exchange, including Technology, Finance, Membership, Business Conduct, Floor and Floor Traders, Common Goals, and

continued on page 2

Chicago Board of Trade

2.1 Biographies of Patrick Arbor and David Brennan, final candidates for the position of chairman, are presented to the CBOT board members in the exchange's internal publication. Courtesy of the Board of Trade of the City of Chicago.

2.2 Completed in 1997, the new, technologically enhanced trading floor was known as "the Arboretum," after chairman Pat Arbor. Courtesy of the Board of Trade of the City of Chicago.

system. In his bid for the chairman's seat, Brennan campaigned for electronic technologies to enhance the main open-outcry business of the exchange. He believed that the CBOT had to continue to draw business to the pits of Chicago by creating a more efficient version of open outcry. In contrast to Arbor's vision of an expansive network, Brennan's perspective was that the global market for U.S. futures should resemble a whirlpool with Chicago at its center. He made his position against the Eurex alliance clear and criticized Arbor for expenditures relating to it.

In the press and among the membership, the "flat earth" attack created a clear division between Brennan and Arbor. However, this neat categorization obscured the fundamental agreements that bound their positions together. Both candidates saw that the CBOT had to respond to electronic trading. Both men advocated using digital technologies to make open outcry more efficient and expanding some electronic capabilities of the exchange to achieve global distribution of products. But while Arbor advocated pursuing the Eurex deal to expand the reach of the exchange, Brennan supported increasing the number of terminals on the CBOT's own Project A network. According to Brennan's plan, Project A would remain entirely under CBOT control and would always be subservient to the open outcry pits.

Each backed an approach that mixed technological regimes. In "electronic open outcry," digital "clerks" would route orders from the outside market directly into the pits, bypassing the army of clerks and runners. Electronic technologies would provide greater speed in filling orders and greater accuracy in accounting procedures. The possibilities of these new efficiencies were central to arguments both for maintaining and for abandoning the open outcry system. Brennan and Arbor's essential agreement that some degree of digitalization was necessary exposes their assumptions about technology. Each justified strategies that would eliminate human mediators from the market. Adding digital technologies to bring orders to and from the trading pits would decrease the cost of human labor for clients while allowing the traders to remain in the heart of the market. Arbor and Brennan's disagreements, and those among the members, focused on how well suited each technology was for achieving those ideals.

Election day arrived, and the traders brought these arguments to the ballot box. Their ties to the pits proved unbreakable. When the debates ended and the votes were tabulated, David Brennan won by only the narrowest of margins—608 votes to Pat Arbor's 598. David Roeder of the *Chicago Sun-Times* reflected on the significance of the election, "He won because the trading floor struck back, but his victory raises questions about whether the CBOT is stepping dangerously away from the global stage" (December 7, 1998). Within a month, the membership had reaffirmed the vote by scrapping the alliance with Eurex. Brennan moved quickly to dismantle the deal in favor of expanding Project A and to focus his attention on increasing electronic order flow to the pits.[15] Pat Arbor left to found an electronic trading firm of his own. He eulogized his last term in office in the *New York Times* business section on December 11: "The push for technology, I think, was maybe too much for the membership to digest right now. . . . This means that the old guard is back; they thought we were going too far" (December 10, 1998).

The election proved that pit traders were still in control in 1998. The exchange had created a method for hedging farmers' risks and perfected the related trading technique. One hundred and fifty years later, the pits had become much more than a rationalized and elaborated form for handling risk. Open-outcry technology and the daily performance of the market had linked Chicago's traders to its method of exchange.

* CHAPTER THREE

Social Experiments in London Markets

While the CBOT debated whether to go digital or retain the open-outcry trading system, Perkins Silver, a firm founded by Chicago locals, was maneuvering to take advantage of the electronic upheaval. The two directors, Eric Perkins and Philip Silver, founded the company in 1985 as a clearing firm managing the accounts of Chicago locals. Both men were closely involved in CBOT politics and management, and both watched with frustration as the CBOT swerved to avoid the coming of electronic trading. At the same time, they recognized how their company could take advantage of the opportunities in the emerging overseas electronic markets.

Eric Perkins saw a shift occurring in the global futures industry. The Chicago exchanges no longer dominated the futures industry in trading skill and knowledge. Perkins noted that both São Paolo and London had successfully adopted "the Chicago trading culture" during the past ten years. In London, moreover, the financial futures exchange had been built on the Chicago model, and the market was already populated with scores of Chicago traders. Although this may have posed a threat to organizations like the CBOT, Perkins knew that local trading populations in financial centers outside Chicago could provide human materials for Perkins Silver and other entrepreneurial Chicago firms. Silver and Perkins positioned themselves to take advantage of this experienced work force. They intended to hone the skills of the British futures and foreign exchange dealers along the Chicago model and train new ones who would ultimately supplant them according to their plan for diversity. They planned to set up an electronic dealing room in London that would bring Chicago techniques of trading to the electronic financial frontier.

Europe, in particular, presented a clear opportunity. Without the constraining attachments to pit trading that held back the CBOT, in London Perkins Silver would be able to bring Chicago-style speculation to the new