

# Pioneering: On the Frontier of Electronic Data Processing, a Personal Memoir

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This personal memoir is essentially an insider's view of IBM—how it worked, the road to its success, and the major decision-making processes IBM used.

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## Introduction

I have always thought that my career at IBM, my sole employer, was the most challenging and wonderful work any person could ever have. However, I never thought my life's work would be interesting to others beyond my family and friends.

In the spring of 1979, Irwin Tomash, a computing pioneer from Engineering Research Associates and the founder of the Charles Babbage Institute (CBI), visited me to acquaint me with the role and purpose of the CBI and to invite me to serve on the Board of Trustees. During an interview the following year with Tomash and Roger Stuewer, CBI's executive director, for the purpose of recording my oral history, they suggested that I write a more comprehensive account of my role in the evolution and use of digital computing.

Probably the most persistent urging that I prepare a personal memoir came from the then editor-in-chief of the *IEEE Annals of the History of Computing*, J.A.N. Lee. He suggested that I record my memoirs and permit the *Annals* to consider publishing them. My trepidation persisted, however. I did not want to commit myself to writing a lengthy piece on my extensive business career until my consulting activity began to wane in 1996 and I had time to review memorabilia and to think about events I could record in a memoir.

Responding to the urging of my family members—and especially from my daughter-in-law Susan-Marie Birkenstock, who turned out to have a flair for literary criticism—I finally committed to documenting my career in the form of a personal memoir and later submitted it to the *Annals*. The next editor-in-chief, Michael R. Williams, and his advisory board deemed the result appropriate and accepted it for publication.

## My Boyhood and School Years

When I was born on 7 May 1912 in Burlington, Iowa, to Anna and George Birkenstock, I suspect I was a bit of a surprise, since my sister Elsie was 20 years old and my brother Roy was 17. My father was a furniture buyer and salesman for Wyman and Rand Department Store, and my mother was a homemaker. Both sets of my grandparents immigrated to the United States in the mid-19th century. My maternal grandparents, the Flynns, arrived from County Tipperary, Ireland; my paternal grandparents were from Magdeburg, Germany.

While I attended elementary school in Burlington, my family's financial circumstances led me to enter the workplace at the age of nine. I began as a caddie at the Burlington Golf and Country Club. With age and experience, I was promoted to caddie master. During the summer of 1928, touring pros Johnny Farrell and Gene Sarazen, on their way to Chicago to play in the U.S. Open, stopped in Burlington to play an exhibition match. As caddie master, I chose to carry Farrell's bag. When we reached the ninth hole, Farrell asked me to make a club selection for the uphill approach to the green. Embarrassingly honest, I said, "I don't know." Undaunted by my response, Farrell chose a four iron and put his ball hole high on the green. The next week at the Olympia Fields course, Farrell tied Bobby Jones in the U.S. Open at the end of regulation play. Farrell then beat Jones in the play-off. Little did I know that 28 years later, I would become a member of the Country Club of Florida, where Farrell served as head pro.

I continued working as caddie master through my high school years, which included the Great Depression of 1929. These were hard times for most Iowa families, including mine. However, the greatest depression I experienced

was when my mother passed away on 21 December 1929, leaving me in the care of my sister. My father was devoted to my older brother, who was a professional baseball player. As a result, he showed little interest in me and seemed pleased that my sister, who was childless, took responsibility for my upbringing. While not estranged, we did not have a close father-son relationship. Dad died in 1937.

When I graduated from high school with honors in 1931, I was pleased with myself in my first store-bought suit. I could not help but think of my self-sacrificing mother, who had made all of my clothes. Just after graduation, still wearing my new suit, I went on a date with another new graduate. We stopped in Corso's Drug Store for a milk shake. As I looked across the room, I noticed Jean Hale, a sophomore at Burlington High. I did not know then who she was, but I did know she was the prettiest girl in Burlington. The next week, I arranged an introduction through a mutual friend. Four years later, we were married. My accomplishments over the past 64 years of our married life are, in great part, the result of Jean's support, companionship, and understanding.

Even though I graduated from high school and went on to Burlington Junior College (now Southeastern Iowa University), I never left the building. The junior college shared the same facilities with Burlington High. When school was in session, I held two jobs in addition to my caddying position, while maintaining a full course load. I worked as a busboy in the school cafeteria and also worked for Mrs. McFarland, a wonderful elderly widow and cultured lady, whose guidance and philosophy helped to shape my adolescent years. One of my duties was to take Mrs. McFarland on daily afternoon drives, weather permitting, through the beautiful countryside and farmlands. During one of those drives, Mrs. McFarland asked, "James, do you know how you can tell who is boss of the household?" I answered, "No, Mrs. McFarland. How would I know?" She responded, "Look at the property, James. If the barn is larger than the house, the man is the boss." I gathered how I could tell if the woman was the boss. Whenever she was ready to go home, Mrs. McFarland always delighted in saying, "Home, James," to which I always replied, "Yes, Ma'am."

During the summers, I served as assistant to Scottish golf professional Bonnie Weaver at the Burlington Golf and Country Club. Because of my caddie and caddie master experience, I became a good golfer. Weaver, who called me "Jimmy boy," thought I had the potential to be a professional golfer. On his recommendation,

I was given the pro job at a start-up, nine-hole municipal golf course. Unfortunately, 1932 was the year of the Iowa bank closings and a Dow Jones that dropped to 50 points. As a result, people stopped playing golf, buying clubs, and taking lessons. With no money coming in, I was forced to seek other work. A member of the country club saw my situation and offered me a job painting billboards that yielded an average income of \$2 a day. I supplemented this employment by pumping gas at a DX filling station, working evenings and weekends.

I graduated with honors from junior college in 1933. Then, Sterling Lord and Max Conrad, country club members who knew me as a caddie master, sponsored me for a scholarship at the University of Iowa in Iowa City, their alma mater. As a result of their sponsorship and my academic record, I was granted the scholarship. With this and my summer earnings, I entered the university with encouragement from my sister Elsie and her husband Art Friedel, with whom I had a home and as much financial assistance as they could manage. My first and biggest challenge on arrival at the university was to find a part-time job. I had heard that the Iowa Memorial Union was interviewing for cafeteria employment and that the person to see was the dean, Rufus Fitzgerald. During my interview, Fitzgerald said that all cafeteria positions were filled except one: a job on the meat counter, the most difficult one on the cafeteria line. He asked if I could handle such an assignment. With bravado, I cited my previous work experience at the Burlington Junior College Cafeteria. I assured him that I could handle the position, stressing how much I needed employment.

Fitzgerald hired me, and I immediately went to work under Ted Rehder. Mrs. Ebert, a warm and lovable Irish woman who was a cook in the cafeteria, recognized my inexperience at the meat counter and bailed me out. "Don't worry, James," she said. "I'll teach you the ropes." Mrs. Ebert took me under her tutelage and set up a temporary carving station behind the refrigerator that adjoined the cafeteria line. From there, she taught me to carve and supply the counter with meat. In a short while, I was able to master the carving of large roasts, turkeys, and hams with dexterity, at which point Mrs. Ebert returned to the cafeteria kitchen.

In the summer of 1934 before I began my senior year, I returned to Burlington to court Jean, my bride-to-be, and to work as a bookkeeper for the Burlington Beverage Company. The following fall, I returned to Iowa City for my senior year at the university and was pleased to learn from Rehder that I had been

promoted to operate the cash register at the end of the cafeteria line. Additionally, I was to replace George Byce as maitre d' on his days off, operating the cash register and greeting the diners. One day, shortly after spring break, Clark Kusterer, an IBM vice president, was dining in the cafeteria. Apparently impressed by the way I was greeting the customers and handling the job, he asked my name and informed me that IBM representatives would be at the university in the near future to conduct employment interviews with graduating students. While I was pleased to have been informed of this opportunity, Chester Philips, dean of the College of Business Administration, had already advised me that he had selected me for employment at Northwestern Bell, an AT&T subsidiary. This company had a policy of hiring one senior, who was selected annually from the College of Business Administration on the dean's recommendation. Philips had become my idol during my junior and senior years at the university and was my good friend, mentor, and confidant both before and after graduation. Naturally, I was honored that he had chosen me for the position. Philips, aware that I was to graduate magna cum laude, also knew that I had a strong work ethic. That I was a near-scratch golfer also helped, since he and his wife were avid golfers. Philips sometimes invited me to play with him and his wife at the university golf links, a rare treat.

#### A Pivotal Career-Launching Decision

Based on Philips's recommendation, Northwestern Bell offered me a position starting at \$125 a month. Therefore, believing I need not pursue a job opportunity with IBM, I dropped Kusterer's business card in the wastebasket. Little did I know how important IBM would eventually become in my life. About a month later, scarcely remembering Kusterer, I received a call from Philips telling me that Gordon Thomas from IBM was conducting interviews at the university with prospective graduates and was asking for me. This created somewhat of a dilemma, since my first reaction to this request was that perhaps Philips would be offended, thinking I had instigated the interview and was unappreciative of what he had done for me regarding Northwestern Bell employment. I explained to Philips what had happened. To my great relief, he urged me to proceed with the interview, saying it would be a good experience to do so and assured me that I was free to accept employment from IBM, if its offer was more appealing. During my interview, Thomas described the position of IBM Electric Account-

ing Machine salesman as one in which I would be studying customer business problems and devising solutions utilizing IBM's electric punch card accounting machines. Thomas described the dress code for IBM salesmen as white shirt, solid color tie, and pin-striped suit. Since I owned only one business suit, the one I was wearing, I found this disconcerting. When I explained my situation to Thomas, he said that I should not be concerned and that if I joined IBM, I could buy a new suit and put it on my first expense account. Incidentally, the IBM Accounting Department disallowed the suit when I submitted my first expense account. A decade or more later, I reminded Thomas of this promise not kept. He just laughed and shrugged his shoulders.

In contrast to Northwestern Bell's accounting job, IBM's offer appeared far more attractive, challenging, and intriguing, despite the fact that the starting salary was only \$100 per month, \$25 less than Northwestern Bell's offer. Nevertheless, I accepted the IBM offer, with Philips's concurrence. This proved to be one of the most important decisions of my life, launching me on a career with IBM that lasted 38 years. I eventually earned the position of IBM corporate vice president in 1958 and an appointment to the IBM World Trade Corporation's Board of Directors in 1963. I held both positions until 1973, when I retired from the company.

In this memoir, I will attempt to highlight my most poignant experiences. While some were frustrating, many were rewarding and, at times, afforded me peer recognition both inside and outside IBM. When I joined IBM in 1935, the company was small, generating annual revenues of \$25 million with fewer than 4,000 employees. I had only two weeks at home after graduating from the university before I left Burlington by train for the 24-hour ride to the IBM sales school in Endicott, New York. I had never taken a sleeper train before, and this was quite a thrilling experience for me and likewise for Carl Gamrath, another University of Iowa hiree. Because lower sleeper berths were designed to accommodate two people, we shared a berth, concerned that to do otherwise would appear extravagant to our new employer. In Iowa there is a saying: "You can take the boy off the farm, but you can't take the farm off the boy." This was certainly the case for the two of us.

When Gamrath and I reached Endicott to begin the six-week sales school, we were joined by George Teyro, another University of Iowa graduate. We reported to the IBM Educational Center, about the size of a small elementary



Figure 1. IBM Sales School Number 125 trainees and instructors.

To Thos. J. Watson, President, IBM  
(Tune: "Happy Days Are Here Again")

Happy days are here again!  
And every heart in I.B.M.,  
All loyal T.J. Watson men,  
Love our noble President.  
His leadership stands out alone;  
He's honored everywhere he's known;  
We proudly claim him all our own;  
In our worldwide I.B.M.,  
By him we are all inspired,  
To do whate'er he desires.  
Happy men of I.B.M.,  
Throughout the world good citizens,  
With faces bright as Diadems,  
Happy days are here again!

Ever Onward

(IBM rally song, written especially for the International Business Machines Corporation)

There's a thrill in store for all,  
For we're about to toast  
The corporation that we represent.  
We're here to cheer each pioneer  
And also proudly boast

Of that "man of men," our sterling president.  
The name of T.J. Watson means a courage none can stem:  
And we feel honored to be here to toast the "I.B.M."

Chorus

Ever onward—ever onward!  
That's the spirit that has brought us fame!  
We're big, but bigger we will be,  
We can't fail for all can see  
That to serve humanity has been our aim!  
Our products now are known in every zone,  
Our reputation sparkles like a gem!  
We've fought our way through—and new  
Fields we're sure to conquer too  
For the ever onward I.B.M.

Second Chorus

Ever onward—ever onward!  
We're bound for the top to never fail!  
Right here and now we thankfully  
Pledge sincerest loyalty  
To the corporation that's the best of all!  
Our leaders we revere, and while we're here  
Let's show the world just what we think of them!  
So let us sing, men! Sing, men!  
Once or twice then sing again  
For the ever onward I.B.M.

school, where IBM conducted training for customer engineers, factory workers, engineers, and office personnel. Two classrooms were designated for sales trainees. The smaller room was assigned to a class of 25 recently hired female college graduates. The larger classroom was allocated to Sales Class Number 125 and was comprised of 67 men (see Figure 1). The 25 women were housed at the IBM Homestead on the outskirts of Endicott, a facility normally used to house customer VIPs and dignitaries. The men stayed at the Hotel Frederick in Endicott. The venerable Glen Armstrong, the instructor, was a veteran of the IBM sales executive team. "Army," as he was affectionately

known, was 100-percent salesman and 50-percent educator and was loved by all who met him. Bill Wiseloge and George Hedendorf, two experienced IBM instructors, assisted Army as guest instructors. The class was immediately indoctrinated in IBM's dress code, its rules regarding drinking and smoking, and, most important, the need for a studious attitude, coupled with enthusiasm and "pep." To instill pep, each class session opened in song. Usually, we sang a patriotic song first, such as "America," followed by one of the five songs dedicated to Thomas Watson, Sr., that was in the IBM songbook (see the sidebar). If a trainee's attention wavered, there was always



the threat that he or she would have to sing a solo of “Ever Onward” (see the sidebar). Singing aside, the curriculum of the sales school focused, for the most part, on learning to use IBM punch card machines and applying them to solve customer problems. Everything was user-oriented. Sales training usually followed within a year.

When Watson, Sr., IBM’s founder and CEO, visited the IBM Educational Center, he noticed there were 67 men and 25 women in separate classes. With his insistence, classes were merged and from then on were coeducational. Watson, Sr., visited the classroom about every other week. Having a class of young women was a novelty that he seemed to enjoy. Accordingly, he had the staff at the IBM Homestead arrange social activities, such as picnics and dinner dances, where he could enjoy observing the female sales trainees having fun. The women caught on quickly and played up to the “Old Man,” as the employees affectionately nicknamed him. The women performed skits and composed songs especially for these occasions. In one skit, the setting was a slumber party in which the women wore “Dr. Denton’s” (sleepwear).

Just before the course was completed in September 1935, Armstrong, vice president of education, asked the trainees to indicate their first, second, and third choices for branch office assignments. I listed Peoria, Illinois; Des Moines, Iowa; and St. Louis, Missouri. Armstrong, admired for his humor and wit, commented on my choices, saying that this was the first time anyone asked to be sent to Peoria, the IBM version of Siberia. As it turned out, I was assigned to St. Louis as a sales trainee.

Following a brief stopover in Burlington, where I was able to visit my sister Elsie and my fiancée Jean, I reported to Paul Maxwell, IBM’s St. Louis branch manager. While in Burlington, Jean and I agreed that courtship by telephone and mail was not conducive to a satisfactory relationship and that we needed to marry as soon as I could afford it. On the basis of a \$25-per-month salary increase after six months of employment, which was promised at the time of hire, Jean and I set a goal of marrying six months hence. I loved my job in the St. Louis office, and Maxwell was very supportive of me. If it had not been for him, my IBM career would have been snuffed out before it began. He reassigned me as manager of the IBM service bureau, where I worked late into the night. During the day, he allowed me to make sales calls with him and prospect his territory, giving me sales training I would not have experienced otherwise. At the time, I did not realize that he

was protecting my employment with IBM. I learned much later that Watson, Sr., annoyed at IBM field sales management’s resistance to accepting the 25 women on the marketing staff, had ordered termination of all 67 men in my Sales Training Class Number 125.

#### Jean and I Marry

Anxious that Jean and I fulfill our promise of marriage, I pressed Maxwell for the promised raise as my six months’ employment approached. Maxwell assured me that he would send his recommendation for the raise to IBM headquarters in New York. Based on this reassurance, Jean and I proceeded with our marriage plans. Because IBM’s policy in 1935 did not include time off for marriage, we scheduled the event for Thanksgiving weekend. In a car Gene Gilbert (a St. Louis IBM colleague) loaned to me, I arrived in Burlington on Thanksgiving Day and had dinner with my family. The following day, Jean and I took out a marriage license. On Saturday morning, 30 November 1935, we married in a ceremony in St. Paul’s Church that one could characterize as a “hometown elopement.” On 30 November 1997, Jean and I celebrated our 62nd wedding anniversary.

Several months after my marriage, I was shocked to learn from Maxwell that my promised six-month salary increase had been denied. After meeting with Maxwell’s manager, Mr. Worthington, the Midwest IBM regional sales manager, I was told that he had approved the increase and that it had been denied by Mr. Farwell, IBM sales manager at headquarters. Not long after that, I learned Farwell planned to visit St. Louis. I went back to Worthington and received permission to seek an appointment with Farwell. When Farwell arrived, I met with him and inquired why my salary increase had been denied. He replied that I should consider myself fortunate to still be employed, explaining that of the 67 men in my training class, only 14 were still with IBM. I responded that if I could not sell IBM management on honoring its commitment to me, I doubted I could be successful selling IBM systems.

Following the Farwell meeting, I explored alternative employment opportunities. In the meantime, Maxwell was transferred out and replaced by Harry Eilers, which was the purpose of Farwell’s visit to St. Louis. Eilers allowed me to continue the dual work assignment Maxwell had arranged. A month or so after Eilers became manager, I surprised him by bringing in a signed contract for a \$128-a-month punch card accounting machine installation with Tom

Boy Stores, a St. Louis wholesale grocery chain. I had secured this account prospecting on my own in the manager's sales territory. Eilers considered this no small accomplishment. He said that such an unassisted sale by one who was not yet a junior salesman was "unprecedented." I further surprised Eilers with the news that I had accepted an employment offer from Shell Oil Company as assistant manager of its Tabulating Machine Department for \$125 a month. Since I had never resigned from a job before, I asked Eilers for his advice regarding the appropriate procedure for tendering my resignation. He suggested that before resigning, I take three days off, implying that my decision to leave IBM was more the result of my fatigue from handling dual job assignments than from my irritation with IBM for failing to honor its commitment to me. I followed his suggestion. After taking the time off, I met with Eilers for further discussion.

At this point, Eilers said that the IBM home office was impressed by the sale I had made and that if I would remain with IBM, I would receive an invitation to IBM's two-month advanced sales school, scheduled to commence in a few weeks. Additionally, I would receive my \$25 increase and be assigned back to IBM St. Louis after my training concluded. I told Eilers that while this offer was appealing, I had made a commitment to Mr. Baker, the controller of Shell Oil Company, and that I felt duty-bound to honor it. Eilers suggested I discuss the matter with Baker. When I spoke with Baker, he said, "Birkenstock, I think you love your work at IBM and, in due course, will be a successful salesman. You have no obligation to me or to the Shell Oil Company. I think you should stay with IBM." Years later, Eilers informed me that during my three-day sabbatical, he had contacted IBM headquarters and obtained approval for his plan to retain me. He also had contacted Baker relative to the Shell job offer. This was my first introduction to business intrigue as well as the beginning of my association with one of the highest-principled salesmen and managers I have ever known. Eilers and I bonded as friends and business associates throughout Eilers's lifetime. As a salesman and manager, Eilers was a role model I did well in following.

All IBM marketing representatives operated on a sales quota that was established at the beginning of each year. Good sales achievement was marked by making 100 percent or more of the sales quota and becoming a member of that year's Hundred Percent Club. At year's end, all club members were invited to New York for a

series of motivational sales meetings (see Figure 2). Members enjoyed various cultural activities and a banquet featuring famous Broadway or opera performers. Each member was invited to address the assembly, presided over by Watson, Sr., who was assisted by the president of the Hundred Percent Club, the highest achiever of that year.

#### Early Success Interrupted by Tragedy

During my seven years in St. Louis, I advanced from senior salesman to special transportation representative. In this capacity, I handled the railroad, trucking, and airline accounts in the St. Louis area and qualified for five IBM Hundred Percent Clubs. The only year I failed to make the club was in 1939, the year our one-year-old son Michael was tragically killed in an automobile accident that my wife and I experienced outside Peoria while on our way to visit Jean's parents. Jean sustained a concussion, while I suffered a broken sternum and jaw. While in the hospital, Mr. O'Malley, branch manager of the Peoria office, showed me a telegram from Watson, Sr. It authorized O'Malley to set up a \$5,000 account to pay our hospital expenses, if needed. This was my first introduction to Watson, Sr.'s compassion toward his employees, whom he considered family members. Though we had been badly injured, Jean and I recuperated from the accident; however, we never fully recovered from the trauma of the death of our precious infant son. The grief over the loss of Michael was softened with the birth of our second son Robert Hale on 5 May 1940 and with the arrival of our daughter Joyce Ann on 6 October 1943.

The year before the accident, Charles Kirk had succeeded Eilers as branch manager. Kirk, a free spirit with a knack for business politics, showed me the importance of the "lighter" side of selling. Kirk served as St. Louis branch manager until 1940, when he was promoted to manager of IBM's Endicott plant. My tenure in St. Louis, especially the first five years, was a period of challenge, growth, and development. During this period, several junior salesmen were assigned to me for training. This responsibility,



Figure 2. The author addressing 1937's Hundred Percent Club Convention in the Grand Ballroom of the Waldorf-Astoria Hotel, 26 January 1938.



Figure 3. St. Louis branch manager Larry Flick (left) presenting me with my Five-Year Medal.

small as it was, was my first experience in personnel management. However, I feel fortunate to have had a part in the career development of two IBM employees in particular. O.M. Scott, a 1938 graduate of the University of Missouri, and Warren C. Hume, a 1939 graduate from Rollins College, were both assigned to me as junior salesmen for training. Both men later had long and distinguished careers as IBM executives and corporate officers. Before their retirement, Scott was president of IBM's Field Engineering Division, and Hume was an IBM group vice president.

In 1940, Larry Flick (see Figure 3) succeeded Kirk. Flick's management style was entirely different from the managers who had preceded him. He was alternately pessimistic and wildly optimistic and did not control these emotional swings. Moreover, Flick became jealous of Harry Strait and me for being the most successful salesmen in the St. Louis office and for the tribute World Headquarters (WHQ) paid us for our accomplishments. Needless to say, our relationship with Strait was somewhat strained. In the spring of 1941, Bob Brownell, IBM special representative to the U.S. Army, asked me to undertake a special assignment, the rescue of a failing IBM installation at Fort Leonard Wood in the Ozark Mountains. The assignment began after IBM's Washington office, dealing directly with the Army, sold the IBM accounting machine installation to the Fort Leonard Wood contractors to perform payroll accounting and camp construction logistics. Thousands of people had been hired to construct this new Army base. However, the IBM tabulating machine installation could not keep pace with the personnel growth and, therefore, could not produce a timely weekly payroll. Consequently, disgruntled employees were picketing and were on the verge of rioting.

To cope with this problem and to save the installation, IBM branch manager Flick assembled a six-person task force of St. Louis branch office systems service and sales personnel. Because this attempt was unsuccessful, the Army lost faith in IBM, sent a discontinuance notice to the IBM Washington office, and ordered new payroll equipment from the

Burroughs Corporation. As a result, Brownell went to the site and quickly concluded that Flick's task force leadership was ineffectual and that a different strategy was required to save the installation. At that time, I was functioning as an IBM special representative with a sales territory in St. Louis that was not geographical but transportation industry-specific. St. Louis was a transportation hub and the home of four major railroad companies, several trucking companies, and an airline. The railroads I served all had large IBM accounting and payroll installations. My experience in planning and installing payroll systems in the area prompted Brownell to call Washington and request that I be assigned to the project. He advised Flick of his action.

On Brownell's instruction, Flick ordered me, via telephone, to go to Fort Leonard Wood. On my arrival there, I discovered Flick was still on the site and that he had made his growing animosity toward me and his predecessor Kirk evident to the members of his task force. Believing it would be impossible to work with Flick, I stated to Brownell that I would accept the assignment only on the condition that Flick and his task force return to St. Louis. I further requested that Hume, a junior salesman assigned to assist me, remain. Brownell agreed. As a task force of two, Hume and I worked in the succeeding weeks from Wednesday through Saturday with little sleep, making system and procedure changes that produced an on-time payroll and saved the installation. The Burroughs equipment remained in its crates and was subsequently shipped back to Burroughs. Needless to say, IBM headquarters considered this quite a feat. As a result, both Hume and I received an IBM headquarters commendation. After the assignment, I returned to working my normal territory and had already made the 100 Percent Club for that year. Hume was promoted to senior salesman and went on to an outstanding IBM career.

In the fall of 1941, presumably due to the Fort Leonard Wood achievement, Watson, Sr., called me to New York and assigned me as an IBM civilian advisor to the Army on maneuvers near Fort Bragg, North Carolina. The assignment placed me in charge of one of the two 12-hour shifts for the operation of an experimental IBM Mobile Accounting Machine Unit utilizing IBM punch card equipment. This occurred during what was then the Army's largest simulated warfare maneuvers, which Major General Hugh Drum commanded. T. Vincent Learson, an IBM employee from the Boston office, managed the other shift. IBM's

experimental Mobile Accounting Machine Unit was programmed to manage ammunition logistics and inventory control on the battlefield during simulated warfare. As a result of this experiment, the military recognized the great potential of IBM's mobile accounting units. The Army subsequently employed IBM for not only ammunition control but also field personnel records, logistics, and frontline military applications during World War II.

The early days of this assignment did not exclude physical discomforts. As civilians, Learson and I and our staffs, comprised of recent sales trainee civilians, were unaccustomed to both the simulated battlefield environment and our exposure to the extremely cold temperatures. We were required to sleep on cots in tents, wearing civilian clothes far from weatherproof. More often than not, I found myself cold and damp. Fortunately, my discomfort was cut short. The Blue Army captured the commanding officer of a Red Army division. Embarrassed and infuriated, Drum blamed this surprise capture on the presence at the "front" of the civilian contingent that, he contended, disclosed the Red Army headquarters' position. In retaliation, the general ordered all civilians to "move to the rear."

The "rear" for all IBM staff members meant bivouacking at the Southern Pines Hotel. How wonderful my warm hotel bed felt, especially after a 12-hour work shift. (Some 40 years later, I revisited Southern Pines on a golfing holiday. For nostalgic reasons, I had hoped to stay at the Southern Pines Hotel. To my disappointment, I found the hotel closed and the building in a shambles.) The mobile unit experiment was completed on 1 December 1941. I arrived back home in St. Louis on 6 December 1941, awakening the next day to the news of the Japanese bombing of Pearl Harbor.

World War II opened a new era for IBM and its people. The company's punch card equipment was in great demand by both the armed forces and military contractors. New IBM equipment rental for nonmilitary use was restricted to government contractors and military applications. In addition, many IBM personnel not serving in essential industries were drafted into the military and commissioned as officers. Almost immediately, IBM's branch office activities shifted from sales to the service of defense contractors and customers classified as "War Emergency Enterprises."

#### My First Promotion

Flick, in his idiosyncratic manner, began running his branch office in a paramilitary fashion,

and his relations with me became even more strained. With what appeared to be excessive patriotism, he assembled the sales personnel at 9 a.m. daily for a brief sales meeting. Prior to the meeting, we were required to stand and salute the flag and sing "America" and the "Star-Spangled Banner." On occasion, Flick, who loved ceremony, would wear his Army Reserve uniform to the office. A major in the Army Reserve, Flick was called to active duty in the summer of 1942. Having the best sales record in the St. Louis office, I thought I might be named as his replacement. However, Flick advised New York against this and, instead, recommended Mike Petkus, the C.E. Manager, be appointed. As it turned out, in September, Thomas was named St. Louis branch manager, and I was appointed branch manager of Kansas City. Shortly after my move to Kansas City, the U.S. Navy, aggressively recruiting IBM employees to take command of Navy IBM tabulating machine installations, offered me an ensign's commission. Not wanting to be drafted, I was eager to enlist. Unfortunately, I was unable to serve, having flunked my physical due to a hyperacidic stomach. Later, the U.S. Army drafted me; however, I once again failed my physical, was declared 4-F for the duration of the war, and remained the Kansas City branch office manager. An extraordinarily large number of defense contractors resided in this territory, including the Army base at Fort Leavenworth, Kansas.

Wartime restrictions notwithstanding, my days in Kansas City were among the happiest and least stressful of my IBM career. I had the full cooperation of two other managers in the office. Ed Vincent, International Time Recording Division branch manager, and I shared 7 May as our birthday; Vincent turned 60 the day I became 30. Vincent never once resented working under a man so much younger than he was and gave me his full cooperation, as did Ken Van Antwerp, the typewriter branch manager. As Kansas City branch manager, one of the most challenging problems I faced was the renovation of Kansas City's Baltimore Bank building into an IBM office. During a brief stopover in Kansas City in the spring of 1942, and prior to my becoming manager, Watson, Sr., hearing that the bank building was for sale, bought it because of its splendid location. Unfortunately, the building had structural problems, which I discovered when I engaged an architect to plan the remodeling. Since the building would be housing heavy IBM accounting machines, the floors had to be strengthened. This became a major



problem due to wartime restrictions. Steel construction that was nonessential to the war required a certificate of necessity from the military that was difficult to obtain.

While having lunch with IBM customer Fred Detweiler, comptroller for the new Pratt and Whitney aircraft plant being built in the Kansas City office territory, he and I commiserated over our mutual construction problems and his start-up problems. The Pratt and Whitney plant was nine months behind schedule, with IBM accounting machines due to arrive in a few weeks, and he had no facility in which to train key punch and accounting machine operators. Detweiler and I collaborated on a solution to both of our problems. Since Pratt and Whitney could easily obtain a certificate of necessity as a defense contractor, I agreed to give that company a one-dollar-a-month, short-term lease to the bank building. Pratt and Whitney, at IBM's expense and to its design, would remodel and reinforce the premises. Furthermore, I agreed as a quid pro quo that Pratt and Whitney personnel would be given a free training course at the leased bank building on the new IBM accounting machines scheduled for use at the Pratt and Whitney plant when its construction was completed. What a stroke of luck for both of us. When the work was completed, Pratt and Whitney personnel moved out of the building, and IBM personnel moved in.

At IBM headquarters in New York, Pete Pennell, in charge of branch office facilities nationwide, thought I was a magician, a super negotiator, or just darn lucky. I suspect a little bit of all three were involved. On completion of the Pratt and Whitney plant, and after Detweiler's accounting machines and staff moved, only minor alterations were required to make the former bank building serve as IBM's Kansas City branch office. The Kansas City IBM branch operation won high acclaim from both IBM management and the U.S. government for its wartime service to both industry and the military in the Missouri/Kansas area.

#### Career Crisis

All of my experiences during my Kansas City days were not always this positive, however. During wartime, and particularly toward the close of the war, IBM adopted a practice of occasionally inviting branch managers to Endicott as guest instructors at an IBM training facility. In the fall of 1944, headquarters invited me to teach a two-week sales and management course. While I was there, Watson, Sr., and his wife were visiting and staying at the IBM

Endicott Homestead, where I was residing as well. At dinner one evening, Watson, Sr., sensing that the war might be ending soon, posed questions relative to the future of our defense contractor customers. I responded that they already were looking for commercial applications for their wartime technology and manufacturing capability. I further commented that IBM was assisting our customers in this regard to avoid IBM having to requisition "packing cases." This terminology was field jargon for preparing discontinued IBM machines for field transfer to other users. Under IBM policy, machines discontinued by a customer ceased to be under branch office control and became part of field transfer inventory administration, which George Richter headed at IBM headquarters. IBM filled equipment orders from both factory production and field transfer inventory, and the delivery sequence was established according to the date of the customer's order under a delivery schedule Richter controlled. When I used the term "packing cases," I did not realize that, for Watson, Sr., it carried a negative connotation or that he was unaware that discontinued equipment ceased to be under the control of branch office management. In other words, he did not understand the field transfer system the company utilized.

Several days later, I visited New York to obtain some sales material before returning to Kansas City. While in New York, Kirk called to inform me that in two days, a meeting was being held in Chicago for all IBM branch office managers and that I should stop there for the meeting on my way home to Kansas City. Two days later, Kirk opened the meeting by telling the assembled group that Watson, Sr., had posed a question to one of his branch office managers regarding the future of IBM wartime defense contractor installations. He said that Watson, Sr., perceived a negative attitude by a branch manager in the response to his question. When the meeting broke for lunch, I said in private to Kirk that I was, undoubtedly, the branch manager whom Watson, Sr., thought had exhibited a negative attitude. I then asked Kirk how he thought I should handle the situation. He responded that I needed to write Watson, Sr., a letter of apology. I said that I felt I had done nothing wrong and that Watson, Sr., had misunderstood my comment. Upset, I left before the meeting had concluded and boarded a sleeper train for Kansas City.

I tossed and turned all night in my berth, mulling over the problem. I finally decided prior to my arrival in Kansas City that I could not and would not offer Watson, Sr., an apolo-

gy. In my heart, I did not feel that I had anything for which to apologize. I decided that I would write him what turned out to be a two-paragraph letter, explaining that unfortunately he had misinterpreted my comment to him regarding the packing boxes. I further stated that I had no negative feelings regarding IBM's pursuit of postwar equipment sales. I concluded my letter stating that my positive attitude could be easily ascertained by examining my sales record and history with the company. Within a week, I received Watson, Sr.'s response. He thanked me for my letter and agreed that my sales record resolved the issue. As far as he was concerned, the incident was "behind us and forgotten."

Called to IBM Headquarters, New York City

That incident certainly was behind us, for in August 1945 (when the end of the war was in sight), I received a telegram from Watson, Sr., requesting that Jean and I meet him in Endicott the Tuesday following Labor Day. While en route and during a stopover at the IBM Midwest district office in Chicago, VJ Day occurred. Although the euphoria that followed presented some travel difficulties, Jean and I managed to arrive in Endicott on schedule. When I met with Watson, Sr., he informed me that I had been promoted to the IBM headquarters staff as assistant to Kirk, who was recently appointed as IBM executive vice president. Naturally, I was thrilled, even though Jean and I regretted leaving Kansas City. We knew we were fortunate, by IBM standards, to have moved only twice in 10 years.

In the ensuing fall of 1945, I spent considerable time getting acclimated to the role of assistant to the executive vice president. Kirk's job was challenging, since he was the principal operating executive responsible for "retooling" IBM from a wartime to a peacetime operation. One of my assignments was to develop a peacetime sales plan along with retraining programs for the IBM sales and management personnel returning from military service. Others in Kirk's office were assigned to engineering and manufacturing changes. Jean and our children stayed in Kansas City during the several months it took me to locate an apartment for my family in Bronxville, New York. During these same months, Kirk, who also was house hunting, invited me to share with him a Ritz Tower suite in Manhattan. Through my many after-hours conversations with Kirk, I gained a broad insight into both the present problems and future opportunities IBM faced as we spent

considerable time planning the wartime-to-peacetime transition.

In December 1945, Watson, Sr., announced the convening of an IBM branch managers' school at Endicott on 6 January 1946 to update and train IBM's postwar branch managers, many of whom only a few months earlier had been on military duty. The group included Tom Watson, Jr., whom, although not a branch manager, his father invited to attend. On the opening day, Kirk, who was to have been the principal instructor and discussion leader, was occupied with the "Old Man," Watson, Sr., relative to a glitch in factory production that suddenly had come to his attention. As the only WHQ executive present, the role of classroom instructor fell to me.

A Stunning Promotion

During the third day of the weeklong school, Watson, Sr., and Kirk joined the assembly and seated themselves in the back of the room. At that point, I was making a presentation about the need to double the existing number of IBM branch offices to maximize sales potential and the related, though unpopular downsizing of sales territories in order to enhance customer service. After listening to my presentation for about half an hour, Watson, Sr., moved to the podium and stated that he had just discovered his postwar general sales manager. With that, he announced my appointment as IBM general sales manager, filling a six-month vacancy. At 33, I became IBM's youngest general sales manager. In my new position, I felt a great responsibility to IBM and its customers and a tremendous sense of challenge in meeting the demands of the postwar period. Besides the "retooling" and restaffing necessary for IBM's Marketing department to adjust promptly to a postwar operation, the marketplace was experiencing a pent-up customer demand for punch card tabulating systems. Additionally, with the help of the government's financial support, competition was growing.

During my first week in my new position, Executive Vice President Kirk assigned me to a highly sensitive regional sales management personnel problem. A year or more had passed since IBM had promoted Eilers from Minneapolis branch office manager to manager of the Midwest regional office in Chicago. Eilers was still residing in Minneapolis, however, and commuting to Chicago each week. Kirk said that Watson, Sr., strongly disapproved of a regional sales manager living in a city other than the one in which he was headquartered. He made his feelings known to Kirk and told

him he wanted the matter resolved immediately. Consequently, Kirk instructed me to go to Minneapolis and give Eilers an ultimatum either to move his residence from Minneapolis to Chicago or to resign as regional manager. This was the same Eilers who was my St. Louis branch office manager and, later, the district manager to whom I had reported when I was the Kansas City branch office manager. Knowing Eilers's respect for authority, I could not imagine him disobeying Watson, Sr.'s order.

When I arrived in Minneapolis, I discovered the reason Eilers had not moved to Chicago. He was receiving treatment at the nearby Mayo Clinic for a partial blockage of his carotid artery. Under these circumstances, rather than issuing Eilers the ultimatum, I encouraged him to undergo further Mayo Clinic diagnostic procedures and arranged for assistance in the Midwest region. I expressed my concern to Eilers that his health might be impaired by travel time between his Minneapolis home and his Chicago office. I asked him to consider moving to Chicago at the earliest feasible date.

On arriving at my next destination, Seattle, Washington, I called Kirk and explained Eilers's situation and my rationale for not taking Eilers out of the Midwest region job. Kirk was displeased by my failure to follow orders, especially, as he said, "when they came from the top." He characterized my handling of the situation as a "bad beginning" and said he would take care of the matter himself. As a result, Eilers, who refused reassignment, retired from the company prematurely and remained in retirement until 1953, when Watson, Jr., found a way to partially rectify Eilers's harsh treatment. Watson, Jr., put Eilers in charge of IBM/3M relations, reporting to me. To facilitate the IBM/3M relationship, IBM opened a small magnetic computer tape finishing plant near 3M's St. Paul, Minnesota, plant that supplied IBM with "raw" computer tape. In 1970, IBM closed its St. Paul tape finishing plant when IBM's Boulder tape manufacturing plant supplied all the company's magnetic tape requirements. At this time, Eilers retired for good, however, but not without Watson, Jr.'s personal hand in restitution for Eilers's lost pay and retirement benefits.

Years later, after I left the general sales manager position and after Kirk's death, Watson, Jr., told me that he held me blameless for the "terrible injustice done to Eilers" and assigned Eilers to a management position reporting to me. This confirmed my suspicion that the reason behind Watson, Sr.'s order to remove Eilers from his position was that he wanted his

nephew Charlie Love appointed as Midwest sales manager. Watson, Sr., eventually assigned Love to succeed me as general sales manager in 1947, a position Love held until 1952. By then, Watson, Jr., had convinced his father that a position should be arranged for Love in an affiliated company.

On my January 1946 visit to Seattle, another noteworthy incident occurred. Art Brambach, Seattle manager, asked me to interview a young applicant, recently returned from the military, whom he considered to be outstanding. The applicant was Dean McKay. However, Watson, Sr., had initiated a hiring freeze that would remain in place until all former staff returning from military duty were absorbed into IBM's sales organizations. As a result, Brambach's request necessitated a policy exception. Believing that the hiring freeze would soon be lifted, I interviewed McKay, was greatly impressed with him, and authorized his hiring. When I reported this to Kirk, he replied that within my first month as executive sales manager, this was the second time I had disregarded the orders of "the boss" (Watson, Sr.). I am pleased to say, however, that I never regretted making the policy exception to hire McKay, whose brilliant career with IBM culminated in the position of IBM vice president of communications. As IBM's chief information officer, McKay was adept at public relations and, later in his career, was elected to the IBM Board of Directors.

Since postwar IBM was experiencing a surge in customer demand for systems and service, coupled with a "tired" product line, my life as general sales manager was quite hectic, particularly with Watson, Sr., acting as my chief critic. Consequently, each day I was confronted with new and diverse challenges. Meeting market demand for IBM systems from government, industry, and academia drove the company to a phenomenal expansion of branch offices—from 85 to 135 in a single year. This growth in marketing capability was achieved due to the support of Gordon Lovell, Ed Zollinger, Don Gamel, and, to a lesser extent, Love, all regional sales managers. These men were supported by a staff of special department executives such as Jack Kenny, Gordon Roberts, Al Lishawa, Paul Shakelford, and Barney Freeman. Freeman's loyalty and expertise were outstanding. Generally, a manager had the prerogative to select his own assistants. However, while away on my first trip to the West Coast, Watson, Sr., appointed C.E. McKittrick as my assistant without my knowledge or concurrence. This appointment was Watson, Sr.'s way of rewarding McKittrick for

tracking down the dog that had bitten his wife during the Watsons' visit to the Winston-Salem, North Carolina, branch office that McKittrick managed. He made another appointment without my concurrence. Fortunately for me, this was a good choice, as Norma Trabold was a loyal and capable assistant.

Previously, on my 33rd birthday, Watson, Sr., convened a meeting of executives in his office to read to them a letter he had received from a disgruntled salesman. The salesman complained that his commission statement was tardy, inaccurate, and prepared on Burroughs machines. Watson, Sr., asked A.L. Williams, in charge of accounting and finance, if indeed our commission statements were produced on Burroughs equipment rather than our own machines. Williams acknowledged they were. Watson, Sr., responded that he wanted all commission statements prepared on IBM machines by 1 June—less than a month away. Williams said he did not believe this was a feasible request.

Watson, Sr., then turned to me and, acknowledging my many years of experience with this equipment, handed the assignment to me. I told him that I did not believe I could meet that deadline any more than Williams could. Besides, I told him I had many problems retooling our sales organization from wartime to peacetime operation and felt it inadvisable for me to neglect them. With that, Watson, Sr., turned to my newly appointed assistant, McKittrick, and asked him to undertake the assignment. McKittrick responded, "Yes, sir." Watson, Sr., then added, "I won't be asking you to undertake this project alone, because I will help you, Mr. McKittrick." As it turned out, neither Watson nor McKittrick solved the problem. A Mr. Bray, manager of payroll records, fulfilled the assignment; however, it took him months, not weeks to accomplish it.

Penalty Box for Crossing Watson, Sr.  
That same afternoon, Watson, Sr.'s secretary, Byron Waters, notified me that Watson, Sr., felt I needed a vacation. Accommodations, I was told, had been arranged for Jean, the children, and me at the Buck Hill Falls Resort Hotel in the Pocono Mountains. Waters also told me he had called Jean; asked her to pack bags for herself, the children, and me; and told her that a car would be picking them up at 3:00 that afternoon to drive them to the resort where I was to meet them. I knew this was Watson, Sr.'s way of demonstrating to me that I was not indispensable. I also knew that I had little alternative but to accept this "vacation." My fami-

ly and I spent a week in a resort that would have been far more enjoyable had it not been in May. It was cold and damp in the mountains, and the resort was almost empty. I, along with my family, suffered out the week, all the time cursing myself for not having the fortitude to refuse Watson, Sr.'s enforced vacation.

One of the most pleasurable experiences I encountered as general sales manager was the placement of many men and women returning from military assignment who had become qualified in IBM punch card systems. Those with a marketing background needed to be integrated into IBM's sales and service operation. Each week, all top-level managers were furnished a list of IBM personnel returning from the armed services that indicated the IBM position they had held prior to their military service. Drawing from the returning military service personnel, we staffed the new offices we needed to open in every state of the union. Many were moved immediately into management positions, and some became important WHQ executives.

Due to the branch office growth during 1946, new sales territories were established, while others were realigned. New sales and compensation plans were announced to replace those terminated during World War II. Another complication I had to resolve was when older salesmen were reluctant to share sales territories with the new hires or returning employees. Also, several new rental products were announced, requiring training and sales promotion. I faced these challenges as general sales manager for just under a year.

Watson, Sr., in most ways, was a great person. Many considered him America's greatest business leader. He was an exponent of world peace through trade and was a confidant of U.S. presidents. In spite of this, or perhaps because of this, he was not easy to please and wanted the final say in all facets of the business. Unless he gave his full concurrence in advance, he was prone to disapprove decisions subordinates made, especially decisions his general sales manager made. He did not like to delegate authority and, at the same time, had a reputation for making impulsive appointments (as was the case with my appointment as general sales manager). He was also known to terminate management or sales personnel just as impulsively, as was the case with Eilers and the entire male contingent of Sales School Number 125 in 1935.

#### Greatest Career Crisis

Toward the end of 1946, Kirk called me to his office and, in the abrupt, "hatchet-man" man-



ner for which he was noted, told me I was being relieved of my position of general sales manager. When I asked why, he said it was because I had too often opposed Watson, Sr. When I inquired about a place for me in the company, Kirk suggested I could have any marketing management position anywhere in the field I wished. This meant, of course, that someone else would have to be removed from that position before I could occupy it. At the time of my appointment, I had accepted the possibility that my term of office might be short. What I could not accept, however, was the type of job reassignment Kirk proposed. I was filled with anger, disgust, and disappointment because of the ruthless manner in which Kirk handled my removal. I was not willing to play his game and told Kirk as much. After a brief and heated exchange, I advised Kirk that I was resigning from the company, packed up, and went home.

In apparent disagreement with Kirk's handling of the matter and wanting to retain me in IBM, Watson, Jr., called my home. He spoke with Jean, who told him that I was too upset to converse with him. Watson, Jr., asked Jean to relay to me his nonacceptance of my resignation and his desire to meet with me later in the week. When we met, Watson, Jr., said IBM should not lose a man with my record and executive capability. He offered me the position of manager of the IBM Future Demands department, reporting to him. In this new position, Watson, Jr., said, I would be able to utilize my knowledge of customer requirements and what he believed to be a flair for systems design and innovation. This gave me the opportunity and privilege of working with him directly. I admired him and his greater concern for IBM's future rather than for its present.

#### Career Rebound Begins

In 1947, when I was only six months into my Future Demands position, Kirk suffered a heart attack and died while on IBM business in France. Watson, Jr., promptly was named executive vice president, succeeding Kirk. Following his appointment, he began to talk to his father about decentralization, encouraging him toward lessening his control over all IBM functions and divisions. In 1949, as one of the first steps in that direction, Watson, Jr., believing his father had too many people reporting to him, persuaded his father to allow Bob Noll, IBM's patent manager, to report to him. In that same year, as Watson, Jr.'s workload as executive vice president increased, he added staff and promoted me from manager of Future Demands to

his staff as executive assistant with responsibility for certain functional areas, such as Intellectual Property (then called the Patent department). With the Intellectual Property responsibility came John Hayward as an advisor. Hayward was a wonderful, elderly, legal statesman who, together with Noll, schooled me in the world of intellectual property. On occasion, Noll was somewhat pedantic. Nevertheless, this highly capable attorney was particularly adept at selecting younger attorneys who reported to him, such as John Shipman, John Hanifin, Charlie McTiernan, Dewey Cunningham, and Jerry Etienne. Roger Smith, Paul Enlow, and Paul Carmichael joined the department over the next several years. Later, Shipman became second in command, responsible for international patents and the development of foreign patent policy and staff. All of these attorneys were highly professional and, I believe, the best in their field. In the years to come, each attorney achieved manager status. McTiernan left to head Sperry Rand's patent department, and Enlow was hired away by AT&T to direct its intellectual property activity with distinction.

The era following my assignment to Watson, Jr.'s staff coincided with a tremendous surge in the growth of engineering throughout IBM, which came about at Watson, Jr.'s insistence. This, coupled with the emphasis Watson, Sr., had placed on patenting, resulted in a patent workload glut. IBM was filing patent applications on 47 percent of inventive disclosures received from engineering. I foresaw that if IBM were to continue filing at that rate, based on its growth potential, there would come a day when such a filing rate would require the company to hire all the available patent attorneys in the United States and more. In search of a solution, Noll advised me that "publication" was a secondary and infrequently used form of protecting IBM's engineering accomplishments. But this, some reasoned, would mean prematurely telling the world, and especially the competition, what we were doing or about to do. A legal study of the problem suggested the innovative procedure of adopting a form of early publication that would serve as a "statutory bar" against others claiming they were the first to invent something. Such a procedure would require only limited publication in, for example, an area newspaper or a technical journal.

To further ensure that we met legal requirements, we devised a limited-publication document called an *IBM Engineering Disclosure Bulletin* that would be filed in the Library of Congress and several university libraries throughout the

country, such as the Massachusetts Institute of Technology, Princeton University, California Institute of Technology, and Carnegie Tech. Consequently, the IBM Patent department changed its filing practices, and our filing rate dropped to 11 percent. The patents IBM filed represented the very best of the inventions coming out of the laboratories. The remaining approximately 36 percent of IBM's previously filed internal invention disclosures were published in our new *IBM Engineering Disclosure Bulletin*. This procedure reserved exclusive patent monopoly rights for IBM's best invention applications while preserving IBM's freedom of action to practice all its inventions and to assert them as prior art when they were challenged. Not only did this practice become a first in U.S. industry, but also it enabled IBM to concentrate its patent firepower on its best inventions and to protect them worldwide. This process would have been too expensive had we been filing applications on all patentable inventions. The strength of our worldwide patent portfolio became, in 1960, the tool we used to retain 100-percent ownership of IBM Japan and, subsequently, through cross-licensing, to gain freedom of action worldwide under the inventions that IBM competition held.

The scarcity of patent attorneys throughout the free world caused me, in collaboration with Noll and Shipman, to create another first for the profession. Instead of hiring attorneys away from other companies, analogous to today's professional athlete's free agency, we established IBM's own patent attorney school in Washington, D.C., staffed by IBM attorneys Jan Jancin and Maury Klitzman. Within IBM, Jancin recruited engineers with an ambition to become patent attorneys. They were then relocated to the Washington, D.C., area for training, spending part of their workday studying patent law at either Georgetown University or George Washington University. During the remainder of their day, Jancin and Klitzman taught them in IBM classrooms. They trained on real IBM patent searches, analyzing engineering disclosures and drafting patent applications on some of IBM's lesser inventions. After obtaining their law degrees and completing the IBM school, these new attorneys were assigned to various IBM laboratories.

IBM's Patent Operations department also played a role in stimulating the company's research and development. As a result, Emmanuel Piore, IBM vice president of research and engineering, asked me to devise an invention award system. Calling on the talented Hanifin and Cunningham, we came up with an

award system that gave points for patents filed and articles published in the *IBM Engineering Disclosure Bulletin*. Annually, a patent award committee evaluated new patent issues, chose the most outstanding inventions, and gave the inventors cash awards, ranging from \$20,000 to \$100,000 and even higher. IBM Engineering Management sponsored an annual dinner to honor the most outstanding and prolific inventors. This patent award system was another first within the computer industry and, perhaps, for industry at large.

#### Historic Fumble

After the death of Clem Ehret—the elderly IBM veteran and manager of market research—I, as Watson, Jr.'s assistant, was also responsible for receiving and handling submissions from people outside the company who hoped to sell their inventions or technology to IBM, a legally sensitive, but only rarely fruitful procedure. Each of these submissions was given careful review, even though most proved worthless. But, one of them I received, had it been accepted, could have steered IBM in yet another profitable direction. Sometime in either late 1946 or early 1947, Chester Carlson, a freelance patent attorney, presented IBM with a rudimentary electrophotographic printing device that he proposed IBM manufacture and market, paying him royalties for the use of his patents. I was impressed with his development model, crude as it was, and saw the invention's potential, not as an adjunct to the punch card machine, but as a new office product: a plain paper copier. Carlson wanted a large sum up front and royalties for exclusive rights to his invention. In order to make a commitment to him in a deal of the magnitude he was proposing, I had to obtain a higher level of management approval. Since Watson, Jr., was away, I went to Watson, Sr. After I described the Carlson invention to him and what I believed to be its capability, he queried, "What has this got to do with the punch card?" "Nothing," I replied, "but it will give us a new product for the office machines market." He responded, "Now let me tell you something, young man. When my wife Jeanette tells me I'm the smartest man in the world, I respond, 'No, Jeanette, I'm only smart in spots; and I'm wise enough to stay on those spots.' Birkenstock, you should know that the punch card is one of those spots, and this Carlson invention isn't; so tell Mr. Carlson we're not interested in his invention." This time, to my later regret, I suppressed my inclination to debate the issue and turned down Carlson's offer. My becoming a

yes-man to Watson, Sr., in this instance was a huge mistake.

Carlson's next visit was to Battelle Institute, which undertook product development of a plain paper printer/copier and obtained a license under the Carlson patents. Sometime later, Joe Wilson, president and CEO of Haloid Company, saw the rudimentary electrophotographic printer under development at Battelle and instantly recognized its potential. For an undisclosed sum and future royalties to both Battelle and Carlson, the Haloid Company purchased exclusive rights to the invention. Thus, xerography was born. Several years later, Haloid changed its company name to Haloid Xerox and subsequently dropped the name Haloid.

Prior to Xerox's enormous success, Wilson appeared as a guest on a TV program and discussed what he called "a document processing technology breakthrough." Watson, Jr., saw the TV program, so the next morning, I was "on the carpet" in his office. I explained how my proposal to accept Carlson's deal was turned down. Watson, Jr., responded with, "What a pity. Well, let's see if we can still get some part of the action. Haloid is a small company and may want our help." I contacted Wilson, who was extremely candid with me. This invention, he said, was the "find of the century, a technology that will give us a plain paper copier and a Haloid exclusive." Wilson continued that he would welcome a partnership with IBM regarding any other xerographic applications other than copiers. Consequently, IBM agreed to a joint development program for several IBM system products. Regrettably, this partnership did not produce a viable product. The heat fixing of the electrostatic image onto a punch card created dimensional instability relative to the tabulating card, and as a result, the IBM/Xerox technical collaboration died on the vine. It did lead, however, to Wilson's proposing that our two companies join in the manufacturing and marketing of the Xerox 914 in the United States. I thought this would be a means for IBM to enter the copier field. IBM management turned to Arthur D. Little to evaluate the proposal, and the Little firm forecast a modest market for plain paper copiers. Therefore, IBM turned down Wilson's offer, much to my regret and eventually to IBM management's regret. Following the success of the 914, Xerox came to me with a second proposal for a collaboration, this time in Europe. The IBM World Trade Corporation, which Arthur K. Watson (Watson, Jr.'s younger brother) headed, declined the offer, so Xerox formed a company with Rank, Ltd. to capitalize on the European

market. In hindsight, I believe if I had waited for Watson, Jr., to intercede with his father before turning down Carlson, IBM would have achieved another goal. Instead, a historic fumble transpired, not only initially, but also twice thereafter.

#### Emerging Competition and Pivotal Assignment

One of IBM's most sensational growth periods began in the late 1940s and continued into the 1950s. The postwar demand for data processing outpaced IBM productive capacity, and the annual revenue growth was hundreds of millions of dollars. Also growing at a rapid pace in the late 1940s was the competitive threat of vacuum tube electronics and various means of binary computation and storage under development at university and private laboratories. Future competition from these developments concerned Watson, Jr., and caused him to assign me the additional responsibility of monitoring the potentially competitive threat arising from U.S. government-supported electronic development not only in government laboratories but also in government-funded university labs. In particular, I was to monitor the competitive cloud that was forming on the IBM horizon resulting primarily from the vacuum tube computer developments of the Eckert and Mauchly Electronic Company and secondarily from the binary storage capability Engineering Research Associates (ERA) was developing. I reported the results of my monitoring activities to Watson, Jr., every two to three weeks over lunch, viewing with alarm these competitive threats. Watson, Jr., and I both anguished over the publicity coups Univac achieved when CBS forecast election results in 1952 using Univac and when General Electric installed a Univac. The scope of the various new competitive threats required me to visit many of the university and government laboratories engaged in electronic development or research throughout the United States and in Great Britain, France, and Germany.

In parallel, the European branch of the IBM Patent department had a "patent watch" in place for adversely held patent applications that might impact IBM's future. From what I saw and learned from both sources, coupled with my knowledge of unfulfilled IBM customer requirements, I soon realized that the work going on in university, government, and private laboratories constituted a substantial threat to IBM's future. Watson, Jr., accepted this outlook and voiced his opinion to others. However, Watson, Sr., while not averse to IBM's experimenting with higher speed electro-

mechanical processors, felt that there would never be a successor to the IBM punch card systems, which were so much in demand that our plants were working three shifts. He would publicly say, "IBM is an institution that would live on forever, based on the punch card."

In regard to shifting engineering emphasis toward electronics, Watson, Jr., soon found himself running interference between his father on one side and himself and me on the other. Because of his concern for IBM's future, Watson, Jr., with the passive approval of his father, issued instructions to IBM engineering departments that new IBM hires be electrical engineering graduates, preferably with a doctorate in mathematics, physics, or electronics. Because of this, IBM's electronic technology development capabilities were rapidly enhanced, and IBM began moving away from electromechanical accounting machine development toward electronic processors, with considerable emphasis as well on electronic memory and tape drives. This set the stage for the company's bold move into a crash program of electronic computer development in 1951. At that time, the emphasis on electronic development could not have been accomplished by anyone in the company other than the son of the founder. Watson, Jr., could, and often did, oppose his father's views. On occasion, he countermanded his father's orders and got away with it. Eventually, he persuaded his father to change some of his views regarding IBM's future.<sup>1</sup>

In 1948, IBM Poughkeepsie's electronic engineering laboratory staff demonstrated an innovative development called a Magnetic Tape Processing Machine Test Assembly. Only a few of those who appraised the Poughkeepsie test assembly believed Poughkeepsie's laboratory technology could give IBM an early entry into the electronic computing industry. We "believers" with marketing experience—none of whom was at a top management level—argued that the Tape Processing Machine could be the platform for a machine that would outperform both the ENIAC installed at the Aberdeen Proving Grounds and its successor the Univac being installed at the General Electric Company. Both products were the developments of the Eckert and Mauchly Electronic Company. I championed magnetic tape for processor input and storage because of its greatly enlarged digital storage and high-speed input/output capability, as did other supporters. Admittedly, as supportive as I was, I visualized it only as an alternative to the punch card as an operating medium. The primary need, as I envisioned it, was for a high-speed processor with

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himself and me on the other.**

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large-capacity storage capability to use with IBM printer systems and punch card peripherals. I was confident that IBM's customers would pay a rental price many times higher than for punch card system rentals because such equipment would be far more cost-effective. This was especially true for the larger customers whose enormous data input required complex processing applications, recording more than 80 digits in a single entry, and whose output required "acres" of storage capacity.

Several major problems, however, needed to be addressed: the cost of development, the initiation of the program, and the introduction of such a new development into the market in competition with proven electromechanical punch card accounting systems. Most of all, we had to face the obsolescence factor, namely, the specter of outdating the company's lucrative equipment-rental machine inventory, the main source of IBM revenue and profit. We also needed to be concerned that we not lose our proprietary intellectual property rights if we accepted U.S. government funding to pursue a new development course.

Another threat to IBM's dominance that surfaced in mid-1947 was an advanced magnetic storage drum development, accomplished by a group of elite engineers originally assembled by the Navy in Dayton, Ohio, during World War II as part of the Navy's highly confidential wartime cryptology effort. These engineers developed stored-program potential and provided large-capacity, intermediate storage capability, something the ENIAC and the IBM Defense Calculator (mentioned later) lacked. Such potential was particularly worrisome to Watson, Jr., and me, because we considered this group of computer scientists and engineers to be some of the most talented engineers, outside of those at IBM. When General Bud Talbot, a Dayton resident and friend of Watson, Jr.'s, suggested IBM acquire the group as a separate entity along with its related contractual obligations



to the Navy, Watson, Jr., declined for antitrust reasons. Watson, Jr., asked me to assist Navy Captain Ralph Meader, who was in charge of the cryptology project, in finding a solution to the antitrust dilemma. Meader found John Parker, a retired Navy officer with a defunct glider factory in St. Paul, Minnesota, and convinced him to incorporate the group and to locate it in Parker's factory, offering him lucrative Navy development contracts as an inducement. Parker became president of the new company (ERA). William C. Norris became the chief operating officer. (Some years later, Norris founded Control Data, Inc.)

In early 1950, ERA had cash flow problems and was unable to raise sufficient venture capital. Parker came to IBM and, ultimately, to my office. Parker's approach to IBM was quite timely. A few months earlier, I was at a meeting when Watson, Jr., expressed his dissatisfaction with the IBM Endicott Magnetic Drum Project, which was vital to the company's introduction of a new calculator for its punch card line. (This planned IBM Intermediate Calculator was later introduced as the highly successful IBM 650.) When I informed Watson, Jr., of Parker's offer to sell us ERA, he said, "Jim, as much as I would like to, we can't acquire ERA because of antitrust reasons; but see if we can buy rights to their technology." I suggested we hire ERA to do drum development for us. Watson, Jr., liked the idea of IBM's funding a magnetic drum calculator design at ERA, because, he said, the Endicott drum project was "going nowhere and needed a kick in the rear." He added, "I think a competitive design by ERA would stimulate Endicott drum development and be good for the business. Go ahead and see what you can work out with Parker."

Over the next several months, with the aid of Stephen Dunwell, a highly innovative engineer handling electrical specifications, I began negotiations with Parker and his staff regarding the terms and conditions for IBM's funding an ERA development of a computer to IBM's design objectives. Further, we discussed IBM's acquiring rights under ERA patents. On 8 March 1950, Watson, Jr., signed an ERA-IBM agreement, a development contract that was the first ever for IBM with a potential competitor. This became a milestone agreement, particularly for IBM, since it provided the company with an alternative drum computer design to the Endicott project. Equally, and perhaps more importantly, it contained a clause that gave IBM the right to purchase for \$150,000 a nonexclusive, paid-up patent license to all ERA inventions conceived prior to

and during the development done for IBM. Needless to say, Parker was delighted with the agreement because of the recognition it gave ERA. Moreover, the agreement provided ERA with an advance of working capital and a 20-percent profit to ERA above total cost. For IBM, the ERA development served several purposes. It motivated IBM's engineers at Endicott to furnish the company with an innovative drum design, a stored-program concept, and checking capability compatible with IBM's punch card input and output peripheral equipment. Of landmark significance was the freedom of action that the patent license clause afforded IBM. (In 1951, the Remington Rand Corporation acquired ERA. Within days of the acquisition, I notified Remington Rand that IBM was exercising its purchase option to a nonexclusive license under all ERA patents.) IBM could now move forward technologically, unhindered by ERA's patents.

The decade of the 1950s was arguably the most significant in IBM's history and, certainly, in the so-called Watson years. The Korean War, the cold war, and other geopolitical events provided IBM and other technically oriented companies with new opportunities. These opportunities were so abundant that IBM's chief problem was selecting the right project. When IBM seized the opportunity to serve its country, it grew and prospered as a result. Fortunately, I was in the right place at the right time, a blessing for which I am grateful. Below, I will attempt to describe how the U.S. government and IBM's customers turned to us for solutions to both military and commercial problems. As a result, the marketing of solutions was becoming as important as the marketing of products.

As this important decade began, I found myself in a position to know what calamity any missed opportunities could bring and to understand the rich rewards that innovation and creative solutions could bring. I needed people with skills and backgrounds similar to mine, people who believed in themselves enough to take risks and dare to fail. As was my good fortune, Watson, Jr., chose me from his immediate staff to recruit, organize, and conduct a unique Corporate Staff operation that moved IBM into the frontier of electronic data processing. In planning for the future, Watson, Jr., gave me more authority than his division managers.

#### IBM's Korean War Effort

In 1950, when the Korean War started, IBM Poughkeepsie had not yet obtained IBM management support for a proposed program to

develop an electronic computer, based on the Magnetic Tape Processing Assembly. The Poughkeepsie staff were chafing at the company's decision to fund the Endicott magnetic drum calculator (a punch card system project) in preference to Poughkeepsie's proposed development of a much larger tape processor. As fate would have it, only hours after the onset of the Korean War, Watson, Sr., notified President Truman that an unlimited amount of IBM personnel and facilities would be available to serve our country's war effort. Promptly thereafter, Watson, Sr., decided to reactivate IBM's Military Products Division, which had been deactivated at the close of World War II. He did so by calling Watson, Jr., and me to his office to say that he was reestablishing this division, whose sole function would be the design and manufacture of products, systems, and material for the U.S. government's war effort. Furthermore, he said that IBM would make its engineering and manufacturing capability available for any program directed and approved by the War Production Planning Board in Washington, D.C.

Next, Watson, Sr., informed the two of us (although I am sure he had prior discussions with his son) that he was appointing me to organize and direct this new activity under the title of IBM manager of military contracts. My assignment was to contract with the U.S. government for research and development projects and to start a new IBM division to provide IBM services and products of a military nature. All existing IBM divisions, Watson, Sr., said, would be instructed to assist in the staffing of the new division. Because of this, I had access to divisional promotion lists, enabling me to recruit and staff the infrastructure of a brilliant team effort from within the company. I was able to bring in people with outstanding management and sales records, like Cy McElwain from Factory Management; Zollinger, a former regional sales manager; and branch office managers Glen Solomon, Phil Whittaker, and Phil Coulter.

Watson, Jr.'s first comment to me after we left his father's office was that this could be IBM's "window of opportunity" to utilize the Poughkeepsie tape processing assembly technology in a government contract. He suggested that a large-scale computer development I had been advocating (similar to those being funded at several universities) be a part of the military products effort his father had just authorized. Watson, Jr., cautioned, "Our first priority, of course, must be to follow my father's orders and to meet whatever requirements the U.S. government's War Production Planning Board

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places upon IBM." Then he said that after this was determined, I should see what I could do about contracting for a suitable government-supported computer project. This was the green light I needed, and I gave this equal, and perhaps greater, priority to determining what the government had in mind for IBM's war effort. My first move relative to selling the government on the concept of funding an IBM electronic development was to explore the possibility of the government funding an electronic computer, based on IBM Poughkeepsie's electronic test assembly expertise.

I promptly communicated to Ralph Palmer—manager of IBM Poughkeepsie's Electronic Development Laboratory and leader of the group that had developed the Magnetic Tape Test Assembly—the good news that IBM would undertake new computer development under the auspices of a government contract related to IBM's activation of a Military Products Division. Palmer and his people were delighted at this prospect, as was Cuthbert Hurd, a skilled mathematician heading IBM's Applied Science department and a former employee of the U.S. Atomic Energy Commission. Palmer, Hurd, and I quickly decided that the first development contract we should seek would be for a "scientific computer" because of the known pressing need for such equipment for military applications. Following such development, our second effort, we reasoned, would be to produce a commercial computer to counter our arch technology rival: Univac.

In 1951, in parallel with my efforts regarding what became the Defense Calculator Project, I spent considerable time and effort in Washington, D.C., ascertaining what the U.S. Department of Defense and the related War Production Planning Board perceived to be IBM's role in the Korean War effort. I pursued this at the same time I was alerting the Defense Department of IBM's interest in fulfilling part of its war effort by undertaking the custom design, under government contract, of several scientific electronic calculators. I inquired

about contract terms and conditions and probed to see how much government money might be available for computer development. My second step toward obtaining a computer development contract was to conduct a nationwide survey of the military's need for high-speed computation rather than to rely solely on estimates given to me in Washington. To accomplish this, I asked for and received what proved to be invaluable assistance from Hurd. Together, Hurd and I conducted a nationwide survey of U.S. military and government computational requirements, looking at the same time for prospective government funding to support the development of several electronic high-speed magnetic tape computers at IBM. In so doing, we visited numerous computational sites from coast to coast. Palmer had provided us with block engineering diagrams of the Magnetic Tape Processing machine, along with an estimate of his group's capability to develop a maximum of four custom-built computers under contractual terms and funding by government agencies or defense contractors.

As I recall, Hurd and I visited 22 government contractors, laboratories, and computational facilities, including the Long-Range Proving Ground at Coco Beach, Florida, later known as Cape Canaveral. At the close of this study, we concluded that a single electronic scientific computer architecture, well within IBM Poughkeepsie's engineering design capability, could meet 80 percent of all the government and contractor market requirements. With this new concept of what was best for both IBM's future and the Military Products effort, I ceased my quest for several separately funded computer development contracts and concentrated on convincing IBM management to do the unprecedented: skip the trial by development stage and proceed immediately into production. Therefore, on 15 December 1950, I wrote to Watson, Jr., recommending that IBM pursue a strategy of corporate funding of IBM computer development. I reasoned that this move would protect IBM's patent rights and, at the same time, enable the company to focus its efforts on a single computer architecture that would jump-start us into the electronic computer business. I asked Watson, Jr., to authorize an estimated \$3-million investment in a proprietary IBM Electronic Magnetic Tape Computer, based on the Poughkeepsie laboratory's technology, to be rented, not sold. I further proposed that due to program urgency, IBM skip the design model phase and build a production lot of 20 machines to be leased at \$8,000 a month. Of the production lot, 18

machines were to be leased to customers, and two were to remain in IBM. Admittedly, this was a huge gamble and a bold step never before attempted by IBM—or any other company, as a matter of fact. I played down the risk factor and emphasized our need to maintain our leadership in the data processing field.

My memorandum also endorsed the appointment of a committee comprised of Engineering department, Applied Science department, and Watson Laboratory personnel to establish system architecture and specifications for the machine capable of meeting all or almost all the current military scientific computational needs. Additionally, I suggested the project be named the "IBM Defense Calculator" to comply with Watson, Sr.'s desire to give government needs first priority over IBM commercial market requirements and to avoid the appearance of challenging Watson, Sr.'s belief that punch card system technology was IBM's future. In the 15 December 1950 letter proposing the IBM Defense Calculator development, I assured Watson, Jr., that my recommendations had the full support of Palmer and Hurd. In spite of this, the IBM Sales department members, ordinarily short-term oriented, were not enthusiastic about a proposal they viewed as taking away engineering from punch card systems that were still in great demand. Nevertheless, Watson, Jr., acted on my proposal for the Defense Calculator Project a few weeks later with the provision that Hurd and I demonstrate to him that a market existed for an electronic scientific computer at the projected \$8,000 monthly rental.

With Watson, Jr.'s provisional authorization and admonition to be discreet, in February 1951, Hurd and I revisited the government installations and the military contractors, carrying with us block engineering diagrams of the proposed architecture for the Defense Calculator. Our purpose was to secure letters of intent from 18 future customers for a machine that would meet the proposed capability of performing high-speed arithmetic calculations at an \$8,000-a-month rental. When we returned with 18 letters of intent, Watson, Jr., promptly gave his consent to the program. Some months later, Watson, Sr., approved a \$3-million budget for the development and production of the Defense Calculator, thus launching IBM full force into what was to become our first production of an electronic computer. We would also become the first company to offer a machine of such power and magnitude on a rental basis. Apparently, this project required a gamble some were unwilling to make.

Opposition mounted within IBM, enhanced by Learson's quite vocal disapproval. Midway through the Defense Calculator Project, Williams, vice president of finance, called a meeting and suggested to Watson, Jr., that the project be halted because, at the \$8,000 monthly rental, he projected the machine would generate staggering losses for the company. He further projected that for IBM to break even, the Defense Calculator had to be priced at a monthly rental ranging from \$11,900 to \$17,600. Sensing the demise of the project, the IBM Electric Accounting Machine Division assumed an I-told-you-so attitude.

Dismayed but undaunted, Hurd and I returned to the customers from whom we had received letters of intent and advised them of the revised rental price. In most cases, the customers accepted the rental increase. Fortunately, the several letters of intent that were canceled were soon replaced by orders from new prospective customers, the production lot was reestablished at 18, and the Defense Calculator Project was not only continued but also publicly blessed at the IBM annual meeting in April 1952. Watson, Sr., by this time having become a convert, announced to the stockholders that the company was building an electronic machine (the Defense Calculator) 25 times faster than any previous IBM development.

With Watson, Sr.'s acceptance of the project, I reasoned that the name Defense Calculator had served its purpose. With Hurd's concurrence and my eyes to the future, I selected "electronic data processing" as more descriptive of our new capabilities. Besides, it was different than the terminology our competitor used. In December 1952, the Defense Calculator was renamed the "IBM 701 Electronic Data Processing Machine" and was marketed under rental contract by that name as were its successors, each with a different number prefix. At the same time, Watson, Jr., astutely put Learson in charge of both the production and marketing of the 701 and the follow-on data processors. With Learson in charge, the IBM Sales department and its Electronic Data Processing Machine Division quickly became supporters. This marked the inception of a new era of IBM electronic data processing that initially supplemented and eventually replaced the punch card systems in IBM's product line, the total replacement of which, I must confess, I did not envision at the outset. In the same year, the U.S. Department of Justice filed an antitrust suit against IBM, charging the company with market dominance in punch card systems. One of

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**IBM's strength in both the quality and quantity of its patents gave the company a trump card to use later in its "freedom of action" negotiations with both companies and countries, particularly market access in Japan.**

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IBM's defenses was the availability of magnetic tape data processing systems and the emerging competition offered by the new companies joining the data processing industry.

Following the 701, IBM quickly embarked on two other magnetic tape data processor projects, designated the IBM 702 and 704, targeting the commercial market rather than the scientific computer market. These second-generation products were designed to process business functions as well as scientific computing applications. At the outset, Watson, Jr., took personal charge of the marketing of IBM's new data processors. Every Monday, he held a meeting of all the principals involved in the development, manufacturing, education, servicing, and marketing related to the data processors. IBM was on its way to becoming the dominant computer manufacturer due to the intensity of management interest. Sperry Rand's Univac Division, notwithstanding its earlier technical leadership, failed to make a matching marketing commitment and became an also-ran.

All of IBM's technology utilized in its computer system architecture remained the company's intellectual property because of IBM's business strategy of supporting research, development, and production without the benefit of U.S. government funding. This policy decision gave IBM an unparalleled patent license trading capability industry-wide, furthered IBM's growth, and positioned it for world dominance in what was to become known as the Era of Electronic Information Processing. IBM's strength in both the quality and quantity of its patents gave the company a trump card to use later in its "freedom of action" negotiations with both companies and countries, particularly market access in Japan. Another important factor that contributed to the company's achieving such dominance was the excellence of IBM's peripheral units (e.g., tape drives and





Figure 4. The author (left) and Ed Zollinger (right) in a SAGE discussion with Lt. Col. Townes at ARDC headquarters in Baltimore, Maryland.

high-speed printers) compared with those of its competitors. Consequently, IBM became a supplier to its own customers as well as to its competitors. This often caused problems, such as when our competitors requested discounted prices and expedited deliveries. In all cases, we denied these requests, on the grounds that such action would discriminate against IBM's own customers. Consequently, this exacerbated our already sensitive relations with our competitors.

At the same time IBM was developing these new data processors, the War Production Planning Board recognized both our electro-mechanical capability and our systems management skills. The board asked us, as prime contractor, to manufacture high-speed bombing systems. Additionally, the Army wanted us to produce tank gun stabilization systems, and the Navy asked us to undertake the design of a sonar detection system. Early in this time frame, we learned by chance that MIT's Lincoln Laboratory was engaged in coupling its prototype Whirlwind computer with a prototype AT&T radar-tracking system. The Air Force was funding this project, and MIT was considering Sperry Rand as a partner in the production phase of the computer and display portion of the air defense system. My immediate challenge was to dissuade MIT from utilizing Sperry Rand/Univac and to accept IBM as a partner, sharing development responsibility with MIT and as the sole manufacturer and installer of the production versions of the system. This project was a perfect fit for IBM because it was a rare opportunity for us to display our innovative capability and manufacturing know-how relative to sophisticated computer and data display technology. Production versions of these prototypes were to be integrated into an air

defense system that would protect the North American continent from hostile planes—a huge and complex undertaking.

Not wanting to be outsold in obtaining a project of such prestige, Sperry Rand called on five-star General Douglas MacArthur, its “biggest gun” and a member of its Board of Directors, to join its sales effort, particularly at the Pentagon level. Believing that the Pentagon would not make the ultimate decision, I focused our sales effort on the system's architect, MIT's Lincoln Laboratory. To convince a self-assured laboratory like MIT that IBM had a unique capability, my first step was to establish a high-level contact at MIT's Lincoln Laboratory. As a result, I met with laboratory manager Al Hill and expressed IBM's interest in becoming MIT's industrial partner in the project, with MIT retaining its systems design leadership. Several of IBM Poughkeepsie Laboratory engineers and I met with Jay Forrester and Ken Olsen, MIT Lincoln Laboratory engineers responsible for the Whirlwind computer. Since it was apparent that an intensive selling and corporate management effort would be required, I first alerted Watson, Jr., of the opportunity. Assisted by IBMers Zollinger and Solomon, I quickly organized a series of demonstrations of IBM research, development, and production capabilities, showcasing our personnel in particular and utilizing our Poughkeepsie factory 701 computer production site as the focal point. Watson, Jr., eager for an MIT-IBM collaboration, personally participated and did a superb selling job on MIT management, an achievement to which he proudly alludes.<sup>1</sup>

Zollinger and Solomon, two of our most capable marketing executives whom I recruited to assist me, coordinated IBM's continuing sales effort. Their assistance in directing the company's contract negotiations with MIT's Lincoln Lab and the Air Force officers made IBM the successful bidder. The MIT-IBM partnership became known as the Semi-Automatic Ground Environment (SAGE) defense system project, with the U.S. Air Force as our customer (see Figure 4). Arguably, SAGE was the most significant U.S. government-sponsored electronic computer development in history (accomplished by the blending of talented university and industry scientists) and the largest and most costly special-purpose computer project ever attempted. It provided IBM with invaluable product know-how and experience, an electronic development laboratory at Poughkeepsie, and a new plant site at Kingston, New York. Project SAGE became a pioneering technical effort, utilizing breakthrough tech-

nology in many areas, such as ferrite magnetic core memory. The SAGE system was a massive duplexed computer operation, making large-scale use of telephone lines for digital data acquisition, cathode ray display terminals for data and graphics, and much more. As IBM's *Federal Systems Division Magazine*, printed in honor of the division's 25 anniversary, describes it:

With SAGE, the Pentagon planned a network of digital computers fed by ground-based radar, ships, early warning aircraft and ground observers. IBM was responsible for the digital computers to process the data and, if an attack were imminent, pictorially display the battle situation for the human controllers.

At the same time that the Military Products Division was making MIT's SAGE systems, it was also engaged in developing and manufacturing Bombing Systems/Navigational computers for the Air Force. IBM was awarded a design contract for more-advanced bombing and navigational systems for the B52. This activity evolved into IBM's Federal Systems Division with manufacturing headquarters in Gaithersburg, Maryland, but only after the initial bombing and navigation systems project had provided IBM's Poughkeepsie manufacturing site with a quantum expansion in production facilities and personnel.

#### My Most-Cherished Moment

My efforts during my term as Watson, Jr.'s assistant and beyond were recognized when, in early 1953, Watson, Jr., arranged a luncheon in the IBM boardroom to commemorate the birth of the electronic computer industry and to recognize its pioneers. He invited J. Presper Eckert, Jr., and John W. Mauchly (inventors of the Univac) to meet with IBM's Board of Directors on this occasion. He also invited George Brown from the California Institute of Technology; John von Neumann; James Madden, vice president of Metropolitan Life; and several other government and industry computer innovators. Watson, Jr., paid equal tribute to all the computing engineers and scientists present. In my view, however, the greatest of all was Palmer, whom I considered to be without peer. Besides Palmer, Nat Rochester (noted for his capability as a systems architect), several other IBM staffers, and I were also invited. Watson, Jr., spoke of the financial and technical problems of the fledgling industry and its great future promise with benefits to government, industry, commerce, and humankind in gener-

al. He also spoke of the contributions of each of the attendees. To commemorate the founding of the electronic computer industry and the invitees' contributions to its beginning, he presented to each an inscribed Tiffany gold electric watch. Its unique design made the watch capable of serving both as a desk clock and as a money clip. The inscription on my watch reads:

*J.W. Birkenstock  
1946-1952  
IN APPRECIATION OF YOUR CONTRIBUTION  
TO  
THE COMPUTER INDUSTRY IN THE EARLY  
YEARS  
IBM*

I consider the watch a treasured memento. Many years later, at a CBI meeting, Mauchly's widow Kay said that her late husband had felt the same way. She praised Watson, Jr., for the recognition he had given her husband and others both in and outside IBM who pioneered during an uncertain era. In any event, competitors, academicians, customers, and businessmen attended this unique and historic meeting. They were all recognized collectively as founders of an industry that historians later credited as having done more for humankind than any other industry. This was a memorable occasion in which Watson, Jr., shared the credit with other pioneers for the inauguration of an industry. Many years later, Kay Mauchly and Eckert commented it was a pity that no photographs or video recordings had been made. I agreed.

#### Another Pivotal Assignment

In 1953, Watson, Jr., in a reassessment of what he called "an almost near miss" in IBM's early electronic computing, asked me to look into how IBM assessed electronic computing technology and to recommend a strategy to prevent another policy error. After careful study, I suggested the establishment of two new corporate staff departments, to be known as IBM Product Planning and Market Analysis, to replace IBM's Future Demands department. These departments were to be staffed with specially skilled, career-oriented personnel selected from both within and without IBM. Watson, Jr., accepted the recommendation, but with one criticism. He said, "I like your recommendation, but I don't like the fact that you didn't finish your assignment." I asked him why I had not. He said, "Because you didn't name an individual to head the operation." I replied that I was not

aware this was part of my responsibility. He said, "All right; I'll complete the assignment by naming you." While I was pleased to accept this appointment, I told Watson, Jr., that I was reluctant to give up my responsibility for IBM Intellectual Property Management and Patent Licensing. Watson, Jr., suggested I retain responsibility for these functions in my new position as executive director of product planning and market analysis. I did, however, willingly relinquish my responsibilities in Military Contracts, renamed the Military Products Division, to which McElwain was appointed director. Zollinger, Solomon, and Coulter, who had previously assisted me in the SAGE program, were appointed assistants to McElwain. Whittaker left SAGE and joined the newly created staff department. For administrative assistance, I turned for help to Herb Keith and named him assistant director of recruiting, organizing, and establishing this new IBM corporate departmental function.

From 1953 to 1956, the Product Planning and Market Analysis departments shifted IBM product and systems development emphasis toward Electronic Data Processing Systems and away from Electromechanical Punch Card Accounting Machine Systems. Additionally, subdepartments were added, focusing on electric typewriters and time recording equipment as well as product testing and special products. This marked a new era of business guidance to IBM Engineering, Manufacturing, and Marketing that emphasized new and more cost-effective solutions to customer problems in both small and very large enterprises. Heretofore, IBM Engineering developed technology and then sought problems for this technology to solve. Now, we focused on locating the customers' problems and then planning, in concert with IBM Engineering, to apply invention, innovation, and technical solution to these problems. What had been a feeble voice in the past now became a loud and persistent cry with full management support. This significant shift in IBM practice required a different composition of personnel than that utilized in the disbanded Future Demands department. As a result, I became immersed in building a staff of future-market-oriented professionals, recruited from both within IBM and without, that was fully compatible with my intellectual property management.

During my entire career at IBM headquarters, I was blessed with exceptional secretarial support, but particularly in the Defense Calculator and Product Planning days. Two people in particular come to mind. I was con-

tinually amazed by Don Skelly's fantastic memory. His efficiency was exceeded only by his tremendous loyalty. When I moved to director of product planning and market analysis, Skelly was the logical choice for my office manager. His first assignment was to find me a secretary as capable as he was. I was recuperating from abdominal surgery at the time when he came to my hospital room to tell me he had found "just the right person." When he told me it was Ulla Rundberg, I said I had serious reservations about hiring an 18-year-old. Additionally, knowing the many long hours this position often required, I suggested Skelly find a male secretary who could handle the physical rigors of this assignment. However, he persisted, convincing me to give Rundberg an opportunity to demonstrate her abilities. She did just that. While Skelly was the best male secretary I have ever had, Rundberg was my best female secretary. She was a devoted employee who expertly balanced her work schedule with her personal life. She married Paul Mangodt and had a son before leaving IBM to become a full-time mother. Both Skelly's and Rundberg's support greatly aided my transition from Watson, Jr.'s staff to manager of defense contracts and then to vice president-executive director of product planning and market analysis.

#### The Birth of the Saber System

From 1953 to 1956, the Product Planning and Market Analysis departments planned, guided, and supported many landmark developments, such as the IBM 702, 704, and 705 computers; the IBM 305 RAMAC; the IBM 1401, 1410, and 1620; the early planning phase for the 7090; the 1710 control system; teleprocessing; and the Saber (Semi-Automatic Business Environment Research) system. The Saber system was a joint development between American Airlines and IBM directed toward an automated interactive reservation and ticketing system. Its architecture was conceived under the leadership of Product Planning's Perry Crawford. Blair Smith, manager of Market Analysis, was the IBM liaison between the two companies, and Charlie Amin was his counterpart from American Airlines. This was the first of such business relationships between IBM and one of its customers in the Electronic Data Processing Machine era. The business agreement for the IBM-American Airlines collaboration, a brief memorandum of understanding, was negotiated and agreed to between C.R. Smith, president and CEO of American Airlines, and me. Blair Smith assisted in the negotiation. The Saber system development was significant because it marked the first

convergence and use within a commercial system of interactive display, teleprocessing, random access disk and drum storage, cache storage, keyboard terminal input, data transceivers, and a variety of data processors. Although smaller than the SAGE system, it rivaled it in system complexity. Today, all airlines use Saber or Saber-like systems. As a result of this shift in emphasis and our new class of products, beginning in the mid-1950s, IBM's rental revenue gave the company a quantum growth in earnings.

#### Coping with Adversely Held Patents

In the early era of electronic computer development, there was a preponderance of inventions originating in university and government laboratories and in private facilities. Coping with adversely held patents that might be read or could be alleged by the patentee to be infringed by IBM-installed computer equipment worth billions of dollars was an immense problem. Inventors' patent infringement claims grew by leaps and bounds and seemed to be coming out of the woodwork. A patent infringement suit filed against the computer lessor invariably carried the threat of an injunction against our customers' future use of the patent embodied in IBM equipment, should the plaintiff prevail against IBM. This created an awesome responsibility for IBM as the lessor. How did we cope? We did so through our intensive patent watch, discussed above, particularly abroad where patent applications, by law, must be laid open for opposition within 18 months of filing. In the United States, where no opposition procedure exists, the problem of ascertaining which patents had issued or were about to issue became a real challenge—a guessing game not unlike the commodities market.

As soon as an adversely held or potentially held patent or patent application came to our attention, our contracts and licensing personnel, after thorough evaluation, attempted to buy a paid-up, nonexclusive license to make, use, and sell the device as insurance. In some cases, as a last resort, we entered into an option agreement to a royalty-bearing license, based on a percentage of the manufacturing cost. Sometimes we bought patent licenses not used in our products, but on balance, what we spent on paid-up licenses was millions of dollars less than what it would have cost us had we waited for the inventor to assert his claims against us. During my 25 years of Intellectual Property department management, only a single serious patent infringement suit was filed against IBM, the aforementioned Research Corporation-MIT

suit. While I was vice president of commercial development, IBM's Intellectual Property attorneys and our contracts and licensing personnel accomplished a great deal. Each day produced a new challenge and put an old one to rest.

It is worthy of mention that toward the end of the 1960s, IBM unbundled software from its equipment lease agreements, due to pressure from the U.S. Department of Justice's Antitrust Division and the mounting customer demand for software innovation beyond the operating system. About the same time, IBM began shifting its marketing strategy from leasing to sales. IBM's pricing policy made outright purchase more attractive than rental. These two shifts took a great deal of antitrust heat off the company and, more than anything else, paved the way for the Department of Justice to eventually drop its antitrust suit in 1983, originally filed by Ramsey Clark late in the Johnson administration.

#### Early Problems in 700 Series Computers

The early 700 Series, however, had its problems. After the 701/702 data processors reached the field, Watson, Jr., began hearing negative reports about their reliability. After intensive engineering review and consultation, Watson, Jr., made an epic command decision that was crucial to the success of electronic data processors within IBM. He ordered all data processors operating with electrostatic storage (whose patent rights I had purchased from NRDC of Great Britain for \$290,000) to be retrofitted with magnetic core memory, pioneered in the SAGE computer. For a commercial (nonmilitary) core memory first used in the SAGE project, IBM's design and manufacturing capability was not sheltered under a government "save harmless" clause. While the U.S. government provided "save harmless" patent rights for SAGE memories, this was not applicable to commercial use. From a patent standpoint, IBM lacked freedom to produce ferrite cores for use in commercial products, blocking our use of the SAGE composition ferrites as a substitute for electrostatic memory in the 701 and 702. I attempted to obtain patent license rights from the patentee, General Ceramics Corporation, but failed because it insisted on retaining exclusive make rights and on supplying 100 percent of IBM's core requirements, making us a captive customer. My offer to purchase 50 percent of our core requirements from General Ceramics Corporation with IBM retaining the right to produce the other 50 percent at a reasonable patent royalty was rejected by Hans Arnold, the CEO. This seemed to me a short-sighted decision. I understand Henry Arnold, Hans Arnold's



nephew and president of General Ceramics, did not agree with his uncle's decision.

At this point, IBM's "patent watch" discovered a substitute noninfringing Dutch ferrite core composition, developed by the Philips Company of Eindhoven, Holland, and alerted the Engineering department. Philips Company had the capability to manufacture cores to IBM specifications and was receptive to giving IBM a make, use, and sell license under its core composition patents. In 1956, Mr. Loupard, managing director of the Philips Company, and his deputy, Mr. Thromp, and I negotiated a comprehensive cross-license and technology transfer agreement stipulating that North American Philips would supply 50 percent of IBM's commercial magnetic core requirements for a period of time. Near the conclusion of our negotiations, Loupard, an interesting personality, suggested that the contract signing take place after lunch at the Eindhoven Golf Club. "This way," Loupard said, "we can have lunch and watch a historic event on television—the wedding of Prince Rainier and Grace Kelly." I was surprised that Philips, an early leader in the European TV industry, did not have a TV in its executive offices.

The contract with Philips, however, did not solve all our commercial-use ferrite memory patent problems. Several other patent licensing negotiations of import in which I was deeply involved occurred during the core storage era. IBM patent operations uncovered the existence of two patent applications about to be issued to An Wang, a graduate student at Harvard, and Frederick W. Viehe, a public works inspector in Los Angeles working out of a home basement laboratory. Wang's rights were clouded by certain claims in the Viehe patent, filed prior to the Wang application. IBM patent operations predicted that, in due course, the U.S. Patent Office would declare an interference between Viehe and Wang and that a legal battle would ensue to determine who was entitled to what. A further cloud over the Wang patent was Dr. Woo's contention of being a coinventor. (Woo was Wang's research partner at Harvard.)

After long and tedious negotiations with all the parties, Viehe sold us his patent rights in 1956, making IBM a party to the interference, if and when the U.S. Patent Office declared it. Next, we bought Woo's claim of coinventor's rights. Finally, we took a paid-up, nonexclusive license under Wang for \$500,000 with a stipulation that \$100,000 of the payment could be withheld if the interference was declared and Wang lost one or more of the claims in his patent, as predicted. The Patent Office declared

interference, and Viehe won the claim. In the course of the interference, Wang learned that IBM had bought the Viehe patent and was, therefore, the opposing party in the interference. As a result, Wang became critical of me because of the ruling and expressed himself accordingly in his autobiography.<sup>2</sup> This was notwithstanding the fact that subsequent to the 1956 IBM-Wang agreement, IBM paid the cost of having Wang's outside patent counsel defend the Wang patent claims in the interference action in the U.S. Patent Office. Viehe put the money we paid him for his patent right in 72 savings and loan banks, so his neighbors would not learn of his wealth. Unfortunately, he never got to see his patent issued or enjoy the money we paid him. During a rock collecting expedition in a California desert, his car broke down. Viehe became lost while seeking help and perished from exposure. Wang used the money from the sale of his patent rights to found Wang Laboratories, which ultimately made him a fortune.

Midway into IBM's ferrite core memory production, IBM's patent watch activity discovered another adversely held patent. This was a magnetic core systems patent awarded to Gerhard Dirks in Germany and filed in the United States and elsewhere. Dirks was a rare character with inventive genius. During World War II, he became a Russian prisoner of war and was incarcerated for several years in a building in Russian-occupied Germany. The building contained a technical library, and Dirks, with nothing else to do, spent his time reading and studying in the library. In the course of his studying there, he conceived his version of a magnetic drum and magnetic core storage system. When the war ended, he returned to his former employer, the Krupp Company, but failed to interest it in taking a license to his German patent application. A small German company, Siemag Fein Mechanische Werke GmbH, that manufactured bookkeeping machines did show interest and, in return for an exclusive German license, paid Dirks a modest sum, enough to enable him to file his patent application worldwide.

Following this, Dirks came to the United States and contacted Sperry Rand, which paid him \$1,000 for a one-year option to an exclusive U.S. license that the firm allowed to lapse. Next, Dirks contacted the British Tabulating Machine Company, which, for a substantial sum, took an exclusive license to Dirks's patent rights for the British Commonwealth. At this point, IBM patent operations informed me that several IBM memory developments would

infringe on Dirks's patent rights. I contacted Dirks and conducted a long series of negotiations that involved several trips to Germany and Great Britain. IBM also financed Dirks, along with his wife, to come to the United States for negotiations. During this time, Dirks became enamored with California and the IBM San Jose research laboratory. In due course, I was able to obtain a license from the British firm for the rights Dirks had granted it. This was accomplished as part of a comprehensive cross-licensing agreement between IBM and the British firm. IBM paid Dirks \$1 million and assigned him a research position in our San Jose laboratory. In return, IBM obtained a paid-up, nonexclusive license under all the rights that remained under Dirks's patents. In his early advocacy of "distributive processing," Dirks was ahead of all others.

IBM was particularly interested in a cross-license under RCA patents because of the inventions Jan Rajchman of RCA had made in the field of magnetic core storage. RCA, pursuing its Busmark computer development, was in need of freedom of action under various IBM patents. Accordingly, a cross-license agreement between RCA and IBM was one of the first that I negotiated with a major company aspiring to be an IBM competitor. After RCA Vice President Anderson and I concluded negotiations, and I was poised to sign the agreement, Anderson explained that RCA's CEO (General Sarnoff) wanted the agreement signing to be between himself and Watson, Jr., in Sarnoff's office. Watson, Jr., and I went to Sarnoff's office, at which time Sarnoff advised Watson, Jr., that a complete exchange of know-how between RCA and IBM would solve IBM's antitrust problems. Needless to say, Watson, Jr., declined Sarnoff's self-serving advice. The following year, RCA abandoned Busmark.

The most politically sensitive and legally complex patent licensing negotiations I conducted regarded obtaining a license under the Forrester patent. In 1955, Research Corporation, functioning as patent licensing agent for MIT, charged IBM with infringing a Forrester magnetic core array storage patent. Research Corporation proposed IBM pay two cents per bit of core memory—an exorbitant royalty. IBM refused to take a license under the MIT-Forrester core memory patent for two reasons. First, we questioned the validity of the patent because Rajchman of RCA claimed to have conceived the same invention at an earlier date and had an application on his conception pending at the Patent Office. IBM was licensed under the Rajchman patent due to the

IBM/RCA cross-license. Second, we considered the running royalty to be exorbitant. Research Corporation contended that the proposed royalty was reasonable and refused to acknowledge the fact that the Rajchman patent cast an invalidity cloud over the Forrester patent. I suggested that negotiations resume after the interference had been adjudicated in the U.S. Patent Office. Then, without sanction from MIT or prior notice to IBM, Research Corporation filed suit, charging IBM with willful infringement of the Forrester patent. Besides the question of validity and the exorbitant royalty fee demands, this became a sticky issue between the heads of IBM and MIT. Watson, Jr., was on MIT's board, and MIT's president, John Killian, was on IBM's board. The lawsuit caused both men to resign from each other's boards. Because I had stood firm against both the validity and royalty issues, I became the black sheep and the man in the middle of a legal drama involving two nonconsenting corporations drawn into a lawsuit by a greedy licensing agency.

An early action on the part of MIT was to notify Research Corporation that MIT would settle the Forrester patent issue directly with IBM. This accomplished, Watson, Jr., and Killian moved quickly to terminate the lawsuit. IBM agreed to pay \$13 million to MIT for a paid-up, nonexclusive license under the Forrester patent. Huge as the sum was in the minds of some people, it turned out well for IBM. Over the life of core storage, IBM's estimated usage was several trillion bits of memory. However, it was not a sweet deal for Research Corporation. MIT made a private settlement with Research Corporation and then fired that firm. This incident reinforced my belief in a patent licensing policy I had adopted. I was convinced that the most practical licensing procedure for IBM was to purchase a paid-up license in lieu of a running royalty rate based on future sales or product usage for the life of the patents.

In addition to his resolve to replace electrostatic tube memory with ferrite core memory, Watson, Jr., made a second technical command decision, perhaps the most epic in mid-century IBM history. During the production phase of the 701 and the planning stage of the 702, Watson, Jr., became concerned with field reports regarding the failure of vacuum tubes in the 701. He ordered all vacuum tube assemblies in 700 series machines to be retrofitted with transistorized circuits. This bold decision was made notwithstanding that IBM lacked transistor production facilities, making it necessary to find a manufacturing source that could meet

IBM's requirements. While IBM's Engineering department believed that Texas Instruments (TI) would be the best source, it feared we would become captive to an outside supplier. Therefore, following a strategy meeting in Watson, Jr.'s office, it was decided to seek the collaboration of TI. Watson, Jr., assigned me to pursue this course with TI's CEO Pat Haggerty, being careful to reduce the risk of IBM becoming wholly dependent on TI. I was authorized to arrange a technical partnership and to handle contractual relations pertaining to a collaborative transistor design and manufacturing program. This led to TI's becoming IBM's computer circuit design collaborator and sole source of transistor circuitry during the IBM era of 700 series electronic computers. TI also remained a partial supplier during 1958 and into the mid-1960s. With TI's assistance, IBM developed the manufacturing capability, enabling IBM to meet most of its own transistor requirements, should it choose to do so. Consequently, IBM became a world leader in the development and manufacture of microelectronics. The mutually beneficial relationship between TI and IBM made TI a powerhouse in semiconductor manufacturing, both in the United States and abroad. Additionally, the TI-IBM collaboration made IBM's computers more reliable and orders of magnitude faster. Bringing solutions to both the U.S. government and industry was now more affordable and cost-effective.

#### The Sperry Rand Antitrust Suit Settlement

In the early 1950s, the U.S. government became concerned about IBM's dominance in the punch card equipment market. Consequently, the government filed an antitrust suit against IBM, alleging it was a monopoly. Our powerful competitor Sperry Rand also filed a private antitrust suit against us. This constituted a major harassment to IBM management and affected business practices until, on 22 January 1956, IBM signed a consent decree with the U.S. government that terminated its antitrust litigation. Among other things, to make the market more competitive, the consent decree stipulated that IBM establish a patent licensing policy, opening up its existing patents to competition. In regard to its manufacturing know-how of the tabulating card itself, the decree mandated providing a royalty-free transfer to all applicants for those rights as well as selling card manufacturing equipment to all comers. The tab card manufacturing know-how was the only know-how mandated under the decree. That in itself was a victory for IBM.

Following the IBM consent decree, patent interference negotiations continued with Sperry Rand, where I sensed the climate was less tense. Frank McNamara, Sr., Sperry Rand general counsel, confirmed this to me during a negotiating session in March 1956. He began to hint that a settlement—much broader than settling the pending patent interference issues we were currently negotiating—might be considered. I assumed this meant an out-of-court settlement of Sperry Rand's antitrust suit against IBM might be possible. When I brought this to Watson, Jr.'s attention, he called a meeting in his office, attended by Hank Trimble (IBM legal counsel) and attorneys from the law firm of Cravath, Swain & Moore. Trimble was opposed to a nonlawyer's involvement in settlement negotiations with Sperry Rand, no matter how skilled a negotiator that person might be. Former District Court Judge Bruce Bromley, Cravath's lead attorney, took the opposite view and offered his support to me. "Why not let Jim have a go at it," he said to Watson, Jr. "We lawyers can always take over if he fails." With that, Watson, Jr., authorized me to proceed with the negotiations.

Soon after, negotiations began between McNamara, Sr., and me and proceeded without rancor. While he was a hard-nosed negotiator, he was also one of the highest-principled men with whom I have ever dealt. During the six months of negotiations, I received great encouragement from Bromley and George Turner, Cravath's lead attorney to IBM. In September 1956, McNamara, Sr., and I initialed a consent decree settlement. However, a problem developed before IBM and Sperry Rand management could sign it. The Eckert-Mauchly people at Sperry Rand were displeased with the agreement, believing it was not compensatory enough for ENIAC patent rights. McNamara, Sr., stood by his commitment that the agreement we had reached represented a quid pro quo: \$10 million for a patent cross-license and the settlement of the antitrust suit. With only minor alterations in terms to appease the Eckert-Mauchly dissenters, Mr. Vickers for Sperry Rand and Watson, Jr., for IBM signed the agreement. Although the Sperry Rand settlement cost IBM a substantial sum of money because it included a royalty-free cross-license between the two companies, it was worth many times its cost. The settlement permitted IBM patent freedom, particularly under the Eckert-Mauchly patents assigned to Sperry Rand. Many years later, during a Sperry Rand-Honeywell patent litigation, Honeywell attorneys characterized this settle-

ment as a “sweetheart deal for IBM,” since it included a paid-up license under valuable ENIAC patents.

The year 1956 was a pivotal one for IBM in several other respects. In May, at a top management luncheon in the St. Regis Hotel dining room, Watson, Jr., gave a stirring talk about his father’s “golden years of leadership” as IBM’s founder and leader for the past 41 years. To commemorate the occasion, the invitees were given a \$20 gold piece, minted in 1914. Watson, Sr., also spoke, announcing his decision to step aside as CEO and declaring IBM’s good fortune to have his son Watson, Jr., as his successor with the title of president and chief executive officer. Watson, Sr., also said he would retain the title of chairman of the board. This was the last time I saw Watson, Sr., since he passed away some weeks later.

#### The Birth of Line and Staff at IBM

Shortly after taking over as CEO, Watson, Jr., made known his concern that IBM’s centralized management system could not adequately cope with the challenges of the company’s growth and the resultant customer requirements. Accordingly, he brought in Booz, Allen & Hamilton to study IBM’s present organization and to propose a decentralized management plan. In October 1956, Watson, Jr., at a meeting of all IBM executives, revealed the Booz, Allen plan to create a line/staff management concept with himself as CEO and Williams as president and chief of staff. Product divisions functioning under a decentralized management concept were to report to Watson, Jr., as the CEO, and those divisions were given greater autonomy. Corporate staff under Williams would provide functional review of divisional operations and establish a system of management by contention. Under this concept, IBM’s Product Planning and Market Analysis departments ceased to exist as a corporate function. Thereafter, all operating divisions would be responsible for their own product planning and market analysis.

The Booz, Allen study, however, recommended that Intellectual Property Management and Contracts and Licensing activities become entities within the IBM corporate staff. Under powers reserved to the corporation, Commercial Development was to function outside the proposed line/staff system of management contention on a worldwide basis, serving all IBM divisions and subsidiaries. The Booz, Allen study further recommended that Commercial Development, under powers reserved to the corporation, be responsible for IBM’s worldwide

intellectual property management, all technology transfer in and out of IBM, contracts and licensing, and other related responsibilities. As a part of the plan, I became IBM director of commercial development. While I regretted I would no longer be associated with planning IBM’s future products and would no longer report directly to Watson, Jr., I supported the recommendation and accepted my new position with alacrity, reporting to Williams and, through him, to Watson, Jr. Two years later, because of both the growth and importance of IBM’s patent licensing activity and the magnitude of the company’s intellectual property resources, I was elected IBM corporate vice president for commercial development.

One key set of a vice president’s responsibilities was to administer IBM’s policies and practices regarding divestitures; two major ones occurred on my watch. In 1958, Watson, Jr., in consultation with Learson, decided that IBM should divest itself of the International Time Recording Division, which Simplex Corporation had shown an interest in acquiring. I arranged an appointment whereby Learson initiated discussions that led to IBM’s transfer of all the physical assets of the International Time Recording Division to Simplex. Commercial Development handled the administrative details of the divestiture of the division’s physical and intellectual property assets to Simplex.

In the late 1960s, Watson, Jr., Learson, and Nick Katzenbach (IBM general counsel) decided it would be in IBM’s best interest if a settlement were reached in Control Data Corporation’s antitrust action against IBM. Accordingly, I arranged for secret meetings between IBM President Learson and Norris, president and CEO of Control Data. They reached a settlement that included IBM’s divestiture of the Service Bureau Corporation through Control Data. For the most part, Paul Knaplund—acting on behalf of IBM’s general counsel (with Commercial Development attorneys assisting with intellectual property, transfer, and cross-licensing matters)—administered the divestiture. Industry Relations, a subdepartment of Commercial Development under Tom Spain, monitored competitive marketing.

#### Slow Death of a Visionary Acquisition

A second key responsibility of Commercial Development was acquisitions. IBM was offered an average of one acquisition possibility a week. Such propositions required in-depth study and analysis, a function assigned to Vilar Kelly and Dick Geeson from my staff. Kelly also



had the responsibility of seeking out acquisition possibilities. In this capacity, he suggested the acquisition of Science Research Associates (SRA) in Chicago. SRA developed, published, and distributed elementary education teaching materials. Its math, science, language, and history courses were highly regarded in the education community. Kelly visualized computerization of the SRA material, with IBM achieving a leading role in both elementary and secondary institutions of education.

Watson, Jr., bought the idea and approved my embarking on negotiations with Lyle Spencer, president and principal owner of SRA. The negotiations that I conducted with Kelly's assistance resulted in the acquisition of SRA for \$20 million in IBM stock. Shortly after the acquisition closing, the value of the IBM stock doubled because of a two-for-one split. Unfortunately, Spencer, the founder and inspirational leader on whom we were counting, died several years later. To replace him, Watson, Jr., appointed Geeson as SRA's president and managing director. For various reasons, however, the SRA acquisition never flourished as Watson, Jr., and I had intended. The chief reason was the company's attempt to "IBMize" SRA, a process that stifled its growth. As a result, IBM sold SRA in the mid-1980s for \$150 million. Although IBM's lofty goals for SRA were never realized, its acquisition and divestiture were, nonetheless, profitable to IBM.

#### A World Trade Directorship and the Perks

In 1963, I was elected to the IBM World Trade Corporation's Board of Directors. This, coupled with my promotion to IBM corporate vice president, facilitated my dual roles of director of Commercial Development staff operations and IBM chief negotiator with governments, such as Japan's Ministry of International Trade and Industry (MITI), as well as companies and individuals seeking rights from IBM or offering to license IBM under their property rights. As a world trade director, I had the privilege of attending the annual joint board meetings with the IBM parent Board of Directors. These meetings were held throughout the world at the major IBM subsidiary sites in Canada, South America, Great Britain, France, Germany, Italy, Switzerland, Scandinavia, and Japan. This afforded IBM directors the opportunity not only to meet the management personnel abroad but also to become acquainted with our important customers and government officials. The directors and their wives were always royally entertained in each country. For example, in France,

we were entertained at the Palace of Versailles; in Great Britain, at the U.S. ambassador's residence; in Peru, at the president's palace; and in Japan, at the former Imperial Palace in Kyoto. A great deal of public relations value was achieved through the association of the directors with the foreign dignitaries and especially with the customers due to the prominence of IBM's outside directors, who had careers in education, government, law, finance, and industry. Among these directors were Bromley; Grayson Kirk, president of Columbia University; Merske Mueller, Danish shipping magnate; Amo Houghton, CEO of Corning Glass; Tom Hoving, director of the Metropolitan Museum of Art; William Scranton, governor of Pennsylvania; Cyrus Vance, U.S. ambassador; and William Moore, CEO of Bankers Trust. For my wife and me, this was an opportunity to develop personal relationships with several of the outside directors and their wives.

#### A Professional Staff—Key to My Success

As director of Commercial Development, I am too often given disproportionate credit. The achievements of this corporate function must be shared with the professionals on my staff who assisted me. One credit I can solely claim, however, is the development of a recruitment technique that enabled me to promote from field sales positions a number of highly qualified men for jobs in Contract Relations and Intellectual Property management. To accomplish this, I gained access to the IBM sales department's "high-potential personnel" list, guarded closely at the divisional and district sales manager levels. Prior to the meeting of each IBM 100 Percent Club, I would arrange a luncheon meeting for approximately a dozen high-potential employees from this list. During the luncheon, I would discuss with the invitees IBM's challenges and opportunities from a field marketing perspective. I also would intersperse into the discussion several hypothetical problem situations, bordering on the ridiculous, to solicit spontaneous responses. Almost invariably, one or two people stood out at the luncheon meeting. Since I taped each session, I would return to WHQ and have my staff listen to the taped responses and select whom they thought were most likely to succeed in Contract Relations. Without prior knowledge of my selection, the staff, by consensus, always chose the same people as I did. Through this means, I was able to recruit such outstanding men as Bill Miles, Gordon Williamson, Tom Birchfield, Kelly, and Dave Luening.

The early computers that resulted from the

work accomplished through IBM's frontier efforts, like all IBM equipment from the Hollerith days forward, were offered on a lease-only basis. Even IBM computer peripherals, ordered by competitors such as Burroughs, Control Data, NCR, and Honeywell for use in their early systems, were leased, not sold. Our customers preferred leasing over outright purchase because it reduced their initial capital investment and protected them from obsolescence resulting from the rapid pace of electronic development compared with an earlier era of electromechanical computing, when change had been slower. Under the lease plan, the customer received free maintenance, installation, and programming assistance. Software furnished with the installation was "bundled" into the rental price.

While IBM's competitors, especially those offering electronic computers, disliked leasing their equipment, market forces compelled them to offer their machines on a lease basis as well. IBM continued its lease-only marketing practice until the 1956 consent decree that terminated the U.S. government's antitrust suit and that compelled IBM to sell as well as lease equipment to help stimulate competition. The leasing concept of marketing computer systems, in which monthly rentals ranged from \$20,000 to \$1 million or more per system, put a great strain on IBM Intellectual Management and related patent licensing activity for which I was responsible. Leasing created a huge lessor field inventory that became a vulnerable target for patentee claims of lessor infringement. In the punch card era, infringement claims were rarely asserted against IBM, chiefly because invention was made mostly by company employees within the industry and patent rights were assigned to the company. Consequently, patent licensing was between companies; and cross-licensing solved most of the licensing problems, especially for IBM, due to its large patent portfolio. Toward the end of my career, IBM's punch card line was beginning to become subject to infringement claims from independent inventors.

Since both small and large European companies were engaged in computer development, a considerable number of inventions under which IBM needed a patent license originated in Europe. I closely monitored this activity with assistance from Shipman, director of International Patent Operations, and two extremely capable and talented patent attorneys, Harold Aspden, the U.K. patent manager at Hursley, and Walter Hoffmann, IBM patent manager based in Boblingen, Germany, who

also later coordinated the IBM patent system in Munich.

#### Research Involvement

In the late 1950s, Watson, Jr., asked me to tour Europe with Arthur Samuel from the Yorktown Research Laboratory to look for a site for a European research laboratory. We selected Zurich and hired Ambrose Speiser, a noted Swiss professor of engineering, to head the facility. Watson, Jr., approved both selections. Subsequently, I hired Thomas Speckert as attorney for the laboratory and as a contract relations representative to assist the talented and capable Claude Wiley, whom I named European manager of Contract Relations, based in Zurich. Speckert became known throughout IBM and the World Trade Corporation for his charisma and for his ability to arrange joint board of directors meetings in every part of the world. IBM European research began in rented facilities until, in 1963, our permanent laboratory in Zurich was completed. I traveled to the new facility to share the honor of dedicating it with Williams and Arthur Watson.

#### The Japanese Challenge

The business, legal, and political challenges facing IBM seemed to be growing at a pace equal to, if not exceeding the company's growth in revenue and scope of operations. In late 1957, Arthur Watson, president of the IBM World Trade Corporation, had a visit from Mr. Komai, president of Hitachi, Ltd. Arthur Watson perceived early that Komai was wearing two hats: one for Hitachi and one for the Japanese government. Komai wanted to ascertain the availability of an IBM 705 computer for installation at Hitachi, allegedly to do nonmilitary scientific computing such as weather forecasting. More importantly, however, Komai wanted to inform IBM management, on behalf of MITI, that the Japanese government considered IBM Japan an unlawful foreign subsidiary. Komai further advised us that IBM Japan, Inc. was violating Japan's foreign investment and foreign exchange laws that forbade 100-percent ownership of a Japanese subsidiary by a foreign national. The background follows.

On 7 December 1941 (Pearl Harbor Day), the Japanese had confiscated IBM Japan as an enemy alien company; during World War II, Toshiba operated it. After VJ Day and during the Allied occupation, IBM Japan was operated under the direction of the Supreme Commander for the Allied Powers (SCAP). When the occupation concluded, SCAP ordered the Japanese government to return to

IBM Japan its assets and facilities, along with revenues held in escrow. In the postwar occupation period, SCAP had assumed direction of IBM Japan, with the cooperation of IBM U.S., from which SCAP procured equipment and personnel. These resources were utilized in order to administer SCAP's occupation and to perform SCAP studies pertaining to the economic reform of Japan.<sup>3</sup>

In October 1950, by orders from SCAP to the Japanese government, IBM took over the operation of IBM Japan as a wholly owned, foreign-resident subsidiary. Three years later, Japan enacted its foreign investment and foreign exchange laws requiring foreign-resident enterprises to be validated by the Japanese government to transfer technology and products into Japan, to manufacture and market products in Japan, and to remit royalty payments and dividends to the foreign parent. In order to be validated, foreign companies were required to be only a minority owner of the enterprise, with the majority owned by a Japanese organization. Because it had existed prior to these laws and was established by SCAP order, IBM Japan believed it had grandfather rights, making it exempt under the 1954 law. Komai informed us that the Japanese government held a different view and proposed that IBM form a jointly owned subsidiary with Hitachi as a 51-percent partner so the enterprise could achieve validation. He further proposed that the partnership be licensed to make, use, and sell under IBM's patents worldwide and that an IBM know-how transfer from IBM U.S. to the jointly owned Japanese subsidiary be a part of the license grant. This later stipulation brought me into the picture as the IBM executive responsible for contract negotiations and patent licensing. Arthur Watson told Komai that all patent licensing and technology transfer matters were my responsibility, as the director of IBM Commercial Development, and that I would handle directly with the Japanese government the matter he had brought to our attention.

During several visits to Japan during 1957 and 1958, I made contact with MITI, observed what other companies had done in similar situations, and concluded three actions were fundamental to the successful conclusion of negotiations. First, IBM initially had to avoid any form of renegotiation with Japanese companies seeking partnership with IBM and had to negotiate only with the Japanese government. Other U.S. companies, I observed, had initially negotiated with a potential Japanese business partner only to have MITI renegotiate many of the terms and provisions when those

U.S. companies sought government approval. Second, IBM had to prolong the negotiations, allowing the company sufficient time to build up a sizable patent portfolio in Japan. Third, IBM had to make known to MITI that the term of any license granted would not exceed the term of validation granted to IBM Japan.

It did not take me long to realize that MITI wanted to build a Japanese computer industry and that MITI's demands on IBM comprised the first step in that direction. I knew that the aspiring Japanese computer manufacturers could not be successful without violating IBM's intellectual property rights. I also was aware of MITI's policy to seek a license under intellectual property rights rather than have Japanese companies violate them and risk being charged with infringement both in Japan and abroad. Therefore, it was evident that, most of all, MITI wanted freedom under IBM patents not only for Hitachi alone but also for other companies that would comprise Japan's computer industry in the future.

Against this background, I concluded that it would not be in IBM's interest to seek a speedy resolution. Both Watson, Jr., and Arthur Watson concurred and allowed me as many months or years as I deemed necessary. Accordingly, I established the following Japanese negotiation policy guidelines:

- We would allow the Intellectual Property staff approximately four years to build a strong intellectual property rights position in Japan, sufficient to block manufacture, use, and sale of electronic computers and punch card peripherals.
- IBM would not negotiate directly with any proposed Japanese partner, regardless of the terms of any proposed offer.
- IBM would not transfer know-how, except that shown in a patent, to a Japanese company other than the wholly owned IBM Japan, with the right for IBM Japan to exclusive-license subcontractors for limited production for IBM Japan only.
- IBM would reject MITI's demands that 50 percent of IBM product content be of Japanese manufacture, and IBM would substitute a balanced import/export product shipment between IBM subsidiaries.
- IBM would not reduce the 10-percent royalty rate that it uniformly collected from its subsidiaries that were manufacturing and selling in foreign countries.
- IBM would not acquiesce to MITI's request that IBM delay shipment of its latest model computers until three years after U.S. introduction.

- IBM would offer the Japanese government as *quid pro quo* for validation the company's pledge to grant a patent license for all MITI-approved prospective Japanese computer makers at a reasonable 2-percent cross-license royalty rate, applicable to both parties under a MITI-approved cross-license agreement. But, we would not agree to transfer know-how to the Japanese companies.
- IBM would agree to a 99-percent equity interest, with the remaining 1 percent to be held by the directors of IBM Japan as nominee stockholders—all of whom were Japanese nationals. (This provision was made so MITI could save "face," in respect of MITI's contention that it had never validated a 100-percent-owned company.)

The free hand that both Watsons had given me—along with the authority the IBM Board of Directors gave me—was invaluable, especially during the difficult and protracted negotiating sessions that ensued over a span of almost four years. During this time, MITI threatened to impose restrictions on IBM Japan regarding importing technology and products, raising capital, hiring employees, and purchasing land for plant expansion. MITI contended that a validation of IBM Japan as a wholly owned subsidiary would set a precedent with which Japan could not live, as many other U.S. multinational companies would seek similar treatment.

The stalemate that developed in the negotiations between MITI and IBM made life difficult for Ko Mizushina, president of IBM Japan, and the other Japanese nationals managing our subsidiary. However, this was reasonably tolerable to the parent IBM World Trade Corporation that was willing to accept short-term "extreme administrative guidance" with an eye on the long-term benefits of complete control of its Japanese subsidiary. While negotiations were dragging on, prospective Japanese computer makers were becoming anxious and impatient with the passing of time, and MITI was chafing at the bit, eager to inaugurate the Japanese computer industry. Manufacturers like Hitachi turned to partnership with RCA, NEC partnered with Fairchild Semiconductors and Honeywell, Toshiba with General Electric, Fujitsu with Siemens, and Oki Denki with Sperry Rand. The Japanese partners eventually dissolved all these partnerships, leaving the foreign partner with but a short-term monetary gain. All the while, however, the Japanese companies were aware of IBM's Intellectual Property strength and its tremendous investment in research and devel-



Figure 5. Jim and Jean Birkenstock at an NEC-hosted dinner.

opment. Consequently, they continued to woo IBM (see Figure 5), hoping that IBM's position would weaken under pressure from MITI and that IBM would accept a Japanese partner in response to MITI's threats of sanctions and restrictions on IBM Japan.

My negotiations with MITI consumed a great deal of my time and stamina, notwithstanding the able assistance I received from Wally Doud as assistant director, Williamson and John Gosselin from Contract Relations, and Shipman, successor to Noll as Patent Department manager. These last three men spent a disproportionate amount of time in Japan. With all negotiations taking place in Tokyo, plus negotiations here and abroad with European companies, I had to maintain a heavy travel schedule. Despite my many visits to Japan, I never learned to speak the language. My Japanese vocabulary was limited to several hundred phrases, sufficient to help me communicate on the golf course or at the geisha dinners my wife and I found interesting and sometimes amusing. (Due to my excessive time away from home, the company allowed my wife to accompany me occasionally.) During negotiations with MITI, I overcame the language barrier through a professional interpreter. I saw to it that my interpreter was always an American, because I chose not to put IBM Japan personnel in a position that might test their loyalty between company and country. Additionally, I felt that utilizing a Japanese national interpreter might compromise my negotiating capability. Translating technical language is a problem for the best of interpreters. I want to emphasize, however, that at no time during my negotiations did I have reason to doubt the loyalty of any of my Japanese fellow IBM employees. Mizushina, Ono-san (IBM Japan's highly capable patent manager),



and Kudo-san not only gave me their complete loyalty but also offered me their unstinting effort. Interestingly, when the negotiations became tense, members of the opposition who spoke fluent English began to utilize an interpreter. In this way, the Japanese negotiator was able to remove himself from any discomfiting direct confrontation with me while, at the same time, continuing the negotiation process.

#### Cultural Differences

The difference between Japanese and U.S. culture was more of a hindrance than the language. Therefore, I became a student of the Japanese culture, believing this would help me better understand and predict how the Japanese would respond during our negotiations. Most helpful in this regard were the cofounders of Sony, Akio Morita and Masumi Ibuka, whom I met soon after one of my early visits to Japan. Since Sony was not a contender as a computer maker for IBM affiliation or license rights, and because of Morita's fluent English, I felt comfortable talking with and learning from him and his brother-in-law Iwama-san and became well-acquainted with them both. Trust and confidence developed among us, certainly to my benefit and, I believe, also to theirs and Sony's. The knowledge I gained regarding the various aspects of Japanese culture gave me further insight into the intricate Japanese business strategies. During almost every visit to Japan, I visited Sony headquarters and laboratories, where I was privileged to see its most advanced developments.

My personal relationship with these men eventually led to technical collaboration between Sony and IBM. When Leo Esaki, Sony's Nobel Prize-winning electronic engineer, desired to work in the United States for a U.S. firm, Morita approved IBM hiring him because, he said, "his employment was handled in a Japanese-like manner." In the late 1960s, Morita was elected a member of the IBM World Trade Board of Directors and served in this capacity for a number of years. In 1965 and beyond, IBM and Sony collaborated on a number of projects of mutual interest, the most significant being the manufacture at IBM's Boulder, Colorado, plant of magnetic computer tape utilizing Sony tape manufacturing know-how. This collaboration, like the one with Philips in Holland, ceased when Sony's products became competitive with IBM's.

As IBM maintained its negotiation strategy, the fledgling Japanese computer makers, anxious for a license under IBM's patents, were putting pressure on MITI to conclude negotiations

with us. MITI reacted by requesting IBM refrain from discussing with these Japanese companies any details pertaining to the negotiations. The MITI-IBM negotiations were also receiving attention from the Japanese press. To suppress coverage of IBM's position, MITI ordered IBM not to communicate in any manner with the Japanese media. We strictly adhered to this policy, giving MITI freedom to provide its own version of how negotiations were proceeding. At a certain point, MITI became so sensitive to media pressure that it arranged for secret meetings at various locations of its choosing.

#### Impasse and Its Resolution

Finally, in mid-December 1960, IBM and MITI reached a total impasse. Akasawa-san, chief negotiator for MITI, attempting to bully me into acquiescence, stated that unless IBM accepted MITI's terms, MITI was prepared to impose severe sanctions on IBM Japan, crippling its current operations and clouding its future. Akasawa-san requested I make IBM's Board of Directors in the United States aware of this situation. I flatly refused. I responded to this threat by telling Akasawa-san that if MITI wished to play hardball, IBM was prepared for the game. I further told Akasawa-san that I had written authorization from the IBM Board of Directors to resolve the validation issues on terms and conditions that would be in the best interests of IBM and the Japanese government.

Until this was accomplished, all negotiations would remain at my level. I then advised Akasawa-san that I considered the negotiations to have reached an impasse that only a period of time would heal. Meanwhile, I said, I considered negotiations suspended. I also advised Akasawa-san that I no longer felt obligated to maintain confidentiality regarding IBM's position in the negotiations. I informed him that I would be leaving Japan at 11:00 p.m., the following Monday night. In accordance with Japanese protocol, I requested a 30-minute "sayonara" appointment on Monday afternoon. I hoped, I said, that both sides would benefit from a cooling-off period. Akasawa-san scheduled the appointment for Monday at 3:00 p.m.

After departing from the MITI office, I met with IBM's outside legal counsel, Dick Rabinowitz, and Mizushima to suggest they devise a short-term strategy for IBM Japan to continue operations, should MITI's threatened sanctions be imposed. After the meeting, I returned to my hotel to receive a telephone call from Mr. Kurata, CEO of Hitachi, inviting me to play golf with him and several of his staff at

the Three Hundred Club in Tokyo on Sunday afternoon. From this, I sensed that word of the negotiation impasse had already reached Hitachi via MITI.

During my round of golf, Kurata pressed me for my views of the MITI negotiations. With confidentiality lifted, I was able to apprise him of the impasse, as if he did not already know, and of IBM's position relative to it. After I hit one particularly long drive of over 200 yards, Kurata asked me how I hit the ball so far. My "un-Japanese" reply was that I imagined the insignia on the ball to be "MITI" rather than "Titleist" and "hit the hell out of it." This evoked a hearty laugh from my host. During the cocktail hour that followed our golf session, Kurata said that it was a pity for me to leave Japan without the other prospective Japanese computer makers having had an opportunity to hear IBM's position regarding the negotiations and the impending impasse. I responded that, regretfully, I could not, due to commitments at home and my departure the following evening. Kurata then asked if I would agree to Hitachi's arranging a dinner meeting comprised of top executives from the other prospective Japanese computer makers, at which time I could present IBM's views and, in general, its position relative to the MITI-IBM negotiations. I agreed, provided IBM host the dinner. Prior to leaving the clubhouse, Kurata insisted I not dine alone but have dinner with his aide, Mr. Haraguchi, to which I agreed. At dinner, Haraguchi suggested I might enjoy the company of a "dancing partner." I refused. After dinner, I went directly to my hotel.

I was awakened at 8:00 a.m. the next morning by a knock on my door. When I opened it, Mr. Ando from Akasawa-san's office greeted me. The first thought that flashed through my mind was Haraguchi's offer of the night before. Although Ando-san said he had come to inquire if I could meet with Akasawa-san at 11 a.m., I reasoned that he could have more easily contacted me from his office. Nevertheless, I asked Ando-san to join me for breakfast in my room and then inquired whether or not it was Akasawa-san's intention to reschedule my 3:00 p.m. "sayonara" meeting. Ando-san explained that this meeting had not been rescheduled but that Akasawa-san wished to have some further discussion with me prior to it. While this puzzled me, having learned to accept the unexpected during these negotiations, I agreed to the dual appointments.

At the 11 a.m. meeting, after a few minutes of sipping green tea with Akasawa-san and his aides Hiramatsu-san and Ando-san, Akasawa-

san took a paper from his jacket and, reading from it, fully capitulated to IBM's position, without precondition. Concealing my surprise with great difficulty, I thanked Akasawa-san for removing the impasse prior to my departure and discussed with him a near-future meeting to be arranged at a date that would give both sides sufficient time to prepare the definitive legal agreement. At 3:00 p.m., I revisited MITI for the "sayonara" meeting. Not surprisingly, we discussed nothing substantive other than my assurance that IBM would develop a definitive agreement applicable to the general terms to which we had agreed. We sipped more green tea and exchanged pleasantries for about half an hour. I said "sayonara" and departed.

While I was delighted with the turn of events, I now faced a new dilemma: how to deal with this unexpected reversal at the 7:00 p.m. dinner meeting that Kurata had arranged with the five prospective computer manufacturers. On the way to my hotel, I had a brainstorm. By good fortune, I had brought with me a golf practice putting clock, golf balls, and several putters that I had intended to give as gifts to my Japanese golf hosts. I visualized a hastily arranged putting contest among the dinner invitees as a means of consuming much of the time set aside for discussion at the dinner meeting. Prior to the dinner, on the reception area rug, I announced a putting contest involving only the dinner guests, with IBM employees as scorekeepers. Mr. Degawa of Nippon Electric Corporation (NEC) won the contest and the prize: a new Ping putter. Degawa-san was ecstatic. With the contest concluded, we sat down to dinner with only a little time left for me to address the group prior to my departure. In my brief remarks, I informed my guests that I was pleased to say that IBM and MITI had reached an accommodation that had broken our negotiation impasse, the details of which I was sure they would learn shortly from MITI (as if they did not know already). I then departed for the Tokyo airport with a smile instead of a frown for the first time in three years of negotiations.

My joy on this occasion was enhanced by a touching event that had occurred just prior to dinner being served. I was called to the hotel lobby by a surprise visit from Hiramatsu, who said, as best he could in English, that he came to compliment me on my "honorable manner of conduct" during the long negotiations. With that, he presented me with a gift of bamboo rosary prayer beads, hand-carved by his father-in-law, the mayor of Beppu City and a Roman Catholic. I still use this treasured gift.

Some weeks later, following MITI's abrupt

capitulation, I returned to Japan with legal papers pertaining to IBM Japan's validation and the terms and conditions of a patent cross-licensing agreement in both Japanese and English. With minimum alterations, Japanese government officials agreed to the terms and conditions. Consequently, IBM Japan was validated without restriction for a period of five years. In due course, IBM executed patent cross-license agreements with five prospective Japanese computer makers, giving both IBM and the Japanese licensees a worldwide patent cross-license for a corresponding period of five years under each party's respective patent at a reasonable royalty rate. No know-how was to be exchanged, only the gold fountain pens each party used to sign the agreement. By this time, MITI's confidence in my integrity had reached a high point. Because of this, MITI asked me to be the principle spokesperson at the press conference regarding the agreement between MITI and IBM.

#### Follow-on Negotiations

Approximately three years following our initial cross-licensing activity, the Japanese computer makers began to manufacture products and systems similar to IBM's and, in many cases, not unlike their competitors. As they began remitting royalties to IBM, we discovered a major problem. The Japanese licensees were ascertaining in a disparate manner the patented portion of their product or system covered by IBM patents and subject to royalty. For example, Licensee X manufacturing a product almost identical to Licensee Y considered the portion of its machine subject to IBM patents to cover a much smaller area than did the competitor Licensee Y. As a result, Licensee X was paying smaller royalty fees to IBM per unit than Licensee Y under the same patent. It became an administrative nightmare for IBM to contest and prove validity and equity of its royalty base. Additionally, this became a serious legal and accounting issue between the licensor and licensee. The language barrier exacerbated the problem.

Due to the frequency of dispute over the patented portion and the technology swing away from discrete componentry in sub-assemblies to solid-state integrated circuitry, conventional royalty-bearing cross-licensing procedures—even at nominal royalty rates—became inadequate. To solve the problem, I proposed a new form of cross-licensing between IBM and the licensees wherein the licensee could pay a single rate per machine and be licensed under all patents that pertained, thus

avoiding the administrative costs of determining patent coverage on various portions of a machine and computing each portion's costs or selling price. This simplified the royalty computation for both IBM and its licensees and became known as the "*Table d'Hote Option*." I was deeply concerned that the language in our Japanese license agreements might be troublesome, should the pending U.S. government antitrust suit force IBM to break up into several separate companies. Therefore, in 1971, I embarked on a rather comprehensive revision of our Japanese license agreements with the aid of IBM's legal counsel. As an incentive to the Japanese, particularly MITI, I conceived the idea of a royalty payment procedure that became known as the "Five-Year Balancing of Royalty Payment Cross-License." The negotiating procedure required both parties to exchange measurements that reflected their research and development and manufacturing capabilities for the present and for a projected five-year period, along with the size of their respective currently issued patent portfolios.

The first step was to sell MITI on approving the new license plan, which MITI agreed to with a few questions regarding the language changes vital to IBM concerning the licensing of separate business entities. Because of the U.S. government antitrust suit brought against IBM on the last day of President Johnson's administration, it was essential that we incorporate language in our Japanese license agreements to take care in the event the U.S. Department of Justice was successful in breaking up IBM through the antitrust action. The language I was able to incorporate stipulated that all parts of IBM could retain the benefit of a Japanese license as that part (of IBM) had prior to any segregation. (Fortunately, the U.S. Department of Justice dropped its suit against IBM in 1983, and segregation was never forced on IBM.) The focus was almost entirely on simplification of royalty payments and assurance of complete "freedom of action" for both parties to cross-license for a five-year period. The five-year period was chosen because of the corresponding five-year validation IBM Japan received from MITI and the Japanese Ministry of Finance. IBM was now in the comfortable position that if the U.S. Department of Justice broke up IBM into separate companies, each would be licensed under the patents of our Japanese cross-licensees

From measurements, and through negotiation, the two parties agreed on a dollar amount to be paid annually by the party with the lesser number of issued patents and smaller research

and development capability. This was done to compensate for the current and projected difference in the patent strength between the parties. Because the relative patent and research and development strength was expressed in U.S. dollars and paid annually, this practice became known as an annual balancing of payment for a specified term of cross-license. Due to IBM's sizable patent portfolio and the magnitude of its research and development effort, compared with the cross-licensee, in each case IBM became the recipient of an agreed-on annual royalty of six or more figures. With MITI endorsement of the new "Balancing of Royalty Payment" plan, the only issue that remained was negotiating separately the balance of payment applicable to each licensee. These negotiations occupied most of my time following my relinquishment of management responsibility for the day-to-day operation of Commercial Development and becoming fully retired by mid-1973.

Because of the equity of this form of cross-licensing and its relative freedom from both an administrative burden and contentious royalty calculation issues, our Japanese licensees accepted this practice and frequently employed it in their licensing relations with third parties. IBM's innovative "balancing of payment cross-licensing" procedure eventually was adopted by some U.S. corporations, especially those possessing patent portfolios that covered technologically complex products and systems. As a result of recommendations from consultants, myself included, U.S. companies became aware of this procedure. My postretirement activities as a consultant specializing in the management of intellectual property assets and licensing enabled me to suggest this innovative cross-licensing practice to a wide number of companies facing similar cross-licensing problems.

As negotiators, the Japanese are about as tough as they come, especially MITI officials. However, on one occasion, when MITI officials could have taken advantage of IBM, they showed great understanding and compassion. In April 1970, after having just arrived in Tokyo, I was preparing to engage in yet another round of sensitive negotiations with MITI officials concerning revisions to our patent cross-licensing agreements, particularly changes MITI proposed concerning "administrative guidance." Just as the negotiations were commencing, I received an urgent telephone call from my wife in Florida. She advised me that our New Canaan, Connecticut, home had caught fire and had burned almost to the ground. All but a few of our home furnishings were destroyed.

Fortunately, the house had been unoccupied; Jean was at our Florida residence and was unharmed. The circumstances obviously required my returning home as quickly as possible. Without any request to do so, MITI officials responded to my plight by expediting discussions around the clock. Without haggling, they made all the contract concessions I wanted.

When word of my loss of home and furnishings became known in Tokyo among high-level government and computer industry executives, expressions of regret and sympathy poured in. In several cases, these expressions were accompanied by the replacement of our Noritake dinnerware, Japanese artifacts, and other household items the fire destroyed. Jean and I will always be grateful for the unsolicited show of compassion and sympathy by both friends and business adversaries in Japan. It gave us an understanding of still another side of Japanese nature.

#### Japanese Government Recognition

The licensing of the Japanese computer makers was considered an epic event in Japan, since these companies became the core of the Japanese computer industry. Japan has on occasion publicly stated that the Japanese computer industry arguably has been more beneficial to its society than any other industry. In 1980, at a ceremony commemorating the 20th anniversary of the Japanese computer industry, Hiramatsu, by now governor of the Oita Prefecture, arranged for me to attend ceremonial events in Tokyo and to be honored by the Japanese computer industry. (Hiramatsu, for three decades following his MITI career, has served as governor of the Oita Prefecture on the island of Kyushu. Even to this day, we frequently correspond with one another and have exchanged visits at our respective homes.) In 1994, Asahi TV made a documentary on the Japanese computer industry and its origins. A camera crew came to the United States and interviewed me as part of the program.

#### Travel

My life as a negotiator in foreign lands was not all work. My wife accompanied me abroad on several occasions. My travels were sometimes fascinating and other times rather boring, especially when I found myself alone in a large city that I had previously visited and whose places of interest I had already seen. To relieve weekend boredom and to get some exercise, I played golf. I stored a set of clubs at IBM Europe headquarters in Paris, and that office shipped the



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**IBM Japan kept a set of clubs on hand for me, and over the years, my golf playing became one of my “tools” of negotiation.**

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clubs to the IBM facility nearest me during each business trip. Over the years, I was able to play golf in Scotland, England, Holland, Denmark, France, Switzerland, Germany, and Italy. IBM Japan kept a set of clubs on hand for me, and over the years, my golf playing became one of my “tools” of negotiation. Additionally, when I was hosting foreign negotiators in the United States, I would play an occasional round of golf at the Westchester Country Club (in New York) or the Country Club of Florida, where I had my second home. The Japanese particularly loved this experience.

The Japanese were not the only ones interested in becoming licensees under IBM’s patent portfolio. The British, French, German, Dutch, and Italians wanted to enter the electronic data processing market as well. Additionally, patents were issuing in Europe, particularly Germany, France, and Great Britain, that were adversely held advancements in the art and under which it would be prudent for IBM to acquire license rights. As a result, I spent considerable time in Europe as IBM’s chief negotiator for patent licensing and technology transfer during the Electronic Data Processing Machine’s frontier days and beyond. In addition, administrative responsibility for the management of the IBM patent departments located in IBM’s foreign subsidiaries doing product manufacturing and development frequently took me to the European cities in which these facilities were located.

Watson, Jr., while a fierce competitor, saw the computer as a God-given tool for the benefit of humankind. With this viewpoint, he was among the first, if not the first, of the computer company CEOs to advocate industry standards—both de facto and anticipatory. This did not set well with the IBM engineering infrastructure that endorsed standards as long as they were IBM-dictated. Watson, Jr., fought this in his own company and instructed me to organize and conduct an anticipatory standards effort within the industry, working with the U.S. Bureau of Standards and IBM competitors, or would-be competitors, large or small, without discrimination. I appointed John Rankin

from my staff to be the catalyst for this activity. Rankin organized an industry-wide effort through the Computer and Business Equipment Manufacturer Association. In the mid-1950s, when I needed a counterpart effort abroad, I traveled to Europe and persuaded International Computing and Tabulating, Inc. and Bull (France’s Computing and Tabulating Company) to organize and staff the European Computer Manufacturer’s Association. By this means, worldwide computing standards were negotiated and promulgated, giving data processing a common program language and unified standards. Thanks to Rankin and other members of my staff, we were able to assist Watson, Jr., in realizing his pioneering goal for “open computer systems.” I believe many people overlook this IBM contribution, without which the World Wide Web could not function.

#### A CIA Point of Contact

In the period following Soviet Premier Nikita Khrushchev’s visit to IBM’s San Jose plant in 1959, during the Cuban missile crisis, the CIA was contacting Watson, Jr., with increasing regularity with a variety of requests. These contacts became burdensome to him, so he advised the CIA that I would be its contact point. Thus began perhaps the most sensitive and annoying of assignments Watson, Jr., gave me. Because CIA demands were wide-ranging and, for the most part, unreasonable, I refused practically all of them. One request, for covertly placing a CIA agent in the IBM Watson Research Laboratory in Yorktown, New York, I promptly rejected. Another request, to permit a CIA agent to assume cover as an IBM customer engineer assigned to service a customer in Omaha, Nebraska, I also immediately denied. During the peak of the cold war, IBM World Trade subsidiaries unknowingly employed CIA operatives in the Asian Pacific area and Europe in several instances. There seemed to be no limits to the requests the CIA made. It was most aggressive in seeking to obtain information through IBM scientists who attended engineering and technical symposiums abroad. The CIA wanted IBM scientists to covertly contact foreign scientists or to make extracurricular visits to Russian laboratories. Since this type of activity posed serious threats to IBM personnel, I firmly denied all such requests.

At one point, anti-Vietnam War activists were making frequent threats against computer research facilities. In several cases, there were bombings, the most notable at the University of Michigan computer research laboratory and at several IBM overseas facilities. One Westinghouse executive, while visiting a facility behind the

iron curtain, was charged with espionage, jailed, and held hostage by the KGB. As a result, I became apprehensive when I, along with other members of the U.S. Patent Commission, visited several communist countries to conduct a patent study. When the commission study group visited Berlin and East Germany in 1966, I declined to make the trip, not wishing to risk being apprehended and accused of a trumped-up espionage charge. When my IBM career was drawing to a close, I was relieved to be able to transfer my assignment as CIA contact to another IBM corporate officer.

#### My Most Interesting Extracurricular Activity

During the mid-1960s, I was involved in several extracurricular activities, in particular with the U.S. Patent Commission. On 8 April 1965, President Johnson, having become concerned about the complexities and delays arising out of the U.S. patent system, established a bipartisan commission to conduct a study of the system and to make some recommendations regarding its reform. I suspect I was among the 14 appointed to the president's commission for two reasons. The first reason was because the commission would be addressing the controversial issue of the U.S. patent system's permitting software as patentable subject matter. The second reason was because I had become well-known for executive management of IBM's worldwide intellectual property. I served along with members from the legal, industrial, and governmental sectors. Former Circuit Court Judge Symond Rifkind was our chairman, who brilliantly guided the commission to its conclusions and submitted our report to President Johnson.<sup>4</sup> The commission members were greatly pleased that the Johnson administration accepted all of its recommendations. Regrettably, only a few were enacted into law due to the highly influential Patent Law Bar that opposed most of the commission's recommendations. Decades later, however, the U.S. Patent Office adopted a number of the recommended changes; even today, some are being reconsidered and may yet be adopted.

From 1955 to 1970, IBM's annual corporate revenues increased 12-fold from \$696 million to \$7.5 billion and employment grew from 60,000 to 270,000. Due to the electronic technology explosion, my Commercial Development responsibilities outpaced even IBM's growth within the worldwide computer industry throughout most of this period. In the 1960s, IBM management broadened my responsibilities and corresponding workload by adding such

functions as Industry (Competitive) Relations, managed by Spain; Industry Standards, under Rankin; Government Regulatory Practices; and Trade and Professional Association Activities. Fortunately, I was able to cope with my expanded responsibilities thanks to the support from my "world-class" Assistant Director Doud, who came to me in 1959 after serving as assistant to Williams, IBM president and chief of staff.

During this same period, Birchfield, a transfer from the Kansas City branch office, came into the department as my administrative assistant. Although IBM did not offer the title as such, Birchfield acted as my chief of staff. He directed traffic in and out of my office, never hesitated to be the staff's advocate when differences arose between the staff and the boss, and, in general, brought harmony to the operation. For Birchfield, there was no task too large or too small, and his aid was invaluable. He not only worked tirelessly behind the scenes but also was a loyal friend who was never afraid to tell me when I was wrong. I later learned, after leaving Commercial Development, that Birchfield's peers described him as "the person charged with the responsibility of cleaning out the tiger's cage while the tiger was still in it." On one occasion, he even took my dog Peppy, suffering from an incurable disease, to the veterinarian to be "put down," a task I could not face or bear the thought of turning over to just anyone. After my retirement and after Doud took over, Birchfield went on to an outstanding career as a director in IBM World Trade America's Far East Corporation and domiciled in Japan.

#### IBM's Astounding Growth

IBM's growth following Watson, Jr.'s becoming CEO in 1956 was, as I mentioned above, phenomenal. In January 1970, to recognize those who helped IBM realize this important 15-year period in IBM's history, Watson, Jr., and his wife Olive gave a dinner party at their Greenwich, Connecticut, home. They invited approximately 25 of Watson, Jr.'s top executives plus their spouses. At the party, each executive was given a small solid silver mantel piece emblematic of the company's revenue growth from almost \$700 million in 1955 to over \$7 billion in 1970. The polished silver base was inscribed:

*Towers We Built Together  
Tom and Olive*

Affixed to the base was a cluster of silver rods of ascending height, each representing and inscribed with one of the 15 years of IBM's rev-

enue growth. The shortest “tower” was 1/4 inch in height, and the tallest was four inches high. I was honored to be a part of this occasion and, more importantly, a part of this piece of IBM’s history.

#### A Change to Come, Told in Confidence

In late 1971, Watson, Jr., to whom I still reported on most matters, told me in confidence that he was contemplating introducing a mandatory retirement age of 60 for all IBM corporate officers, effective 1 January 1973. He reasoned that this would increase career opportunities for the many highly capable employees in positions below the corporate officer level. Since I would be one of three corporate officers to be retired under the new policy, he wanted my views. I told him I could not speak for the others, but mandatory retirement at 60 would not be unwelcome in my case. I said this because I was beginning to feel “burned out” due to both the breadth of my responsibilities and the added workload I was experiencing since Doud was promoted from assistant director of commercial development to group vice president. Operating without Doud’s assistance was having a telling effect on both my effectiveness and my health. My talk with Watson, Jr., provided me with the opportunity to gripe to him about his and my failure over the prior months to agree on the person most qualified to become assistant director.

Some weeks after this confidential meeting, Watson, Jr., informed me that because of a management reorganization in another area of the business, Doud was available for reassignment and suggested he return as my assistant. I viewed Doud as a “perfect fit” for my job and reasoned that if he were asked to resume his former position as assistant director and to await my retirement before he could become a vice president and director, he would resign and go to another company. Therefore, I reasoned with Watson, Jr., that it would be in IBM’s, Doud’s, and my best interests for Doud immediately to take my job. This would enable me to phase gracefully into retirement and provide me, in my remaining time with IBM, an opportunity to focus my efforts primarily on high-level corporate negotiations such as IBM/Western Electric Corp. cross-licensing rather than on administrative activity. I also could devote more time and energy to concluding the balancing of payment agreement negotiations in Japan that I estimated would take 18 months. Watson, Jr., accepted the logic behind my recommendation, and Doud returned and took charge as vice president of commercial development, renamed Commercial and Industry Relations to better

reflect the scope of its operations. My title, consistent with the management change I had proposed, was now IBM vice president, corporate relations, under which I functioned in parallel with Doud in the aforementioned areas. This facilitated the management transition and the negotiating responsibilities left with me.

I turned the Commercial Development department over to Doud on 24 May 1971, leaving behind a wonderful staff, and moved my office to the third floor of our Armonk, New York, corporate headquarters facility. On the occasion of my move, my staff, who had always enjoyed an opportunity to have an after-hours gathering, arranged a party in my honor at one of the neighborhood restaurants. We had enjoyed other social functions as well, such as our annual golf outing with the Patent department that I captained and with the Contract Relations department that Doud captained. The rules of the contest were simple: the losing team had to buy the beers. Bob Schuey always made arrangements for office parties and other social events. Frank Chadurjian led the singing and Roy Fougere arranged golf foursomes. It saddened me to think I was leaving all of this behind, and my “going-away” party was most touching as I experienced, one last time, the warmth, good humor, and fellowship of my colleagues. Schuey clearly missed his calling as a writer and was known to the group as the “Phantom Poet.” In his capacity as master of ceremonies, he read a poem he had written about my IBM career. I shall always treasure the poem and the memories of the special event that occasioned its writing. Schuey retired several years after I did. Although he moved to California, we managed to keep in touch. Unfortunately, his retirement was saddened by the death of his beloved wife Eleanor. Schuey survived his wife by only a few years. I kept a copy of the poem he wrote and read for my party (see the sidebar).

#### Another Cherished Moment

When January 1973, my official retirement date, arrived, I was still involved with completing and consummating the MITI-IBM revalidation negotiations in Japan. Therefore, I retained my IBM office for six months beyond retirement in order to conclude the Japanese negotiations. In the middle of 1973, as I was closing my IBM office to become a full retiree from IBM, Frank Cary, who on 1 January 1973 had succeeded Learson as CEO, organized a farewell luncheon in the IBM executive dining room. Following some very complimentary remarks by Watson, Jr., regarding my 38 years

Saga of a Salesman or How to Take License (Poetic, That Is)

Jim B. began his long career back there at SUI,  
He studied, worked and played—gave everything a  
try.

When Jimmy Boy left college, it seemed that he was  
fated,  
For in '35 toward IBM he quickly gravitated.

Now in '35 the times were tough and it was hard to  
make a living,  
A hundred a month, and a little commission, was all  
that they were giving.  
So up to Endicott he went and worked as hard as hell,  
He learned the IBM lingo—he didn't need to learn to  
sell!

Then back to old St. Louis, by the mighty Mississippi,  
He made his calls and did he sell—you better bet your  
bippy.  
He did so well it wasn't long before they noticed Jim,  
Then good old Harry Eilers said, I'll make Assistant  
Manager out of him.

Then on to Kansas City, garden spot of all the  
Midwest,  
Jim made his clubs and proved himself to be one of  
the best.  
He was happy and contented with his family, home,  
and work,  
But then one day he caught the eye of big shot  
Charlie Kirk.

So they took the bull from old Missou and sent him to  
the city,  
But along the way he was to learn, 'twas a city  
without pity.  
Wide-eyed and eager, full of fight, he climbed to  
greater heights,  
He made his mark, and soon became one of IBM's  
leading lights.

At 33 he reached the top, directing every sale,  
What happened then, he'll never know, but that's  
another tale.  
But at this point, he promised himself that in spite of  
all their snide ways,  
If they won't let me grow straight up, I'll do my grow-  
ing sideways.

Came Future Demands and our boy changed from a  
doer to a seer,  
And overnight he realized, here's a whole damn new  
career.  
Punched cards will ultimately go out, thought their  
erstwhile greatest rooter,

They'll be replaced, and I predict, by electronic com-  
puter.

Today we're faced from every side with status, status,  
status.  
You have to have an E.A. or they'll think that you  
have had it.  
But back in 49'ish, would you believe, I'm sure you'll  
laugh,  
J.W.B. was E.A. to the whole darn corporate staff.

Product Planning was his mission, the future was his  
game,  
EAM or EDP, you name it, his efforts were just the  
same.  
He said, "buy those Haloid patents and we'll do quite  
well with them."  
Tho' "they" said "No," can you imagine, a Xerox-IBM!

Oh, Williamsburg, you changed the ways that we all  
did our thing,  
You decentralized, divisionalized, and overnight did  
bring  
A lot of new and different things—we wondered at  
their intent,  
Everyone quickly started asking, "What the hell is  
Commercial Development?"

Jim began negotiating, some at home a lot abroad,  
And Accounting started yelling, "Those expense  
accounts, My God!"  
They really weren't that bad until he started going to  
Japan,  
I'd like to know the real account of Mr. Birkenstock-  
san!

Our Jim's had a lot of relations—I mean Contract,  
Industry and such,  
But regardless of the type, he always had the touch.  
Now in Corporate Relations, whatever they may be,  
He'll do his thing, and you can bet, do it successfully.

For 35 years he made his mark and did all that they  
required,  
But he's still as young—tho' a little gray—as the day  
that he was hired.  
He tried for success and got it—you really just have to  
want it.  
The moral of this story is, if you got it, you just have  
to flaunt it!

The Phantom Poet  
24 May 1971



of IBM service, Cary presented me with a replica of Leonardo da Vinci's 15th-century gyroscope. Watson, Sr., a great admirer of da Vinci, had acquired an extensive collection of replicas of da Vinci's art and innovative ideas. From this collection, Cary chose the gyroscope, one of da Vinci's heralded inventions, as an appropriate memento for me and for the years of service I had given the company. A plaque on the gyroscope's base carries the following inscription:

*Jim Birkenstock  
Innovator  
IBM Corporation  
1935-1972*

#### Watson, Jr.'s Personal Note

Another, and perhaps my most satisfying, moment concerning my IBM career came 17 years after my retirement. In June 1990, Watson, Jr., sent me an autographed copy of *Father, Son and Company*. In the text, he named me, along with Executive Vice Presidents L.H. LaMotte and Williams and Vice Presidents Wally McDowell and Whiz Miller and Learson as his management "inner circle" on which he relied to run IBM after his father handed him the reins. What I cherish most are the words Watson, Jr., wrote beneath his autograph:

*For the Birkenstocks. From Watson, with great admiration. Lest you don't notice, Jim, I think you are one of a very few of IBM's indispensable men.*

These words could not have been more fulfilling, even if they had been written in 1973 or earlier. Regrettably, Watson, Jr., died of a heart attack in December 1993.

#### Postretirement Consulting and Directorship Activity

When Watson, Jr.'s revised retirement policy became public knowledge, it received a great amount of media attention, especially because, under the new policy, IBM Chairman and CEO Learson was affected. There was considerable speculation regarding his successor as an outcome of this policy. As a fallout of the publicity regarding IBM's retirement policy, a number of companies, both domestic and Japanese, approached me offering employment opportunities. I was not interested because I had envisioned my post-IBM life to be in the consulting field, where I could function at my own pace and apply my experience in contracts, licenses, and intellectual property management. Texas Instruments, Fairchild Camera & Instruments, and Motorola contacted me. Bob Galvin, chair-

man of Motorola, offered me a five-year retainer as a consultant and a promise of a place on the company's board. I chose Motorola over the others and, after a short time, was elected to the board on which I served until I reached Motorola's mandatory retirement age of 70.

#### Ten Years with Motorola

My work with Motorola was perhaps my most stimulating and rewarding post-IBM consulting effort. Galvin was an outstanding leader and corporate executive. His concept of corporate governance was to have his directors become heavily involved in leadership activities and in planning Motorola's future. Early in my service with Motorola, I was asked to assist in the restructuring of the company's patent and licensing activity as it shifted from outside legal patent counsel, utilized since Motorola's founding, to in-house management of its intellectual property. I had the opportunity to work with fellow directors Ken West, CEO of Harris Trust, and Art Reese, retired vice president of Motorola, in presenting recommendations for the restructuring of Motorola's corporate governance. Galvin accepted our recommendations almost in their entirety. We recommended bringing more outside directors to the board and forming a number of new committees of the board, such as the executive and nominating committees as well as committees for technology, corporate strategy, long-range planning, and human resources in addition to the already existing audit and finance committees.

In the mid-1970s, Galvin decided that Motorola should divest itself of its Quasar Division, which developed and marketed large-screen TVs. Negotiations for the sale of the Quasar Division to Matsushita Electric Company in Japan were proceeding when they reached an impasse. Some months earlier, Motorola had licensed Sony to manufacture a large-screen TV under Motorola's patents and know-how for sale in Japan by a Sony subsidiary. Matsushita contended that it could not live with such an arrangement and, for the acquisition to be consummated, Motorola would have to bring about a dissolution of its Sony arrangement. Galvin sensed that this could be accomplished only at a high level between Motorola and Sony. At that time, Galvin had not met Morita, president and CEO of Sony. Knowing of my long and cordial relationship with Morita, Galvin turned to me for assistance. I knew of Morita's forthcoming visit to the United States for a groundbreaking ceremony for Sony's San Diego plant. I suggested that I arrange a California meeting between Galvin and Morita. Knowing that Morita was

continuing to New York, I further suggested that Galvin use his private Gulfstream to fly Mr. and Mrs. Morita to New York. I suggested that while in flight, they would have time to discuss Motorola's problem and work out a solution. The plan worked well, and the two men agreed to a dissolution and asked me to serve as consultant to both companies to mediate the dissolution. I was able to accomplish the dissolution, with Motorola's paying Sony a flat sum of \$200,000 for relinquishing the rights Motorola had previously granted Sony. I was pleased that two heads of large corporations were able to place their mutual trust in my ability to devise a fair and objective solution for both.

#### Consultation at IBM

Like me, other IBM corporate officers became retirees, and Cary thought our skills should be utilized somehow. Accordingly, he invited retirees to meet with the current IBM top management for three days, biannually, at IBM corporate headquarters to discuss IBM's opportunities, challenges, and problems and to solicit input from the retirees regarding these topics. I enjoyed these sessions not only because IBM valued the many years of experience we retirees brought to the meetings but also because these meetings kept us updated in regard to IBM's latest products and business strategies. These meetings continued into John Opal's term as CEO. When John Akers succeeded Opal, he reduced the number of meetings to one a year and eventually terminated them altogether.

Following my retirement from IBM, several Japanese companies wanted to retain me as a consultant. All except Sony were competitive with IBM, so I rejected their offers and accepted Sony's offer of a five-year retainer. In this capacity, I assisted Morita in resolving several technology transfer matters and the particularly sensitive Motorola license termination issue described above. A man of great wealth, Morita asked me to consult with him regarding opportunities for expanding his personal holdings in the United States, particularly in Florida. He also sought my assistance in licensing several patents issued to him in areas outside the interest of the Sony Corporation of America. More than anything else, Morita used me as an advisor on various matters in which he sought an American's point of view.

#### My ECD Connection and My Consultancy to Others

Stanford Ovshinsky, president of Energy Conversion Devices, Inc. (ECD), offered me a

consultancy and a directorship. I had previously met and dealt with Ovshinsky when I was active in IBM and knew him in his capacity as a prolific inventor, as a leader in the synthesis of new materials, and as the developer of advanced production techniques. Intrigued by the Ovshinsky inventions in photovoltage technology, optical memory, and battery technology, I accepted the consultancy. However, I declined the ECD board directorship, citing conflict with my Motorola directorship. After I retired from the Motorola board in 1984, I was free to accept a place on the ECD board. After four years of air travel from West Palm Beach, Florida, to Detroit for monthly board meetings, I reluctantly decided to retire from the ECD board and focus on ECD consulting. My relationship as a consultant with ECD has continued to the present.

My consultancy to the Ricoh Corporation of Japan on intellectual property matters and technology licensing matters was the most extensive, lasting eight years. I assisted M. Tagami, a clever man who had a Japanese law degree and who spoke fluent English. Tagami placed a higher value on my credibility than my logic when dealing with difficult negotiations. He placed too high a value on my broad acquaintanceship within industry in contrast to what I felt was a proven capability on my part as a negotiator. This created tension and usually resulted in my having to prove to him that negotiation in the United States had to be done the American way to be successful, not the Japanese way. Influence seldom had any effect in resolving intellectual property matters. For reasons I never understood, Tagami seldom gave me all the facts when patent infringement was the issue. He sought my opinion and employed me to set up the negotiation; however, with only one exception, he never relinquished his role as lead negotiator. The single exception was a prolonged cross-license negotiation between Ricoh and Motorola in which Motorola alleged that a subcontractor had developed a certain applied specific integrated circuit (ASIC) design using misappropriated Motorola know-how. Ricoh was producing this ASIC for Nintendo in huge quantities and needed the Motorola license to retain its customer. Tagami proceeded with a general cross-license with Motorola that excluded the ASIC. In desperation, he turned over to me the problem of obtaining a license to the excluded technology. It took more than a year to resolve the issue at a cost of \$1.4 million, less than Ricoh had anticipated. Notwithstanding this successful negotiation, Tagami never allowed me to assume a concluding role in any of the negoti-

ations in which I assisted. I believe he was fearful of “losing face” with his superiors. My problem and my consultancy were terminated when Ricoh retired Tagami.

Of shorter duration, I served Illinois Tool Works, Franklin GNO, NCR, Vendo Corporation, DASI, Inc., Vari-Lite Corporation, and Katsuragawa Electric Company in Japan, among others. During a 15-year postretirement time span, to facilitate my consulting efforts under a name other than my own, I set up a consulting firm called Intercal, Inc., a contraction of International Contracts and Licensing Consultants, specializing in intellectual property resource management. The challenges of my consulting activity were more intellectually stimulating than they were financially rewarding. I found that for the most part, clients disliked compensating consultants even more than they did attorneys. They were reluctant to pay additional compensation even when the results merited it. I am glad to say that my career as a consultant was accomplished without my having to relinquish too many rounds of golf.

#### Post-IBM Directorship/Trusteeship

My post-IBM career contained considerable board activity. I accepted election to a local bank board in 1984 when I was named director of the Harris Trust Company of Florida, a directorship I resigned in July 1996. Another directorship I held early in my post-IBM retirement was with Air Sunshine in Florida, prior to its merger with Air Florida. For more than 10 years, while with IBM, I served as a director of the Computer and Business Equipment Manufacturers Association and as chairman of the board for two years. Several years later, the Electronic Industries Association cited me for distinguished service to the electronics industry and awarded me an honorary life membership in the association. Outside the electronics field, I served on the Vendo Corporation board, including a term as interim chairman.

One of my most interesting affiliations began prior to my retirement and continued after I left IBM. As a trustee of the Charles E. Culpeper Foundation, I was privileged to serve under the leadership of Frank McNamara, Jr., whose father is mentioned above. Like his father, McNamara, Jr., is noted for his integrity and great insight that led the foundation to outstanding philanthropic heights. Also on its separate incorporation in the early 1960s, I served Fairfield University as a lay trustee, the first non-Jesuit to be appointed. I am proud to say that I continue as trustee emeritus of this exceptionally fine educational institution. In

the mid-1970s, Irwin Tomash asked me to become one of the early trustees of the CBI and president and director of the Charles Babbage Foundation. In this capacity, I chaired the relocation committee that selected the University of Minnesota as the site for the institute.

Other than Motorola, my most active post-IBM directorship was as director of University Patents, Inc. (UPI) in Westport, Connecticut, a firm that managed patent properties for universities. At UPI, I became reassociated with Miles, now chairman and CEO of the company. Both at IBM and at UPI, Miles was one of the most astute and highly qualified executives I have ever known in the field of patent resource management and negotiation. Sid Alpert, president and former IBM patent attorney, served as Miles’s alter ego. Together they have formed an outstanding team. This exciting and stimulating enterprise at UPI provided me with office space and secretarial assistance during my five-month annual stay at my Connecticut home, solving the logistics of working as a consultant out of a Florida home office in the winter months and from a Connecticut residence in the summer. I resigned my directorship and relinquished my office when Maxwell Enterprises bought the company. All my consulting and board activities were fruitful in that they provided me with intellectual stimulation, especially when my association was with companies whose activities were at the leading edge of high technology in their respective fields.

Today, at the age of 87, I have only one consultancy and two trusteeships, one emeritus. In 1965, my alma mater, the State University of Iowa, awarded me a Distinguished Alumnus Award. In 1974, I received an honorary doctor of laws degree from Fairfield University. As I wind down from a long and richly rewarded career, I discover that my highest priorities are time with my family and friends and two rounds of golf weekly at the Country Club of Florida, where my home overlooks the 14th hole.

#### Epilogue

During my business career and throughout my life, I have had the good fortune of associating with some wonderful people, many of whom I had the pleasure of hiring. Others, through God’s will, happened to be in my path of life. I cannot recall anything that I achieved entirely by myself; there was always someone close by to encourage, assist, teach, or inspire me. Therefore, when it came time for IBM management to arrange and host my retirement dinner, I graciously declined, but not because I was ungrateful. It was customary for IBM manage-

ment to arrange and host a dinner in honor of the retiree at which the CEO or a member of upper management would give praise to the retiree for his or her accomplishments and service. IBM management chose the guests as well. Therefore, I chose to host my own retirement dinner so that I could pay tribute not to myself but to the wonderful IBM employees who worked with and assisted me during the various stages of my IBM career.

In January 1973, my wife and I hosted a dinner in the Westchester Country Club ballroom. The only speech was my tribute to and expression of appreciation for my guests. I thanked my colleagues for enabling my career to be what it was and for allowing me to bask on occasion in the light of a success achieved primarily because of their loyalty, diligence, and talented performance. I told these associates and assistants that they were a blessing from heaven. I believe my retirement dinner was a success. Certainly, Jean and I thought so as we dined and danced with my former coworkers and associates.

Although he was not invited, since it was not my intent to include members of IBM top management, I must pay tribute to Watson, Jr., who, in recognizing the harsh treatment I had received from his father and from Kirk in 1946, saved my career in the company. Throughout most of my IBM employment, I reported either directly or indirectly to Watson, Jr. Because he was demanding and sometimes temperamental, working for him was not always easy. Yet, Watson, Jr., had another side that was fair and compassionate. Although I was seldom invited into the Watson social circle, I was an integral part of his inner management team. There I earned his trust and respect. Watson, Jr., will always live on in my fond memory.

Many people made my IBM career a possibility even before I passed through the doors of the company. My parents, particularly my mother, cared for me during my formative years. When I lost my mother, my grown sister, Elsie, continued that care as if I were her son. During my teenage summers, Weaver, head pro at the Burlington Golf Club, kept me well-employed and taught me self-discipline and responsibility. Clara, head cook at the club, made sure I was never hungry.

When I recall my years at the University of Iowa, I think of Rehder, manager of the Iowa Memorial Union's dining services, who was my first boss and whose trust in me increased along with my job responsibilities. As a result, my self-confidence grew, preparing me for even greater responsibilities. I also think of Philips—dean of the university's business college, my

teacher, confidant, role model, and source of encouragement. From him, I learned to live a life of purpose and integrity.

My greatest tribute of all must go to my wife Jean, my soul mate and companion for the past 64 years. While I did my best not to bring the office home, there were times when I sought Jean's advice and counsel on matters regarding a troublesome personal relationship or a critical IBM career choice I was facing. Jean was always willing to listen and, invariably, provided me with an objective point of view that assisted me in making the best decision. My worldwide corporate responsibilities required extensive travel and lengthy absences from home. Jean was always tolerant of this as she took on the duties not only of homemaker and mother but also of the head of the household for extended periods of time without my being there to give her a breather. When we were required to host business functions, Jean always stood out as a beautiful and gracious lady.

### Acknowledgment

I am particularly grateful to my daughter-in-law Susan-Marie Birkenstock for her patience and assistance during the 18 months I devoted to preparing for and writing this memoir. If she burned out while I fiddled, she never showed it.

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**James W. Birkenstock's** portrait was painted by his daughter Joyce Ann Birkenstock for her father's 85th birthday.

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