

# A HISTORY OF ADMINISTRATIVE DATA PROCESSING



CENTER FOR COMPUTING ACTIVITIES • COLUMBIA UNIVERSITY

## A HISTORY OF ADP

### BEGINNINGS

To understand how ADP evolved, we need to look at how CUCCA evolved. To understand how CUCCA evolved, we need to look back sixty years to when Columbia first established close ties with IBM. It all began in 1928, when IBM provided the Columbia Statistical Bureau with punch card equipment. Soon the Astronomy Department realized that this equipment could be helpful in their astronomical calculations, and by 1934 IBM had provided additional equipment for the establishment of an astronomical computing laboratory in Pupin Hall. In 1937 this setup became known as the Thomas J. Watson Astronomical Computing Bureau, a cooperative effort of IBM, the American Astronomical Society, and the Department of Astronomy at Columbia. The Bureau was appropriately named after Thomas J. Watson, who was not only the president of IBM, but also a trustee of the University.

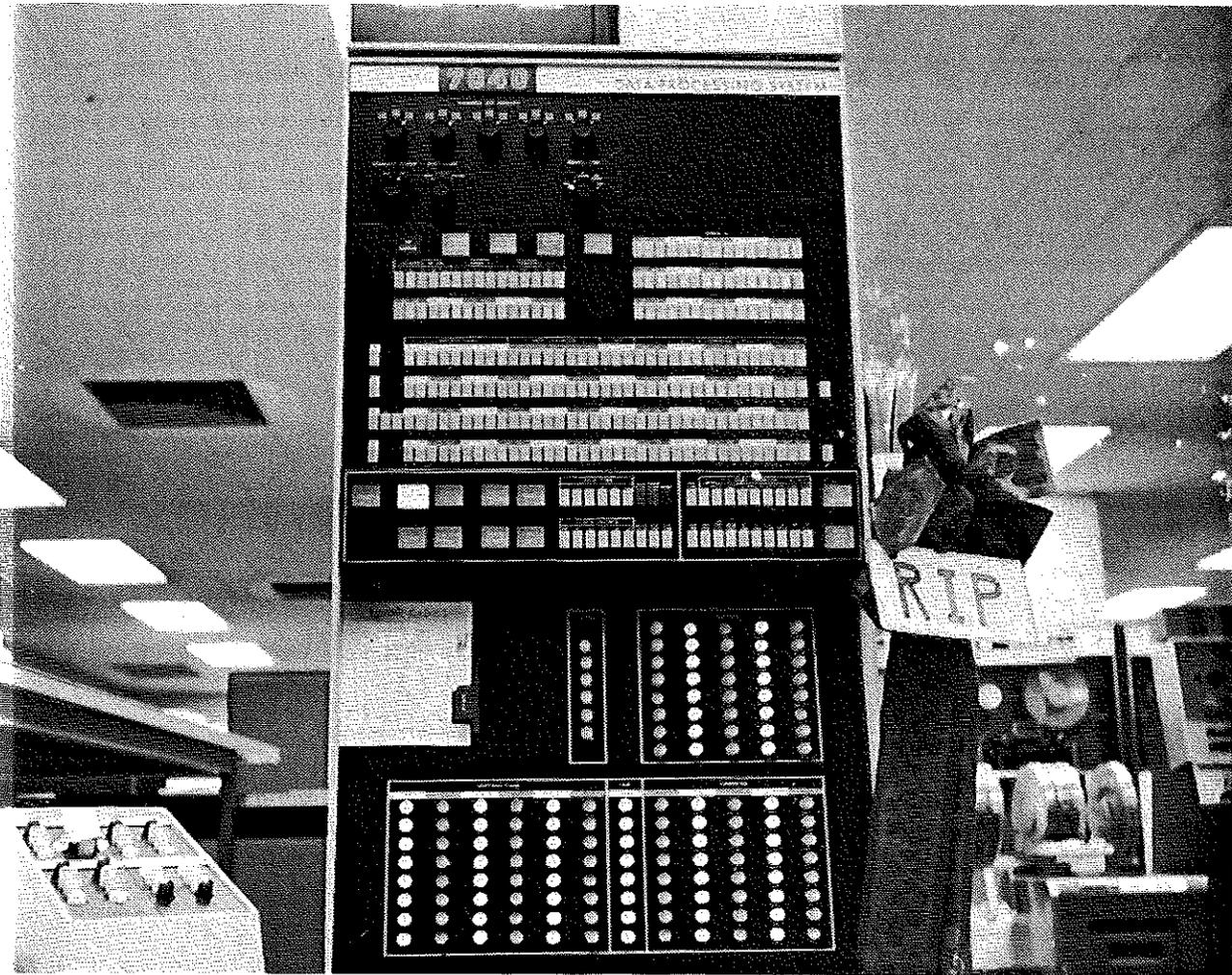
In 1945, at the suggestion of Mr. Watson, IBM and Columbia jointly established the "Watson Scientific Computing Laboratory" in a Columbia building at 612 West 116th Street (now Casa Hispanica). Later, the Laboratory expanded to include 612 West 115th Street (our present "Watson" building). For the next two decades Watson Laboratory was IBM's most advanced research facility, as well as the primary site in the world for instruction in computing. IBM staff and customers, international students, and scientists from all over the world came to the Laboratory for intensive training in the new technology and to observe the facility's model computing configuration. Computer time was also made available to Columbia faculty members, and approximately forty Columbia students received their doctoral degrees under the Laboratory's auspices.

### COMPUTER CENTER OPENED

However, as Columbia's academic and administrative computing requirements grew, it became clear that the University needed its own facility. In 1962 the Columbia University Computer Center was created. Dr. Kenneth King, a physicist who had been manager of Watson Laboratory's computing facility, was appointed as the Center's director. To house the Center, a new building—designed with the assumption that there would be more

## 7040/7094

than sufficient space for future expansion—was constructed underground between Havemeyer and Uris Halls. On January 2, 1963, twenty-five years ago, the Computer Center was officially dedicated and opened. Initial equipment consisted of an IBM 7090 (upgraded to a 7094 several months later) and an IBM 1401, as well as a 1410 shared by the Registrar's Office. In 1965 the system was further upgraded by the addition of a rented 7040 to form a directly coupled 7040-7094 system. During those early years, not only were the computers, the peripheral hardware, and the operators located in the Center but also the entire Computer Center staff, from director to programmers to support staff. The Center also included a comprehensive computer library of reference books, journals, and technical manuals, a much-used resource for faculty, students, and staff.



For the first few years, the Computer Center's main emphasis was on academic computing, which was conducted on the IBM 7090/94. Administrative computing was, for the most part, carried out independently by individual departments such as the Registrar's Office and the Controller's Office. Gradually, these offices came to feel that their data processing tasks could be more efficiently handled by the resources of the Computer Center. To provide systems and programming support to these and other University administrative departments, the Administrative Data Processing Center (ADPC) was established in 1965. Its staff comprised two or three data processing personnel from the Controller's and Registrar's Offices plus a couple of the Computer Center's programmers. York Wong, programming supervisor at the Center, headed the new

ADP  
ESTABLISHED



group. Initially, ADPC was separate from the Computer Center; both York Wong and Dr. King reported independently to Warren Goodell, Vice President of Administration. The bulk of ADPC's administrative work was programmed in AUTOCODER and ran on second-generation equipment: a rented IBM 1410 and a 1401 owned by the Controller's Office. The University payroll system ran on the IBM 1401, which was actually located in Prentis Hall on 125th Street.

In October of 1966, ADPC staff moved to the Casa Hispanica building, which they shared with the Spanish Department (IBM having moved out in 1962). As the Computer Center expanded, many of its staff gradually moved into Casa Hispanica as well, and the two groups occupied several floors of the building. But even with these new quarters, space was insufficient, and in the late sixties many staff members found themselves working out of apartments on 114th Street, 117th Street, and other scattered locations in the neighborhood.

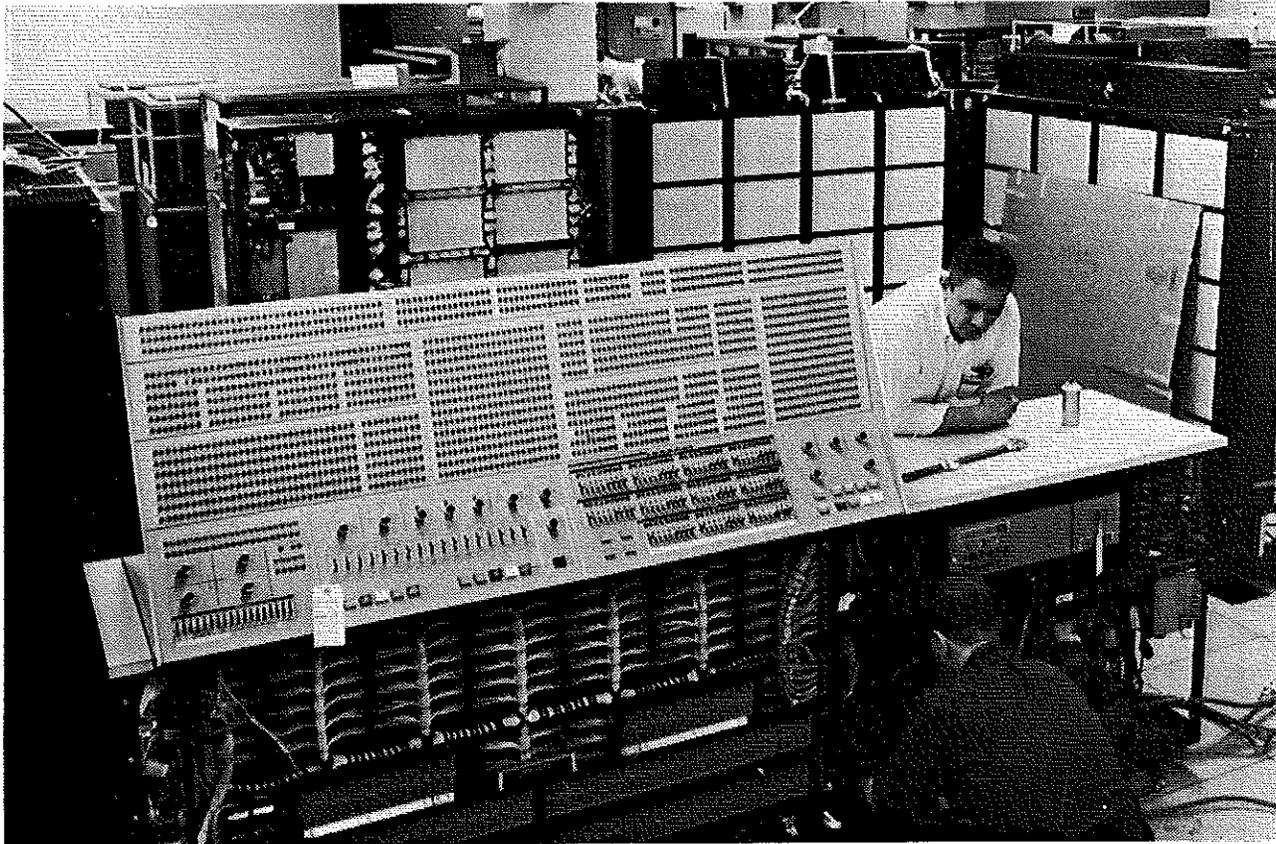


## INTO THE FUTURE 360/91

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Meanwhile, in 1967 the Computer Center developed a plan to upgrade its computer resources, and to unify academic research computing and administrative computing under the same computer system. This led to the purchase of an IBM Model 360; by 1969 conversion to the third-generation 360/91 coupled system was complete. The IBM 360/91 was one of the most powerful computers in the world; only thirteen of them were ever manufactured and most of those

were retained by IBM for their own internal use. An advanced machine for its time, it had a tremendous impact on later computer developments. This giant computer took every inch of space in the Center's machine room; extensive renovations had to be made to accommodate its sprawling dimensions. (It was finally removed in 1981 and the 360/91 console, which graced the Watson lobby for many months, now resides in The Computer Museum in Boston, Mass.)



In the summer of 1968, as part of the plan to unify all University computing, ADPC merged with the staff of the Center. The Computer Center now incorporated both academic and administrative computing, and the new associate director of ADPC, Jon Turner, reported to the Center's director, Dr. King. Steps were taken to convert all administrative work to the new 360 system. By 1973 conversion was complete; the old 1410 served as a backup for a few more years before it was finally removed.

## THE MOVE TO WATSON

In 1970 IBM moved their research facilities to Yorktown Heights. After undergoing major renovations, the Watson building became the permanent home for the Computer Center's director, its programming staff, the Systems Group, User Services, and Production. They were joined by ADPC, now grown to a staff of forty-five. The move to Watson meant that, except for the operators and a few other key staff, Computer Center personnel were now under one roof. Watson seemed to provide more than enough space for everyone; there was even room for Purchasing on the second floor (they moved out in 1983), and the current Xerox 9700 room—when it wasn't acting as a conference room—made a wonderful space for Christmas parties.

The Computer Center experienced several organizational transitions during the first few years of the 1970's. Dr. Kenneth King resigned in 1971 and Warren Goodell took on the additional function of acting director until a replacement for Dr. King could be found. In 1972 Dr. Goodell was replaced by Warren Haas, vice president for information services and University librarian. During this period ADPC was separated temporarily from the rest of the Computer Center and Jon Turner reported to Paul Carter, then executive vice president for administration.



## FIRST ADMINISTRATIVE COMPUTER

Finally, in June of 1973 Dr. Bruce Gilchrist was appointed director of the Computer Center. Jon Turner left the University and ADPC again merged with the Center. Dr. Gilchrist appointed Drita Ivanaj to manage ADPC, which was renamed Data Processing Operations (DPO). The Computer Center also changed names: reflecting its mission to coordinate the growth of computer activities beyond the Center itself, it was named Columbia University Center for Computing Activities (CUCCA).

DPO continued to grow all through the 1970's and many new systems were created. As computer capabilities and administrative requirements increased, these systems expanded in number and in complexity. By the middle of the decade, administrative computing had grown to such an extent that new resources were needed. The IBM 360, though still a state-of-the-art computer, was ultimately more suited for large computational problems arising in academic research projects than for administrative applications. Also, as students began using the 360 for running small jobs, the question of data security for administrative systems arose. These concerns resulted in a decision to acquire a separate computer specifically for administrative use, and in 1977 the first "administrative machine," an IBM 370/138, was installed. (Academic computing staff continued to use the 360 until it was completely phased out and replaced by two "academic" IBM 4341's in 1981.)

A milestone of this period was the development of the Personnel System, which was one the first systems to be designed in-house and run on the brand-new 370. Another milestone was the acquisition of the first CRT's (Hazeltines), which signaled the end of the keypunch era and the beginning of interactive, on-line systems. On its IBM mainframes, CUCCA ran a little-known, interactive operating system called VM, which, it was rumored, would be short-lived due to IBM's lack of commitment to it at that time. Because of VM's capabilities, CUCCA continued to support it throughout the 70's; VM now has a customer base larger than IBM's former front-runner, MVS.

## REORGANIZATION

The 1980's began with another reorganization of CUCCA's administrative staff. The name DPO was dropped and the staff divided into two main areas: ASAP (Administrative Systems Applications) and ASCO (Administrative Systems Control Operations). The ASAP group, managed by Jim Carrubba, provided programming support, and the ASCO group, managed by Drita Ivanaj, consisted of technical support, production, and I/O operations. Soon thereafter, Joe Kroculick, who had been appointed by Dr. Gilchrist in an advisory capacity, became director of administrative computing. Under his direction, administrative systems programmers—formerly part of a unified Systems Group reporting to CUCCA's academic side—formed a separate Systems Group, reporting to CUCCA's administrative side. In 1982, all of CUCCA came under the aegis of the new executive vice president for academic affairs, Dr. Norman Mintz. These first few years of the eighties saw many additional administrative programmers hired. Multiple new systems were created and major development work continued in dozens of others.

## EXPANSION

During 1981-82 CUCCA's administrative computing facilities expanded once more to additional campus locations. CUCCA was asked to take over the decentralized production areas of the student systems in Philosophy Hall and of the financial and payroll systems in Hogan Hall. Production personnel moved to Hogan and Philosophy, and the data entry clerks and other production personnel of these areas became part of CUCCA's staff. Expansion continued as CUCCA responded to the Health Sciences central administration's request for a satellite group specifically to support the administrative requirements of the uptown schools and departments, thus establishing what we currently call the Health Sciences ACC group.

The fastest-growing area of data processing was now office automation, and by 1983 personal computers had proliferated all over campus. In the 1960's only the central University administration had been able to afford the cost of a computer. By the late 70's, smaller groups and departments could consider minicomputers for local needs. By

1983, individuals were reaping the benefits of the silicon chip, in an environment more "friendly" and accessible than any mainframe computer. Soon, IBM PC's, Macintoshes, or DECmates were integrated into practically all administrative offices, and CUCCA began offering microcomputer and office automation support to these areas. In October of 1986, when the Administrative Computing Consultants (ACC) group was formed to support end-users in schools and departments, it began to provide intensive support, including programming assistance, to users of mini- and microcomputers throughout the University.

The events of 1986 brought major changes to CUCCA. In late 1985 Dr. Bruce Gilchrist was elected Supervisor of his home town and resigned as CUCCA's director. Effective on the first day of the new year, CUCCA was realigned, with the academic support area reporting to Pat Battin, vice president for information services and University librarian, and the administrative area continuing to report to Dr. Norman Mintz. The administrative computing staff became a separate entity from CUCCA and was known once again as ADP—minus the C.

On January 5th 1986, ADP's director, Joe Kroclic, died suddenly of a heart attack. Dorothy Marshall became acting director for a period of six months, after which she was appointed assistant vice president for ADP. One of the first changes she made was to realign ADP into three major areas: Strategic Planning; Administrative Systems; and Systems and User Support—each with its own director. During that summer Dorothy quickly became involved in plans to upgrade the administrative computer once again. The inexorable growth of administrative systems during the previous seven to eight years had led to the acquisition of progressively larger and more powerful machines, notably the IBM 3031 in 1979 and the IBM 3083 in 1983. These upgrades culminated in the installation of the IBM 3090 in November of 1986. The 3090 is projected to last four to five years—a relatively long life in the computer world.

## MORE REORGANIZATION

## TOGETHER AGAIN

The latest separation of ADP and academic computing was a short one. Dr. Elaine Sloan joined the University in August of this year, replacing Pat Battin who resigned in the summer of 1987. With the appointment of Dr. Sloan, the division between administrative and academic computing ended, and for the third time in its history, ADP merged with CUCCA to form a cohesive, unified computing center at Columbia.

In these past twenty-five years, under several administrations and various aliases, ADP has expanded far beyond the dreams of those first five or six data processing staff members. Today ADP is a large, diverse organization of 135 people, many of whom have never seen a punch card reader or sorter in their lives—nor would they want to, as they sit in front of their terminals and PC's, rapidly accomplishing tasks that would have taken a couple of thousand cards to do in the old days, way back when.

Nuala Hallinan  
September 30, 1988

