A Ten Year Perspective

Gwen Bell
Founding President

A decade ago, in the winter of 1979, I met with a small group of people at Digital Equipment Corporation to talk about plans for a computer museum. In 1976, Ken Olsen had asked a consultant to write a report on the idea of such an institution. The focus of this report was the education of school children. Concurrently, Jonathan Rotenberg put together his first proposal for a computer discovery center, and a Silicon Valley group started the idea of their high technology center. All of these ideas were ahead of their time, and are only now starting to get off the ground.

Ten years ago, when the plans for The Computer Museum were made, they reflected the environment of the time. The mainstream of computing was time-shared minis and batch-processed mainframes. The Apple II, Commodore Pet, and TRS-80 were a year old and considered to be "hobbyist" computers. Dan Bricklin was dreaming up the first spread sheet to be sold to mini-computer users along Route128. Few people foresaw the spectacular personal computer revolution that was to come. Few people cared about the early first generation vacuum tube computers that were being thrown out.

It was easy to start The Computer Museum by collecting old machines, film, and video and doing some "oral video" of the pioneers of computing, who, with a few exceptions, were alive and well.

Even Release 1.0 of The Computer Museum was more than hardware boxes sitting out on the floor. What changes a collection into a museum is the human interface, the software interpretation that allows people to appreciate and learn from the exhibits. In Release 1.0, these were mainly signs and photographs that helped to interpret the early machines in their context. Like many first releases, the human interface was hardly easy to use. The oldtimers, who remembered programming in assembly language and hand-soldering machines, loved these exhibits. In fact, one said to me, "Why isn't the Museum in Boston, like the first one in Marlboro?" This is a minority opinion, the first exhibits were inexplicable to most people and did not begin to meet any public need for explaining computers.

In the eighties, a rapid change started to occur in the industry. Within three years, the PC was announced with word processing, spreadsheets, and enough memory to make it a business and educational tool. This revolution, along with a move to Boston, allowed the Museum to take on a new look and feel.

In the fall of 1984, Release 2.0 of The Computer Museum opened at the present site. Many of the old machines were put away in the warehouse. Only the most dramatic and special computers were put on display in a context with more information than Release 1.0, but at a level best understood by engineers. Guided tours with trained interpreters from the Museum staff help make these exhibits understandable to school groups and other visitors. One-third of Release 2.0 used interactive computer stations where even the unknowledgable could have fun experimenting with personal computers and investigating graphics applications.

It became clear that the interactive element — computer discovery — was what most of the visitors liked, even if they came to see some of the historic machines.

In June 1987, the Museum opened *Smart Machines*, release 2.5, where the visitor explores and investigates the world of artificial intelligence and robots. Human interface in this area is even easier: machines respond to voice and speak back, to physical presence, and with touch. Keyboards are only one small part of this interface and signage is supplemented by video, sound, and dramatic displays.

Release 3.0, the future museum, may finally be able to realize the dreams of ten years ago to communicate the excitement of computing to a broad audience. An unparalleled collection will continue to be used to develop unique and exciting historical exhibits. The tools of new easy-to-use computers will be used to define a new level of interactivity in Museums. For the first time, using interactive video, exhibits can have layered messages that will appeal to different levels and interest groups. The evolution of the computer — that we celebrate — will also transform this Museum into a new multi-level, multi-layered experience that can grab every family member from a six-year old to a PhD in Computer Science and to a grandmother intimidated by the new world of computing surrounding her.

In all of this the Museum proceeds step-by-step, experimenting with the new while preserving the old. The vision leads to Release 4.0, reflecting the new advances that are still in the realm of "computer imagineware." Come along this road with us. Help the Museum preserve a distinguished past and bring the newest computing concepts to the public.

Ten years ago,

the Museum took the plunge, and moved from a secure corporate nest within a Digital Equipment Corporation building in Marlboro to Museum Wharf on Boston's waterfront. The Museum's 10-strong staff led by Gwen Bell took less than a year to complete the move and open five new exhibit galleries. This initial set of galleries pointed the way for the Museum's development; the SAGE, Univac, IBM 1401 and Seymour Cray exhibits were primarily historical. *The Computer and the Image*™, on the other hand, explored a key application of computing—computer graphics and image processing—exploiting hands-on interactive stations, film, video, and artifacts.

Today's exhibits reflect the increasing impact of computing on many aspects of life. The exhibits have become more interactive—more than 125 interactive stations today compared to 25 a decade ago. But the most significant change took place in 1990 when *The Walk-Through Computer*™ became the symbol for the Museum in the minds of children around the country. Appearing on the "Today" show and on "Sesame Street," the Museum's friendly giant continues to attract young visitors from around the world.

Five years ago, the Museum's Board laid out a strategic plan for the exhibits in which three themes would be addressed in the permanent exhibits: the evolution of computing; computer technology and how it works; and the applications and impact of computing. *The Walk-Through Computer's* extraordinary size invites visitors to discover the elements of computer technology; *PEOPLE AND COMPUTERS: Milestones of a Revolution*™ reveals the effect of computers on employment and recreation with vignettes supplemented by period film footage.

ROBOTS & OTHER SMART MACHINES™ and *TOOLS & TOYS*™ indulge visitors' desire to engage with a wide range of computer uses, from robotics and expert systems to music and games. The 1994 *NETWORKED PLANET*™ exhibit gives visitors a chance to try out the much touted "information highway" for themselves with the help of computer-based "network guides." Over the past decade, the Museum has enriched the permanent exhibit experience with a panoply of special exhibits. Topics have ranged from computer art to digital views of Earth from satellites. Taken together, the Museum's 30,000 square feet of exhibitions offer a uniquely accessible introduction to a technology that is fast becoming ubiquitous.

Since 1984, the Museum has expanded the impact of its exhibits in several dimensions. On-site, the number of visitors has tripled. Beyond our walls, copies of our exhibit interactive software reach over a million people a year in other museums. The video "How Computers Work," based on *The Walk-Through Computer*, serves tens of thousands of students. And the Museum's travelling exhibits on pocket computing and satellite digital imagery of Earth have been on display in over 20 other museums.

An important milestone

was the opening of *The Computer Clubhouse*™, an innovative learning environment in which children engage in open-ended computer-based projects. The *Clubhouse* has forged a connection for the Museum with several underserved communities of Boston. Kids from housing projects are in the *Clubhouse* almost every day experimenting with multimedia tools and building interfaces for robots—acquiring skills that could affect the course of their lives.

In 1984, the Museum's historical collections of computing were already one of the world's finest. In the past decade many important acquisitions have been added. The Univac 1, IBM 360, Cray 1 and Xerox Alto are examples. In 1986, the Museum held an international early model personal computer contest which yielded nearly a hundred significant additions including the Micral, Apple 1, and TV Typewriter. The Museum's collections have continued to perform valuable rescue missions, saving important items from destruction. A good example is the JOHNNIAC named after John Von Neumann. This 1953 one-of-a-kind computer was rotting in a parking lot in Los Angeles until we flew it to Boston. The machine is now beautifully restored, with the help of the original project engineer, Ray Clewett.

Artifacts represent only one facet of the historical record; the past decade has seen a strengthening of our document, video, photograph and book collections. Video of computers in use and pioneers telling their own stories serves as an especially useful aid to interpretation owing to the relative inscrutability of the Museum's collections. Our video collection was greatly enriched with the acquisition of the collections assembled by WGBH-TV, the PBS station in Boston, during their research for "The Machine that Changed the World" television series. In 1994, the collections include nearly 1,200 artifacts, 570 film and video titles, and 4,000 photographs.

A very significant achievement of the decade has been the tripling of the Museum's operating budget *(see Chart 1)* and the diversification of the Museum's support. The Museum owes its existence to the far-sighted and generous support of Digital Equipment Corporation, which provided well over half the Museum's funding in 1984. In 1994, over 50 different sources each provided more than $10,000 of annual support, with no single source accounting for more than 2% of operating revenues *(see Chart 2)*.

An increasing proportion of the Museum's backing comes from beyond Massachusetts, showing an appreciation for our mission nationwide. This geographical reach is reflected in the Museum's visitors, of whom over half come from beyond Massachusetts.

chart 1

THE COMPUTER MUSEUM OPERATING INCOME

Legend:
- Contributed annual
- Earned income

Y-axis: $0, $500000, $1000000, $1500000, $2000000, $2500000
X-axis: FY 85, 86, 87, 88, 89, 90, 91, 92, 93, 94

chart 2

NUMBER OF COMPUTER MUSEUM CORPORATE, GOVERNMENT, INDIVIDUAL, AND FOUNDATION FUNDERS

Legend:
- $10,000-24,999
- >$25,000

Y-axis: 0, 10, 20, 30, 40, 50, 60
X-axis: FY 85, 86, 87, 88, 89, 90, 91, 92, 93, 94
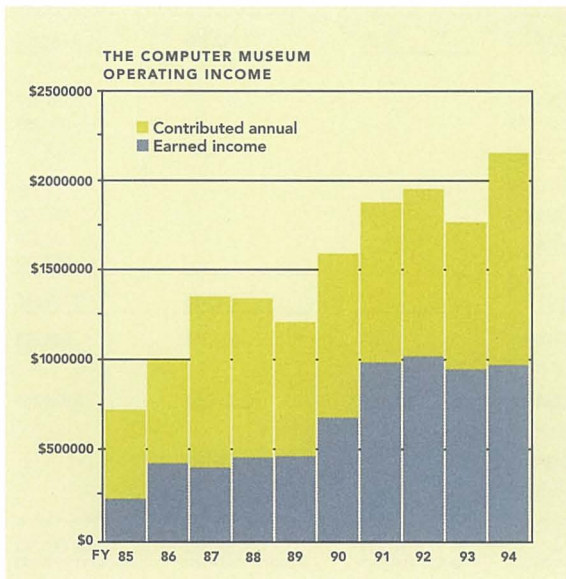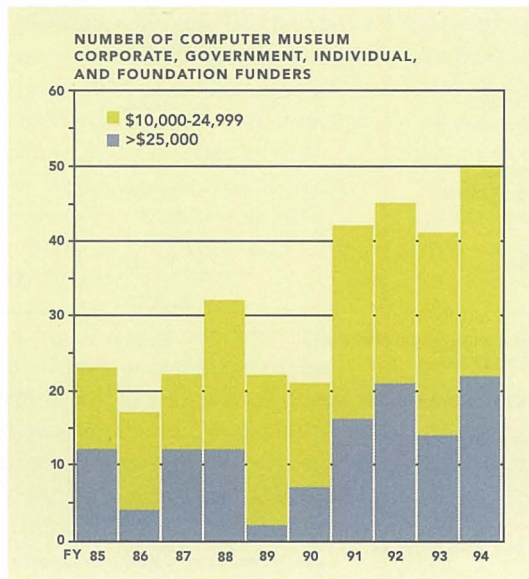
THE COMPUTER MUSEUM, INC. BALANCE SHEET/JUNE 30, 1994

	Operating Fund	Capital Fund	Endowment Fund	Plant Fund	Total 1994
ASSETS					
Current Assets					
Cash and cash equivalents	$351,494				$351,494
Receivables and other assets	236,536			18,000	254,536
Store inventory	52,403				52,403
Interfund receivable		417,222			417,222
Total Current Assets	640,433	417,222		18,000	1,075,655
Other Assets					
Restricted cash equivalents			250,000		250,000
Property and Equipment					
Equipment and furniture				344,471	344,471
Capital improvements				960,401	960,401
Land and building				1,603,221	1,603,221
Exhibits		352,279		4,078,754	4,431,033
		352,279		6,986,847	7,339,126
Less - accumulated depreciation				(3,735,002)	(3,735,002)
Net Property and Equipment		352,279		3,251,845	3,604,124
TOTAL ASSETS	640,433	769,501	250,000	3,269,845	4,929,779
LIABILITIES AND FUND BALANCES					
Current Liabilities					
Accounts payable and other current liabilities	146,281	68,870			215,151
Deferred revenue	126,654	388,206			514,860
Interfund payable	417,222				417,222
Total Current Liabilities	690,157	457,076			1,147,233
Bond Payable				509,333	509,333
Fund Balances					
Unrestricted	(49,724)				(49,724)
Restricted		312,425	250,000		562,425
Net investment in plant				2,760,512	2,760,512
Total Fund Balances	(49,724)	312,425	250,000	2,760,512	3,273,213
TOTAL LIABILITIES AND FUND BALANCES	$640,433	$769,501	$250,000	$3,269,845	$4,929,779

STATEMENT OF ACTIVITY AND CHANGES IN FUND BALANCES for the year ended June 30, 1994

	Operating Fund	Capital Fund	Endowment Fund	Plant Fund	Total 1994
SUPPORT AND REVENUE					
Unrestricted gifts	$714,876			$1,013,888	$1,728,764
Restricted gifts	341,903	534,545			876,448
Memberships	187,903				187,903
Admissions	504,541				504,541
Auxiliary activities	482,418				482,418
Miscellaneous	7,752		6,382		14,134
TOTAL	2,239,393	534,545	6,382	1,013,888	3,794,208
EXPENSES					
Exhibits and programs	512,366	18,761			531,127
Marketing and membership	390,867				390,867
Depreciation				772,731	772,731
Supporting services:					
Management and general	267,465				267,465
Fund raising	201,901	133,883			335,784
Occupancy	307,101	46,977			354,078
Auxiliary activities	507,233				507,233
TOTAL	2,186,933	199,621		772,731	3,159,285
EXCESS (DEFICIENCY) OF SUPPORT AND REVENUE OVER EXPENSES	52,460	334,924	6,382	241,157	634,923
FUND BALANCES, BEGINNING OF YEAR	(108,566)	162,804	250,000	2,334,052	2,638,290
ADD (DEDUCT) TRANSFERS					
Equipment purchase		(105,303)		105,303	
Bond repayments		(80,000)		80,000	
Investment income	6,382		(6,382)		
FUND BALANCES, END OF YEAR	$(49,724)	$ 312,425	$250,000	$2,760,512	$3,273,213

Corporate support has grown

beyond the computer industry to corporations and businesses that rely critically on computers, such as telecommunications companies, banks, insurance companies, accounting firms, and law firms. Federal foundations, including the National Science Foundation and the National Endowment for the Humanities, and national private foundations, such as the Alfred P. Sloan and Hearst Foundations, have added their support to our exhibit, outreach, and educational programs.

The culmination of the decade of growth and consolidation came in 1993 with Digital Equipment Corporation's gift of the building. The Computer Museum now owns a half interest in Museum Wharf, the building and land we share with the Children's Museum. Chart 3 shows the impact of the gift on the Museum's assets, as well as gradual reduction in the Museum's mortgage liability and the establishment of an endowment fund.

Starting in 1988, The Computer Bowl® event and PBS television program, airing on 288 stations in the USA and in 200 countries around the world, has become the bi-coastal event for the computing community to have fun, socialize, and raise money for the Museum. Its success owes a great deal to dedicated Silicon Valley volunteers. "Grass roots" support has been mirrored by an increase in the number of West Coast Board members. Last year we opened a Museum office in Menlo Park, CA to further build our Silicon Valley relationships.

The maturing of the Museum has led to an evolution in governance. As the decade advanced, the number of Board members swelled from 24 to 46. Active committees grew from the core Executive, Nominating, Collections, and Finance committees to include Exhibits, Education, Marketing, Development,

Computer Bowl, Publishing, Licensing, and Audit, as well as committees for special development or exhibit initiatives. As the Board approached fifty members, it became apparent that the Museum would benefit from a twin Board structure. A 25-person Board of Trustees was therefore created to maintain the fiduciary responsibility for the Museum's governance, and a diverse Board of Overseers was established as a formal body of high-level volunteers with connections to various communities, industries, regions, or other special groups. A record number of senior volunteers now actively help the Museum in all of its endeavors.

Complementing our growing volunteer community is a team of staff who have become more professional and experienced each year. The Museum now has 45 employees, many of whom are seasoned experts in their fields. Through regular presentations at national museum and education conferences, the Museum is recognized as a leader in interactive exhibitry and informal education about computing.

The Museum's second decade promises to be even more exciting as the Museum continues to exploit and explain the new technologies which are both its medium and its message. Perhaps my retrospective on our second decade will reach you through a wireless network that connects to a universal communications device in your pocket. And perhaps you will respond with your reactions and ideas for our future just as easily. For the present, I invite you to respond by e-mail, and to explore our Gopher and World-Wide Web servers on the Internet. I hope you will join with us in making our second decade an even bigger success than the first.

Oliver Strimpel
Executive Director
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chart 3

PLANT AND ENDOWMENT FUNDS
MORTGAGE AND OTHER LOANS

- Plant Fund
- Mortgage Remainder
- Endowment and Loans

Smart Machines
Walk-Through Computer
People and Computers
Tools & Toys
Half interest in Museum Wharf

$3500000
$2500000
$1500000
$500000
$500000
$1500000

FY 85 86 87 88 89 90 91 92 93 94