The Computer Museum

300 Congress Street
Boston, MA 02210
(617) 426-2800

Membrandum

to: The Computer Museum Board of Directors
from: Oliver Strimpel
re: November 7 Board meeting
date: October 25, 1991

The next Board meeting will focus on two main areas, both of which concern the Museum's long-term future.

- The Capital Campaign and the endowment fund it will create.
- The Waterfront Project to expand the Museum's facilities.

We have organized the agenda to allow enough time for these important topics to be discussed in some depth at the meeting. To help prepare you for the meeting, I enclose:

For the endowment discussion

- A draft resolution to establish an endowment fund proposed by the Finance Committee and approved by the Executive Committee and the Capital Campaign Steering Committee.

- A partial slate for election to a newly created Investment Committee

For the Waterfront Project

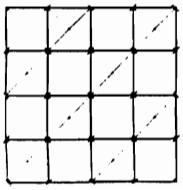
- Preliminary facilities needs assessment for the strategic plan and beyond

Also enclosed are:

-financial statements for the first quarter of FY92; the audited FY91 statements will be handed out on the 7th.
-minutes of the September 4 Executive Committee meeting.

Please note that I have a new assistant, Geri Rogers. A few of you will remember her excellent work as the Museum's administrator from 1982-5. She brings a great deal of valuable experience with her to the Museum, derived in part from a 15 year career at Digital.

If you have not already responded, please let us know of your attendance by calling Geri at extension 372.



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Meeting of the Board of Directors

November 7 1991

8:30-12:30

Agenda

Museum operations update

Capital Campaign

- Board solicitation report
- Fund-raising strategy discussion

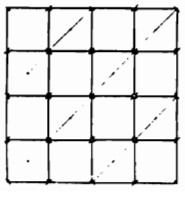
Establishing an Endowment Fund

- Purpose of the endowment—discussion
- Vote on resolution to establish the endowment fund

Waterfront Project

- Background
- Planning for the next century:
  - facilities needs assessment—discussion
- Possibilities for collaboration with Children's Museum

The meeting will be followed by lunch.



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The Computer Museum

Resolution to Establish an Endowment Fund

RESOLVED: That The Computer Museum establish a permanent endowment fund to be administered in accordance with the following terms and conditions:

1. The fund shall be known as the Endowment Fund for The Computer Museum.

2. Funds or property contributed to or set aside for the Endowment Fund shall be held in a separate account and invested and accounted for as a separate account. However, the Endowment Account shall remain the property of the Museum and shall not constitute a separate trust for purposes of taxation.

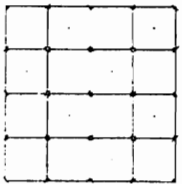
3. The Board of Directors may, from time to time, on the recommendation of the Finance Committee, add funds or other property to the Endowment Account.

4. Donors may, from time to time, contribute funds or other property to the Endowment Account by specifically directing their contributions to the Endowment Fund.

5. Donors who make contributions in excess of such limits as may be established from time to time by the Board of Directors shall have the privilege of establishing a named subaccount of the Endowment Fund. Such subaccounts shall be invested and commingled with the Endowment Fund, and shall for all purposes (including borrowing, invasion of principal and distribution of income) be treated as a part of the Endowment Fund.

6. The Endowment Fund shall be invested, under the direction of the Investment Committee, so as to provide a predictable, reasonable and sustainable income for the Museum while conserving the value of the principal.

7. The income from the Endowment Fund shall be expended to support the mission of the Museum as determined from time to time by the Board of Directors. In order to preserve the purchasing power of the Endowment Fund, the Board of Directors, on the advice of the Investment and Finance Committees, may, in any given year, decide to spend less than the entire income of the Endowment Fund, in which case, any unspent income shall be added to the principal of the Endowment Fund.



8. The funds in the Endowment Account may, from time to time, be loaned to the Museum, on the recommendation of the Finance Committee, by a vote of two-thirds of the Directors then in office to meet a critical need of the Museum in cases where no other funds are available and the failure to meet that need would severely jeopardize the continued existence of the Museum; provided, however, that the term of such borrowing not exceed one year.

9. This resolution to establish an Endowment Fund may be amended only on the recommendation of the Finance Committee by a vote of three-fourths of the Directors then in office.

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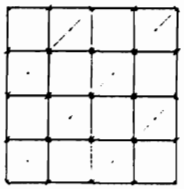
Investment Committee Nominees

David B. Kaplan
Audit Partner, Price Waterhouse
Director, The Computer Museum
Member, The Computer Museum Finance Committee

Anthony D. Pell
President, Pell, Rudman and Co., Inc.
Director, The Computer Museum
Member, The Computer Museum Executive Committee
Member, The Computer Museum Capital Campaign Steering Committee

Third member to be named
with proven nonprofit endowment management experience

10/24/91



Preliminary Needs Assessment
On September 23, the Department Heads held a meeting to discuss the facilities required to meet the programmatic and operational goals set forth in the Strategic Plan. Subsequent conversations focussed on how the Museum could make plans for surpassing the barriers to growth imposed by the current facilities (calculated to be 220,000 visitors annually).

This is a summary of the points discussed in those meetings.

Identity/Visibility	The Museum's independent identity on the site must be enhanced. This means creating a bold visual statement the public would associate with the Museum.
Access	Traffic flow on the Wharf should be enhanced, including provisions for school groups, special needs visitors, families, and all members of the public in sufficient numbers to achieve visitation goals of 220,000 or more.
Lobby	To serve 220,000 visitors the lobby needs to accommodate on the order of 200 people at one time, requiring 1400 square feet. (The current lobby is 730 sq. ft.) The lobby must be made more enticing and attractive. In addition to rationalizing the admissions process, modifications to the lobby should also include an information desk, a security desk, members and group check-in, coat check and lockers, and group orientation areas.
Education Programs	A Learning Center for After-school, Student Project, Family Activity, and Teacher Development Programs requires 2,000 sq. ft.
Retail Operations	Store sales could be increased by enlarging the store and placing it in a more publicly accessible location.
Site Utilities	Improvements in utilities for the wharf, such as trash disposal, should be planned for. Others would include provisions for limited parking, security, lighting, emergency access, functions facilities, public gathering and eating areas, etc.
Vertical Access	The capacity of the current elevator seems to limit annual visitation to 220,000. To surpass this limit additional facilities for moving people to the top of the building must be planned.
Exhibitions	Without major modifications to the building exhibitions could be expanded to 30,000 sq. ft. (currently there are 25,000 sq. ft. of exhibitions). At 30,000 sq. ft. the exhibitions could accommodate 220,000 visitors per year. To surpass this level would seem to imply adding new exhibition space to the building. It would be desirable for this to include a space with high ceilings to accommodate large, dramatic exhibitions.

Background
As mentioned in the previous two Board meetings, The Children's Museum is planning to invest about $6 million in the site. The Waterfront Project seeks to expand the building, create an attractive park on the apron, and develop a major program space on a floating barge in the Channel. This presents The Computer Museum with an opportunity to plan for its long-term needs at Museum Wharf. Although this effort has been catalyzed by the initiatives taken by The Children's Museum, the preliminary needs assessment indicates that such planning is actually needed at this time if the Museum is to maintain its viability in this site through the year 2000.

Planning
The staff, with the approval of the Executive and Waterfront Committees of the Board, has initiated discussions with a team of architects headed by Frank Gehry and Associates to explore how these concerns can be addressed as part of the Waterfront Project. The goal of this interaction is to produce plans that illustrate how the Museum can realize its long-term goals on this site in a manner harmonious with the plans of the Children's Museum.

Engaging in this long-term planning at this time allows The Computer Museum to—

1) proceed in synch with The Children's Museum's plans for their own expansion, thereby promoting a more cooperative role in the planning process while enhancing The Computer Museum's ability to protect its long-term interests.

2) profit from costs savings associated with economies of scale by paying only the incremental costs of explicitly planning for The Computer Museum's needs and applying for permits jointly with The Children's Museum.

3) make preliminary plans for expansion that can be pursued on The Computer Museum's independent timetable.

4) conduct joint fundraising with The Children's Museum, targeting foundations that specifically support building projects. It might be possible to manage the project somewhat like an exhibit, with its own staff and prospects, so as not to divert resources and momentum from the Capital Campaign.

THE COMPUTER MUSEUM
STATEMENT OF REVENUES AND EXPENSES
COMBINED OPERATING AND CAPITAL FUNDS
($ - Thousands)

	FOR THE THREE MONTHS ENDED						
	9/30/90	9/30/91				FY92	FY92
	ACTUAL	BUDGET	ACTUAL	FAV(UNFAV)		BUDGET	FORECAST
REVENUES:							
Operating Fund	527	592	530	(62)	(11%)	2,243	2,002
Capital Fund	149	300	258	(42)	(14%)	1,770	1,770
Total Revenues	676	892	788	(104)	(12%)	4,013	3,772
EXPENSES:							
Operating Fund	447	633	474	159	26%	2,205	2,160
Capital Fund	200	198	183	15	(8%)	1,162	1,182
Total Expenses	647	831	657	174	21%	3,367	3,342
NET REVENUES (EXPENSES)	$29	$61	$131	$70	115%	$646	$430

SUMMARY:

For the three months ended September 30, 1991, the Museum operated at a surplus of 131K compared to a budgeted surplus of 61K. As of September 30, 1991, total cash and cash equivalents amounted to 278K.

OPERATING: Operating revenues were 11% under budget due to lower than budgeted earned revenue in the Admissions, Store, and Function areas along with lower Unrestricted revenue. Expenses were 26% under budget due to timing in spending and lower personnel costs (vacant positions).

CAPITAL: Capital revenues were 14% under budget due to budgeted timing differences in Capital Campaign contributions. Expenses were 8% over budget despite payment of 22K of unbudgeted expense related to FY91 opening of People and Computers.

THE COMPUTER MUSEUM
STATEMENT OF REVENUES AND EXPENSES
OPERATING FUND
($ - Thousands)

	FOR THE THREE MONTHS ENDED						
	9/30/90	--------9/30/91---------				FY92	FY92
	ACTUAL	BUDGET	ACTUAL	FAV	(UNFAV)	BUDGET	FORECAST
REVENUES:							
Unrestricted contributions:	59	$80	7	(73)	(92%)	207	124
Restricted contributions	0	60	90	30	50%	188	218
Computer Bowl	46	18	99	81	450%	305	305
Corporate memberships	17	21	34	13	62%	231	231
Individual memberships	12	14	10	(4)	(29%)	69	69
Admissions	237	222	169	(53)	(24%)	510	416
Store	97	122	90	(32)	(27%)	522	451
Functions	55	54	17	(37)	(69%)	150	104
Interest Income	2	1	1	0	0%	24	24
Other	2	0	13	13	100%	37	60
Gain/Loss on Securities	0	0	0	0	0%	0	0
Total Revenues	527	592	530	(62)	(11%)	2,243	2,002
EXPENSES:							
Exhibits Development	4	47	38	9	20%	82	112
Exhibits Maintenance	11	13	12	1	8%	68	68
Collections	20	19	18	1	6%	67	67
Education	77	83	56	27	33%	303	271
Marketing & Memberships	76	111	97	14	13%	435	435
General Management	68	66	60	6	9%	232	232
Computer Bowl	6	11	9	2	19%	109	109
Fundraising	22	22	14	8	37%	82	82
Store	72	156	91	65	42%	465	435
Functions	19	36	10	26	73%	83	70
Museum Wharf expenses	72	69	69	0	0%	279	279
Total Expenses	447	633	474	159	26%	2,205	2,160
NET REVENUES(EXPENSES)	$80	($41)	$56	$97	237%	$38	($158)

THE COMPUTER MUSEUM
STATEMENT OF REVENUES AND EXPENSES
CAPITAL FUND
($ - Thousands)

	9/30/90	FOR THE THREE MONTHS ENDED 9/31/91				FY92	FY92
	ACTUAL	BUDGET	ACTUAL	FAV (UNFAV)		BUDGET	FORECAST
REVENUES:							
Unrestricted Contributions	$24	$50	$8	($42)	(84%)	625	625
Restricted Contributions	121	250	250	$0	0%	1,145	1,145
Interest Income	6	0	0	$0	0%	0	0
Gain/Loss on Securities	(2)	0	0	$0	0%	0	0
Total Revenues	149	300	258	(42)	(14%)	1,770	1,770
EXPENSES:							
Exhibits Development	106	66	72	(6)	(10%)	670	690
General Management	14	20	20	0	0%	91	91
Fundraising	43	77	56	21	28%	265	265
Wharf mortgage	37	35	35	0	0%	136	136
Total Expenses	200	198	183	15	(8%)	1,162	1,182
NET REVENUES (EXPENSES)	($51)	$102	$75	($27)	(27%)	$608	$588

THE COMPUTER MUSEUM
BALANCE SHEET
9/30/91

	OPERATING FUND	CAPITAL FUND	PLANT FUND	TOTAL 9/30/91	TOTAL 6/30/91
ASSETS:					
Current:					
Cash	$233,369			$233,369	$77,891
Cash Equivalents	44,752			44,752	42,677
Investments		$0		0	0
Receivables	18,164			18,164	98,538
Inventory	86,169			86,169	72,763
Prepaid expenses	11,810	0		11,810	15,591
Interfund receivable		386,316		386,316	400,798
TOTAL	394,264	386,316	0	780,580	708,258
Property & Equipment (net):					
Equipment & furniture	-		$350,158	350,158	350,158
Capital improvements	-		601,304	601,304	601,304
Exhibits	-		1,307,697	1,307,697	1,307,697
Construction in Process	-	11,328		11,328	11,328
Land	-		18,000	18,000	18,000
Total	0	11,328	2,277,159	2,288,487	2,288,487
TOTAL ASSETS	$394,264	$397,644	$2,277,159	$3,069,067	$2,996,745
LIABILITIES AND FUND BALANCES:					
Current:					
Accounts payable and accrued expenses	$127,652	$32,124		$159,776	$209,840
Deferred income	15,445	-		15,445	9,165
Line of credit/Loan Payable	0	-		0	0
Interfund payable	386,316	-		386,316	400,798
Total	529,413	32,124	0	561,537	619,803
Fund Balances:					
Operating	(135,149)			(135,149)	(190,561)
Capital		365,520		365,520	290,344
Plant			$2,277,159	2,277,159	2,277,159
Total	(135,149)	365,520	2,277,159	2,507,530	2,376,942
TOTAL LIABILITIES AND FUND BALANCES	$394,264	$397,644	$2,277,159	$3,069,067	$2,996,745

THE COMPUTER MUSEUM
STATEMENT OF CHANGES IN CASH POSITION
9/30/91

	OPERATING FUND	CAPITAL FUND	PLANT FUND	TOTAL 9/30/91	TOTAL 6/30/91
Cash provide by/(used for) operations:					
Excesss/(deficiency) of support and revenue	$55,412	$75,175	$0	$130,587	($115,374)
Depreciation			0	0	423,106
Cash from operations	55,412	75,175	0	130,587	307,732
Cash provided by/(used for) working capital:					
Receivables	80,374			80,374	21,764
Inventory	(13,406)			(13,406)	(9,551)
Investments		0		0	53,363
Accounts payable & other current liabs	39,593	(89,657)		(50,064)	51,496
Deferred income	6,280			6,280	(7,773)
Prepaid expenses	3,781	0		3,781	(349)
Cash from working capital	116,622	(89,657)	0	26,965	108,950
Cash provided by/(used for) Fixed assets		0	$0	0	(586,601)
Net increase/(decrease) in cash before financing	172,034	(14,482)	0	157,552	(169,919)
Financing:					
Interfund pay. & rec.	(14,482)	14,482		0	0
Transfer to Plant	0	0	0	0	0
Line of credit/Loan Payable				0	0
Cash from financing	(14,482)	14,482	0	0	0
Net increase/(decrease) in cash & investments	157,552	0	0	157,552	(169,919)
Cash, beginning of year	120,568	0	0	120,568	290,487
Cash, end of period	$278,120	$0	$0	$278,120	$120,568

THE COMPUTER MUSEUM

Minutes of the Executive Committee Meeting
September 4, 1991

In attendance were Oliver Strimpel, Ed Schwartz, Gardner Hendrie, Richard Case, and and Larry Brewster.

Oliver noted that attendance in July and August were down 33% and 19% respectively, compared to expectations given in the budget. However, there was a 20% increase over 1989. (He mentioned that many museums in the area showed decreased attendance due to the current local economy, and that none showed any strong growth.)

He mentioned that some $450,000 had been received (or had been pledged with receipt anticipated) for the Computer Discovery Center. Other major "asks" are also pending. The budgeted figure is $800,000. There was some discussion of the strategy which should be used for approaching corporations for exhibit funding versus capital campaign contributions. It was suggested that corporations are more likely to give for exhibits rather than for capital funds, but that senior corporate individuals might be solicited for making capital contributions. Gardner mentioned that in terms of priorities (raising money for exhibits versus raising money for the capital campaign) he felt that the Museum would be harmed more by opening an exhibit six months late than by being six months behind in its capital campaign. Oliver mentioned that although he was

"disappointed" and had hoped to be further along in the Computer Discovery Center funding, he was confident that the exhibit could still be fully funded and opened by June 1992.

He also mentioned that the Loebener prize was now fully funded.

With regard to the capital campaign, Larry Brewster mentioned that there had been Board pledges to date of $650,000 out of a total Board goal of $1M. Ed noted that he was trying to get an official letter of commitment from DEC as to its plans for the capital campaign. It was also decided that the Museum would attempt to get an updated appraisal of the leasehold interest of the premises. Ed and Oliver will pursue how to accomplish this, preferably without cost to the Museum.

There was an extensive discussion of the proposed waterfront project and of potential future expansion at the Museum Wharf site in general. Oliver noted that nothing additional can be built on top of the existing building without having the entire building earthquake proofed. He noted, however, that there was ample space for outward development of new floor area at the site, and felt there would be a future need to improve the Museum's overall site presentation and not just its contents (for example, by making improvements on the apron, to the lobby, etc.)

Ed noted that the Children's Museum is enthusiastically pursuing plans for expansion, including its potential waterfront project, and felt that the Computer Museum as a

result must be more active in formulating its own future expansion plans or at least in asserting its joint rights with respect to development of the area so that any plans of the Children's Museum do not impinge upon the Computer Museum's future objectives. Ed felt that three vital points to be focused upon in connection with any contemplated projects were: what will be built? who will pay for it? and who will receive the revenues derived from the expanded facility? Ed feels that the proposed waterfront project may greatly effect the long term presentation of the site to visitors. He also noted that he expected the Children's Museum has begun a capital campaign to raise some $4M to $6M for improvement of the Museum Wharf site.

There was a general consensus that although the Computer Museum may not be currently in a position to invest money in expansion projects, it should make it clear to the Children's Museum that any plans for developing the site must be the result of a joint consensus between the two Museums, and that although the Computer Museum legally has a veto over any proposed changes to the site, it would be preferable that it not be passive during initial planning stages and allow plans to develop to the point where that veto might have to be exercised.

It was noted that Brian McLaughlin would call James S. Davis to discuss questions which Coopers should focus upon in connection with the Museum's tax exempt classification by the IRS.

Richard Case noted that the next meetings of the Executive Committee will be October 7, November 18 and December 16 at 8:00 a.m. The next meeting of the Board of Directors will be November 7 at 8:30 a.m.

Capital Campaign
- give Ed the brick thanks Grant Saviers
- thank solicitors
- thank solicitees

Endowment Fund - needs of Museum
- operating ~~income~~ budget
- exhibit development
- securing the building

Andy Rappaport

Meeting of the Board of Directors

November 7 1991

8:30-12:30

Agenda

8:45 Museum operations update —STRIMPEL

9:15 Capital Campaign

- Thank, recognize volunteers-Larry, Tony—HENDRIE
- Recognize Ed, Present Brick—HENDRIE
- Board solicitation report—BREWSTER, PELL
- Fund-raising strategy discussion—BREWSTER

10:15 Establishing an Endowment Fund

Purpose of the endowment—discussion—HENDRIE
Vote on resolution to establish the endowment fund—PETINELLA/MCKENNEY
Vote to create and nominate slate for investment committee—MCKENNEY

11:00 Waterfront Project

Background—SCHWARTZ
Children's Museum project, schedule—WELCH
Planning for the next century:
facilities needs assessment—STRIMPEL
Discussion—SCHWARTZ

12:30 Ajourn

The meeting will be followed by lunch.

Meeting of the Board of Directors

November 7 1991

Draft Agenda

8:30 Call to Order (Hendrie)

8:40 Museum Update (Strimpel)

9:30 Capital Campaign

- Update (Brewster)
- Fund-raising strategy discussion (Brewster & Committee Chairs)
- Policy issues regarding endowment and use of funds
- Vote on endowment and allocation of funds

10:45 Waterfront Project

- Update (Strimpel)
- Presentation (Welch)
- Discussion (Schwartz)

If time permits:

12:00 Computer Discovery Center Update (Welch)

12:30 Meeting Ajourns

Lunch

Preliminary Needs Assessment
On September 23, the Department Heads held a meeting to discuss the facilities required to meet the programmatic and operational goals set forth in the Strategic Plan. Subsequent conversations focussed on how the Museum could make plans for surpassing the barriers to growth imposed by the current facilities (calculated to be 220,000 visitors annually).

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CONFIDENTIAL

I N T E R O F F I C E M E M O R A N D U M

The Children's Museum
and
The Computer Museum

Date: 01-Nov-1991 09:42am EST
From: Janet Walsh
WALSH
Title: Capital Campaign Coordinator
Phone: Ext. 333

TO: Oliver Strimpel (STRIMPEL)
TO: Lawrence Brewster (BREWSTER)
TO: Gwen Bell (BELL)
TO: Jan DelSesto (DELSESTO)

Subject: Lynda Bodman

Tony Pell called to report on a "difficult conversation" with Lynda Bodman.

Lynda launched a long and impassioned complaint about how badly treated Howard Cox had been. She was quite distressed that we were putting together net worth statements about people as a methodology for how much to ask for. Tony does not feel he made much headway in addressing her complaints and warns that we should expect to hear more about it at the Executive Committee or Board meeting level. Tony and I wanted to prepare you all with the background.

A word about Campaign prospect research: the process is more than just putting together a net worth statement. Research includes estimating net worth through research of public records on shareholdings and salary, prospect rating, public records of property values, etc. combined with consideration of a prospect's circumstances (children in college, other obligations), other philanthropy and closeness to the Museum. Prospect research is an accepted and nearly-universal practice in professional fund-raising and in fact, if we did not conduct research we would be losing a competitive edge. The fact is, we have modified our research methods because of limited staff and research resources and do not conduct the exhaustive research common at other institutions.

In the case of Howard Cox, after a phone conversation with Lynda, we set the strategy to simply confirm his $3,000 pledge to the Museum (which we knew was significantly under his giving capacity) and enlist his help in cultivating other prospects. We elected not to push for a higher gift. Tony admits that, knowing Howard (and Howard's place as one of our wealthiest Board members) as well as he does, he looked more quizzical than grateful for Howard's $3,000 pledge and may have left Howard feeling uncomfortable. Tony feels our strategy was entirely appropriate and I will have a copy of it available should Tony nee to refer to it. In fact, as Jan points out, our strategy could damage the Campaign for the very reason that Howard is one of our wealthiest Board members but will be listed at the smallest level of Campaign gift. He will not have th leverage in Lead Gift asks because he is not himself giving at a Lead Gift level.

In other news, Lynda has pledged $10,000 to the Campaign for now and will consider increasing that commitment to $25,000 later in the Campaign. I will send a thank you and pledge card from Tony.

The
Computer
Museum

300 Congress Street
Boston, MA 02210

(617) 426-2800

MEMORANDUM

To: Gardner Hendrie
From: Oliver Strimpel
Re: 1991 BOARD MEETING DATES
Date: November 7, 1991

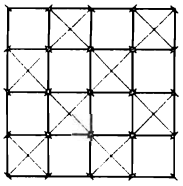
The dates for 1992 are:

Friday, February 14

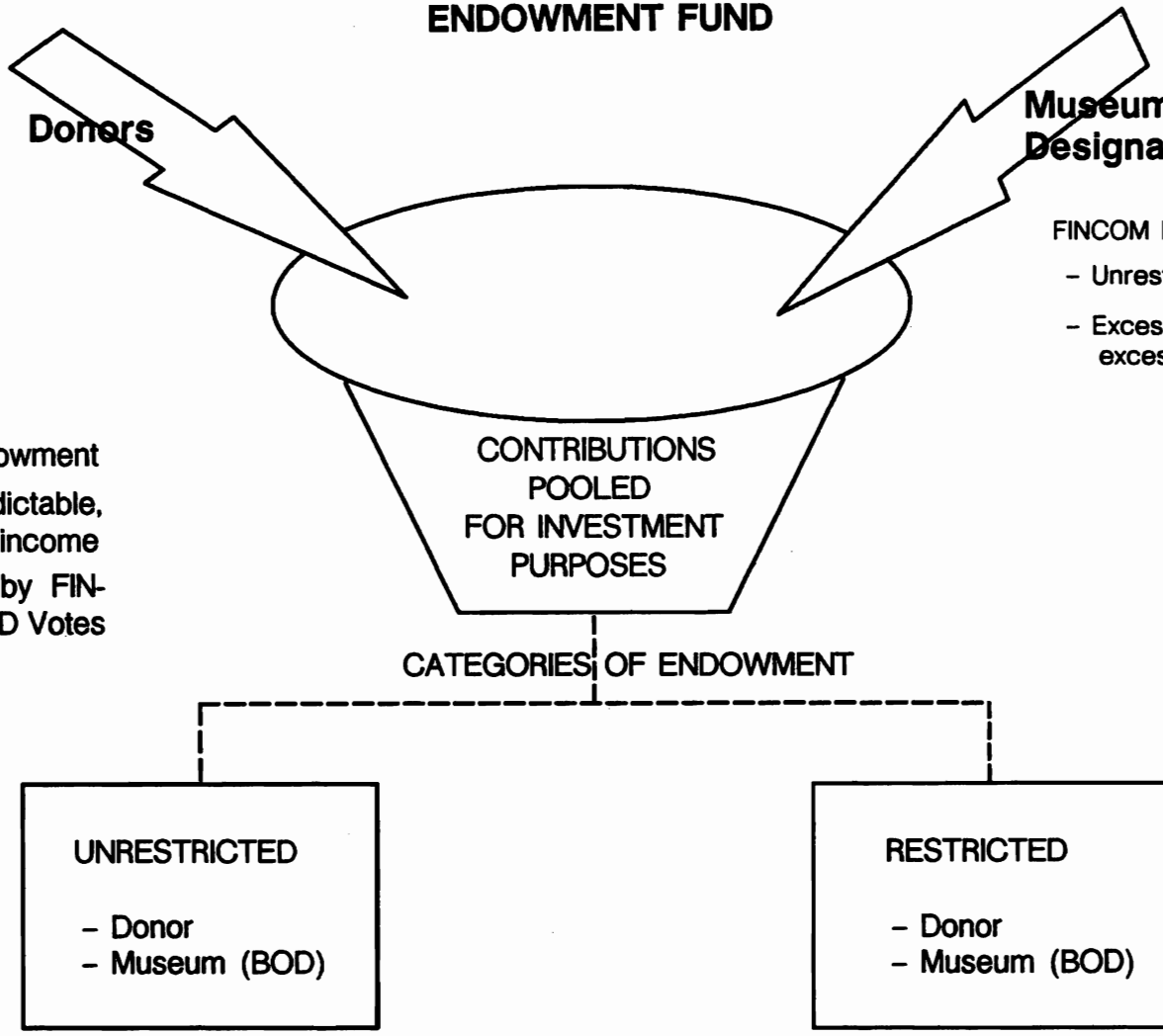
Friday, June 12

Friday, October 9

Regular starting time is 8:30 AM.



THE COMPUTER MUSEUM ENDOWMENT FUND



FINCOM Recommend/BOD Votes

- Unrestricted contributions
- Excess Operating Funds or excess unrestricted other funds

INVESTMENT COMMITTEE:

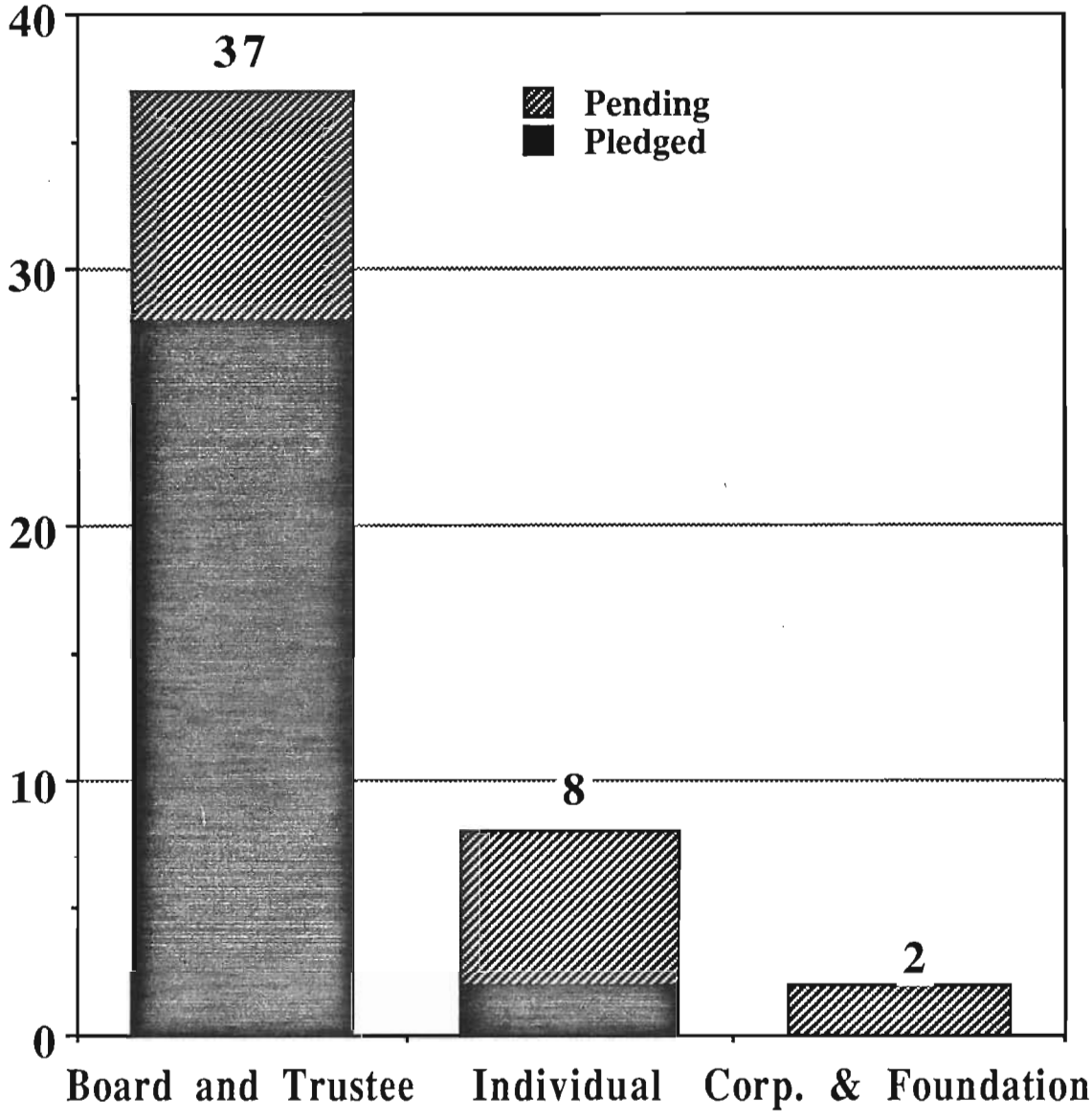
- Manages investment of Endowment
- Philosophy – Provide predictable, reasonable and sustainable income
- Strategy – Recommended by FIN-COM and INVESTCOM – BOD Votes

USE OF INCOME AND APPRECIATION	Support Museum mission. BOD controlled – FINCOM/INVESTCOM Recommend				Contributor controlled
LOANS TO MUSEUM	To Meet Critical Need	–	Not to Exceed One Year	–	FINCOM Recommends/BOD Votes (2/3 Required)

The Capital Campaign for The Computer Museum

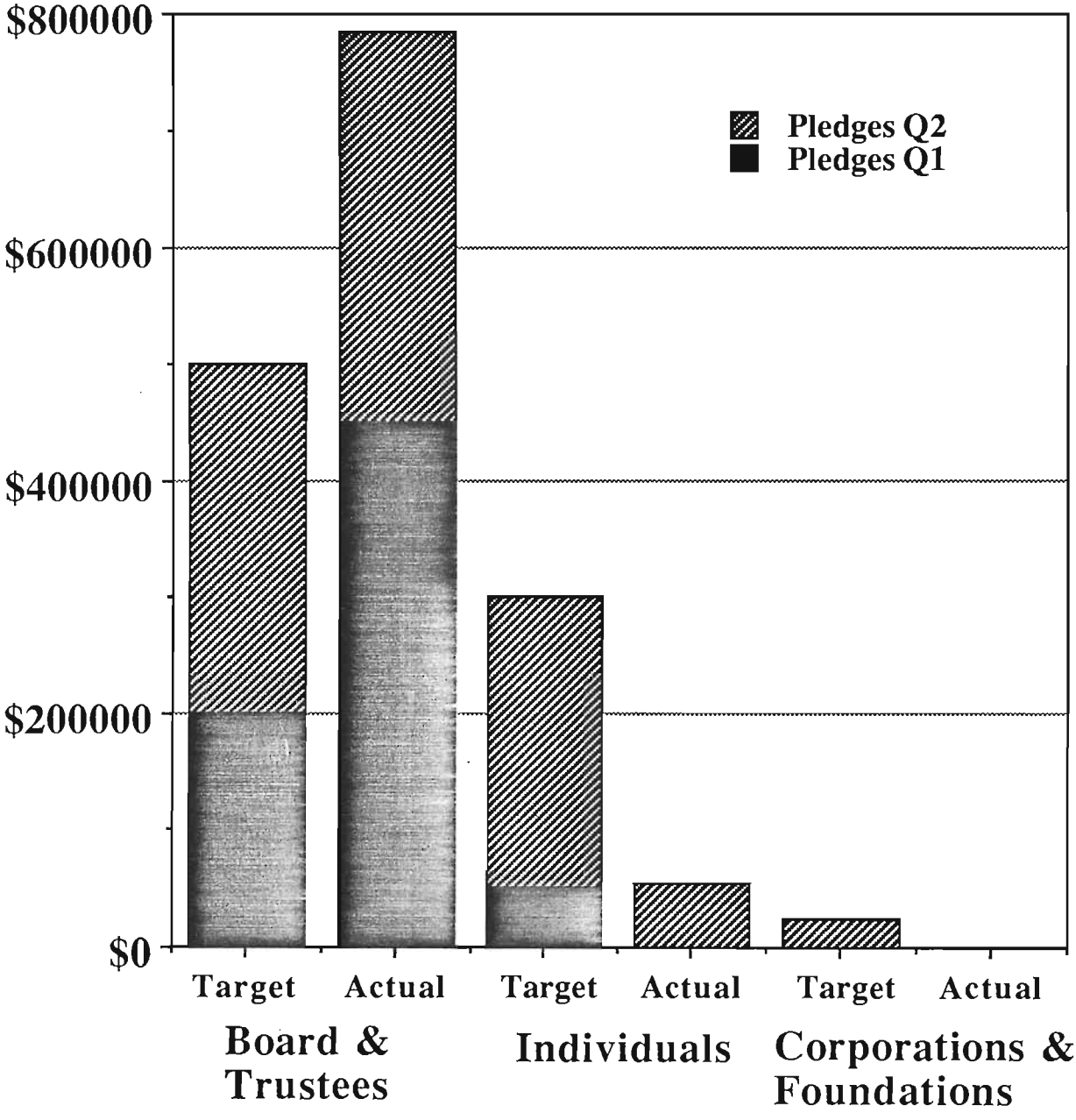
- Achievements to Date
- Board Solicitation Report
- The Case for Support
- Volunteer Recruitment
- Expanding the Solicitation Network
- Enhancing the Cultivation Process

Capital Campaign
Number of Solicitations 11/7/91



Capital Campaign
FY92 to date

Pledges



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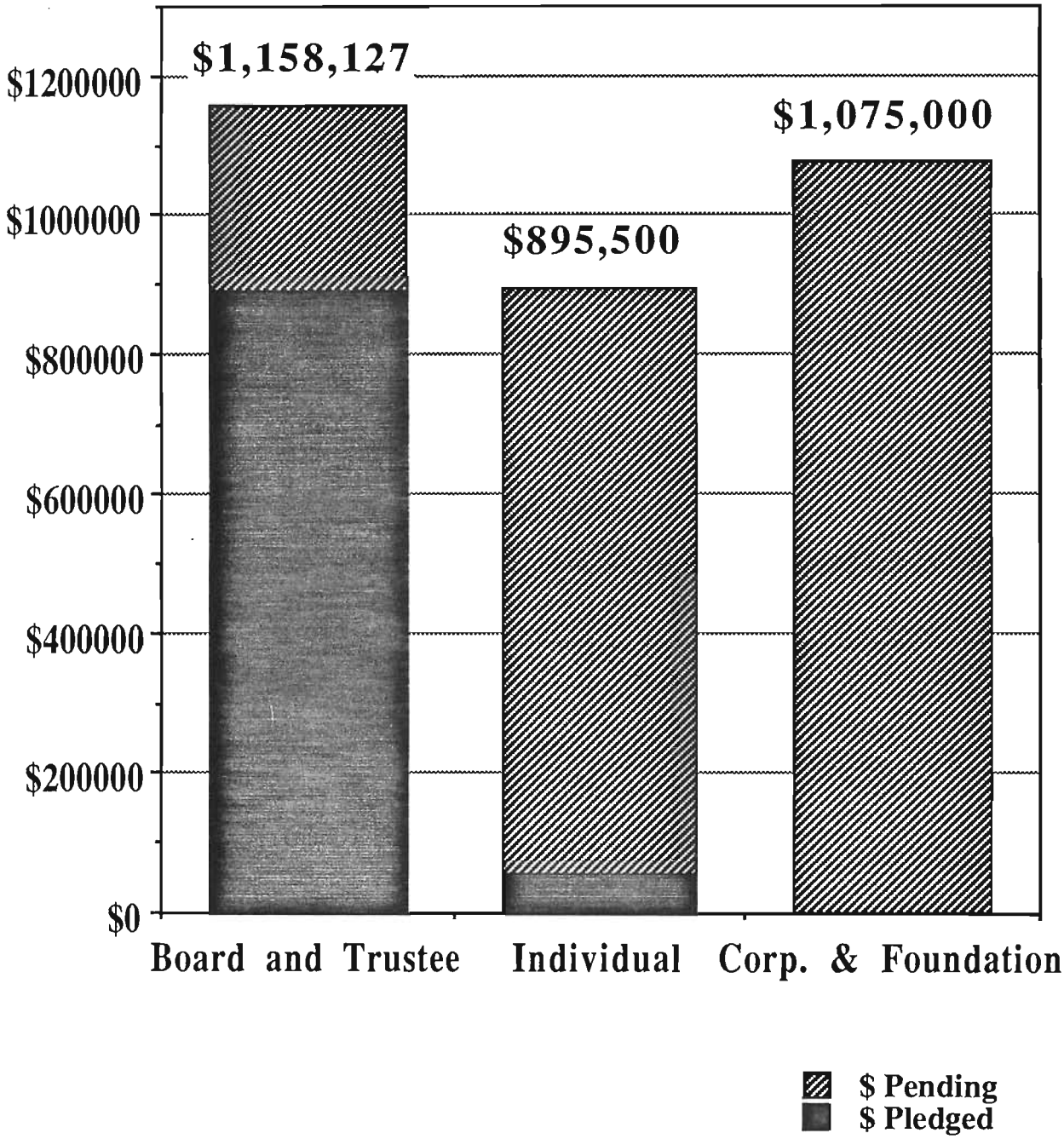
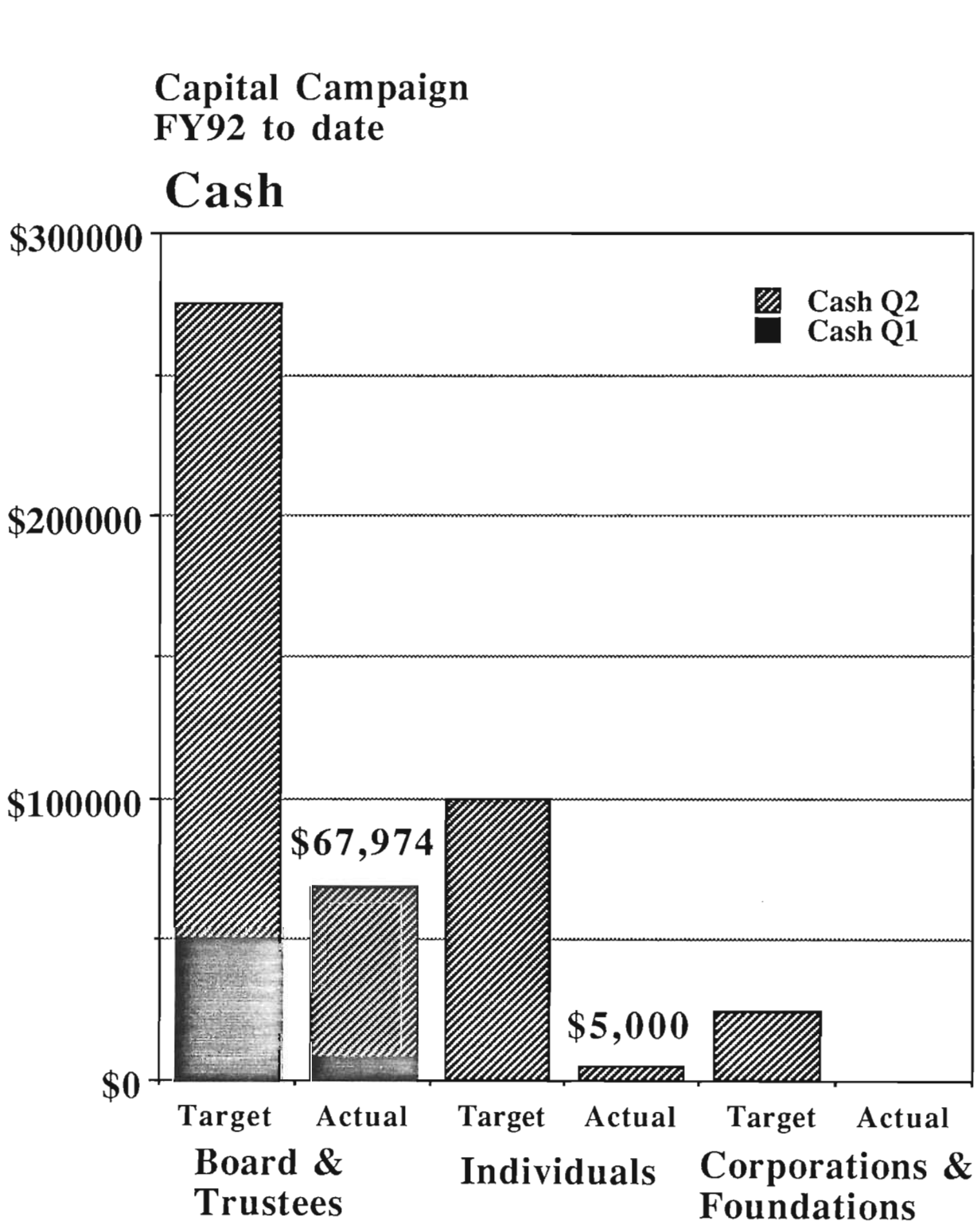
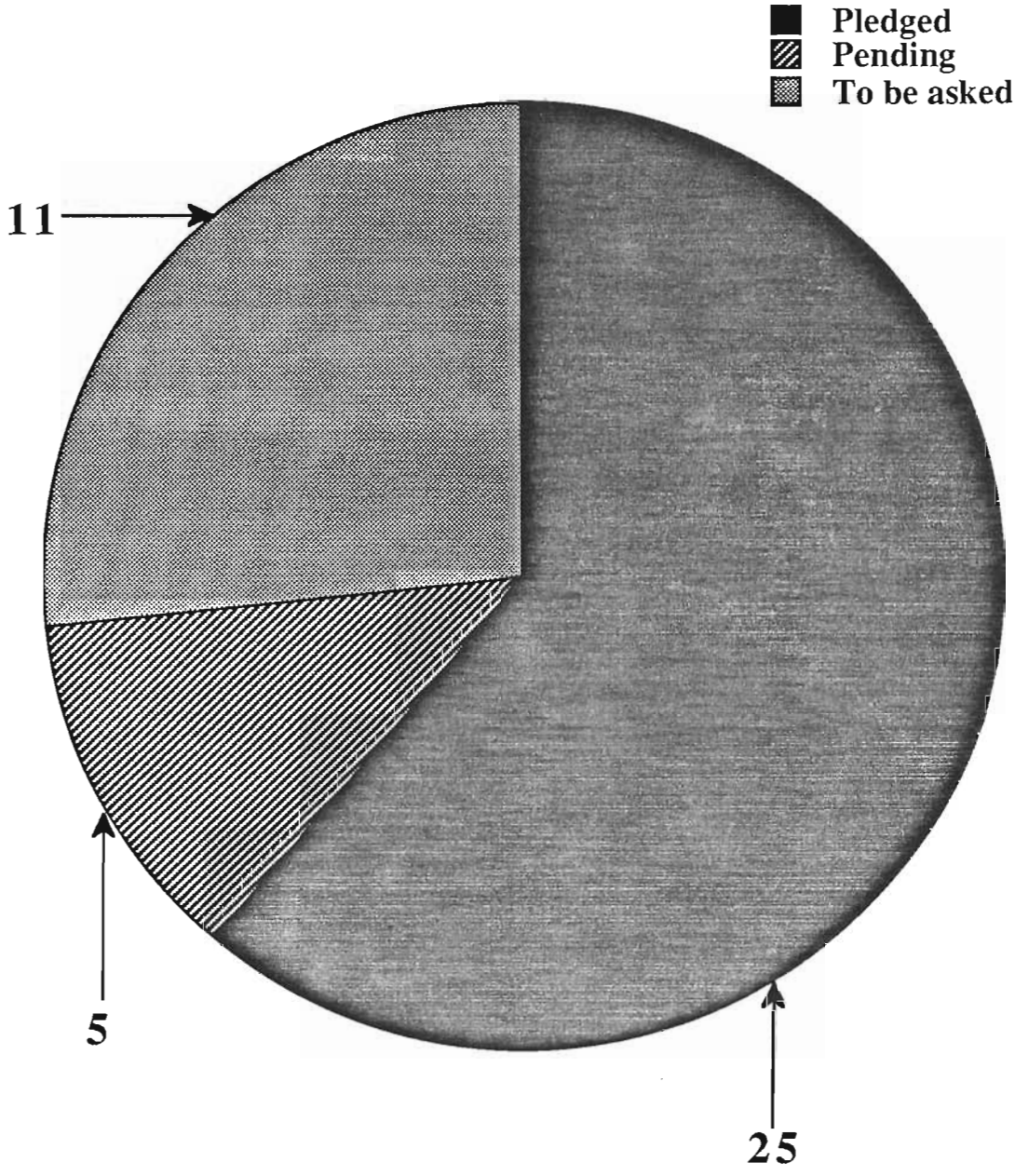
Capital Campaign
Actual and Pending Pledges 11/7/91



gkb.91 11/91


Capital Campaign
FY92 to date
Cash
$300000
$200000
$100000
$0
Cash Q2
Cash Q1
$67,974
$5,000
Target
Actual
Target
Actual
Target
Actual
Board & Trustees
Individuals
Corporations & Foundations

Board Members
Campaign Activity to 11/7/91



11/4/91

The
Computer
Museum

300 Congress Street
Boston, MA 02210
(617) 426-2800

The Computer Museum

Resolution to Establish an Endowment Fund

RESOLVED: That The Computer Museum establish a permanent endowment fund to be administered in accordance with the following terms and conditions:

1. The fund shall be known as the Endowment Fund for The Computer Museum.

2. Funds or property contributed to or set aside for the Endowment Fund shall be held in a separate account and invested and accounted for as a separate account. However, the Endowment Account shall remain the property of the Museum and shall not constitute a separate trust for purposes of taxation.

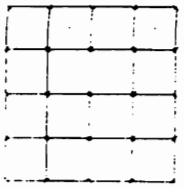
3. The Board of Directors may, from time to time, on the recommendation of the Finance Committee, add funds or other property to the Endowment Account.

4. Donors may, from time to time, contribute funds or other property to the Endowment Account by specifically directing their contributions to the Endowment Fund.

5. Donors who make contributions in excess of such limits as may be established from time to time by the Board of Directors shall have the privilege of establishing a named subaccount of the Endowment Fund. Such subaccounts shall be invested and commingled with the Endowment Fund, and shall for all purposes (including borrowing, invasion of principal and distribution of income) be treated as a part of the Endowment Fund.

6. The Endowment Fund shall be invested, under the direction of the Investment Committee, so as to provide a predictable, reasonable and sustainable income for the Museum while conserving the value of the principal.

7. The income from the Endowment Fund shall be expended to support the mission of the Museum as determined from time to time by the Board of Directors. In order to preserve the purchasing power of the Endowment Fund, the Board of Directors, on the advice of the Investment and Finance Committees, may, in any given year, decide to spend less than the entire income of the Endowment Fund, in which case, any unspent income shall be added to the principal of the Endowment Fund.



8. The funds in the Endowment Account may, from time to time, be loaned to the Museum, on the recommendation of the Finance Committee, by a vote of two-thirds of the Directors then in office to meet a critical need of the Museum in cases where no other funds are available and the failure to meet that need would severely jeopardize the continued existence of the Museum; provided, however, that the term of such borrowing not exceed one year.

9. This resolution to establish an Endowment Fund may be amended only on the recommendation of the Finance Committee by a vote of three-fourths of the Directors then in office.

The
Computer
Museum

300 Congress Street
Boston, MA 02210
(617) 426-2800

The Computer Museum

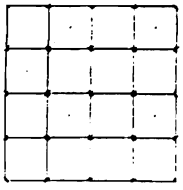
Investment Committee Nominees

David B. Kaplan
Audit Partner, Price Waterhouse
Director, The Computer Museum
Member, The Computer Museum Finance Committee

Anthony D. Pell
President, Pell, Rudman and Co., Inc.
Director, The Computer Museum
Member, The Computer Museum Executive Committee
Member, The Computer Museum Capital Campaign Steering Committee

Third member to be named
with proven nonprofit endowment management experience

10/24/91



THE COMPUTER MUSEUM

Minutes of the Executive Committee Meeting
October 7, 1991

In attendance were Oliver Strimpel, Richard Case, Lynda Bodman, Ed Schwartz, Gardner Hendrie, Larry Brewster, Tony Pell, Nick Pettinella and Jim McKenney. David Kaplan and Greg Welch joined later to discuss the Waterfront Project.

The next meetings of the Executive Committee will be on November 18, December 19, 1991 and January 8, 1992 at 8:00 a.m. The committee will attempt not to hold meetings on Monday.

Oliver presented the operational report. He mentioned that Natalie Rusk has been promoted to Acting Education Director and Geraldine Rogers has been hired as his assistant.

The Children's Museum in Caracas, Venezuela, has contacted the Computer Museum about serving as a consultant for its proposed expansion project. Among other things, it wishes to purchase a Walk-Through Computer Exhibit and twelve hands-on exhibits. The Caracas Museum seems quite serious. A proposal from them is expected. [This development is looked upon as an opportunity to enhance the Computer Museum's exhibits, software, etc. and promote its image without incurring any expense.] There was significant discussion of how the arrangement should be formalized, what

the specific rights and obligations of each entity would be, who would be expending time on behalf of the Computer Museum on what schedule, and what the cost of financing the project would be. The project should be planned and carried out in a way which would promote the needs and image of the Computer Museum without imposing any financial burden on it and without diverting scarce staff resources.

The Museum's attendance has fallen back from its high level at the time of WTC's opening. School group bookings are down during the present difficult economic times due to reduced funding. There was a discussion of how the Museum would best channel its time and energy to attract greater school attendance.

In terms of budgeting, the Exhibit Kit and Computer Bowl are ahead of budget levels, with attendance, Museum functions, the store and general fund development behind. The goal of the CDC is $900,000, of which $525,000 has been raised to date.

The capital campaign was discussed. The campaign has exceeded its first quarter pledge target by $200,000, but is $42,038 below the cash target. There have been roughly $3.9M in requests to date. There are total pledges of $690,000 and requests for $2.3M still waiting for a decision by the potential donors. (These figures do not include the $2.5M matching pledge.)

There was a discussion of the fund raising consultant's role; and Oliver expressed a desire to discontinue the existing consulting arrangement, and hire the consultants only for specific projects in the future as needed. There was a general feeling that the existing arrangement with Webb had not worked out as satisfactorily as hoped and should not be continued.

Another primary objective is to have the capital fund campaign pay for itself through income generated from capital funds which it raises, which is not happening at the moment. Jim McKenney suggested the possibility of amortizing the current campaign expenditures over the life of the campaign. A total of $760,000 was projected as needed to support the campaign through to its close. Nick Pettinella pointed out that we were really speaking of the cost of raising $5M since the $2.5M matching pledge had already been secured through other efforts.

It was moved and voted that the capital campaign should be managed so that to the extent possible expenses are covered as incurred from capital funds raised.

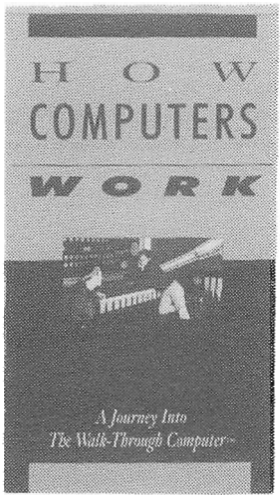
There was a discussion of how mortgage payments on the building should be charged in the future. It was moved and voted that principal amounts should be paid from campaign funds and interest from operating income in the future.

It was noted that Meredith and Grew would produce an appraisal of the premises without charge, and that the property should presumably have its value adjusted accordingly on the books of the Museum. There was a discussion of how to give credit to DEC for its support to the campaign.

It was noted that a resolution was needed to establish an endowment fund for the Museum, with an appropriate fund document to be drafted by David Donaldson. There was considerable discussion of whether the Museum should be allowed to borrow against the endowment fund. It was noted that the building could potentially be mortgaged to raise funds as opposed to tapping the endowment fund. It was decided that policy issues regarding the use of endowment funds, including borrowing, would be discussed and decided upon at the next Board meeting (the agenda of which was also discussed).

Greg Welch discussed the Waterfront Project. There will be a Computer Museum Board meeting February 14; and it is hoped that any announcement about the project could be delayed and made jointly at that time. There was some displeasure expressed at the fact that the Children's Museum had set its own time table without consulting the Computer Museum; although it was recognized that the Computer Museum must now act to protect its interests, that it should act in

a way which would not disrupt its own capital campaign, and should insist that future plans reflect its concerns and needs. The Computer Museum has received a proposal from Schwartz/Silver, architects for the Children's Museum, under which for approximately $20,000 they would consult with the Computer Museum in providing initial programming and design work sufficient for permit and fund raising purposes. These issues will also be discussed at the forthcoming Board meeting.



H O W COMPUTERS WORK

A Journey Into
The Walk-Through Computer

Join science correspondent David Heil (of PBS's *Newton's Apple*) and four teenagers as they discover how computers work by visiting The Walk-Through Computer™, The Computer Museum's two-story high working model of a desktop computer.

The Computer Museum Store 300 Congress Street, Boston, MA, 02210 (617) 426-2800 FAX (617) 426-3568

over

This 26-minute educational video explores both hardware and software, explaining what a software program is and how it works with computer hardware. It examines the major components of the computer, covering the Central Processing Unit (CPU), Random Access Memory (RAM), the hard disk, and video board.

HOW COMPUTERS WORK is intended for use in introductory middle school computer classes but is appropriate to communicate computer basics in any setting.

The accompanying teachers' guide suggests discussion topics and related group and individual projects to explore how computers work.

HOW COMPUTERS WORK (VHS), $19.95.

To order
send the attached form to:
The Computer Museum Store
300 Congress Street
Boston, MA
02210
or call:
(617) 426-2800 x307
or FAX:
(617) 426-3568

Save this bookmark as a reminder.

Ship to:

Name

School Name

Address

City/State/Zip

Bill to:

Name

School Name

Address

City/State/Zip

HOW COMPUTERS WORK *Video*
Quantity _____ x $19.95 = _____ Total
+ $3.00
= _____ Total

Form of payment: ☐ Check enclosed (make checks payable to The Computer Museum)

☐ Mastercard ☐ Visa ☐ Am Ex Card No._____ Expiration Date _____ ☐ Purchase order enclosed (P.O. #_____)

WHAT IS THE COMPUTER MUSEUM?

The Computer Museum is the world's only museum devoted to the past, present and future of computers. Nearly 100 hands-on exhibits allow you to explore computer technology, history, and a wide range of applications, including computer graphics and robotics. The Computer Museum is a unique place where you can experiment, learn, and have fun while discovering how computers work and what they can do.

WHAT WILL WE SEE AND DO?

In The Computer Museum, you will be able to:

Walk inside a two-story working model of a desktop computer and find out how computers work.

Travel 50 years through time to explore how computers have changed our lives in the new exhibit, *People and Computers.*

Play a computer piano that plays along with you or listen to music composed by a computer.

See real robots and learn what they can--and cannot--do in the multimedia Robot Theater.

Use a voice-activated computer to paint a map of the United States.

Create your own designs and computer animation.

Try out innovative educational software.

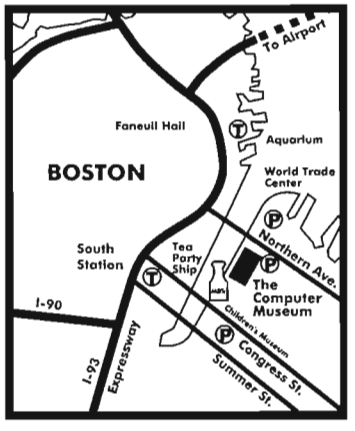
Bargain over the price of a box of strawberries with an artificially intelligent fruit vendor.

And more!

WHY VISIT THE COMPUTER MUSEUM?

The Museum is an exciting place to experience the increasing role of technology in our lives today. See innovative computer exhibits bring science, history, and art alive as never before!

HOW DO I GET THERE?



Follow the signs displaying a giant milk bottle, our landmark, to Museum Wharf where you can also find The Children's Museum, the Tea Party Ship & Museum, and many restaurants.

By Subway: Take Red Line to South Station. Walk across the Congress Street Bridge.

From the North: Expressway (I-93) south to exit 23 (High and Congress Sts.). First left onto Congress, and across the bridge.

From the South: Expressway (I-93) north to Atlantic and Northern Ave. exit. Immediate right over the Northern Ave. Bridge and right again on Sleeper St.

From the West: Mass. Pike (I-90) to Downtown Boston, South Station exit. Go through three lights, onto Congress St. and across the bridge.

For information, please call (617) 426-2800

The Computer Museum
Museum Wharf
300 Congress Street
Boston, MA 02210

Nonprofit Org.
U.S. Postage
PAID
Boston, MA
Permit No. 55897

The Computer Museum

EDUCATIONAL

GROUP VISITS

Planning Guide

ARE RESERVATIONS REQUIRED?

Reservations for groups of ten or more should be made at least three weeks in advance of your visit. You can make reservations by calling (617) 426-2800 ext. 334, weekdays, 9am-4pm. When you call, please have the following information ready:

Date and time you would like to visit.

Name, full mailing address, and daytime telephone number of your group or school.

Number of students and adult chaperones--we require one chaperone for every ten students. (We can accommodate up to 75 people every half-hour.)

Name of group leader.

Grade level of group. (Recommended for ages 8 through adult.)

If you need to cancel or change your visit, please notify us as soon as possible.

WHEN IS THE MUSEUM OPEN?

September to Mid-June
Tuesday-Sunday
10am-5pm

Closed Mondays, except Boston school vacations and holidays.

Mid-June to September
Open daily 10am- 6pm
Friday night until 9pm

HOW MUCH DOES IT COST?

Group admission for ten or more:
Students-$4.00
Adults-$5.00
Chaperones free (1 per 10 students)

Full payment by cash, check or credit card is required the day of your visit. Purchase orders can be arranged prior to your visit through the Group Reservations Office. Groups from underserved communities should inquire about reduced admission programs.

Educators: *Admitted free.*

HOW SHOULD I PREPARE FOR OUR VISIT?

You are encouraged to visit The Computer Museum before bringing your group. All educators are admitted free at any time. Special Museum orientation sessions for groups of teachers are available free of charge. Call (617) 426-2800 ext. 334 for more information.

Three weeks before your group visit, we will send you confirmation materials, including an Educational Activities Packet. The Packet provides materials to prepare you and your group for a visit to the Museum. The materials include an introduction to each of our major exhibits, classroom idea sheets, and Museum Activity Sheets that students can work on during their visit.

CAN I ORDER THE EDUCATIONAL ACTIVITIES PACKET?

Yes, additional Educational Activities Packets are also available for order through The Computer Museum Store. Call (617) 426-2800 ext. 307 or send $5.00 per packet (check or money order only) to The Computer Museum Store, 300 Congress Street, Boston, MA 02210.

WHAT WILL OUR VISIT BE LIKE?

When you arrive at the Museum, your group will be met by a Visitor Assistant who will give a short orientation to the Museum. After the orientation, your group will then have the chance to explore the Museum on its own. Special presentations and tours are offered periodically throughout the day. Check the Museum Activity Map when you receive your confirmation for the times and meeting places of these activities.

Chaperones must stay with the students in their group at all times.

IS PARKING AVAILABLE NEARBY?

Public parking is available in a lot on Sleeper Street for $5.00/day. Free parking for buses is available on Northern Avenue.

For cars and vans carrying disabled visitors, a limited number of parking spaces are available in front of the Museum. If spaces are unavailable, visitors may be dropped off in front of the Museum's elevator before the driver parks off-site.

WHAT ABOUT LUNCH?

Sorry, we have no indoor eating facilities, but you may eat outside on Museum Wharf benches, or on your bus. The McDonald's in the Museum Wharf building is open year-round and has indoor seating. Advance reservations for groups should be made by calling (617) 482-1746.

The Hood Milk Bottle on the Museum Wharf deck serves salads, ice cream, frozen yogurt, and beverages from April through October.

Plan to eat before or after your visit, as there is no re-entry for groups.

CAN STUDENTS VISIT THE COMPUTER MUSEUM STORE?

Yes, we encourage visiting groups to browse in the Store. The Store offers gifts and souvenirs related to computers, many of which are priced under $3.00. Every 10 students must be accompanied by an adult supervisor when entering the Store. Due to space constraints, *no more than 20 students are allowed in the Store at one time.*

Teachers can request
The Computer Museum Educational Catalog
by calling (617) 426-2800, ext.307

Printed on recycled paper

The
Computer
Museum

300 Congress Street
Boston, MA 02210
(617) 426-2800

MEDIA ATTENDING LOEBNER COMPETITION/TURING TEST NOVEMBER 8

PRINT

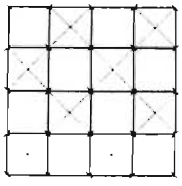
Time Magazine
San Jose Mercury News
Popular Science
Wall Street Journal (Boston)
Philadelphia Inquirer
Boston Herald
Worcester Telegram & Gazette
Espresso (Portugese gen. int.)
BCS Update
The Technology Window
BCS- AI Newsletter
Info Tech Quarterly
IEEE Expert

The New York Times
Der Spiegel
Newsweek
The London Guardian
Il Corriere della Sera
PC Laptop
Communications of the ACM
Computerworld
Financial World Magazine
Harvard Computer Review
CIO Magazine
WGBH/Prodigy

ELECTRONIC

CNN Future Watch
WBUR/NPR
BBC Horizon/NOVA

PBS Scientific American Frontiers
WGBH Boston



The Computer Museum

300 Congress Street
Boston, MA 02210
(617) 426-2800

MEDIA SUMMARY: IN BRIEF

From July 1, 1991 to November 7, 1991: Highlights of Museum Coverage

PRINT:

Total Circulation: 25,016,215

ELECTRONIC:

Total Impressions: 26,600,000

PEOPLE AND COMPUTERS OPENS

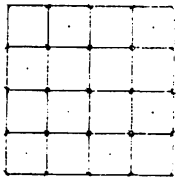
Coverage of the PEOPLE AND COMPUTERS: Milestones of A Revolution exhibition reached an audience of over seven million around the world. Highlights included an AP photo story which was seen as far away as Japan, a feature in the Greek daily Kathimerini and Germany's Der Spiegel. Other stories appeared in The Detroit Free Press, Pan Am Clipper, The Boston Globe, The Boston Herald and the Harvard Information Technology Quarterly (a five page feature).

Over 21 million people heard about the exhibit via stories on three CNN shows and on local TV and radio affiliates on both coasts.

LOEBNER/TURING COMPETITION

Stories about the upcoming Loebner Prize Competition have appeared in the Asian Wall Street Journal, the British publications Computer Talk, the London Guardian and the Daily Telegraph. Future features are planned for Der Spiegel, Il Corriere della Sera (Italy), Espresso (Portugal), Student's Computer World (China), and the Arab daily newspaper, Al Hayat. Japanese TV and the BBC-TV program Horizon are also planning stories.

The Loebner Prize has also attracted domestic press interest. The Wall Street Journal, The New York Times, Associated Press, San Jose Mercury News, and The Boston Globe have all run advance stories. More than 60 people representing 30 media outlets are covering the event including Time Magazine, Newsweek, The New York Times, The Wall Street Journal, The San Jose Mercury News, The Philadelphia Inquirer, Popular Science, as well as television crews from CNN Future Watch, Scientific American Frontiers (PBS) and elsewhere.



Media Summary
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OTHER COVERAGE

Other Museum events and activities continue to attract international news coverage. The Walk-Through Computer was featured in the Japanese youth magazine Popeye and a visit in September from a Yugoslavian reporter resulted in a story in Delo-Moj Mikro, a Yugoslavian computer magazine. The Museum will be featured in an upcoming story on the BBC's The Money Programme (the British version of MacNeil-Lehrer News Hour).

In addition the Museum was featured in a handsome art book as "one of 80 great American museums." The piece included full color pictures of The Walk-Through Computer and Smart Machines Gallery. Popular Science is the first publication this year to highlight the Museum Store's 1991 catalog in an upcoming "What's New" column.

With the Arts
And Entertainment

Science Times

The New York Times

November 5, 1991
Circ: 1,209,225

So Who's Talking: Human or Machine?

By JOHN MARKOFF

BOSTON

IT has been 41 years since Alan M. Turing, the British mathematician, formulated a simple test to answer the question, "Can machines think?" In the intervening years scientists and philosophers have engaged in a sometimes bitter debate over Mr. Turing's puzzle.

In one camp are those who believe that the brain is simply a biological machine, and that despite its immense complexity there is no reason in principle why a suitably programmed computer should not be able to mimic it. Their opponents respond that the human mind is inherently different from a machine and can never be reduced to a set of computations.

This Friday at the Boston Computer Museum, a group of competing scientists and software designers will take the first major step toward answering the question of whether a computer can convincingly mimic a human.

Spurred by the establishment of a $100,000 prize offered by a New York City philanthropist, Hugh Loebner,

Boston judges will decide if the party on the line is a person.

and with the support of the National Science Foundation and the Alfred P. Sloan Foundation, a group of judges will sit before 10 computer terminals and try to determine whether the respondent at the other end is a clever program or a human being.

The prize parallels similar challenges. In 1989, for example, David Levy, a British computer expert and master chess player who had beaten chess-playing computers since 1968, was at long last defeated by a computer program called Deep Thought, designed by scientists at Carnegie-Mellon University in Pittsburgh. A prize of $4,000 was awarded to the designers. But Deep Thought's triumph did not last long. Despite its awesome ability to evaluate 750,000 chess positions per second, it was defeated by the world chess champion, Gary Kasparov, in a two-game match on Oct. 22, 1989.

Even if a world champion chess player should lose to a machine in the future, many computer scientists believe that chess may offer a poor answer to the question Mr. Turing posed. Deep Thought, despite its name, is a program that depends substantially on brute force to assess numerous possible chess positions, and then chooses the best on the basis of a ready-made set of rules. Machines running such programs still lack the intuition and the creativity of a Kasparov and there is little evi-

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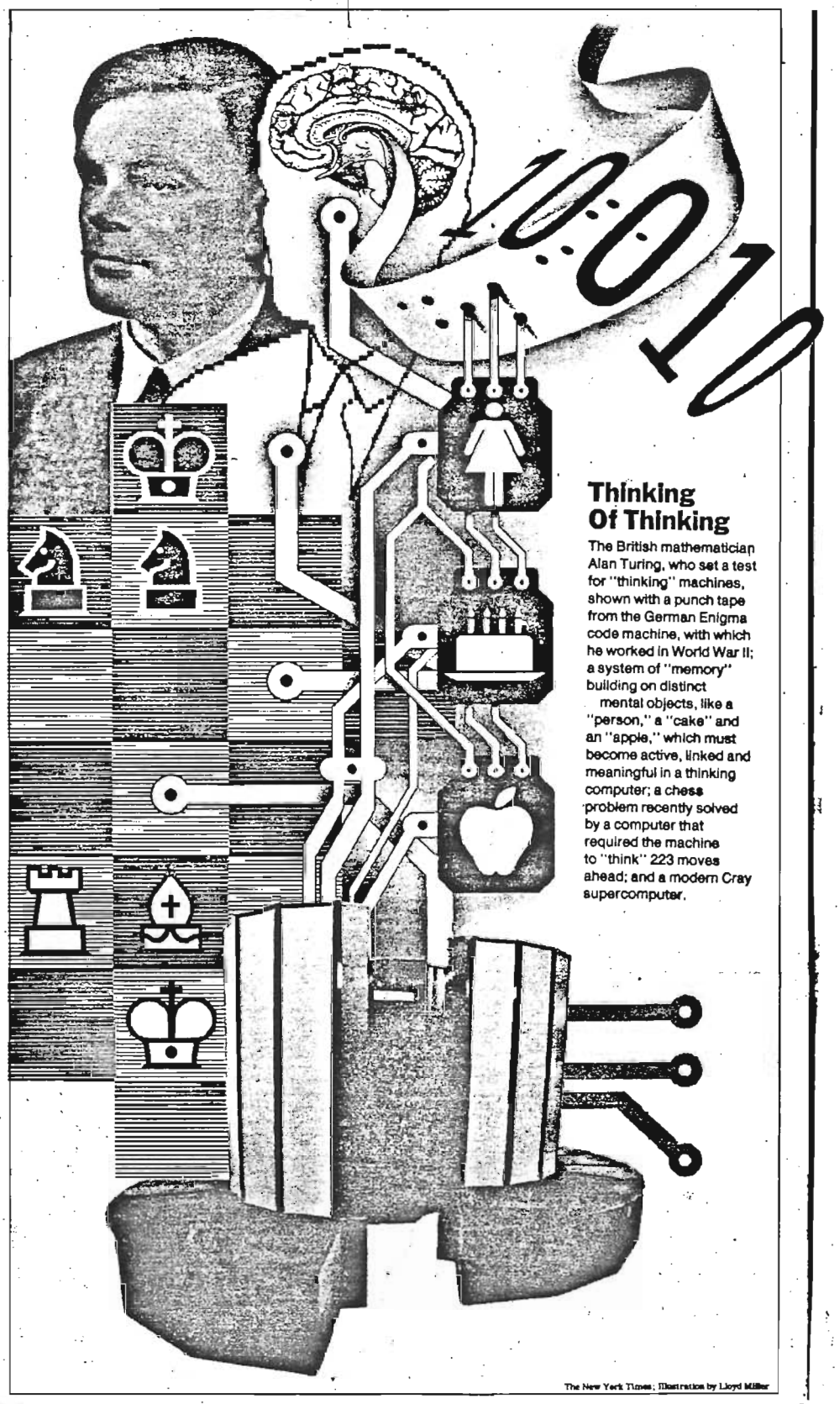


Thinking Of Thinking

The British mathematician Alan Turing, who set a test for "thinking" machines, shown with a punch tape from the German Enigma code machine, with which he worked in World War II; a system of "memory" building on distinct mental objects, like a "person," a "cake" and an "apple," which must become active, linked and meaningful in a thinking computer; a chess problem recently solved by a computer that required the machine to "think" 223 moves ahead; and a modern Cray supercomputer.

The New York Times; Illustration by Lloyd Miller

So Who's That Talking: Human or Machine?

Continued From Page C1

dence that such human characteristics will be matched with today's programming techniques.

To pass a test consisting of a straight-forward conversation may seem simple, but it could prove to be one of computer science's greatest challenges. Such a test was proposed by Mr. Turing in 1950 in the academic journal Mind, a quarterly review of psychology and philosophy.

To cut through the vexing philosophical debate about the mind and computers, he proposed a very simple and practical experiment that has come to be known as the Turing Test. A computer would be required to emulate human behavior by answering questions typed into a computer terminal. If the interrogator could not not tell whether the responses came from a computer or a person, then the computer could be said to be a truly thinking machine, Mr. Turing suggested.

'Out of the Armchair'

"Now is the time to take the Turing Test out of the armchair," said Oliver Strimpel, the museum's executive director. But he acknowledged that many unknowns would still have to be faced and said that Friday's first attempt would be only a partial test.

He said rapidly increasing computer processing power and several decades of experience in artificial intelligence research had made this a good time to pose such a challenge. But at the same time he said that the first round of the Turing Test would not be the open-ended challenge that was originally proposed because it is generally acknowledged that today's computers could never pass such a trial.

Instead the computer-human conversations will be limited to a particular subject chosen by each program's designer to improve the odds for the machines. A limited discussion might be restricted to grocery shopping, the weather, or personal health, Dr. Strimpel said. Questions keyed in by the judges over a three-hour period must be answered by the programs in normal language.

To be successful, a Turing program must not only understand the structure of the English language, but also grasp subtle differences in meaning and cope with ambiguous questions. The programs will also require what artificial intelligence researchers refer to as a "knowledge base," a complete set of facts that a human would be expected to know.

Gaps in Comprehension

Computer scientists have recently made significant progress in what is referred to as "natural language." Programs that understand simple English phrases have been available on personal computers for a number of years. But these programs also stumble easily, failing to comprehend many statements that even children construe correctly. A computer program might be easily confused by information that humans take for granted; for example, that a child is always younger than its parent.

Researchers at the Microelectronics and Computer Technology Corporation have been trying to build a program with a common-sense knowledge base equivalent to that of a young child. The project, which is expected to be completed in 1994, will eventually include as much as a billion bytes of information and about 100 million statements. A byte is a string of ones and zeros that contains the basic information processed by digital computers.

C.M. Hardt for The New York Times

Hugh Loebner, New York philanthropist, is offering $100,000 in contest supported by National Science Foundation and Sloan Foundation to determine whether computer programs can imitate human responses.

Is the human brain inherently different from a collection of computer chips?

Several weeks ago the Computer Museum chose the judges for the coming test by placing an advertisement in a Boston newspaper, specifically ruling out those who have any specialized expertise in computers or artificial intelligence research. The contest itself will be more like a chess tournament than a boxing match.

The judges will be placed in a room with the 10 terminals, which will be connected through telephone lines to the computers that are running the Turing Test programs. Although more than 130 programs have been entered in the contest, the organizers will only say that at least 2 of the 10 terminals will be running programs. The others will be controlled by human "confederates."

An audience will be able to watch the contest on large-screen televisions in another room. A Scientific American columnist, A. K. Dewdney, will act as a Howard Cosell-style commentator during the match.

This year, since this will be only a limited Turing Test, the cash prize for the computer that comes closest to mimicking a human will be only $1,500.

But the organizers of the contest said they planned to increase the cash award each year. They said that eventually an open-ended Turing Test would be undertaken and that if a computer system passed the test, the $100,000 would be awarded and the prize would be abolished.

Dr. Loebner is president of Crown Industries Inc., a theatrical equipment manufacturing company in East Orange, N.J. He said he had offered the prize to encourage people to design machines that could pass the test and to further the scientific understanding of thinking and complex human behavior.

Knowing, but Not Saying

Passing the Turing Test would be an extraordinary milestone in human history, said Dr. Robert Epstein, director emeritus of the Cambridge Center for Behavioral Studies, which is administering the contest.

But a number of scientists said they were skeptical that a computer would every be able to pass the test.

Roger Penrose, a mathematician, argued in his 1989 book, "The Emperor's New Mind," that human thought would always remain inaccessible to computers.

"Certainly the substance of the mind is not computable," said Joseph Weizenbaum, a computer scientist at the Massachusetts Institute of Technology. "We're all the end products of our entire history, and human history is not fully discoverable in language. We all know a lot that we can't say, or by writing it down in notation."

Twenty-five years ago, Dr. Weizenbaum, who is one of nine member of the Turing Test prize committee, wrote a now-famous program called Eliza that imitated a Rogerian psychologist, parrying questions and statements typed at a keyboard with other questions. He wrote later that he was alarmed to see that his students became captivated with the program and engaged in long typed conversations with the system.

However, for very narrowly defined topics, like a program discussing moon rocks designed by a Harvard researcher, programs could be designed that discussed their subjects very convincing, he said.

"But if you asked it if it was better to make love when the moon was full, it couldn't have begun to struggle with that," he said.

Other researchers are more optimistic. Hans Moravec, a roboticist at the Carnegie-Mellon University, has argued that duplicating human intelligence is merely a matter of waiting for a machine with the processing power of the human brain, a machine that he estimates would need to be capable of 10 trillion calculations per second. The most powerful of today's massively parallel computers barely reach 100 billion calculations per second.

$1,000 in 2030

But such a 10 teraflop machine — a teraflop is a trillion calculations per second — might be priced at $10 million as a supercomputer in 2010, Mr. Moravec has written. And by extrapolating the falling cost of computing power, he predicts that the same machine will be available as a $1,000 personal computer by 2030.

The social consequences of Turing programs have been explored in some depth by Verner Vinge, a computer scientist at California State University at San Diego who is also a science fiction writer. In his 1987 novel "True Names," Mr. Vinge speculated on what would happen if vast computing power and speed was added to today's data networks. The result, he suggested, would be a class of programs that could easily pass the Turing Test, and be used by their creators to mask their activities while they electronically "traveled" from computer to computer in a network.

"I appreciate the underlying fear and uneasiness that these programs create," he said. At the same time he also noted that he was concerned that by holding a Turing Test contest public perceptions of what computers can do might again be distorted as they were before the advent of personal computers. While PC's demystified the power of computers for most Americans, he said, before the 1980's many people held computers in fear or in awe.

In 1950, Mr. Turing, who helped crack German codes in World War II and was responsible for developing some of the theoretical principles of modern computing, wrote that he hoped that machines would eventually compete with humans in all purely intellectual fields. But he was perplexed by where to apply such machines first. Teaching computers to play was a good first step, he argued, but possibly a better approach might be to equip them with the best "sense organs that money could buy" and then teach them to understand and speak English.

It should be possible to teach a machine much the same way a child is taught, he wrote.

The Daily Telegraph

THE (LONDON) DAILY TELEGRAPH
November 2, 1991
Circ: 1.5 million

'Talking' computers put to the test

By Adrian Berry
Science Correspondent

A £100,000 prize awaits the first person who can teach a computer to hold an unrestricted intelligent conversation.

The prize, put up by New York philanthropist Dr Hugh Loebner, is unlikely to be won before the turn of the century — but next week a test will be held to see just how close the programmers have come.

The Turing Test was devised by the British computer pioneer Alan Turing in 1950, but it is only now that computers are sufficiently advanced to put his idea into practice.

Turing predicted that by the year 2000 a successful human-machine conversation might go like this:

HUMAN: *Please write me a sonnet on the Forth Bridge.*

COMPUTER: **Count me out on this one. I never could write poetry.**

H: *In the first line of Shakespeare's sonnet which reads: "Shall I compare thee to a summer's day?" would not a 'spring day' do as well or better?*

C: **It wouldn't scan.**

H: *How about a "winter's day"? That would scan all right.*

C: **Yes, but nobody wants to be compared with a winter's day.**

H: *Would you say Mr Pickwick reminded you of Christmas?*

C: **In a way.**

H: *Yet Christmas is a winter's day, and I do not think Mr Pickwick would mind the comparison.*

C: **I don't think you're serious. By a winter's day one means a typical winter's day, rather than a special one like Christmas.**

Next week, in the Boston Computer Museum, a panel of judges will "talk" to a bank of computers. As they key in their questions, at least two computers will be thinking for themselves and at least two will be controlled by concealed humans — but the judges will not know which.

If the judges are deceived by a genuine computer into believing they are talking to a human, then its programmer will win a bronze medal.

Turing led the wartime cracking of the German Enigma code at Bletchley Park. A homosexual, when the practice was illegal, he committed suicide in 1954 by eating a poisoned apple.

THE MANCHESTER(ENGLAND)GUARDIAN
AUGUST 29, 1991

Can computers think like humans? **John Charlton** checks out the artificial intelligence test

Machines meet Mastermind

COMPUTER games take on a serious dimension in November when 10 contestants meet in a test to decide if machines can think like us. Although the answer is certainly not, the organisers of the event, the Turing Test, are confident that within 10 to 20 years a system will pass this electronic litmus test.

The contest will be held at the Computer Museum in Boston, Massachusetts, on November 8. The prize is $1,500, plus a medal bearing a likeness of British computing legend Alan Turing, after whom the test is named. New York tycoon Dr Hugh Loebner, a computer buff who runs a restaurant supply business, is sponsoring the competition, which will become an annual event.

Loebner is also offering $100,000 to the first computer system — or at least, to its owners — which passes the test in all its particulars. Once that happens the competition will be abolished.

This momentous decision will be in the hands of a jury of distinguished American computer scientists, psychologists and philosophers, aided by "lay" judges selected from a cross section of Boston society.

The organiser, Dr Robert Epstein, executive director of the Cambridge Center for Behavioral Studies, Massachusetts, is saying very little about the entrants, in the interests of objective judging. He refuses to give details of entrants' submissions, or even where they come from.

"All I can say is we had 130 requests for entry forms from the US, Europe, Great Britain and the Soviet Union, but none from Japan. The submissions are in and the 10 finalists will be informed by September 15. Even then we won't reveal the finalists' identities, or their topics; we don't want the judges influenced in any way."

The original test was set out by Turing in a paper, Computing Machinery and Intelligence, in the philosophical journal Mind in October 1950. He said that if a computer, on the basis of its written replies, could not be distinguished from a human respondent, then "fair play would oblige one to say that it must be thinking."

Turing, who committed suicide in 1954, thought it would take about 50 years before computers could be programmed so well that they could fool interrogators into believing them human.

But the test has been updated. "We have changed the test as Turing would have done if he were alive," comments Epstein. "Each entry will take the form of two terminals controlled by computers and two by people. Judges have to decide which is which and rank them in order of humanness."

Only the terminals will be in the competition hall. Human and computer controllers will be linked via remote lines, from their "home bases."

Professor Donald Michie, a former colleague of Turing and chief scientist at the Turing Institute, Glasgow, believes the competition will be worthwhile and will "give stimulus and focus to relevant research".

He says the Loebner Committee will be testing two things, "one of great philosophical interest and the other of commercial interest: firstly, machine representations of the day-to-day world, and the exercise of simple, commonsense reasoning about it. And secondly, the ability to convert meanings into intelligible and convincing natural language discourse, and to understand the meaning of the interrogators' questions in terms of the systems' stored representations".

Although Michie doesn't think today's systems have any chance of passing the Turing Test, he says "Turing would have followed [the competition] eagerly and with a sense of fun. I have no doubt that, had he lived, he would be busy trying to program a machine for the competition himself".

Judges will spend 18 minutes at each terminal interrogating who or whatever is at the other end and trying to decide if it's human or machine. The range of topics to be "discussed" will be kept very narrow, otherwise the machines would not stand a chance. "For instance if you had the topic of clothes," explains Epstein, "the question 'What sort of clothes does George Bush wear?' opens the field, and humans would do well, and computers wouldn't."

This is the weak point of the event, as Dr Peter Marcer, chairman of the British Computer Society's Cybernetics Group, points out. "By sticking to very restrictive fields of knowledge, computers perform extremely well.

"In fields like chess, computers perform in a completely different way from expert players: they use massive computing power to look far ahead when deciding on a move. Players think differently.

"I don't really believe computers can be creative in the same way as human beings, some of whom have solved so-called insoluble problems — though I admit computers can assist humans to be creative," he adds.

There will at least be a competition winner. Judges will rank terminals according to how "humanlike" their performance has been. The highest ranked computer-controlled entry wins.

"We doubt very much that the highest ranking computer entrant will beat humans," but "I'm most optimistic we might achieve that in 10 to 20 years," says Dr Epstein. "When a computer passes the test it will be an extraordinary milestone in human history."

MAGAZINE
SEPTEMBER 1991 • $3
PAN AM

PAN AM CLIPPER
September 1991
Circ: 350,000

THE COMPUTER MUSEUM

Chip off the Old Block

The giant Univac I and the ancient Whirlwind on display at The Computer Museum in Boston bear little resemblance to today's desktops and laptops. Yet these multiroom-size machines are the ancestors of the modern computer and form part of the museum's newest permanent exhibit, "People and Computers: Milestones of a Revolution." Tracing the computer's 45-year history with lifelike displays of nine milestones in its evolution, the highly interactive exhibit leads you through a series of historical "time tunnels." As you proceed, the computer shrinks in size: from early 15-ton behemoths to small desktop machines and the miniaturized chips embedded in everyday electronic devices.

The milestones are fun and informative. The Whirlwind, a military computer of the 1940s, is on display at milestone 2, where you can practice firing World War II artillery shells on a simulator. In milestone 3, Walter Cronkite predicts Eisenhower's 1952 landslide election victory using the Univac I, and you can explore the storage of information in the first magnetic core memory. A 1960s model IBM 360 processes insurance claims at milestone 5, where after listening to the museum's top 10 classic computer stories you can add tales of your own. Moving on, you pass through the early 1970s into milestone 6, where computers had become small enough to be wheeled into an operating room to assist in brain surgery, or to fit into the lighting booth at the Shubert Theatre in New York. You can see Broadway's first computer-controlled lighting board (from *A Chorus Line*) and try your hand at stage lighting.

The later milestones bring you to the present day. Milestone 7's late 1970s Cray-1 supercomputer is shown predicting the weather at the European Center for Medium Range

The 5,000-square-foot exhibit joins the hugely popular Walk-Through Computer as another first for the museum.

Forecasts in Reading, England. Here, you also can run test calculations to see how computing speeds jumped 4,000-fold in 30 years. At milestone 8, early versions of the familiar microcomputers are on display, and you can design, print out and take home a postcard at a desktop publishing display. The final milestone summarizes much of the preceding information and lets you compare the size, weight and power of many computers. An Animatron—a robotic mannequin—recalls the history of the computer, surrounded by the latest computerized gadgets in a mock-up electronics shop.

The $1 million, 5,000-square foot exhibit joins the hugely popular Walk-Through Computer as another first for The Computer Museum, turning the sometimes forbidding world of modern data processing into an exciting, enlightening adventure. The exhibit is underwritten by the National Endowment for the Humanities, and includes equipment and software donated by a number of major computer companies, most of which are regular contributors to the museum. For information, call (617) 426-2800. The Computer Museum is located on Museum Wharf, 300 Congress Street, Boston. Admission is $6; students and seniors, $5.

DETROIT FREE PRESS
August 13, 1991
Circ: 636,182

PETER MORGAN/Special to the Free Press

George Adams of Farmington, Mich., and his daughter Kate, left, look at function keys on an oversized keyboard at the exhibit in Boston.

KEYING IN ON HISTORY

Exhibit shows how far computer has come in 50 years

BY RICK RATLIFF
Free Press Business Writer

BOSTON — Remember the 1950s, when computers were electronic brains that some day would take over the world? Remember the '60s, when some feared automation would steal their jobs while others dreamed of getting a robot to mow the lawn?

A new exhibit at the nation's only computer museum not only reminds us how far we've come in our thinking about these thinking machines, it also suggests how far we have to go.

Today, many people consider the computer not a disturbing high-tech job-snatcher but a tool to amplify our brains, making us more productive by allowing us to do more things at once.

THE FUTURE AT YOUR FINGERTIPS

This change in attitude reflects the decentralization, and demystification, of the computer. The large air-conditioned machines that spoke through terminals to specially trained technicians have yielded to little boxes that chatter away on desktops. Yet even the lowliest PC has more processing power and memory than the three-room monster of 40 years ago.

But somehow, a nagging question remains: if we didn't understand the impact of computers over the past five decades, what makes us think we understand it any better today?

Located on the edge of Boston Harbor, the Computer Museum is best known for its walk-through computer, a simulated desktop unit complete with keyboard and a ball-shaped device to control the cursor, blown up to 50 times normal size. It is common to see kids sprawled across the massive track ball and pushing with all their might against the giant keys.

This month marks the 10th anniversary of the year IBM introduced the IBM PC, which became the single most popular computer on American desktops. That anniversary is the excuse for "People and Computers: Milestones of a Revolution."

The $1 million display covers almost a mile of winding space on the top floor of the museum. It uses interactive video technology, automatons and all sorts of seeable and, in some cases, touchable artifacts to convey computer history over the past 50 years.

It is hard not to laugh at the images of cold-hearted robots taking over people's jobs, of earnest experts warning that computers would give us the curse of too much leisure time. There are snippets of Porky Pig cartoons and episodes of the "Monkees" and "Twilight Zone" all showing people as victims of these mysterious machines.

One display shows a punch-card machine that clerks used to get financial aid to millions during the Great Depression. Nearby touch screens show 1930s newsreel coverage of such a device in operation. Those were the humble beginnings of an era with the

See COMPUTER, Page 5C

Exhibit profiles history of computer

COMPUTER, from Page 4C

catchphrase: "Do not fold, spindle or mutilate."

An exhibit on computing in the 1940s includes a portion of the Whirlwind computer, developed by the Massachusetts Institute of Technology, which filled three rooms, cost $5 million and was intended to help the military deal with national air defense. A nearby touch-screen shows television news pioneer Edward R. Murrow asking a question of the machine.

The 1950s exhibit shows a portion of Univac I, one of the first commercially available computers, which General Electric used to control inventory.

By the 1960s, programming languages like Fortran and Cobol were standardized, computers became essential tools of big business, and transistors began to push down the cost of the hardware.

The 1970s display shows computers helping man get to the moon, assisting in hospital operating rooms and synchronizing lights for Broadway musicals. The '70s also marked the dawn of an age of super computers, remarkably powerful machines that create elaborate models of the planet's atmosphere to predict the weather, computing in minutes problems that would previously have taken thousands of years had anyone dared to attempt them. The visitor gets to inspect a Cray I, the blue, horseshoe-shaped machine that came to symbolize super computing.

And the 1980s marked the era of the computer on every desk. Though small, these machines became amazingly powerful — with Macintoshes being used to publish student newspapers in California and IBM PCs to operate horse racetracks in Hong Kong. The final segment of the display shows how microprocessor brains of PCs are found in everything from spaceships to toasters.

The downside of all this, said Oliver Strimpel, executive director of the museum, may be that by making us less dependent on one another, computers are increasing individual isolation. And computerized databases, automated phone machines and mailing lists are at the center of concerns about personal privacy.

"No doubt our names are spinning around on several data base discs at this very moment," he said.

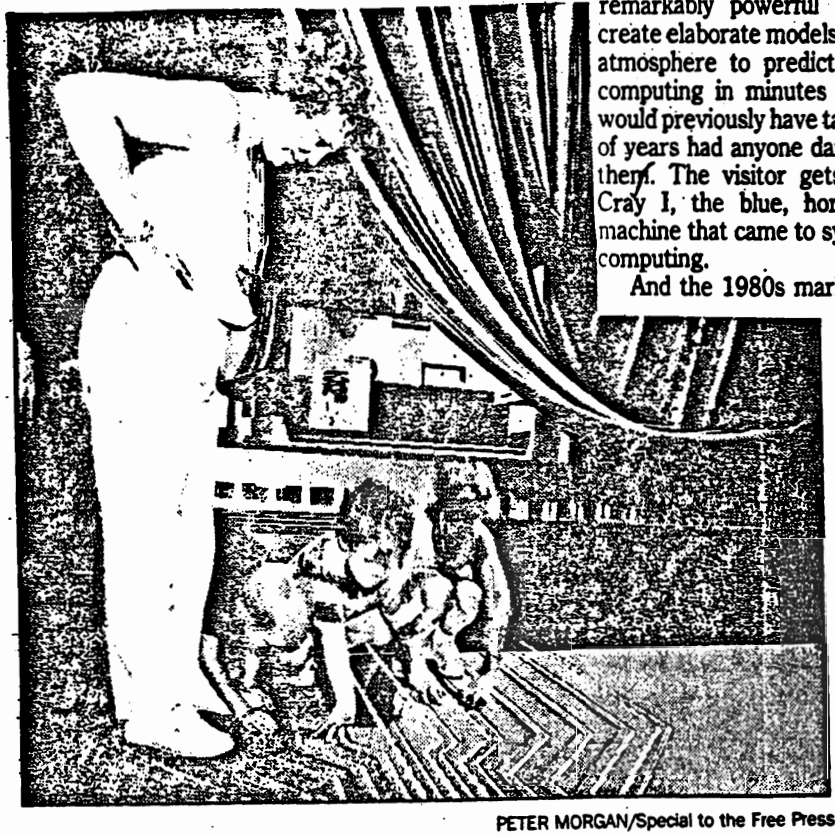
And whether they are working for good or evil, computers are working faster, he said, doubling in speed and memory every year and a half. More power ultimately will enable our computers to do more things, to both listen to us and talk to us in very human ways.

"People today think there is a limit to what the computer can do," said Strimpel. "People think, 'The computer can never write poetry. It can never have an original thought. It can never be as smart as we are.'

"Well, it's only a matter of time."

So maybe that 1950s vision wasn't so far off after all.

This is the second of a five-part series providing perspective 10 years after the personal computer revolution.



PETER MORGAN/Special to the Free Press

Spectators stand in the video archway at the entrance to the "People and Computers" exhibit at the Computer Museum in Boston.

THE BOSTON GLOBE
July 20, 1991
Circ: 509,573

Computers and the minds that made them

By Lawrence Edelman
GLOBE STAFF

The folks at the Computer Museum have always had a knack for making computers understandable, even for technophobes who still haven't figured out how to set the clock on their VCRs.

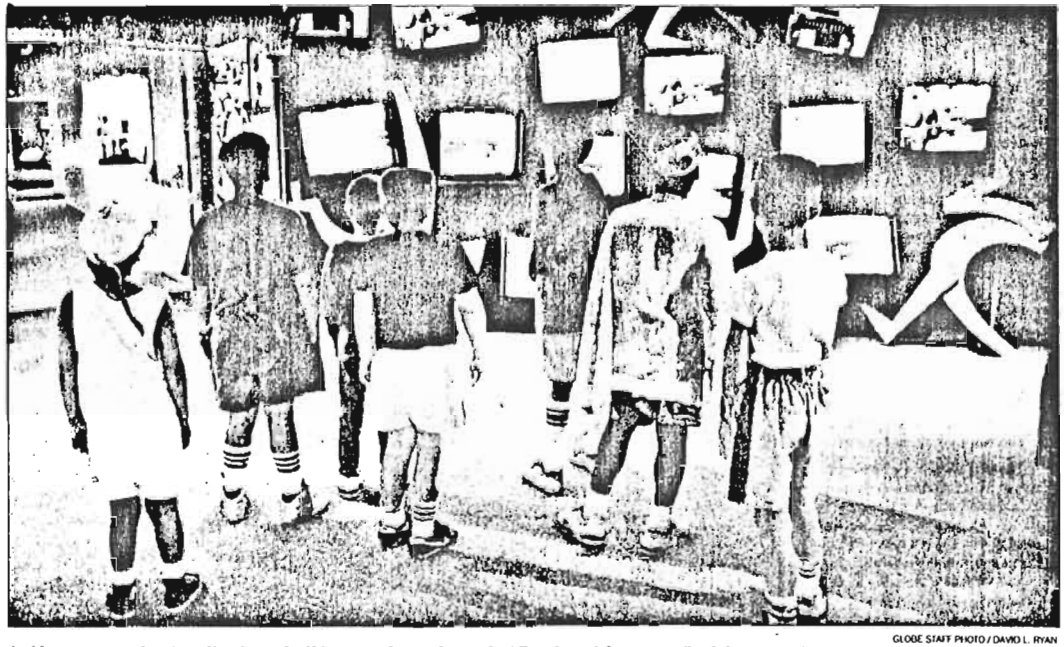
Since setting up shop seven years ago in a renovated wool warehouse on Boston's Waterfront, the museum has showcased machines that made computer history, explained how computers work and explored how they've changed our world. These exhibits have been entertaining and enlightening, especially the Walk-Through Computer, a two-story personal computer that goes a long way toward demystifying a machine that sits atop some 50 million desks in this country alone.

But what the museum has lacked is a comprehensive display that weaves together the threads of history, technology and culture that make up the fabric of our computer-driven society. Until now, that is. Its newest exhibit, "People and Computers," accomplishes just

COMPUTERS, Page 10

GLOBE STAFF PHOTO / DAVID L. RYAN

One Computer Museum display, part of the "People and Computers" exhibit, shows a surgeon using a computer to identify brain tissue.



GLOBE STAFF PHOTO / DAVID L. RYAN

A video montage showing clips from the '30s onward introduces the "People and Computers" exhibit at the Computer Museum.

Computers and the minds that made them

■ COMPUTERS
Continued from Page 6

that.

"This is the exhibit that the museum was created to produce," says Gregory Welch, who directed the design and construction of the $1 million exhibition, which opened late last month. Welch says "People and Computers" will serve as the museum's centerpiece for at least five years.

From the Great Depression to the current recession, the exhibit presents groundbreaking machines of the computer era. The first is Whirlwind, which took up the better part of three rooms at the Massachusetts Institute of Technology in the early 1950s. The show wraps up with the IBM Personal Computer, whose arrival in 1981 brought desktop computers into the mainstream, and microwave ovens and other consumer items that are controlled by the same kind of microchips that make the PC possible.

The relentless advance toward smaller yet more powerful computers is easy for all to see. But the real beauty – and innovation – of "People and Computers" is the way it fixes the machines in the broader context of the times in which they were developed and of the way they influenced those times.

"It brings a social and historic perspective that has been missing from the museum and from most exhibitions of computers," says Howard P. Segal, professor of science and technology history at the University of Maine and member of an academic panel that helped define the exhibit's themes and content.

The exhibit is laid out like a "time tunnel," complete with an entry arch formed from 18 video screens. They play a 90-second montage of film clips and graphics that begins in the 1930s, when New Deal programs forced the government to find more efficient ways to manage bureaucracy, and travels to the present. Throughout the exhibit, videos, pictures, text and music are used imaginatively to set the historical and social backdrop for various breakthroughs in computing.

One stop along the way is a re-creation of the computer room at a big General Electric plant in Louisville, Ky., where in the 1950s the company relied on the Universal Automatic Computer, better known as Univac, to control inventories of millions of parts. The era is recalled with the help of Bill Haley and the Comets singing "Rock Around the Clock," and a video clip of Election Night 1952, when a Univac predicted Eisenhower's victory in TV coverage hosted by, of course, Walter Cronkite.

But more evocative of the period may be the computer room itself, a decidedly low-tech-looking place equipped with a drab gray metal desk on which the Univac's operating console sits. And the console – with its knobs, switches and flashing lights – looks more like a prop out of a B-grade sci-fi flick than the pioneering machine it was back then.

A highlight of the exhibit comes when the heavily scientific/military bent of computing in the 1940s through the 1960s gives way to more creative uses in the early 1970s. Digital Equipment's PDP-8 minicomputer is shown in a hospital operating room, controlling equipment that identifies brain tissue for a surgeon, and backstage on Broadway orchestrating the lighting of "A Chorus Line."

"A perfect use for a computer," says Gordon Perelman, who designed the lighting system while he was teaching at the University of North Carolina.

The re-creation of the theater's lighting station – erected against a red brick wall with metal fuse box and black rotary telephone – contrasts nicely with the antiseptic, "2001"-like feel of the next stopping point in the exhibit, a Cray supercomputer at a weather forecasting center in England.

The exhibit was underwritten by the National Endowment for the Humanities. Corporate sponsors included Digital and International Business Machines.

Μουσείο Πληροφορικής στη Βοστώνη

Τρία να λες τις δύο λέξεις «Μουσείο Πληροφορικής» έτσι μαζί είναι σχεδόν σχήμα οξύμωρο, για μια επιστήμη που δεν έχει καλά-καλά γιορτάσει το ωβηλαίο της. Η Πληροφορική είναι και δεν είναι 50 ετών επιστήμη. Αλλά το Μουσείο Πληροφορικής της Βοστώνης είναι σαφώς υπαρκτό στην αμερικανική αυτή πόλη που φημίζεται για τα πάμπολλα κορυφαία πανεπιστήμιά της (Harvard, M.I.T., Boston University, κ.ά.) και τους διανοούμενους της.

Προ ολίγων εβδομάδων μάλιστα, το επισκέφτηκα για να δω κι εγώ το μοναδικό αυτό μουσείο, το μόνο Μουσείο Πληροφορικής στον κόσμο. Δηλαδή, το μόνο μουσείο που είναι κατ' αποκλειστικότητα αφοσιωμένο στην Πληροφορική. Διότι υπάρχει και το κολοσσιαίο μουσείο Smithsonian Institution, στην Ουάσιγκτον, με πολλές αίθουσες Πληροφορικής, αλλά και με πολλά άλλα άσχετα θεματικά εκθέματα. Το Μουσείο Πληροφορικής της Βοστώνης, πάντως, έχει «περισσότερα εκθέματα Πληροφορικής από οπουδήποτε αλλού συγκεντρωμένα σ' ένα σημείο».

Μην ξεχνάμε ότι τα δύο μεγαλύτερα κέντρα Πληροφορικής στον κόσμο, εκεί που βρίσκονται τα περισσότερα κορυφαία και πλέον δημιουργικά μυαλά της Πληροφορικής, είναι η Κοιλάδα Πυριτίου (Silicon Valley, όπως τη λένε), νοτίως του Αγίου Φραγκίσκου και η Βοστώνη και τα περίχωρά της.

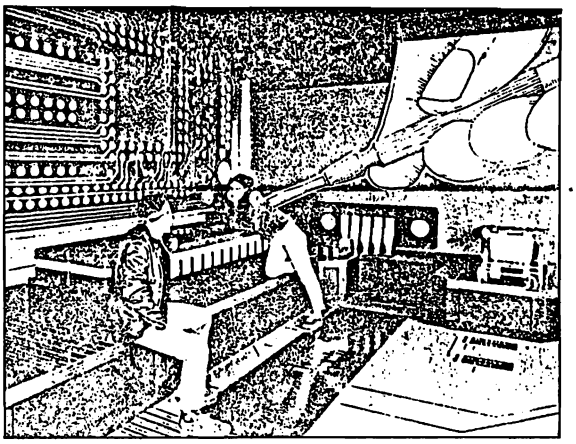
Δεν είναι απλώς σχήμα λόγου, αλλά προγματικότητα ότι από αυτά τα δύο σημεία, τα δύο γεωγραφικά άκρα της Αμερικής, βγαίνουν σχεδόν όλα τα προϊόντα και αποκτούνται σχεδόν όλες οι γνώσεις που αναμισθήτητα επηρεάζουν τη ζωή όλων μας, απονταχού της γης. Βεβαίως και αλλού, εντός και εκτός Αμερικής, υπάρχει - πρωτοποριακή - δημιουργική δραστηριότητα στην Πληροφορική.

Οταν κανείς μιλάει για μουσεία (και ιδιαίτερα στην Ελλάδα) σκέφτεται ότι ασφαλώς περιέχει εκθέματα, η ηλικία των οποίων είναι οπωσδήποτε 100 ετών και άνω. Για την Πληροφορική όμως, που έχει καθ' όλα δική της κλίμακα διαχρονικής εξελίξεως, δεν ισχύουν τα συνήθη μέτρα και σταθμά. Ενας ημερολογιακός χρόνος (365 ημέρες) στη ζωή της Πληροφορικής αντιστοιχεί σε 20, τουλάχιστον, ανθρώπινα χρόνια.

Αν δεν έχεις υπόψη σου αυτή την πραγματικότητα, ξαφνιάζεσαι όταν βλέπεις στο Μουσείο Πληροφορικής της Βοστώνης (που βρίσκεται στη διεύθυνση 300 Congress Street, Boston, MA 02210, USA, Τηλέφωνο: 001.617.426 2800, Fax: 001.617.426.2943) υπολογιστή που χρησιμοποιούσες (και πολύ πιθανό συνεχίζεις να χρησιμοποιείς, ιδιαίτερα στην Ελλάδα) να σου τον παρουσιάζουν ως μουσειακό έκθεμα. Και διερωτάσαι κατά πόσο γίναμε έτσι τα φαινόμενα του future shock. Ο κλονισμός του μέλλοντος, που καθημερινά μας κλονίζει όλους, όσο και να μην το θέλουμε.

Τα μηχανήματα – οι υπολογιστές – που σχεδόν όλοι χρησιμοποιούμε καθημερινά πάσχουν και από προγραμματισμένη και από απρογραμμάτιστη παλαιοποίηση (planned and unplanned obsolescence, όπως λέγεται αγγλιστί), διότι, για να επιβιώσουν οι δημιουργοί τους βρίσκονται σ' ένα συνεχή πόλεμο έντονης εμπορίας και κοφτερού ανταγωνισμού, που τους δημιουργεί την ανάγκη να τα βελτιώνουν συνεχώς. Καλό αυτό, βεβαίως, για τους τελικούς χρήστες. Αλλα έχει και τις συνέπειές του.

Ηταν λαμπερή, ηλιόλουστη μέρα στη Βοστώνη, για καλή μου τύχη. Ο Δρ Oliver B.R. Strimpel, Βρεταννός και νέος, διευθυντής του Μουσείου, με υποδέχτηκε και πρόθυμα απαντούσε στις πολλές μου ερωτήσεις. Προκειμένου για θέματα Πληροφορικής, το μυαλό μου γεννοβολά ερωτήσεις χωρίς τελειωμό. Και έτσι, με το τελείωμα της μαννητοταινίας, στη μισή ώρα, σταμάτησα, για να δώσω τέρμα στις ερωτήσεις μου. Ο Δρ Strimpel το διευθύνει από το 1984, όταν πρωτοάνοιξε το Μουσείο. Επειτα από μια αρκετά εκβαμβωτική περιήγηση που μας έκαναν, είχα υλικό, εντυπώσεις και ανούργιες γνώσεις για πολλά άρθρα.



Μπαίνοντας σε μια από τις αίθουσες του μουσείου βρισκόσαστε στα σωθικά ενός εν λειτουργία γιγαντιαίου υπολογιστή.

Το Μουσείο ξεκίνησε με μια δωρεά του Ken Olsen, ιδρυτού της DEC, αρχικά το 1974, σε συνεργασία με τον Bob Everett, όταν έσωσαν (σχεδόν από τα σκουπίδια) τον άλλοτε περήφημο, ογκώδη υπολογιστή του M.I.T., τον λεγόμενο Whirlwind, λέξη που σημαίνει «σίφουνας ή ανεμοστρόβιλος». Με τον Whirlwind ως πρώτο έκθεμα, τον Ιούλιο 1982, ίδρυσαν το Μουσείο Πληροφορικής της Βοστώνης. Στη σημερινή του θέση βρίσκεται από το Νοέμβριο του '84. «Πάλαι ποτέ», για την Πληροφορική.

Η όλη εμφάνιση και η διάταξη των εκθεμάτων του Μουσείου, που πιάνει 5.300 τ.μ., σε τρία πατώματα, έχει ένα σκοπό: το πώς ακριβώς επιδρούν οι υπολογιστές στη ζωή μας. Σχεδόν 100 από τα πάμπολλα εκθέματά του είναι αλληλενεργά. Δηλαδή, οι επισκέπτες – που είναι κυρίως νέοι άνθρωποι – μπορούν να πατήσουν κάποιο κουμπί ή να κάνουν κάτι άλλο και να δουν κάποιο αποτέλεσμα ή να ικανοποιήσουν κάποια τους αιτήρια. Τέτοια επιλογή μόνο οι υπολογιστές μπορούν να μας τη χαρίσουν.

Το Μουσείο έχει επτά μεγάλες αίθουσες εκθεμάτων, αμφιθέατρο για 275 άτομα και μαγαζί αναμνηστικών αντικειμένων. Εχει περίπου 40 υπαλλήλους και ετησίως το επισκέπτονται τουλάχιστον 150.000 άτομα, εκ των οποίων περίπου το 40% είναι μαθητές και σπουδαστές. Με προϋπολογισμό τριών εκατομμυρίων δολαρίων το χρόνο, μέγα μέρος των εξόδων του βγαίνει από τα δικαιώματα εισόδου. Εχει όμως και συνδρομητές, περίπου 150 μεγάλες εταιρίες Πληροφορικής που συμβάλλουν οικονομικώς.

Ενας άλλος σκοπός του Μουσείου αυτού είναι «να εκπαιδεύει και να εμπνέει» τους νέους μάλλον, προς τρεις κατευθύνσεις κυρίως: την ιστορική εξέλιξη, τη σημερινή τεχνολογία και τις εφαρμογές της Πληροφορικής. Οσον αφορά στην ιστορική εξέλιξη της επιστήμης (που θα νόμιζε κανείς ότι θα έπρεπε να είναι ο μόνος τομέας που θα ενδιέφερε ένα μουσείο – δεν αληθεύει, όμως, εν προκειμένω), το Μουσείο πρόσφατα έκανε ειδική έκθεση που ονομάστηκε «Ανθρωποι και Υπολογιστές». Περιέχει δείγματα των άλλοτε ογκοδέστατων μηχανημάτων (mainframes) που χρειάζονταν τεράστιες, κλιματιζόμενες αίθουσες με υπερυψωμένα βάθρα.

> Οταν κανείς μιλάει για μουσεία σκέφτεται ότι ασφαλώς περιέχει εκθέματα, η ηλικία των οποίων είναι οπωσδήποτε 100 ετών και άνω. Η Πληροφορική όμως, έχει καθ' όλα δική της κλίμακα διαχρονικής εξελίξεως. Ενας ημερολογιακός χρόνος (365 ημέρες) στη ζωή της Πληροφορικής αντιστοιχεί σε 20, τουλάχιστον, ανθρώπινα χρόνια.

Το Μουσείο ήδη οργανώνει ειδική έκθεση συγχρόνων επιτραπεζίων και άλλων υπολογιστών. Σκοπός της θα είναι να επιδεικνύει με σαφήνεια τι ακριβώς μπορούμε να κάνουμε με ένα κομπιούτερ, όπως το γράψιμο κειμένων, και πώς επιτυγχάνεται αυτό με το εργαλείο που λέγεται κομπιούτερ. Τι είναι ένα ηλεκτρονικό λογιστικό φύλλο και πώς ακριβώς επεξεργάζεται σωρεία αριθμών. Και ό,τι άλλο χρήσιμο μπορεί κανείς να κάνει με το κατάλληλο πρόγραμμα, όπως τα γραφικά, τις επικοινωνίες με μόντεμ και πολλά άλλα.

Ολα αυτά θα επιδεικνύονται στη μόνιμη αυτή αίθουσα του Μουσείου, με τρόπο απλό, εύχρηστο και απόλυτα κατανοητό. Και τα ηλεκτρονικά παιχνίδια θα περιλαμβάνονται, διότι αποτελούν τρόπο εκμάθησης, με δισκέδαση, σοβαρότερων θεμάτων. Τουλάχιστον, αυτό ισχύει για ορισμένα από τα ηλεκτρονικά παιχνίδια, όπως ο Εξομοιωτής Πτήσεως (Flight Simulator) της Microsoft. Λέγεται μάλιστα ότι αυτό ιδιαίτερα το παιχνίδι, στην τελευταία του έκδοση, είναι τόσο τέλειο ως εργαλείο που είναι κατάλληλο και για μαθητευτόμενους πιλότους.

Ενα αυθαιτόγραφο ρομπότ σε μια αναπαρίσταση καταστήματος ηλεκτρονικών θα σας ρωτήσει τι σημαίνει για σας η επανάσταση των ηλεκτρονικών υπολογιστών, στην αίθουσα «Ανθρωπος και computers: Η πορεία μιας επανάστασης».

Ενα άλλο πολύ σημαντικό έκθεμα του Μουσείου είναι η μεγάλη του αίθουσα τεχνητής νοημοσύνης και ρομπότ, που άνοιξε για το κοινό το 1987. Εκεί βλέπεις δύο κάπως ανθρωπόμορφα ρομπότ να προσπαθούν να γεννήσουν (με κατσαβίδια και άλλα εργαλεία και ηλεκτρονικά - σύνεργα) ένα μωρό-ρομπότ. Το παιδί τους. Αστείο κάπως. Αλλά η Maxell το είχε αρχικά το κατασκεύασμα αυτό και το χρησιμοποιούσε στις διαφημίσεις της, για να τονώσει την ποιότητα των δισκετών της. Ισως τη θυμάστε τη σχετικά πρόσφατη αυτή διαφήμιση.

Ενα άλλο έκθεμα του Μουσείου, στο εγγύς μέλλον, θα είναι «Οι Αθέατοι Υπολογιστές». Αθέατοι είναι πάμπολοι υπολογιστές που χρησιμοποιούμε καθημερινώς. Και δεν ξέρουμε (ή ξεχνάμε) ότι τους χρησιμοποιούμε, όπως όταν σηκώνουμε το τηλέφωνο ή κάνουμε ανάληψη χρημάτων από αυτόματα συναλλακτήρια ρευστού. Τα λεγόμενα ATMs που σχεδόν όλες οι τράπεζες σήμερα έχουν. Αυτά που ξεύνουν πεντοχίλιαρα (ή εικοσαδόλαρα, στην Αμερική. Αρκεί να τα 'χεις), αφού πληκτρολογήσεις τον ατομικό σου κωδικό προσπελάσεως. Η χίλια δυο άλλα πράγματα που κάνουμε καθημερινώς χρησιμοποιώντας κομπιούτερ χωρίς καν να τους βλέπουμε, διότι βρίσκονται κάπου αλλού.

Το σημαντικότερο έκθεμα του Μουσείου είναι ο λεγόμενος Walk-Through Computer. Η όταν μπεις μέσα στη σειρά αιθουσών που ονομάστηκαν Walk-Through Computer. Δηλαδή, εν λειτουργία υπολογιστής στις μέσα στα σωθικά (τα κλειστά του κυκλώματα) του οποίου βγαίνεις για περίπατο. Περίπατο εντός του CPU, παρακαλώ! Βλέπεις πώς και από πού βγαίνουν και πού πάνε οι οδηγίες. Ενα απαράμιλλο θέαμα. Ο Mitch Kapor, κύριος μέτοχος της Lotus, είναι ο κύριος εμπνευστής και χρηματοδότης του θεαματικού αυτού εκθέματος. Στοίχισε περίπου ένα εκατομμύριο δολάρια.

Η εμπειρία είναι συναπαστικότατη. Μια και δεν έχεις την ικανότητα να αυτοσμικρυνθείς εσύ, ο άνθρωπος, το Μουσείο σε υποχρεώνει γιγαντώνοντας την κλίμακα του κομπιούτερ, δίδοντάς σου την ψευδαίσθηση ότι έγινες λιλιπούτειος.

Αισθάνεσαι τόσο μικρός και ασήμαντος. Γύρω σου συνεχώς αναβοσβήνουν πάμπολλα και πολύχρωμα φωτάκια και χαρακτήρες ASCII που τρέχουν πυρετωδώς από δω και από κει. Δεν προλαβαίνεις τα πρωτοδείς. Προσπαθείς να κοιτάξ προς όλες τις κατευθύνσεις. Σαν να είχες μάτια και στο πίσω μέρος του κεφαλιού σου. Θέλεις να γίνει ταινός. Μην σε πατήσει και κανένα πλήκτρο. Οχι τίποτε άλλο! Το ηλεκτρονικό αυτό περιβάλλον, ολόγυρά σου, σου εξέπιεσι τη φαντασία και τη δίψα να μάθεις πώς ακριβώς γίνονται όλα αυτά τα φαινομενικά φανταστικά (αλλά πραγματικά) μαντάτα.

Το μόνο που σε κρατάει στα λογικά σου είναι η γνώση ότι το δικό σου σώμα (ιδιαίτερα το μυαλό σου) είναι (ακόμη, αλλά όχι για πολύ) απείρως πολυπλοκότερο από τον εσωτερικό κόσμο ενός κομπιούτερ. Βγαίνοντας από τα έγκατα του κ. Walk-Through Computer αισθάνεσαι περίεργα και ότι ίσως πήγες και στο θέατρο για λίγο. Μα αυτός δεν είναι ο σκοπός του θεάτρου; Να σε εμπνεύσει για λίγο. Να σε βγάλει, προσωρινά, από τη στενή καθημερινότητα. Τη γλυκιά καθημερινότητα που σου δίνει την ψευδαίσθηση της αθανασίας.

Και αυτό ακριβώς πετυχαίνει, νομίζω, το μοναδικό αυτό μουσείο. Τα περισσότερα εκθέματά του δεν είναι νεκρά και άψυχα. Η μάλλον, άψυχα μπορεί να είναι. Νεκρά, όμως, δεν είναι και ας είναι ανόργανοι οι ιστοί τους. Επικοινωνείς μαζί τους. Ουο μπορεί κανείς να τα πει μ' ένα κομπιούτερ. Χαλάνε. Κρέμονται. Αλλά δεν αντιμιλούν. Γι' αυτό δεν έχουν και συνταγματικά δικαιώματα. Προς το παρόν. Ολοι θέλουμε να κυριαρχούμε, κάπου.

Εστω και συμπτωματικό να είναι το ενδιαφέρον σας για τους υπολογιστές, σας συμβουλεύω να δείτε το Μουσείο Πληροφορικής της Βοστώνης, αν βρεθείτε προς εκείνα τα μέρη.

KATHIMERINI (Greek Newspaper)
September 8, 1991

Catherine Malloy's computer generated The Flying Dream, *one of many creations at the Computer Museum's Siggraph exhibit.*

Show on Earth roars into to October 17-27. The 120th Anniversary Edition of the **Ringling Brothers Barnum & Bailey Circus** features three rings of liberty horses, an entire herd of elephants, and a performing White Rhinoceros. Also featured will be aerial ballet, including Marguerite Michelle and her daughters juggling fiery clubs while suspended in the air . . .by their hair; other highwire and acrobatic artists; death-defying stunts and countless other attractions. Boston Garden, 150 Causeway St., 227-3206.

Regatta

The 27th **Annual Head of the Charles Regatta**, Mecca for rowing fans everywhere, takes place October 20 from roughly 8 a.m.-6 p.m. Nearly 1,000 boats and 4,000 rowers will converge along the three mile stretch of the Charles River to compete in front of a quarter of a million cheering, picnicking fans on lawn chairs and blankets. The Regatta runs from the Boston University Boat House to the WBZ studio upriver. The most convenient T stop is Harvard Square. More information about the event can be found on page 14, or by calling 864-8415.

Exhibits

The world's only Computer Museum brings us Computers in Art and Design: **The 1991 SIGGRAPH Traveling Exhibition**, featuring new computer creations by artists and designers from around the world. The show features two-and three-dimensional works, stereo images, holograms, animation, and an interactive exhibit where visitors can create their own works of art to take home. The Computer Museum is the only museum in the world dedicated solely to computers and their impact on society, with more than 100 exhibits including the famous Walk-Through Computer. 426-2800.

Barry Manilow arrives at the Wang Center Oct. 8-10 for three performances only.

WHERE

THIS MONTH IN

BOSTON

Halloween haunts, and acrobats, computer art and the Head of the Charles - celebrate October in Boston!

Outer Limits

Twenty-five minutes from Boston, in a little town called Berlin, lies the **Berlin Fun Farm's Spooky Hayrides and Haunted Barn Halloween Museum**, the nation's first theme park devoted to horror and science fiction. For the entire month of October, this will be the site of the scariest fun time to be had. The spooky hayride will roll you through acres of haunted terrain filled with ghosts, goblins and creatures of the night. 14 vignettes and 20 actors supplying the creatures. The 10,000 square foot Haunted Barn is filled with friendly folk such as the alien from Aliens! and Leatherface from the Texas Chainsaw Massacre. Jason will be there for a time to sign hockey masks, supplied with characters and memorabilia by 20th Century Fox, New Line Cinema Corp. and Universal Studios. There's a fun and photo time to walk around with characters and friendly creatures, and complimentary "deadly donuts and spider cider" are given out. Certainly not just for kids, the Berlin Fun Farm is appropriate for all ages. The hayrides, which leave every 5 minutes, get scarier as the hour grows later. Call for more information and directions, (508) 838-0200.

Perhaps no place on earth is as suited to Halloween as Salem, infamous home to the witch trials of 1692. Much can be learned and witnessed in this historic town, but all is not somber! From October 25-November 3 the town will be

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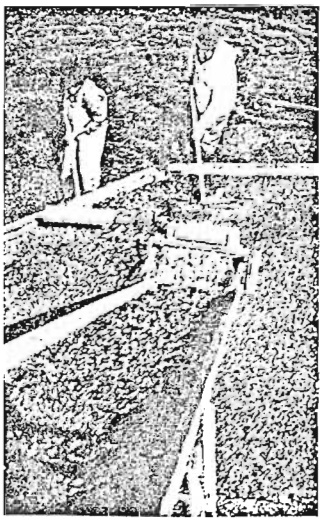
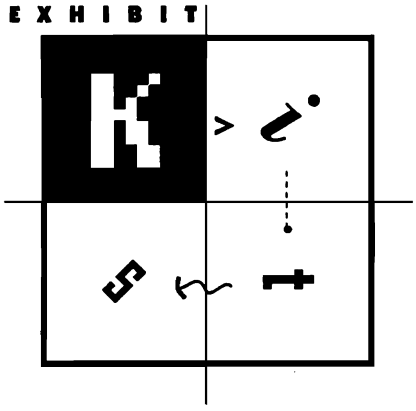
surface of a flooded bog. The dazzling red berries are gathered by booms and conveyed to shore. A quintessential New England occurrence, there are narrated bus tours available on the 12th and 13th, and visitors are welcome throughout the month at both the harvest and Cranberry World, an in-depth look at the agriculture and harvest, just a 10 minute walk from Plymouth Rock and the Mayflower. Ocean Spray products are given out free of charge. (508) 747-2350.

For more events see Happenings in the Hub, page 26.



Cranberry World in Plymouth offers foliage, an ongoing cranberry bog harvest and more.



How Fast Are Computers?

What visitors will learn:

- ***Computers vary widely in their speed of calculation, but they are all much faster than people at numerical calculation.***
- ***Some tasks, such as adding a few numbers, take much less computing than other tasks, such as forecasting the weather.***
- ***It is important to choose a computer that is sufficiently powerful if a job is to be completed in a reasonable time.***
- ***Visitors are introduced to the four standard ways of making faster computers.***
- ***People outperform computers at many tasks.***

What The Computer Museum will provide:

Complete software and licensing

Installation instructions and documentation

Suggested exhibit layout and signage

Supporting educational materials

Cost: $2,500.00

What the purchaser must provide:

PC AT compatible computer system, with color monitor

Signs, enclosure, other site-specific materials

Description:

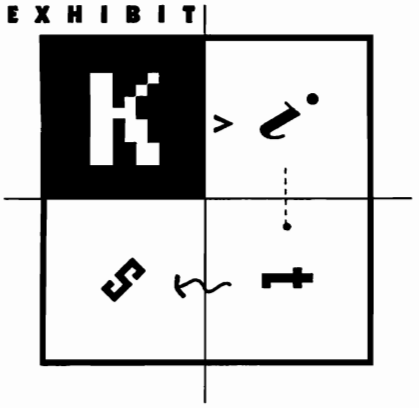
The program invites visitors to add five numbers, and measures how long they take to arrive at the correct answer. It then compares the visitor's performance to the number of additions a variety of different computers could solve in the same time. Visitors can then match any one of five computers (including themselves) to one of five tasks, ranging from balancing a check book to calculating the evolution of a global weather model for the next 24 hours. The program tells them how long the selected computer would take to solve the task. Visitors can see the results of as many such matches as they choose.

Visitors can then choose between two options. The first option examines four techniques for speeding up computers: increasing the clock speed, parallel processing, pipelining, and RISC. The explanations use clear and simple interactive animation to illustrate how each of these techniques works. The second option examines tasks that people can perform much faster than any computer. Instead of solving a math problem, this time visitors are asked to recognize a drawing of a familiar object. Again their performance is compared to various computers. The visitor beats even a supercomputer hands down! The program then explains how such "simple" tasks as pattern recognition, which even very young children can perform, require enormous amounts of calculation. Researchers are only just beginning to understand how people so easily recognize patterns.

This exhibit, not only gives visitors a better grasp of how rapidly computers can perform calculations and how their speed can be increased, but also what types of tasks they are well adapted to performing. Since it treats themes central to computing, this Kit could stand on its own, or form the cornerstone of a exhibition on computers.

For more information call 617. 426. 2800 x377 or Fax 617. 426. 2943
or write The Computer Museum Exhibit Kits Program, 300 Congress St., Boston, MA 02210

The Computer Museum **Exhibit Kit (B)**



Maze Programming

What visitors will learn:

- ***Computers perform tasks by following a list of instructions, called programs.***
- ***Each instruction is simple and very explicit.***
- ***Rudimentary programming is not conceptually difficult, but requires attention to detail.***

What The Computer Museum will provide:

Complete software and licensing

Installation instructions and documentation

Suggested exhibit layout and signage

Supporting educational materials

Cost: $2,500.00

What the purchaser must provide:

Macintosh II, with color display and mouse

Signs, enclosure, other site-specific materials

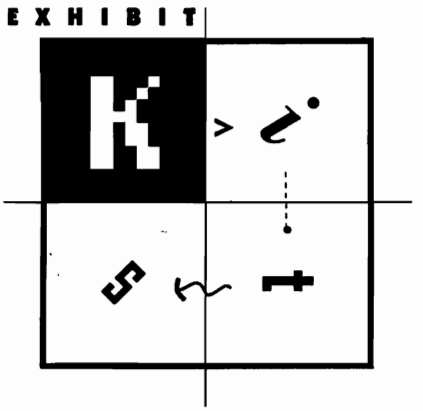
Description:

This exhibit challenges visitors to write a computer program that makes a robot car move through a maze. It guides visitors through the task in simple, incremental steps, introducing them along the way to concepts fundamental to computer programming. After learning what each instruction does, visitors write their own programs, and then execute them, watching the car obey their commands. The car's movements give visitors immediate feedback and a firm grasp of how their program functions.

For many visitors, this will be their first brush with programming. The step from computer-user, to computer programmer is very significant to a better appreciation of computer technology.

This Kit uses high-resolution color and 3D images to engage the visitor. It could stand on its own, or form an integral element of a exhibition on computers.

For more information call 617. 426. 2800 x377 or Fax 617. 426. 2943
or write The Computer Museum Exhibit Kits Program, 300 Congress St., Boston, MA 02210



How Tall Are You?

What visitors will learn:

- ***Ultrasonic sensors allow computers to detect and measure the distance to objects in their environment.***
- ***The keyboard and screen are not the only way to interact with a computer. Visitors who try this exhibit provide input by moving their bodies and receive the output via synthesized speech.***
- ***Mobile robots can use ultrasonic sensors to find the distance to walls and obstacles around them. Such measurements are essential for mobile robots to guide themselves autonomously.***

What The Computer Museum will provide:

Complete software and licensing

Ultrasonic distance sensors

Ultrasonic distance sensor driving hardware

Installation instructions and documentation

Suggested exhibit layout and signage

Supporting educational materials

Cost: $5,400.00

What the purchaser must provide:

Apple Macintosh computer

Speaker and amplifier

Signs, enclosure, sensor mounts and other site-specific materials

Description:

The exhibit calls out to visitors in its proximity, inviting them to have their height measured. When a visitor moves into the correct position (marked by feet painted at the base of the exhibit), their height is measured and announced with sentences such as "You seem to be five feet, six and three quarter inches." If visitors are moving or standing in the wrong place, the computer will respond accordingly, asking people to remain still, or to move into position. The computer often makes a deliberate mistake and then corrects itself. This amusing exhibit encourages visitors to experiment with the computer, tricking the sensors by holding their hands above their heads or by squatting.

The exhibit is equipped with four ultrasonic sensors: three at waist level and one overhead. The waist sensors detect the presence of visitors in the vicinity of the exhibit and inform the computer when a visitor is standing in the correct position for a height measurement. The overhead sensor then measures the visitor's height by measuring the distance from the ceiling to the top of the visitor's head. All output is via digitized speech.

In The Computer Museum, this exhibit is located in a section that explains how computers and robots can sense and react to their environments, which also includes exhibits on speech recognition and machine vision. The Kit can also stand on its own. An adapted version is installed outside the Museum's building.

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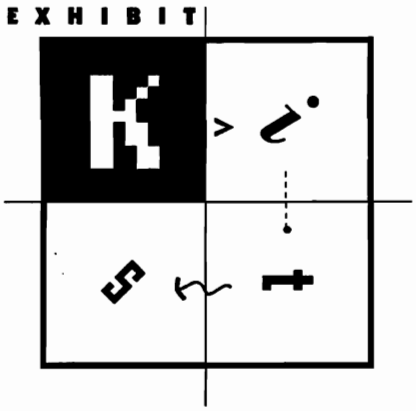

Color the States

What visitors will learn:

- ***Speech recognition allows computers to obey spoken instructions.***
- ***If the vocabulary is small, a computer can recognize the instructions of any speaker without any prior "training" with that speaker. However, the computer quite often makes an error, incorrectly recognizing a word.***
- ***Visitors get used to controlling the computer by spoken commands very quickly.***
- ***Speech recognition allows the disabled, or people who must use their hands for other tasks, to operate computers.***

What The Computer Museum will provide:

Complete software and licensing

Custom cables

Mounted microphone

Installation instructions and documentation

Suggested exhibit layout and signage

Supporting educational materials

Dragon Systems Speech Recognition board

Cost: $3,900.00

What the purchaser must provide:

PC AT compatible computer system with color monitor and graphics

Signs, enclosure, other site-specific materials

Description:

Visitors are invited to color in a map of the United States using only four colors, such that no two states with the same color share a common border. The only input device is a microphone—all commands are given by speech. Visitors first select a state and then select its color. The game is quite challenging. There are many different ways to color the states successfully, but also many ways to fail to avoid coloring two adjacent states the same color.

Accompanying text explain the hurdles computer programmers must overcome in order to cope with the enormous variety inherent in normal human speech. The text also gives examples of people who benefit from the use of computer speech recognition, such as those whose hands are paralyzed, or people, such as surgeons or pilots, who must have their hands free for purposes other than using a computer.

In the Computer Museum, this exhibit forms part of a section on computer and robot sensing, together with exhibits on ultrasonic sensing, and machine vision.

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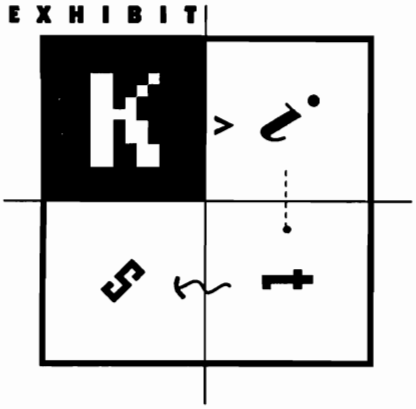

The Talking Computer

What visitors will learn:

- ***Computers can communicate with people by voice.***
- ***To synthesize speech, a computer must use a detailed set of rules to recognize words in written text and the sounds that combinations of letters spell.***
- ***Computer-generated speech is comprehensible but crude. It lacks the subtle inflections and accents important to human speech.***
- ***Speech synthesis has many applications, including providing information over the phone and allowing the blind to use computers.***

What The Computer Museum will provide:

Complete software and licensing

Installation instructions and documentation

Suggested exhibit layout and signage

Supporting educational materials

Cost: $1,500.00

What the purchaser must provide:

Macintosh II computer, with 5 megabytes of RAM and AppleColor screen

Digital Equipment Corporation DECtalk speech-to-text converter

Cables

Description:

The Talking Computer invites visitors to learn about how computers can talk to people. Visitors can experiment with the computer's diction by having it pronounce their name and other text they type. Visitors can also change the characterisitcs of the voice so it sounds like different speakers. To illustrate one of the uses of voice output, the computer asks visitors to pretend they are blind by closing their eyes and typing while the computer reads to them what they type. At the visitor's request, the exhibit can explain how the computer converts text into its component sounds, called phonemes, and then uses special circuitry to produce these sounds.

The Talking Computer illustrates one method for people and computers to communicate. As such, it would make a valuable addition to an exhibit about communication technology or computers in general. The exhibit uses high-resolution color graphics and 3D images to engage the visitor.

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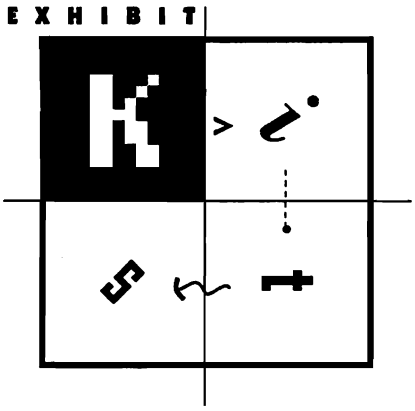

Eliza: The Computer Psychologist

What visitors will learn:

- ***Computer programs can simulate human conversations.***
- ***Simple devices can trick you into believing a computer is intelligent when, in fact, it is simply reflecting your own words back at you.***
- ***There is a world of difference between a simple program, such as ELIZA, and a truly intelligent program. We are still a very long way from knowing how to build a program that converses like a person.***

What The Computer Museum will provide:

Complete software and licensing

Installation instructions and documentation

Suggested exhibit layout and signage

Supporting educational materials

Cost: $875.00

What the purchaser must provide:

PC AT compatible computer system, with color monitor

Signs, enclosure, other site-specific materials

Description:

This exhibit is an implementation of a classic program developed by Joseph Weizenbaum at MIT in 1966. In offering to help the visitor with a problem, the program plays the role of a Rogerian psychotherapist. The visitor types in a sentence, and the program responds by using one of a small repertoire of expedients. Examples include turning a statement into a question, responding to a key word such as "family," or simply asking the "patient" to elaborate. ELIZA's methods become quite apparent after a short interchange, and visitors can then trick ELIZA into repeating itself, or asking nonsensical questions.

This version of ELIZA has been adapted by The Computer Museum to be immune to attempts to break out of the program, and to restart itself automatically after a session is ended.

As an illustration of how a simple short-cut fails to reproduce true human intelligence or behavior, this Kit would provide an educational addition to an exhibition on artificial intelligence, computers in general, or human thought.

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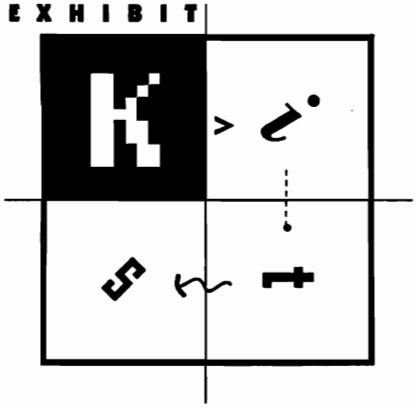

Haggle With a Computer Fruit Vendor

What visitors will learn:

- ***A computer can follow a set of rules, giving it surprisingly human-like behavior.***
- ***The more rules the computer has, the more sophisticated its behavior.***
- ***The computer cannot improvise or use common sense to respond outside its particular area of expertise.***
- ***Rule-based expert systems are growing in use, and are taking over some tasks hitherto thought to require a human expert***

What The Computer Museum will provide:

Complete software and licensing

Installation instructions and documentation

Suggested exhibit layout and signage

Supporting educational materials

Cost: $3,575.00

What the purchaser must provide:

PC AT compatible computer system, with color monitor and mouse

Signs, enclosure, other site-specific materials

Digital Equipment Corporation DECtalk speech-to-text converter

Description:

Visitors bargain with the computer over the price of a box of strawberries. First, visitors select one of three fruit vendors that range in sophistication from NOAH BUDGE (with only 10 rules), to NORA LOGICAL (with over a hundred rules). Visitors can type in offers for a box of strawberries, or make insulting or flattering remarks to the vendor. A tracer on the screen tracks the testing and firing of rules. The computer vendor responds using a voice synthesizer in different voices. The computer may lower the price or return the abuse. The session ends when the computer and visitor close the deal, or the visitor is "kicked out of the vendor's stall." Visitors enjoy the diversity and appropriateness of the computer's responses, and are delighted by the computer's occasionally surly tone.

This Kit illustrates the artificial intelligence principles upon which many computer applications will be based in the future. Consequently, it would work well in an exhibition about how computers may be used in the future or in more general computer-related exhibits.

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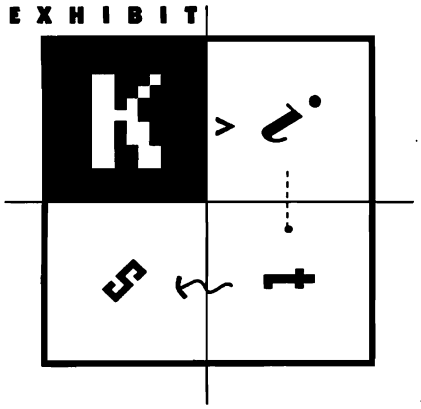

How Computers Play Games

What visitors will learn:

- ***Computers can play games of strategy by using sets of simple rules to test many possible moves.***
- ***The sets of rules can follow different procedures for selecting a move; two such procedures are "look-ahead" and "voting."***
- ***Because they can test many moves very rapidly, computers can play certain strategy games very well.***

What The Computer Museum will provide:

Complete software and licensing

Installation instructions and documentation

Suggested exhibit layout and signage

Supporting educational materials

Cost: $2,700.00

What the purchaser must provide:

PC compatible computer system, with color monitor and mouse.

Signs, enclosure, other site-specific materials

Description:

This exhibit allows visitors to challenge the computer to a game of tic-tac-toe or five-in-a-row. Visitors can then choose which strategy they would like the computer to use for determining moves, "look-ahead" or "voting." A brief explanation of each is provided. During play, two game boards are displayed; one reflects actual play, the other shows the "thought process" of the computer as it tests moves according to the strategy the visitor has selected. Visitors can observe how the computer applies its strategy in response to their moves. Visitors can explore a more detailed explanation of each strategy.

This exhibit forms part of a gallery on artificial intelligence at The Computer Museum. It clearly illustrates how the attributes of computers allow them to compete with humans at certain tasks.

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Ballard, Martha	Functions Manager	340
Boland, Nancy	Visitor/Education Assistant	350/660
Boyd, James	Visitor Assistant	350/653
Burke, Dan	Store Assistant	307
Cash Room		320
Chibas, Asa	Design Assistant	397
Children's Museum		426-6500
Conference Room (5th floor)		304
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Dahling, Sue	Director of Marketing	396
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Del Sesto, Janice	Director of Development/P.R.	378
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Gonzalez, Giselle	Visitor Assistant	350/651
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Griscom, Dan	Exhibits Engineer	335
Groves, Ted	Graphic/Exhibit Designer	373
Visitor Assistants Office		350
Jennes, Gail	Senior Public Relations Manager	341
Jose, Kate	Computer Bowl Project Manager	346
Keck, Ian	Software Engineer	336
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McElroy, Mary	Visitor Assistant/Wkend Flr Mgr	350/661
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