R&D lab concept sketch

March 2015

what

tools for creators

today’s computing tools are optimized for consumption rather than creation

augmenting human intellect

*“augment the capabilities of **groups** of people as they work together on truly difficult problems”*

end-user computing vs. tools for thinking

“modeling”

new computing primitives

End-user computing
creating & exploring dynamic models
revision control
pair programming
hackability, scripting, extensibility
the new literacy

Tools for thinking
sketching
modeling
data visualization
see & understand

Augmenting group intellect
active essays
collaboration (realtime, async)
sharing & publishing
body of knowledge
logicians
tools for informed decision-making

Man-machine symbiosis
humane interfaces
tools as extension of the self

Text interfaces
command-line
code
visual vs symbol manipulation
sharability

Computing primitives

hardware
operating system
displays
input devices

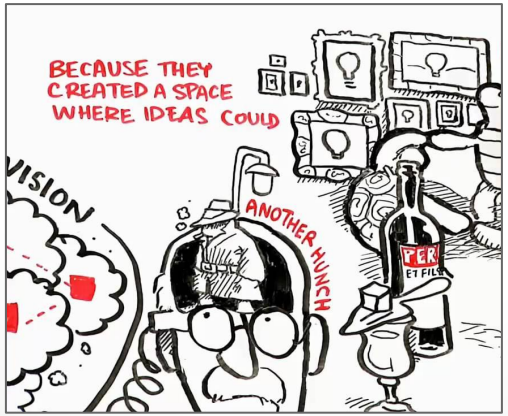
HTML+JS runtime
GPUs
always-on network

identity
security
privacy
encryption

cloud persistence
offline sync
realtime sync

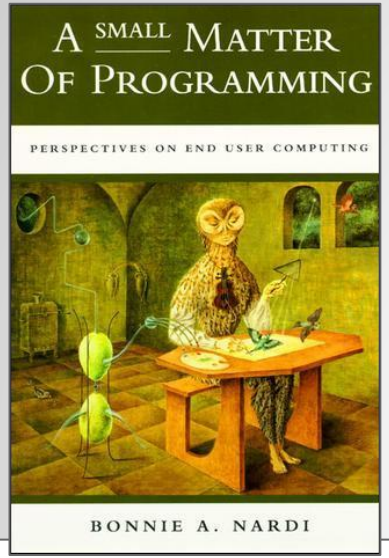
how

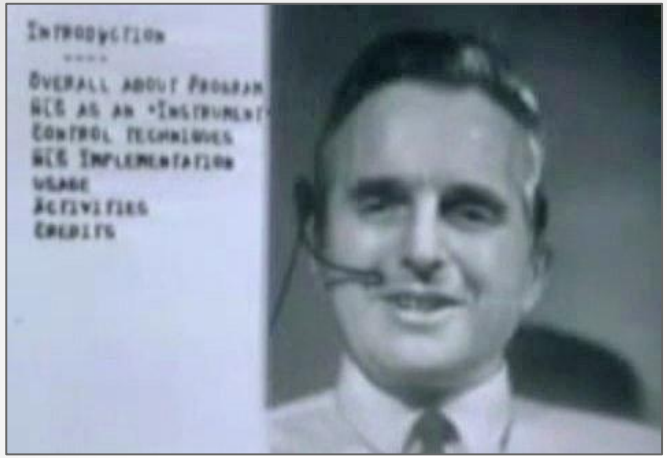
locus for ideas & people



scholarship

“innovation is as much about scholarship and understanding the past as it is about the future”





Chapter 4:

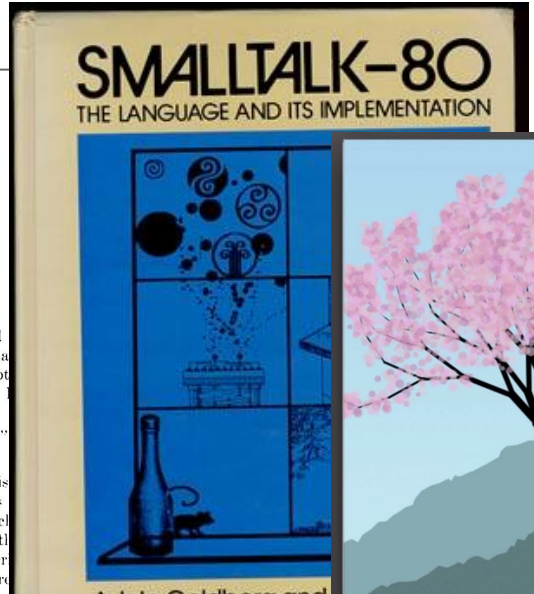
TAXONOMIES OF INPUT

INTRODUCTION

Traditionally, input devices have been discussed in terms of their mechanical and electrical properties (Foley & Van Dam, 1982; Sherr, 1988). Discussions centre on "joysticks," "trackballs," and "mice," for example.

Several studies have attempted to evaluate the technologies from the perspective of human performance. Many of these are summarized in Greenstein and Arnaut (1988) and Milner (1988). A common problem with such studies, however, is that they are often overly device-specific. While they may say something about a particular device in a particular task, many do not contribute significantly to the development of a general model of human performance. (There are exceptions, of course, such as Card, English and Burr, 1978.)

With the objective of isolating more fundamental issues, some researchers have attempted to categorize input technologies and/or techniques along dimensions more meaningful than simply "joystick" or "trackball." The underlying assumption in such efforts is that better abstractions can lead us from phenomenological descriptions to more general models, and hence better



IRE TRANSACTIONS ON HUMAN FACTORS IN ELECTRONICS

Man-Computer Symbiosis*

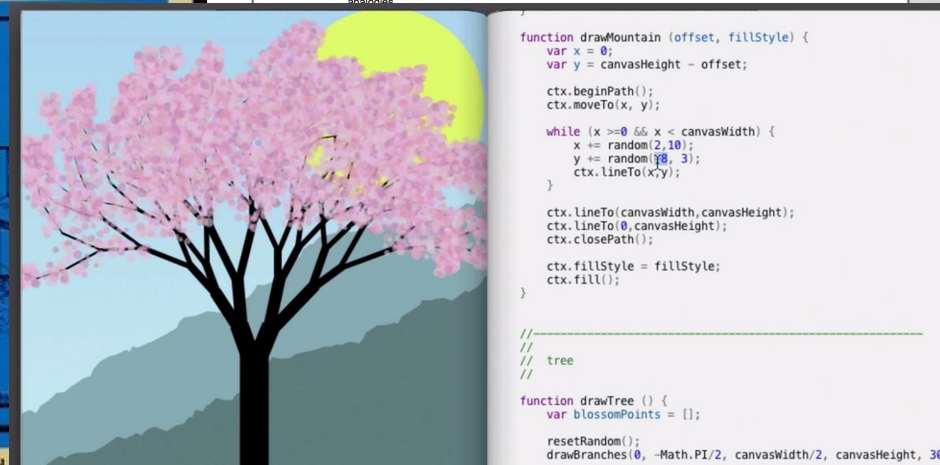
J. C. R. LICKLIDER†

-Man-computer symbiosis is an expected develop-
perative interaction between men and electronic
t will involve very close coupling between the
he electronic members of the partnership. The main
to let computers facilitate formulative thinking as
ilitate the solution of formulated problems, and 2)
n and computers to cooperate in making decisions
ng complex situations without inflexible dependence
ined programs. In the anticipated symbiotic part-
will set the goals, formulate the hypotheses, deter-
iteria, and perform the evaluations. Computing
l do the routinizable work that must be done to
way for insights and decisions in technical and
aking. Preliminary analyses indicate that the sym-
rship will perform intellectual operations much
ely than man alone can perform them. Prerequisites

will be coupled together very tightly, and
sulting partnership will think as no huma
ever thought and process data in a way not
by the information-handling machines we

*B. Between "Mechanically Extended Man"
"Artificial Intelligence"*

As a concept, man-computer symbiosis is
an important way from what North[2] has
chanically extended man." In the man-mach
of the past, the human operator supplied th
the direction, the integration, and the cr
mechanical parts of the systems were merc



```
function drawMountain (offset, fillStyle) {
    var x = 0;
    var y = canvasHeight - offset;

    ctx.beginPath();
    ctx.moveTo(x, y);

    while (x >=0 && x < canvasWidth) {
        x += random(2,10);
        y += random(-8, 3);
        ctx.lineTo(x,y);
    }

    ctx.lineTo(canvasWidth,canvasHeight);
    ctx.lineTo(0,canvasHeight);
    ctx.closePath();

    ctx.fillStyle = fillStyle;
    ctx.fill();
}


//-----------------------------------------------------------
//
//  tree
//

function drawTree () {
    var blossomPoints = [];

    resetRandom();
    drawBranches(0, -Math.PI/2, canvasWidth/2, canvasHeight, 30
```

A:A1: 'EMP MENU

Worksheet Range Copy Move File Print Graph Data System Quit
Global Insert Delete Column Erase Titles Window Status Page Hide

	A	B	C	D	E	F	G
1	EMP	EMP_NAME	DEPTNO	JOB	YEARS	SALARY	BONUS
2	1777	Azibad	4000	Sales	2	40000	10000
3	81964	Brown	6000	Sales	3	45000	10000
4	40370	Burns	6000	Mgr	4	75000	25000
5	50706	Caeser	7000	Mgr	3	65000	25000
6	49692	Curly	3000	Mgr	5	65000	20000
7	34791	Dabarrett	7000	Sales	2	45000	10000
8	84984	Daniels	1000	President	8	150000	100000
9	59937	Dempsey	3000	Sales	3	40000	10000
10	51515	Donovan	3000	Sales	2	30000	5000
11	48338	Fields	4000	Mgr	5	70000	25000
12	91574	Fiklore	1000	Admin	8	35000	---
13	64596	Fine	5000	Mgr	3	75000	25000
14	13729	Green	1000	Mgr	5	90000	25000
15	55957	Hermann	4000	Sales	4	50000	10000
16	31619	Hodgedon	5000	Sales	2	40000	10000
17	1773	Howard	2000	Mgr	3	80000	25000
18	2165	Hugh	1000	Admin	5	30000	---
19	23907	Johnson	1000	VP	1	100000	50000
20	7166	Laflare	2000	Sales	2	35000	5000

DATA.WK3

File Edit Go Tools Objects Font Style Home

Welcome to HyperCard

Home

HyperCard Tour | HyperCard Help | Practice | New Features

Art Bits | Addresses | Phone Dialer | Graph Maker

QuickTime Tools | AppleScript Mail Merge | AppleScript Text Controls

Welcome to... | Stack Kit | Card 3 | Card 4 | Card 5

About BeOS

BeOS

Platform:
IBM PC/AT or clone

CPU:
(unknown) running at 800MHz

Kernel:
May 26 2000 12:27:12

System Version:
R5.0.1

Running:
0 minutes, 53 seconds

Memory:
655360 KB total


slack


Gmail


Trello


Google Docs


Google calendar


GitHub


Dropbox

academic vs market

visionary vs iterative
strategic vs tactical
holistic vs reductionist

“head in the clouds, feet in the mud”

customer discovery

bioinformaticians
architects
financial analysts
archeology / GIS
industrial design / CAD
data scientists
web designers

inclusivity

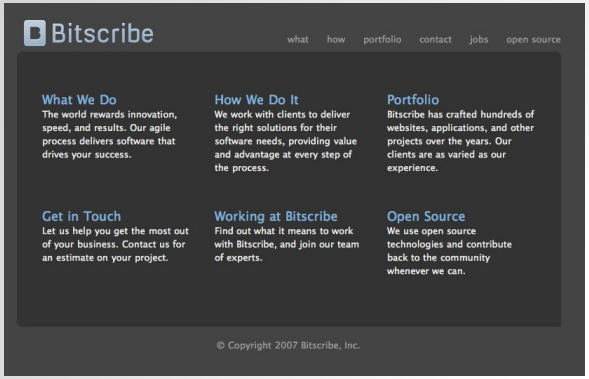
diversity for wider perspective & bigger impact

slow burn

“being early is the same as being wrong”

people in orbit

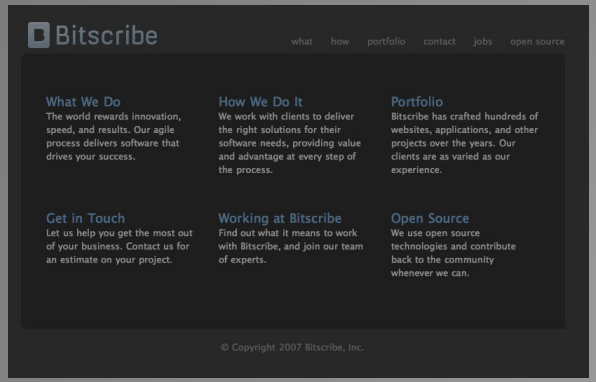
“permeable membranes”



heroku

this R&D lab

?

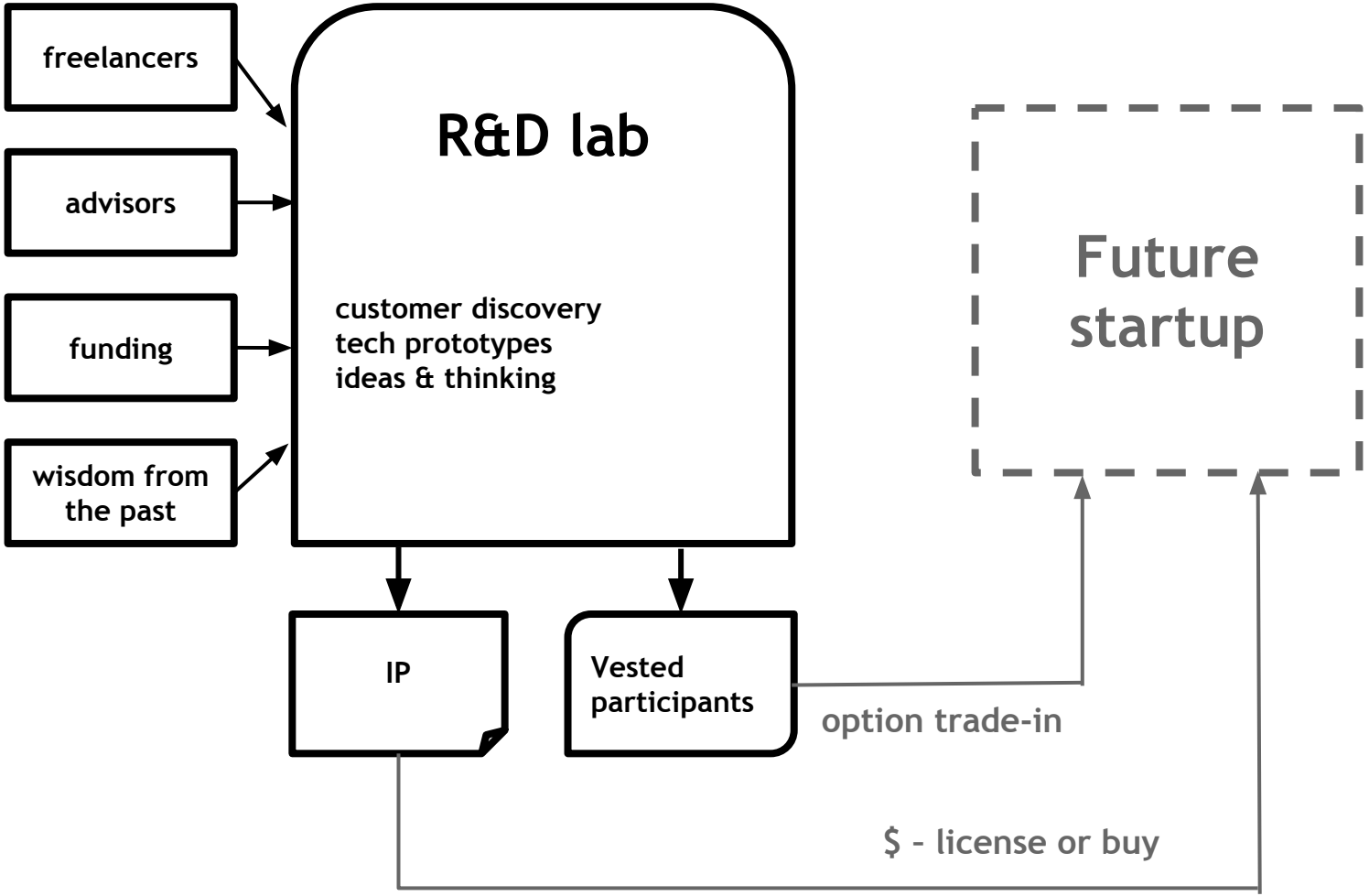


→ heroku

this R&D lab → ?

maybe.

logistics


freelancers
advisors
funding
wisdom from the past
R&D lab
customer discovery
tech prototypes
ideas & thinking
IP
Vested participants
Future startup
option trade-in
$ - license or buy

Project structure

6 – 9 projects

1 – 6 weeks each

gaps between projects for reflection

Entity

LLC
grant funding from investors
no full-time employees
no permanent office space
dissolve in 2016

Who

Board

Advisors &
future investors

Managing
director

Project
participants

Speculative / keep warm

Core materials

mission statement
brand
values & axioms
one-page manifesto
reading list
mailing lists

fin.