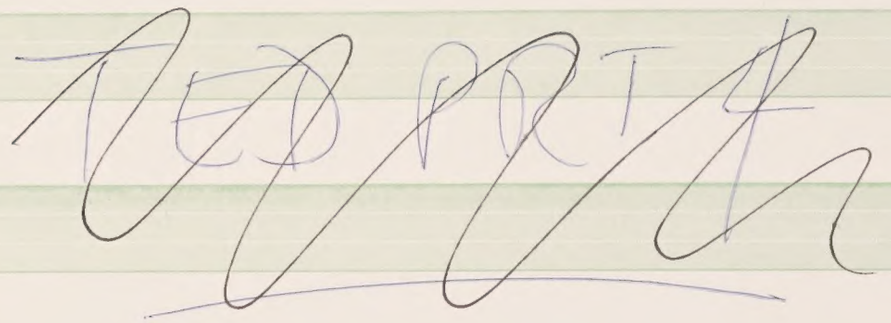
```
//INITCE   JOB  MSGLEVEL=1,PRTY=11
//STARTING EXEC PROC=INITCE
XXIEEPROC EXEC PGM=IEFSD060,PARM=CEA
  STEP TIME=00.00.00
```

FANTICS

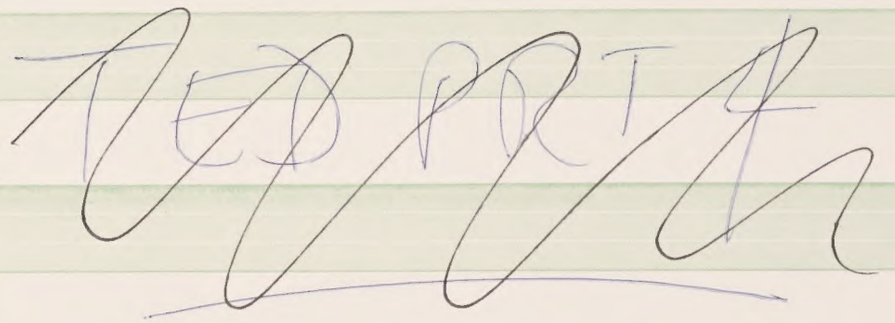
17-18 JULY 1969
4 AM



```
//INITCE   JOB  MSGLEVEL=1,PRTY=11
//STARTING EXEC PROC=INITCE
XXIEEPROC EXEC PGM=IEFSD060,PARM=CEA
  STEP TIME=00.00.00
```

FANTICS

17-18 JULY 1969
4 AM



xxxxxxxxxx

General resident dispatcher for scope

Rollout for print/pinch

Date of this rollout: thursday-friday 17-18 july 1969, 4 am

Name of contents: fantics, a book draft.

Data set, print data set: ted, tedprt4

Description of work: additions at the addition area, rearrangements.

Work systems: outline parts being put between slashes. paragraphs containing new writing direct into draft being put behind three ampersands, which will later be deleted. a new zone, called holds, has been created.

Remarks: what the hell, let's write a book.

*****

****

Systems note. this is the copy buffer. everything here has been copied from area "livnpt". note that there are no "chapters." when sections get combined into chapters is the last thing on my mind.

----- ----- ----- ----- -----

----- ----- ----- ----- ----- income-tax help system (alternatives)
----- example: fliptych ----- ((1:48 am 10 july)) ----- ((8:20 pm fri 11 july)) ((closed 10:48 pm)) ----- ((1:15 am 11-12 july))

----- ----- ----- ----- ----- ((3:10 am 11-12 july))

----- ----- ----- ----- -----

((insertions thursday-friday 17-18 july 1969, starting 12:30 am)) ((12:45 am 17-18 july)) ((started 3:20 am, same night))

'most general machine'

((fin 3:30))

----- ----- ----- ----- -----

((manuscript is supposed to begin here))

----- ----- ----- ----- -----

/Introduction xxx derivation of term "fantics": two useful roots, "fanein," to show, and "fantastein," to present to the mind or eye. the latter would clearly, from its meaning, be the preferable root. however, then the word would be "fantastics," which would have rather the wrong meaning. it would also take away the sense: here i can speak of "a fantic system" and make it mean something, whereas to call it a "fantastic system," though probably true, would cloud the issue as well as raise the pitch of discussion uncomfortably/

We are confronted today with a supposed explosion of information, information systems and new media. what they are, and where they are going, is a matter of considerable excitement and speculation. this book offers a rather different point of view.

/"the information explosion" "the knowledge industry" synnoetics cyber-culture! media barrages media massages./

/Sooper prediction whopperoo (short & summary) media, environments, ideas, communication, feel./

fff summary of my general prediction

This book seeks to make several points. the basic point is that there exists a new art and science, fantics, and that attempts to understand it from more specialized points of view have failed so far. this field of fantics embraces the communication of ideas, and the necessary structuring of media, environments and feel. this topic is unified, rather than diverse. the different kinds of media and environments possible are many: but the considerations upon which they must be based are universal, and do not appropriately fit any technical discipline. what is more, this book seeks to make certain predictions about the future. we are entering what i would call a fantic world, in which our media can be as gracious, beautiful and exciting as any previously known to human culture, or they can be crude, unsatisfying and subtly awful. i advocate the former. moreover, i think the former will come true. i think that when it is generally realized what is possible, the world will change dramatically in certain specific and important ways. this will involve upheavals in education, entertainment, and home and business life, as will presently be described.

The general prediction is approximately this, and i wish to state it as baldly as possible to avoid misunderstanding. within a few years--certainly less than twenty--the written word will no longer be generally printed, but will be stored in computers and read from computer displays in our homes, offices and everywhere.

The written media of our former culture will be replaced, enlarged and improved by a new medium, which i call hypertext. hypertext will be to ordinary writing as flying is to walking.

The illustrations of hypertexts will be hypergrams, pictures which the user can make to react or perform. the other artifacts of our culture, including such things as painting, sculpture and architecture, will come also to be stored in computers for our enjoyment.

Motion pictures and music will also be created by composers and animators, and their basic plans stored in computer libraries where they may be gotten at and re-performed readily. for all creative purposes, computer-based "creativity systems" will be the working consoles at which the artist and writer may work more effectively than ever before.

/ ol: digital control, comp disp., dig. libraries the three basics computers can do for showing: storage, performance, control (dft order?) info facilities supplementing creative envts/

These developments will come about for several reasons. the first is that computers naturally form the best devices for controlling other machines, and making them more responsive and flexible than they ever could be otherwise.

The second is that computers can directly perform various presentations for us: causing words to appear on screens, making diagrams on screens, even making music and motion pictures in full color.

The third is that the structured information for these activities may be stored with great safety and accessibility on computer equipment, and automatically forwarded to people who want to use it.

A fourth reason is that computers, through various helpful capacities, can stand by and answer certain kinds of questions and work out certain kinds of calculations for us.

A fifth reason is that computer storage makes possible a richness, subtlety and complexity of stored information and ideas which is beyond anything the world has previously known.

On the face of it many people will not find this an attractive idea. for various reasons, including stupidity, computer manufacturers and enthusiasts have stirred up the broadest possible misunderstanding of what computers are and do, stirring up feelings of distaste and apprehension approaching revulsion on the part of many. in this book, then, i will attempt to explain why computers can be of the greatest possible help in man's softest and warmest occupations, and why they should and will be welcomed by the writer, the artist and the public into home and study.

----- ----- ----- ----- -----

/What computers are (brief early remarks) the myth and tradition of narrow computer usage, rigid input structures (hardly sophisticated)/

&&& it is generally supposed by laymen, and they have various reasons for supposing it, that computers are narrow and rigid. actually, any narrowness and rigidity of computers comes from the way they are programmed for use. in the early days it was much simpler to program them that way, and this narrowness has persisted as a tradition, a part of the culture of the computer world.

/Section: the ease of use/

----- ----- ----- ----- -----

/Section: the fabulous world of computer display. or, "toys and jewels"/

/Machines must not make decisions fake scientific voting-districts we must jolly well understand the decisions with which machines are entrusted/

/Review of history toward this point, rewritten in my terms. section: the fantic media to 1900 section: the fantic media to 1950 section: the fantic media to 1969 or 1970 fritz machlup "teaching technology" nelson's timetable chart of falling prices plain halftone systems stationery systems the creativity systems of the past the record-keeping systems of the past not gl. computers but special the scattered consumption of systems in homes-- now to be unified cassette-camera timetable for introduction of computer displays in homes/

----- ----- ----- ----- -----

/What computers are (brief early remarks) the myth and tradition of narrow computer usage, rigid input structures (hardly sophisticated)/

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/Section: the ease of use/

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/Section: horizons for sale section: the myth of technicality section: the new-media whizbang xxx emperor's clothes xxx general debunk-list: ir, hum.fact., cai, 'top man' ir 'managerial information retrieval' as a hotcha thing only for the top guys debunk also: diagnosis by computer, automatic dictation, artificial intelligence i do not want to talk about a world in which machines enter the body, at least prosthetically or physiologically or innervatively patient records online clerical ir (another narrow vision)/

§§§ now is a time when everyone with some technical understanding is properly impressed with the potential for new media to communicate ideas and training. but this has led to the strangest variety of predictions, all under the same cloud. this cloud, which i see as obscuring the subject, i would refer to as the "myth of technicality." the myth of technicality is the idea that the development of media for presentation is a technical job to be left to "experts." i consider this idea pernicious and its results unfortunate.

§§§i believe, on the contrary, that the creation of presentational systems is becoming a unified art and study, if it has not always been; and that the criteria for good presentational systems are not technical in any of the current senses, or technically measurable in any but a global sense, like love and war.

/Section: new media components holography "branching" as a whizbang aspect of new media components coupled every which way now electrical coupling of components concrete physical coupling of components/

/ what's coming is structured media, not a hodgepodge what is a medium? viability of medium in society conceptual unity of medium nobody foresees media impact, as a rule xxx movie analogy tv analogy book analogy mcluhan's onto it, even if he doesn't understand the technicalities. basic disagreement with mcluhan: the great differences _among electronic media, and the stupendous difference it makes media that have flopped problems of a medium catching on: marketing, coherence, simplicity & convenience/

/Convergent media vs. mere engineering opportunities/

hereafter there are not slashes, because everything is outline material.

Section: possible worlds of vision and response

Ignore clumsiness of early systems. these will be as easy to use as tv sets

Good old sketchpad i sketchpad 3 sutherland's stereo system 3-d 'tank'

'true structure' systems section: the meaning of structured data

----- ----- ----- ----- -----

Cavern 5—controlled media section: the Computer as multi controller

"multi-media"

Two] new presentational media, especially all-around-you sound, brain-[illegible] machine system gamma gives creative engineers & [illegible] creation. the unification of sonic and visual arts today's rock music light shows

"warp] : moving-screen lord of rings

"Computer-assisted instruction" xyz two-thousand century. the [illegible] brick-wall illustration the nature of intelligence and its opposite aims of top and bottom education the writing of [illegible] today the inside story on pcaq. [illegible]: we hate to do it, hate to [illegible]

[illegible]ication. what education is about anyway xyz section. [illegible] xyz the [illegible] secret: free access to liposhing materials, computing? [illegible] national anyitonmont is the key

[illegible]: "information retrieval" boolean systems. "uit the horizontal [illegible] mind pood.

"[illegible] factors" xyz narrow criteria of "human factors" improperly [illegible] vant nicely ranked control of sony t2-50 control [illegible] [illegible] with cricio holicomtor handle airplane watch xyz 3 chuck cap the [illegible] xyz is human-factors designed, anyhow, if you let in enough variables.

section: the computer as performer sonic-audio machine three-dimensional scene structures shinoffini, airtrans, auto design systems

music library to feel through music performance machine

section: structured pictures

ice section: fantasy-type systems description of ice ice system, utah ice system, bonner ice system, roboarts ice system library of ice interpersonal library of fantasy characters

section: symmorgans xxx brain project

[illegible]

[illegible]

[illegible]

((approximately)) _____ _____ _____ _____ _____ _____

Section: Information Theory

Section: Low Complexity Noisy Channel Codes. Asymptotic Equipartition Property

Section: Low Complexity Codes

Section: The main ideas of data structures.

_____ _____ _____ _____

This area is for live input, in a protocol fashion. the book gets put together in the area "fcs", at least for tonight. (3 july 1969, 10:30 p.m.)

----- ----- ----- ----- -----

These are random insertions toward the book __fantics. 2 july 1969. xxxxx review of history toward this point, rewritten in my terms. xxxxx the general-purpose system toward which we are moving (line-drawing, moving-text) xxxxx the big secret: free access to interesting materials, convergent motivational environment is the key xxxxx sutherland's stereo system xxxxx amusement parks xxxxx

----- ----- ----- -----

Section: terminology section: how computer displays work section: how computers work introduction section: the myth of technicality section: the fabulous world of computer display. or, "toys and jewels" section: some basic questions in the psychology of thought and feeling section: "computer-assisted instruction" section: "information retrieval"

Section: possible worlds of vision and response section: what education is about anyway section: hypertext section: stretchtext section: hypergrams section: context jumps section: author's systems section: the ease of use section: the nature of categories section: the nature of ideas section: the nature of the creative process section: systems for all these section: systems for thinking with data section: the dangers of loss section: on the problem of keeping too much section: a liberal's hopes

----- ----- ----- ----- -----

Section: slammed minds section: the unification of sonic and visual arts section: unity, structure and feel nelson's timetable where these prophecies stop movie analogy emperor's clothes boolean systems: just the beginning of what the mind needs tut-tutorial systems the bads of cai brick-wall illustration

----- ----- ----- ----- -----

"the information explosion" "the knowledge industry" synnoetics cyber-culture! media barrages media barrages mcluhan's onto it, even if he doesn't understand the technicalities. basic disagreement with mcluhan: the great differences among electronic media, and the stupendous difference it makes fritz machlup "teaching technology" the inside story on prog. ed.: we hate to do it, hate to study it derivation of term "fantics": two useful roots, "fanein," to show, and "fantastein," to

present to the mind or eye. the latter would clearly, from its meaning, be the preferable root. however, then the word would be "fantastics," which would have rather the wrong meaning. it would also take away the sense: here i can speak of "a fantic system" and make it mean something, whereas to call it a "fantastic system," though probably true, would cloud the issue as well as raise the pitch of discussion uncomfortably.

----- ----- ----- ----- -----

((((i got this far by 12 p.m.: one and a half hours on the machine.))))

----- ----- ----- ----- -----

Spatial hypertext environments: checkerboard, clouds (hanging in 3-space), swinging pages in 3-space ignore clumsiness of early systems. these will be as easy to use as tv sets the text facility: queen of them all professionalism, bureaucracy, the narrow initiative-paths to success in our world mickey mouse brain project super-audio machine cinenym "human factors" xxx narrow criteria of "human factors" generally irrelevant xxx a church can be thought of as human-factors designed, anyhow, if you let in enough variables awesome architecture swell new presentational media, especially all-around-you sound xxsound, beautiful projection systems holography section: the new-media whizbang xxx "branching" as a whizbang aspect of new media

----- ----- ----- ----- ----- (tuesday 8 july, 12 pm)

Section: horizons for sale example: fliptych example: moving-screen lord of rings example: hyperfilm of wwii section: art & the arts section: scholarship example: 4-d data structure permitting roman snapshots section: new media components section: the fantic media to 1900 section: the fantic media to 1950 section: the fantic media to 1969 or 1970 section: the meaning of data structure section: text control systems

Section: the computer as media controller nobody foresees media impact, as a rule section: hyper-fantic media of various sorts section: computer-controlled media nicely unified controls controls of sony tc-50 control of all-terrain vehicle helicopter handle airplane "stick" section: the computer as performer section: the only permanent form of storage section: fantasm-type systems section: structured pictures digital storage is perfect digital storage may be safeguarded digital storage of paintings

----- ----- ----- ----- -----

((input of 10 july 1969. just starting productive work at midnight, and i'm exhausted.))

How comp. displays work air controller envt handshake structures accounting structures the nature of accounting the virtual space of a conceptual and display environment 'managerial information retrieval' as a hotcha thing only for the top guys patient records online clerical ir (another narrow vision) freedom of information for the citizen freedom from concrete possession of books freedom of education note the number of roles in our society built around the hoarding of information liebling on the press nature of the press: ownership viewpoint, press subculture, domination of the agreed-on, the angle, and the silly the nature of intelligence and its growth the opposite aims of top and bottom education the critics of the schools today our media of this century: their miserable content and yet their common imagery to us all plain halftone systems three-dimensional scene structures shiplofting, airframe, auto design systems stationery systems the creativity systems of the past the record-keeping systems of the past the souvenirs of our world the us national archive: 2 billion dox

----- ----- ----- ----- ----- ((1 am 10 july)) general debunk-list: ir, hum.fact., cai, 'top man' ir debunk also: diagnosis by computer, automatic dictation, artificial intelligence i do not want to talk about a world in which machines enter the body, at least prosthetically or physiologically or innervatively the three basics computers can do for showing: storage, performance, control (dft order?) music library to feed through music performance machine interpersonal environments library arrangements for all digital media chart of falling prices fsm description of ge fsm system, utah fsm system, denver fsm system, nelson's fsm system library of fsm 'performances' library of fantasm characters

----- ----- ----- ----- -----

((1:40 am 10 july))

Info facilities supplementing creative envts the mechanics of springs, lighting & hush swoop feel can we visualize 4-d cube? can we visualize calhamer board? additional dimensions more dimensions through color, smell and sound more dimensions through spring-loading review of my vision: grand libraries, swooping systems, true education, the preservability of the heritage income-tax help system (alternatives) convergent media vs. mere engineering opportunities

----- ----- ----- ----- -----

((1:48 am 10 july))

Hyper-comics hyper-poetry the danger of sudden electrical destruction i am assuming peace, of course hypersystems for education in the underdeveloped countries the scattered consumption of systems in homes-- now to be unified cassette-camera timetable for introduction of computer displays in homes true access to news through hypertext systems today's rock music light shows "multi-media"

----- ----- ----- ----- -----

((8:20 pm fri 11 july))

Ol: digital control, comp disp., dig. libraries 3-d 'tank' response qualities machines must not make decisions fake scientific voting-districts we must jolly well understand the decisions with which machines are entrusted what is a medium? viability of medium in society what is a medium? viability of medium in society conceptual unity of medium components coupled every which way now electrical coupling of components concrete physical coupling of components museums & fairs not gl. computers but special inductive & axiomatic creation expository structures breaking expository structures the nature of writing the nature of ideas ideas as annotated connections

((closed 10:48 pm))

----- ----- ----- ----- -----

Good old sketchpad i sketchpad 3 time dissector for audio, fsm 'true structure' systems section: the meaning of structured data sooper prediction whopperoo (short & summary) what's coming is structured media, not a hodgepodge tv analogy book analogy ((1:15 am 11-12 july))

----- ----- ----- ----- -----

Creativity systems table of media & their corresponding creativity systems media that have flopped problems of a medium catching on: marketing, coherence, simplicity & convenience media, environments, ideas, communication, feel. ((3:10 am 11-12 july))

----- ----- ----- ----- -----

((insertions thursday-friday 17-18 july 1969, starting 12:30 am)) feeling-spaces (incl. multidimensional) can we conceptualize multiple dimensions? the hypercube dashboard environments multi-dim 'feel' clues: auditory, proprio, kinesth, push-pull, breeze, color, vibration, stereophony, visual stereo the 4-d hypercube the home text console universal high-performance text consoles news hypertext strategic intelligence hypertext text editing non-fiction hypertext sphere of interconnectedness in a large-scale hypertext work the myth and tradition of narrow computer usage, rigid input structures (hardly sophisticated) what computers are (brief early remarks) text systems ((12:45 am 17-18 july))

----- ----- ----- ----- -----

((started 3:20 am, same night))

'most general machine' the creative process: creation of overall strux by induction/extrapolation; threading on overall strux; comparing overall

strux & corresp. items & contexts ascap copyright arrangements ((fin
3:30))

Compliments of the

HYPERTEXT EDITING SYSTEM

CENTER FOR
COMPUTER & INFORMATION SCIENCES
BROWN UNIVERSITY
PROVIDENCE, RHODE ISLAND

18 July, 1969