Down From the Top of Its Game

The Story of Infocom, Inc.

Hector Briceno, Wesley Chao, Andrew Glenn,

Stanley Hu, Ashwin Krishnamurthy, Bruce Tsuchida

December 13, 2000

Outline of Presentation

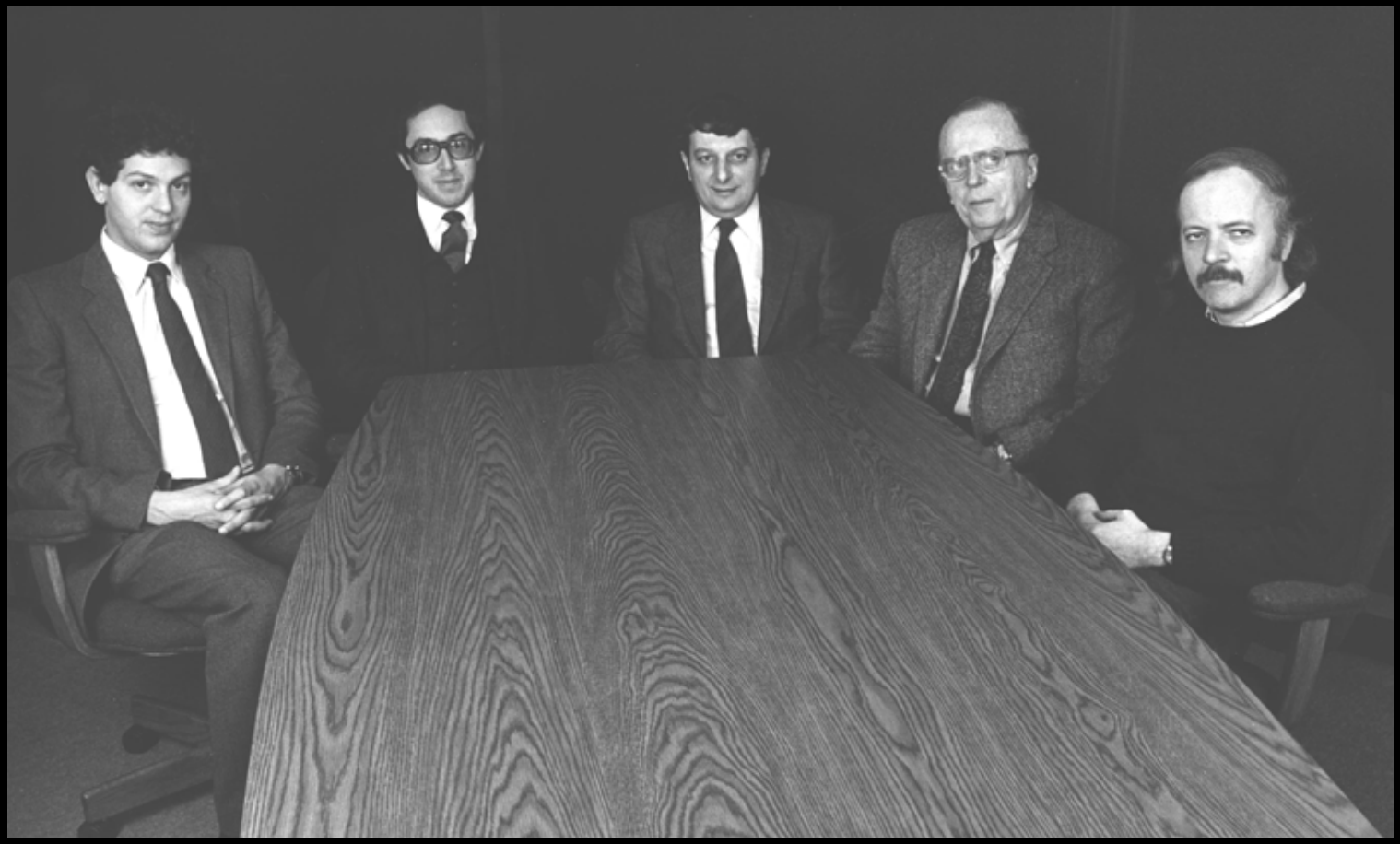
- Founding and Background
- Technical Achievements
- Selling Games
- Financial Success
- Transition to Business Products
- Problems in Transition
- Conclusions

INFOCOM™

Founding and Background

- Dynamic Modeling group at LCS
  - Created *Zork* for mainframes
- Original intentions
  - Keep people together
  - Make serious software for PCs
  - Launched *Zork* to get started

Infocom's Board of Directors



From left: Marc Blank, Joel Berez (President),
Al Vezza, J.C.R. Licklider, Chris Reeve

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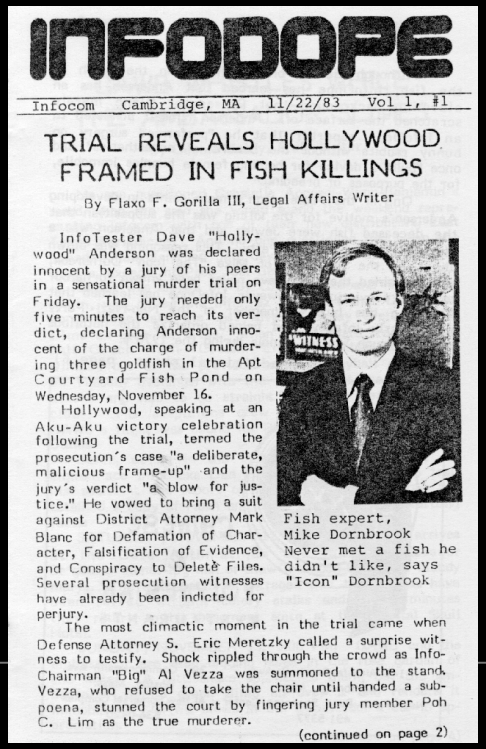
Company Culture

- Fun, humorous group
- Young and funky

"…a level of 28 mg of Budweiser Beer was also noted. This is equivalent to a goldfish drinking eighteen six-packs in a seven minute period."



INFODOPE

Infocom Cambridge, MA 11/22/83 Vol 1, #1

TRIAL REVEALS HOLLYWOOD FRAMED IN FISH KILLINGS

By Flaxo F. Gorilla III, Legal Affairs Writer

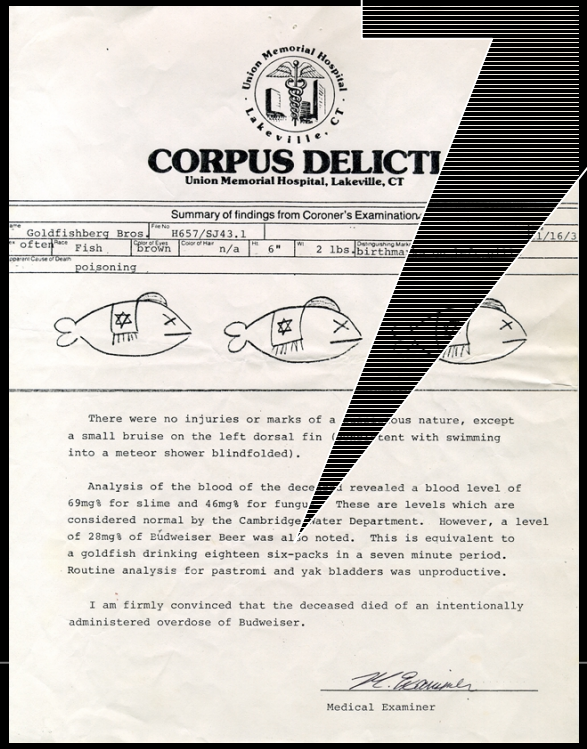
InfoTester Dave "Hollywood" Anderson was declared innocent by a jury of his peers in a sensational murder trial on Friday. The jury needed only five minutes to reach its verdict, declaring Anderson innocent of the charge of murdering three goldfish in the Apt Courtyard Fish Pond on Wednesday, November 16.

Hollywood, speaking at an Aku-Aku victory celebration following the trial, termed the prosecution's case "a deliberate, malicious frame-up" and the jury's verdict "a blow for justice." He vowed to bring a suit against District Attorney Mark Blanc for Defamation of Character, Falsification of Evidence, and Conspiracy to Delete Files. Several prosecution witnesses have already been indicted for perjury.

Fish expert, Mike Dornbrook Never met a fish he didn't like, says "Icon" Dornbrook

The most climactic moment in the trial came when Defense Attorney S. Eric Meretzky called a surprise witness to testify. Shock rippled through the crowd as Info-Chairman "Big" Al Vezza was summoned to the stand. Vezza, who refused to take the chair until handed a subpoena, stunned the court by fingering jury member Poh C. Lim as the true murderer.

(continued on page 2)



Union Memorial Hospital Lakeville, CT

CORPUS DELICTI

Union Memorial Hospital, Lakeville, CT

Summary of findings from Coroner's Examination

Goldfishberg Bros. H657/SJ43.1

often Fish brown n/a 6" 2 lbs. birthma

poisoning

There were no injuries or marks of a ous nature, except a small bruise on the left dorsal fin (cent with swimming into a meteor shower blindfolded).

Analysis of the blood of the dec revealed a blood level of 69mg% for slime and 46mg% for fungu These are levels which are considered normal by the Cambridge Water Department. However, a level of 28mg% of Budweiser Beer was also noted. This is equivalent to a goldfish drinking eighteen six-packs in a seven minute period. Routine analysis for pastromi and yak bladders was unproductive.

I am firmly convinced that the deceased died of an intentionally administered overdose of Budweiser.

Medical Examiner

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Technical Achievements

- Better English parser
- The Z-machine
  - Made games compact
- System of development
  - MDL → Platform-independent byte-codes
  - Efficient and cost-effective

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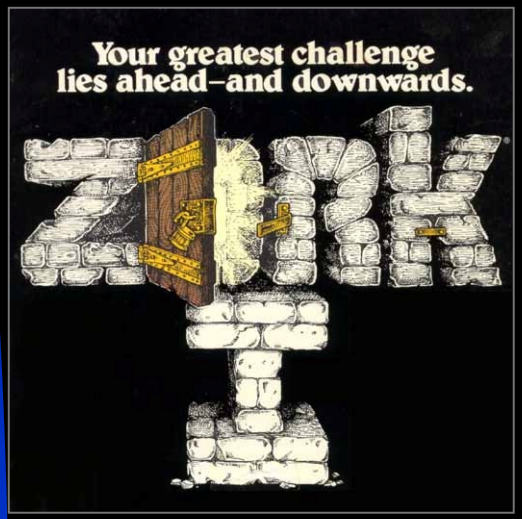
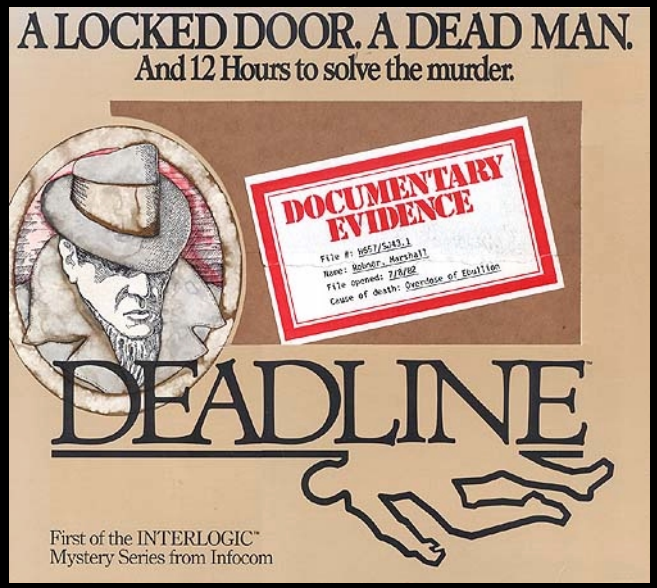
Selling Games

- Released *Zork* in 1980 for TRS-80 Model I
- Spawned sequels, *Deadline*, *Starcross*, more





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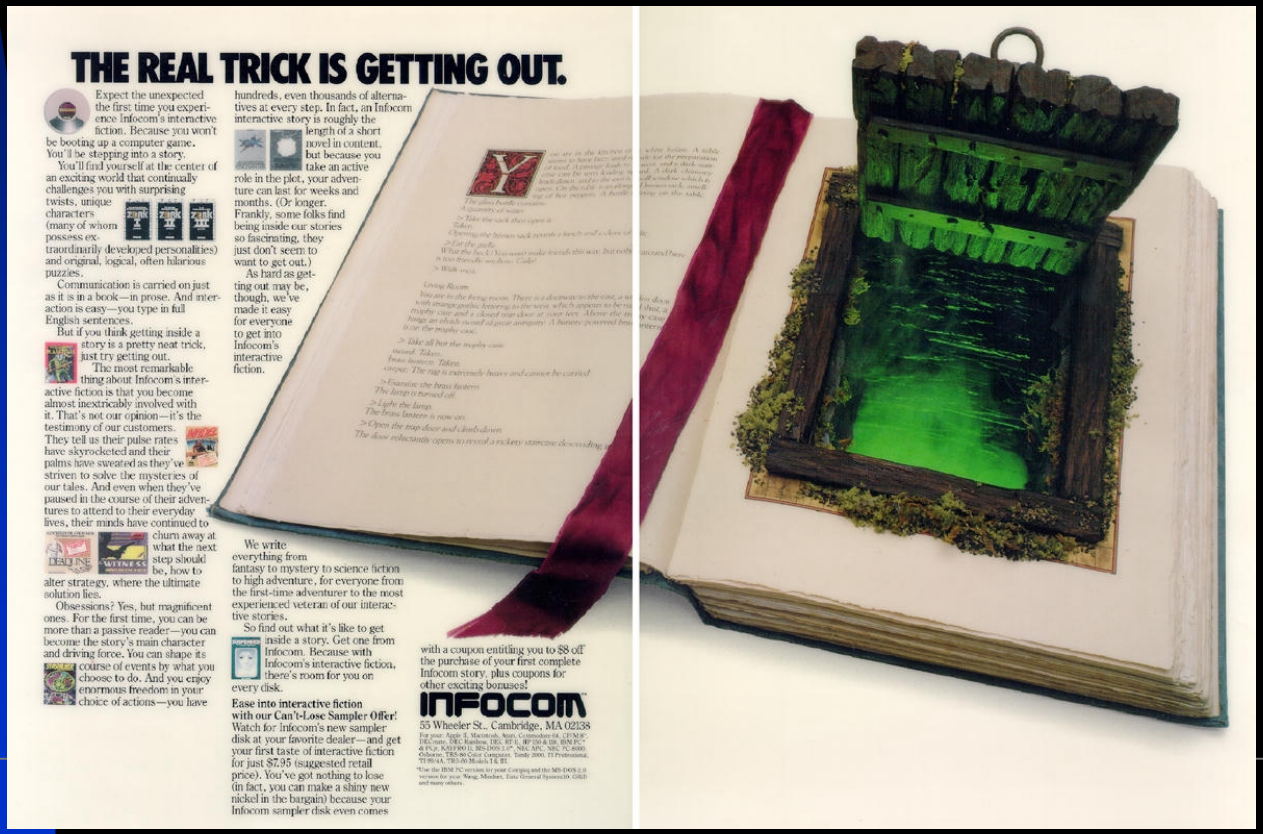
Why were games fun?

- “Understood” many English sentences
- Vivid stories, characters
- Demographics



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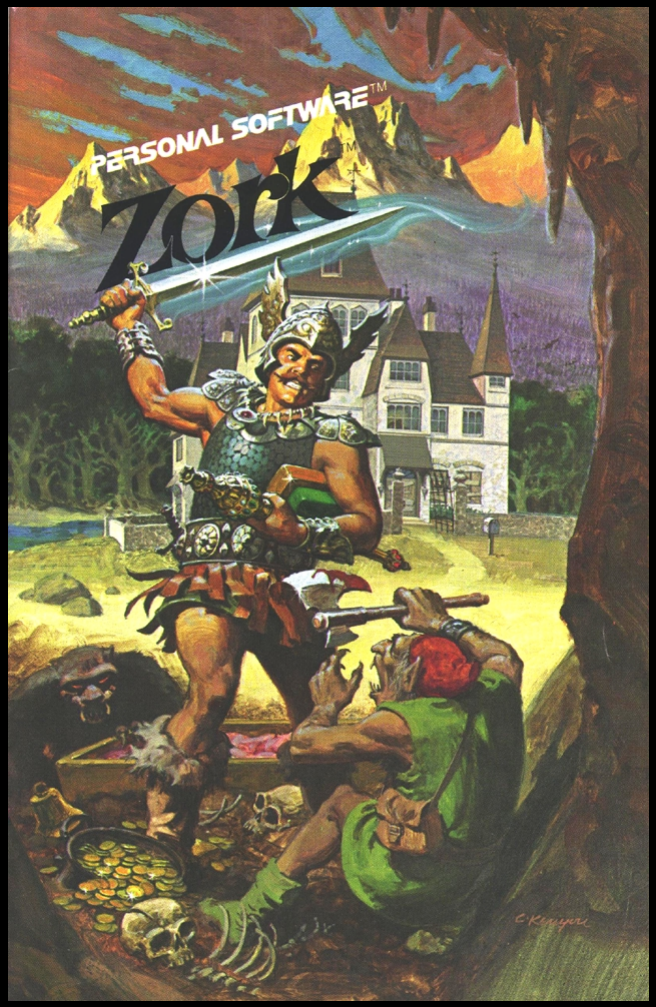
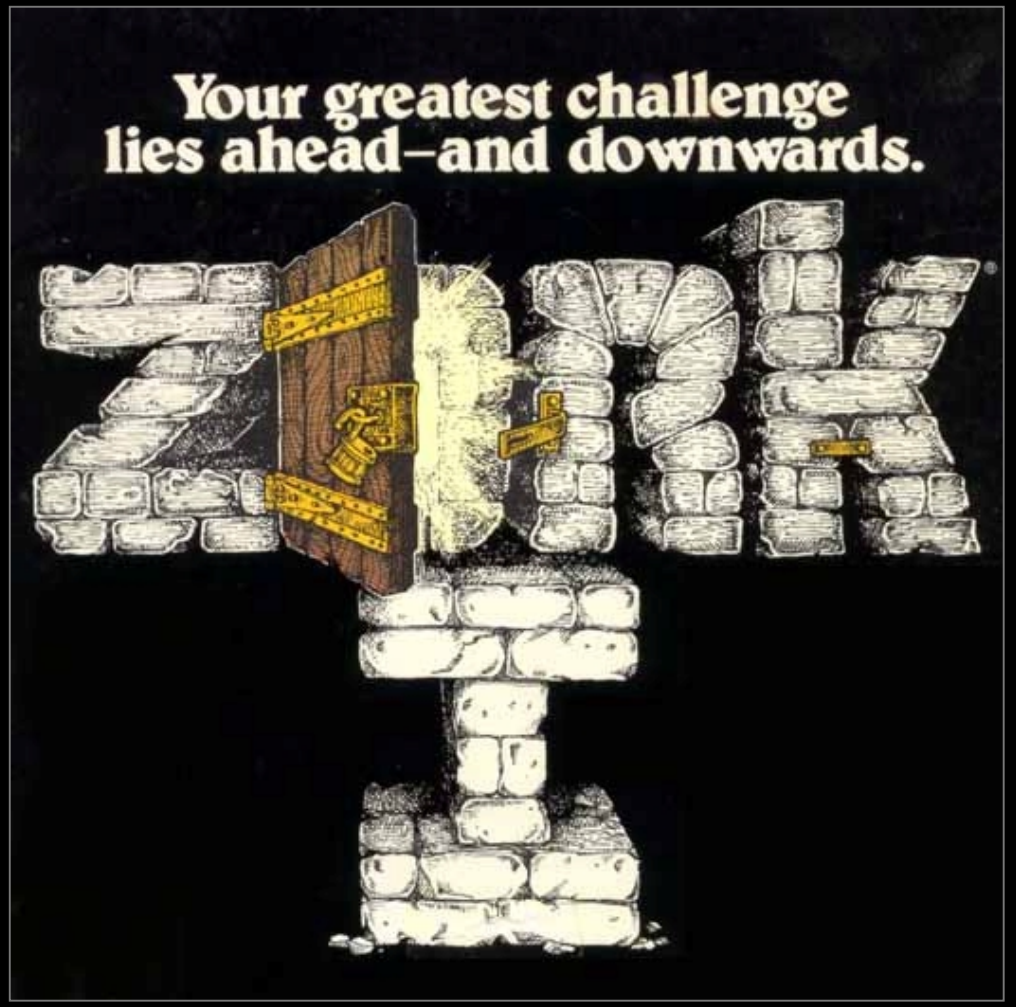
Self-publishing





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Marketing and PR

COMPUTERS

GAMES WITH A REAL BYTE TO THEM

The latest electronic entertainments forgo animation for mind-bending do-it-yourself whodunits and other fictional adventures

BY GARY TAUBES

Somewhere near Los Angeles. A cold Friday morning late in February. . . . The taxi has just dropped you off at the entrance to the Leaders' driveway. The driver didn't seem to like entering into this maze of barely drivable stop more than you did. But the house windows are full of light, and radio music drifts toward you. Your knock is picked, a male voice Can-Ah, is sitting in the kitchen. You just picked up a mortal load of the earth. It might come to handle. Good thing you looked up the police file on Mrs. Leader's death. Her wealth who said the newspaper article had you off on a limited theft family.

What, next, disaster? What happens next is up to you—not the hero, bloodstream. On another weapon, arrest the killer. Or maybe just pull to the door of the time driver and relax. This is not real life—although sometimes it may feel like it. This is Witness, one of the best-selling computer games from Infocom, a software firm in Cambridge, Massachusetts, that uses techniques developed in the nearby computer science laboratory of MIT to give a new twist to computer games. The concept is known as interactive fiction: no animation, no fast moves, no laser beams, no bombing aliens—just prose like Dashiell Hammett minimum that begin Witness. In these computer-choreographed murder mysteries, fantasy adventures, and science fiction thrillers, the player controls the action and makes all the decisions until the mystery is solved, the adventure fulfilled, or the player simply exhausted.

The interactive games, which sell for $40 to $50 each, exercise the player's imagination and ingenuity rather than his fingers. They offer more than a rudimentary, programmed plot structure and a few simple choices. The Infocom games give the player hundreds of choices at any move: a few may affect the ending unexpectedly, some may be just a small step toward the denouement, and many simply go nowhere. The ingenious puzzles that the players encounter in pursuit of the solution have not only made the fiction adventures the best-selling computer game in America, but last year prompted *Personal Choice*, a 36-room-by-guide-to-entertainment and educational materials for children, to recommend Infocom to its readers.

Witness, the account of the Infocom games, is a murder mystery in the classic hard-boiled detective tradition. After a taxi deposits the player-detective in front of the victim's house, the player takes control. By typing commands on the keyboard in English sentences. For example, *Bring the shovel* and *wait for the ballet*, he prepares the detective from room to room, due to clue, suspect to suspect. The program responds with dialogue, conversations, and descriptions of places, objects, and characters. (Then the door swings open. "Good evening," says a smiling Jane. "I am Phenja.")

As the detective probes deeper into the murky maze of events, the plot twists and turns again; suspects lamper with evidence or change their stories as they are confronted with their duplicity. As in real life, every lessons results in the loss of valuable information, or even elimination of the player. (Suddenly there is a flash of light and an explosion, and mortal pain radiates from your chest.)

The real menace either twelve hours of fictional time—the minutes left off with each command—or when the player decides to make an arrest. Only then does the computer reveal whether the detective uncovered enough evidence even to indict, let alone convict, the suspect. The game has many endings, but only one ultimate solution in which murderers, motives, and method are all revealed. Unlike real life, the game can be played again and again until it is finally solved, which can take—and usually does—100 hours or more.

The Infocom games are not the first of their genre. In 1978, two MIT graduate created Adventure, a program-created fantasy game of goblins, trolls, and magic that could be played only on main-frame computers—immense machines with rows of thousands of times more computing power than personal computers. (Adventure was later condensed to run on microcomputers and is still available.) That first adventure was a primitive game in which the player communicated with the machine using only two-word, verb-noun commands: Kill troll, say, or Take sword.

When a group of MIT researchers—all working for computer scientist at Yale, were chief executive officer of Infocom—first played Adventure, they were enthralled. But with the tasks at their disposal, they knew they could write their own, more ingenious version. Marc Blank, now vice president of Infocom, and Tim Anderson, now a consultant for the company, used SAIL to program *Zork*, a fantasy adventure set in an underground world, which took more than a hundred hours to play and more than a million bytes of storage space on the MIT computer. When Infocom was formed out of the nucleus of the MIT researchers, *Zork* became the first product.

Unlike Adventure, *Zork* attempted to mimic reality by allowing the player to communicate with the computer in more-or-less English sentences. Blank invented a computer parser for *Zork* that deciphers more sentences rather than just two-word commands. It recognizes verbs, nouns, adjectives, adverbs, and prepositions.

The wizards behind the computer magic at Infocom: Mike Blank, Joel Berez, and Al Vezza. Behind them, the massive mainframe on which the games are created

When a player types in a command, the parser first interprets the words in the command with their stored in its vocabulary of more than six hundred words. If one of the words is unknown to the computer, it says so, and the player is sent again. If the parser knows each word, it analyzes the sentence structure, quickly categorizing and sorting the parts of speech. A sentence with an unfamiliar structure will prompt the computer to request how it should be understood. Once the command is clear, the program executes it. Then, if the player types *Pick up the football* second and *kill the troll with it*, the computer would understand request.

With the player is moving through the game, recording the action, the program keeps the plot advancing behind his back. The characters and even the setting from their own parts to play, which bear directly on the final outcome. For instance, in Witness a suspect wants to the scene of the crime in the early morning hours to remove damning evidence. If the detective is present, the suspect will feel timed suspect departs, only to return later to fulfill the mission. If the detective eavesdrops, the suspect's tampering may go forever undetected.

The player's breakneck duties continued with the computer-world of fiction, makes for an astronomical number of variations in each game. Says Michael Dertouzos, Infocom's product manager, "It's real trivial, but that doesn't mean the program has to be that long." The programs are manageable because the games rely on another technique called brute artificial intelligence research.

Rather than use immensely long programs that emulate the way every person and object in the game will interact, each of the verbs, objects, and locations in the game has a computer code that describes its traits and the rules that govern its use. "It's not as if there's a program that says if the player types this, do that," says Blank. "There are just all these rules that start interacting. You can use any verb with any object even if that connection wasn't foreseen, because the verb routines have a built-in understanding of which things are reasonable and which are not."

The program knows, for instance, what the verb "burn" means, and it knows the characteristics of wood (although those characteristics may change from game to game or player to player). If a player types in *Burn the wood with the match*, the program pulls the rules for burn, wood, and match, examines the characteristics of all, and if the match is lit, the wood is ignited. If some nonwood player types in, for instance, *Burn the cloak with the match*, the program can provide a suitably flippant response: *Rilke's cloak?!!?*

The Infocom developers are constantly surprised even the most bizarre commands of the players. In Witness, for example, the command *Kiss him* (or *Kiss Jane*) is answered by the reply *Refrain [REAL] paragraph 7.8. of the California police code of conduct specifically prohibits kissing potential suspects or witnesses. To ensure that all eventualities are foreseen and all actions logical and uncontrived, testers or Infocom rigorously play the games before they are distributed. "Never does [one] find a low logic," explains Dertouzos. "Those is all be corrected, but there the testers still have to go back and play the game again and again and again." Even so, a team of outside testers—who get free games as payment for their time—also run the games through their paces. And after distribution Infocom is eager to hear customer suggestions and continually revises the games accordingly.*

The complexity and seeming wizardry of the games is possible only because of the power of the computer language they are written in. When Infocom was formed, Blank and company president Joel Berez invented ZIL (for Zork Interactive Language), they transformed the original Dartmouth BASIC into the new language, which was specifically tuned to the task of writing games. Creating a game in ZIL does resemble writing in much of programmer-ese. Says Blank, "The language is so close to English you can lie."

Although the language is easy for the writers, it would overwhelm any home computer. Hence, before a home user a powerful mainframe computer to create the programs and to write games. Then the games are condensed (from more than a million bytes of mainframe characters to 200,000 to 80,000) to run on a home-computer disc. This process turns all the high-level concepts into nothing but numbers. So that this string of numbers can be understood by a home computer, a special code is tagged onto the program to do the interpreting for each brand of home machine.

As literature, the games are fairly primitive, but Infocom is planning more impressive. First, the company hopes to solve well known whodunit and science fiction authors to write games for them. To make the games more realistic, they are working on a second generation parser that will understand more complicated statements and questions. Ultimately, Infocom dreams of programs that are so lifelike, says Dertouzos, that the company can market them as "the best games you'll ever play."

If Infocom achieves that goal, an impressive player might want to take on the parser with the ultimate of the ultimate hard-boiled detective firmly in mind. "I never met a computer," the dentist would say. "But I didn't understand a thing it the first time, so I sing from a lyric disc."

Discover, March 1984

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Ads

WE STICK OUR GRAPHICS WHERE THE SUN DON'T SHINE.
You'll never see Infocom's graphics on any computer screen. Because there's never been a computer built by man that could handle the images we produce. And, there never will be.
We draw our graphics from the limitless imagery of your imagination—a technology so powerful, it makes any picture that's ever come out of a screen look like graffiti by comparison.
And nobody knows how to unleash your imagination like Infocom.
Through our prose, your imagination makes you part of our stories, in control of what you do and where you go—yet unable to predict or control the course of events.
You're confronted with situations and logical puzzles the like of which you won't find elsewhere. And you're immersed in rich environments alive with personalities as real as any you'll meet in the flesh—yet all the more vivid because they're perceived directly by your mind's eye, not through your external senses. The method to this magic? We've found the way to plug our prose right into your psyche, and catapult you into a whole new dimension.
Take some tough critics' words about our words. SOFTALK, for example, called ZORK® III's prose "far more graphic than any depiction yet achieved by an adventure with graphics." And the NEW YORK TIMES saw fit to print that our DEADLINE™ is "an amazing feat of programming." Even a journal as video-oriented as ELECTRONIC GAMES found Infocom prose to be such an eye-opener they named one of our games their Best Adventure of 1983.
Better still, bring an Infocom game home with you. Discover firsthand why thousands upon thousands of discriminating game players keep turning everything we write into instantaneous bestsellers.
Step up to Infocom. All words. No graffiti. The secret reaches of your mind are beckoning. A whole new dimension is in there waiting for you.
ZORK III
A LOCKED DOOR A DEAD MAN
DEADLINE
STARCROSS
SUSPENDED
INFOCOM
The next dimension.
Infocom, Inc., 55 Wheeler St., Cambridge, MA 02138

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TV

CBS Morning News

Marc Blank
(The Witness)

TV

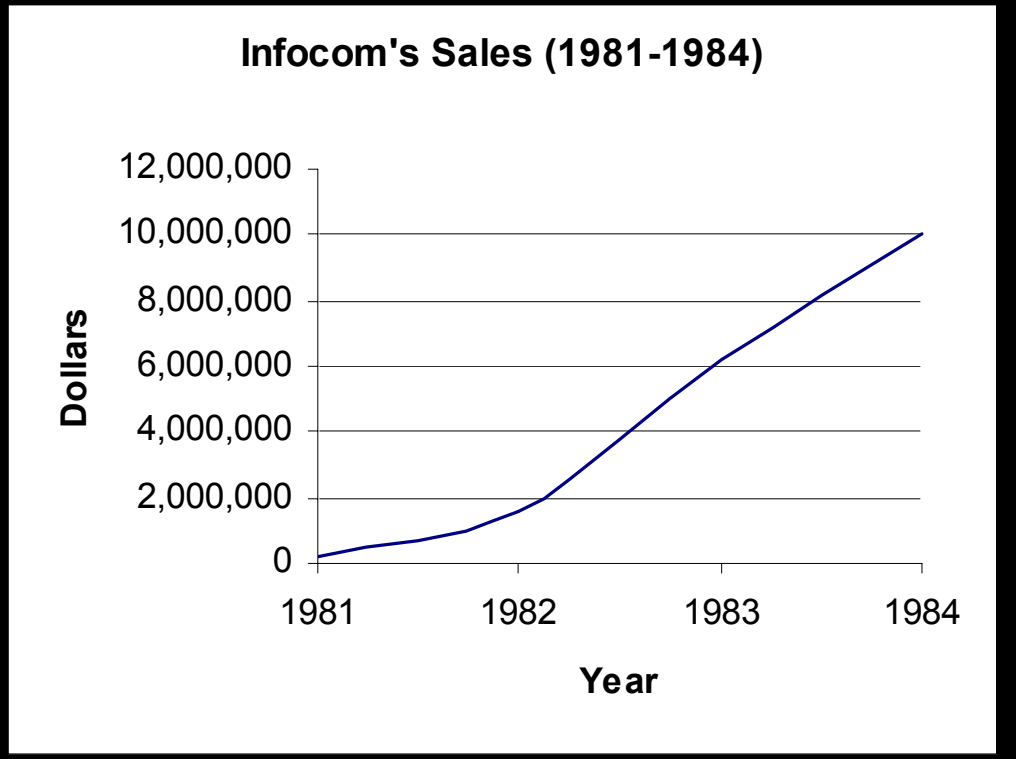
INFOCOM™

Infocom Rockets to the Top

December 1983

SOFTSEL®

This Week	Last Week	Weeks on Chart	RECREATION
1	1	64	**Zork I** · Infocom · AP, AT, CP/M, IBM, C64, DEC, TIP
2	4	19	**Lode Runner** · Broderbund · AP, VIC, AT, IBM, C64
3	2	39	**Zaxxon** · Datasoft · AP, TRS, AT
4	3	65	**Choplifter** · Broderbund · AP, AT, C64
5	5	64	**Frogger** · Sierra On-Line · AP, AT, IBM, C64
6	6	64	**Deadline** · Infocom · AP, TRS, AT, CP/M, IBM, C64, DEC, TIP
7	7	62	**Zork II** · Infocom · AP, AT, CP/M, IBM, C64, DEC, TIP
8	11	5	**Ultima III** · Origin Systems · AP, AT
9	8	60	**Snooper Troops #1** · Spinnaker · AP, AT, IBM, C64
10	9	64	**Temple of Apshai** · Epyx · AP, VIC, AT, IBM, C64
11	12	54	**Zork III** · Infocom · AP, AT, CP/M, IBM, C64, DEC, TIP
12	33	66	**Wizardry** · Sir-Tech · AP
13	15	12	**Legacy of Llylgamyn** · Sir-Tech · AP
14	14	51	**Castle Wolfenstein** · Muse · AP, AT, C64
15	21	13	**Planetfall** · Infocom · AP, TRS, AT, CP/M, IBM, C64, DEC, TIP
16	10	36	**Jump Man** · Epyx · AP, AT, C64
17	19	51	**Flight Simulator** · Microsoft · IBM
18	31	22	**Witness** · Infocom · AP, TRS, AT, IBM, C64, DEC, TIP
19	30	60	**Knight of Diamonds** · Sir-Tech · AP
20	13	13	**Telengard** · Avalon Hill · AP, TRS, AT
21	16	51	**Ultima II** · Sierra On-Line · AP, AT, IBM
22	23	39	**Ft. Apocalypse** · Synapse · AT, C64
23	17	7	**Enchanter** · Infocom · AP, AT, IBM, DEC, TIP
24	18	19	**Blue Max** · Synapse · AT, C64
25	27	47	**Miner 2049er** · Micro Lab · AP, IBM
26	41	3	**Pitstop** · Epyx · AT, C64
27	25	35	**Suspended** · Infocom · AP, AT, IBM, C64, DEC, TIP
28	22	63	**Sargon II** · Hayden · AP, TRS, AT, C64, COM
29	45	8	**Millionaire** · Bluechip · AP, AT, CP/M, IBM, C64, DEC, TIP
30	20	55	**Starcross** · Infocom · AP, TRS, AT, CP/M, IBM, C64, DEC, TIP
31	26	54	**"Night Mission" Pinball** · Sublogic · AP, AT, IBM, C64
32		1	**Infidel** · Infocom · AP, AT, IBM, DEC, TIP
33		50	**Flight Simulator II** · Sublogic · AP, TRS
34	29	7	**Pooyan** · Datasoft · AT, C64
35	42	2	**Murder by the Dozen** · CBS Software · AP, IBM, C64
36	32	4	**Sargon III** · Hayden · AP
37	28	3	**Popeye** · Parker Brothers · AT
38	40	11	**Star League Baseball** · Gamestar · AT
39	35	56	**Shamus** · Synapse · AP, AT, C64
40	44	3	**Star Trek** · Sega · AT, C64



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Shift to Business Products

- Original intentions
- Status
- Diversify products
- Monetary advantages
  - Higher profit margins
  - Consistent revenue stream

"We didn't want to be a $10 million company. We wanted to be a $100 million company."

-Tim Anderson

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Cornerstone is Born

- *Cornerstone*: relational database
- Idea of two members from LCS
- Work starts in 1982

Brian Berkowitz

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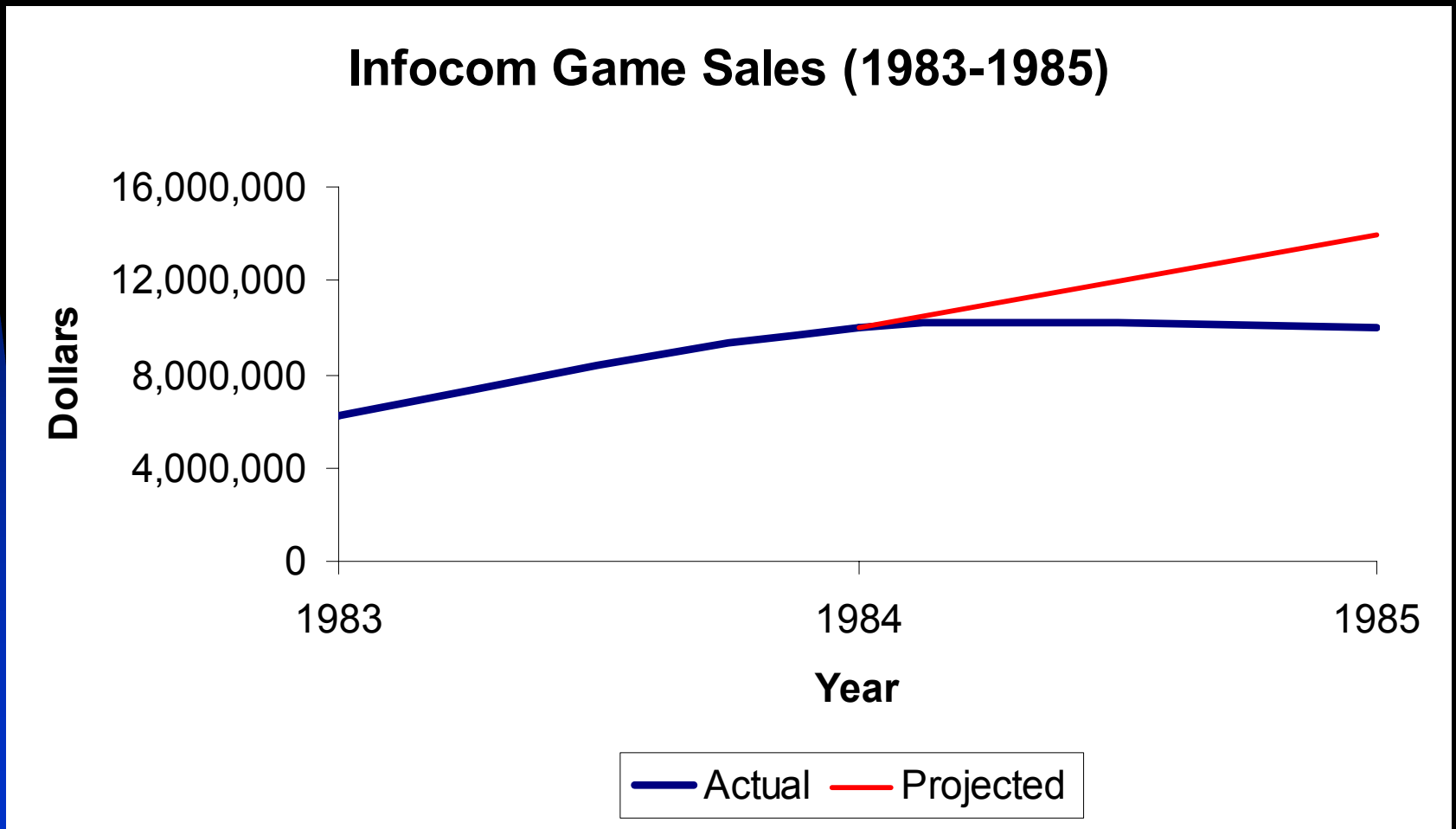
Transition to Business Software

- Changes in management
  - New CEO: Al Vezza
- 32 to 100 employees in 1984
- New, expensive office building
- Sought outside funding

Al Vezza

Trajectory of Growth



Trouble Arises

- Costs up, revenues flat
  - Sales projections off
  - Inadequate funding
- Clashes within company
  - Game profits ⟶ business division
  - Games vs. business work styles
- Morale sank

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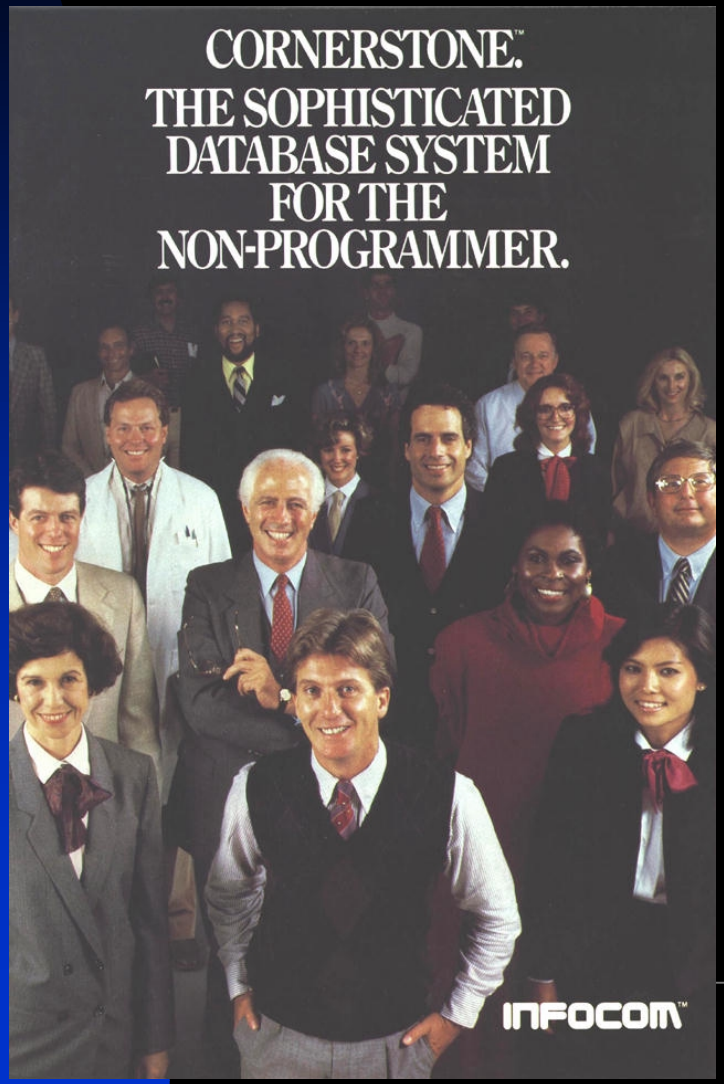
Cornerstone Released in 1985



- Easy to use
- Not programmable, slow
- $1.8 million in sales

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Struggling to Make it

- Debts
  - Lost over $4 million in 1985
  - Bank called in loan
- Cut costs
  - Layoffs
  - *Cornerstone* axed

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Activision Merger (1986)

Jim Levy (left) and Joel Berez (right) celebrating “InfoWedding” for Activision merger

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Continuing Problems

- Losses of $200,000/quarter
  - Increased competition: Nintendo, Sega, graphics
- Infocom dismantled in 1989

Rise of Nintendo, graphics

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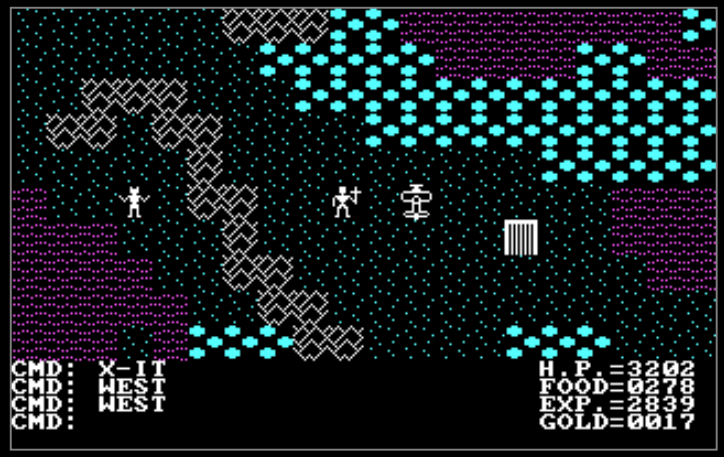
Reasons for Success

- Games: right products at the right time
  - Demographics matched products
  - Graphics in infancy

Mystery House, 1980



Ultima II, 1982

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Reasons for Success

- Company culture excelled at making games
- Good marketing and public relations

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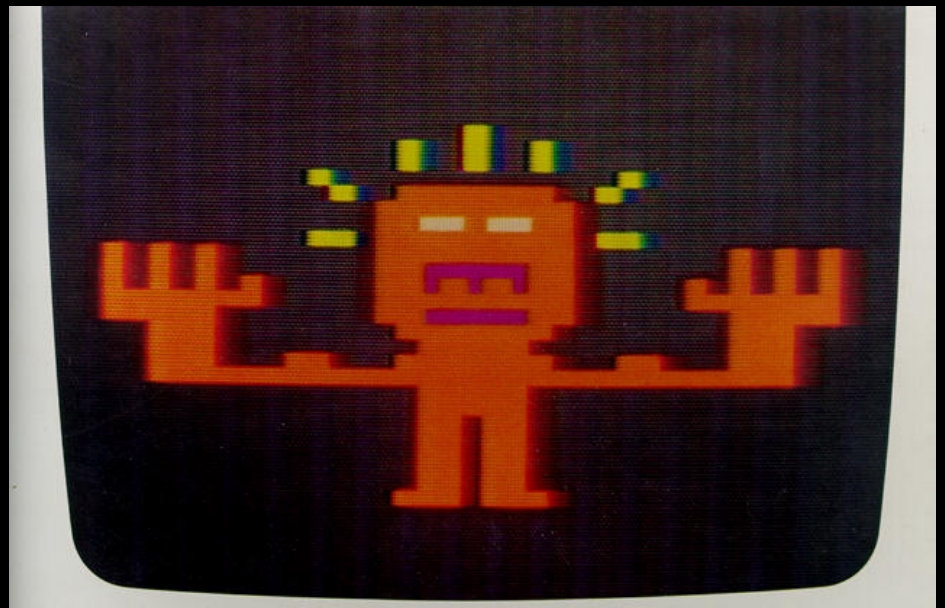
Text vs. graphics



WOULD YOU SHELL OUT $1000 TO MATCH WITS WITH THIS?

MEET YOUR MATCH. MEET INFOCOM GAMES - PERHAPS THE BEST REASON IN SOFTWARE FOR OWNING A PERSONAL COMPUTER.

In fact, people have been known to purchase computers and disk drives solely for the purpose of playing our games. And they haven't been disappointed. Because Infocom's prose stimulates your imagination to a degree nothing else in software approaches. Instead of putting funny little creatures on your screen, we put you inside our stories. And we confront you with startlingly realistic environments alive with situations, personalities, and logical puzzles the like of which you won't find elsewhere. The secret? We've found the way to plug our prose right into your imagination, and catapult you into a whole new dimension.

If you think such an extraordinary experience is worth having, you're not alone. Everything we've ever written—ZORK® I, II, and III, DEADLINE™, STARCROSS™, and SUSPENDED™—has become an instant best-seller. For the simple reason that Infocom offers you something as rare and valuable as anything in software—real entertainment.

At last, you can fritter away your evenings playing a computer game without feeling like you're frittering away your computer investment.

Step up to Infocom. All words. No pictures. The secret reaches of your mind are beckoning. A whole new dimension is in there waiting for you.

INFOCOM™

The next dimension.

Infocom, Inc., 55 Wheeler St., Cambridge, MA 02138

For your Apple II, Atari, Commodore 64, CP/M 8", DEC Rainbow, DEC RT-11, IBM, NEC APC, NEC PC-8000, Osborne 1, TI Professional, TRS-80 Model I, TRS-80 Model III.

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Reasons for Failure

- Engineering culture resisted graphics
- *Cornerstone*: wrong product, wrong time
  - Performance and functionality
  - dBASE III
- Lack of finances
  - Spent money didn't have

What Can We Learn?

- Business Lessons
  - No universal strategy for success
  - Buy time to improve and refine new products
- Success and failure not simple!

Thanks to…

Tim Anderson, Joel Berez, Brian Berkowitz, Marc Blank, John Brackett, Scott Cutler, Bruce Daniels, Mike Dornbrook, Stu Galley, Dan Horn, Richard Ilson, Barry Jacobson, David Lebling, Steve Meretzky, Mike Morton, Chris Reeve, Al Vezza, Richard Weissberg

Game Over

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