

MATTEL ELECTRONICS

INTELLIVISION MARKETING

MEMORANDUM

DATE: April 18, 1983
TO: DISTRIBUTION LIST
FROM: Gary S. Moskovitz *Gary*
SUBJECT: "COMMUNICATIONS CONNECTION" MEETING

Please plan to attend a meeting on "Computer Communications Strategies" discussing various issues involving computer communications issues. Attached you will find one assessment of a possible strategy.

GSM/jg

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MATTEL ELECTRONICS

INTELLIVISION MARKETING

CONFIDENTIAL

MEMORANDUM

DATE: April 13, 1983
TO: Peter Pirner/Stav Prodromou
FROM: Gary Moskowitz *Gary Moskowitz*
SUBJECT: INTELLIVISION "COMMUNICATIONS CONNECTION" STRATEGIC ASSESSMENT

Per our past meetings in your offices concerning Intellivision modem/downloading capabilities, my strategic assessment of the project(s) is contained in this summary report.

Recommendations

I. Immediate Actions

Actions should commence immediately to develop the following Intellivision "communications connection" base product, peripherals and software:

A. Communications Connection - Base Unit

- 300 baud full-duplex direct connect modem, with capabilities for 1200 receive/300/150/75 transmit
- auto-dial/auto-answer
- system control circuitry
- system software to interface with data networks including CompuServ/The Source/Gameline
- graphics capabilities to display a minimum of 24 rows x 40 columns of data, with 80 columns being preferable
- 8-16K RAM resident, with battery back-up
- The base unit should have cursor control via the Intellivision disc or optional joystick hand controller, with a built-in keyboard display for minor alpha-numeric input without the necessity for a keyboard.

B. Communications Connection - Accessory Peripherals

1. Keyboard

- The base unit should work with either the present "parallel" Intellivision computer keyboard or an optional "serial" Intellivision communications keyboard. If a new "communications keyboard" is designed, I would strongly suggest two, perhaps co-existing, approaches:

- 1) connection via twisted pair cable with modular jacks, or
- 2) wireless operation.

2. Memory

- While the base unit should contain a moderate amount of RAM memory, I believe there is an urgent requirement for large scale memory storage (a la 1-5 megabyte "hard disk" type) in consumers' homes at consumer prices.

This memory storage is required, I believe, for two major requirements:

- a. • The downloading of information will grow to be of vital importance in the next few years. I believe the sales of different software packages at retail will be quickly transcended by the almost limitless selection of software via telephone/cable-connected information networks.
- We need to provide Intellivision users with a cost-effective manner of both accessing on-line data and storing data for later off-line usage.
- b. • A secondary requirement is that of on-line RAM memory for consumers' storage of programs and data that they create. While I believe that most consumers will not require this amount of "originally-generated" memory space, I do believe we need this for competitive claims against 64K/128K RAM home computers with micro-floppies, etc.

I have spoken with Ward Spaniol about large-scale "consumer" memory and he has a unique approach, utilizing a magnetic-coated plastic drum, that should be investigated as soon as possible.

C. Home Banking/Videotex Custom System Firmware/Cartridge Software

- If architected correctly, we should be able to:
 - a. insert custom EEROM within the base unit, and
 - b. develop custom software cartridges

for the various security provisions necessary for home banking teleshopping and other transactional type services.

D. "Communications Connection" Software Cartridges/Cassettes

- Using the built-in base features and possibly the peripheral memory units, we can then develop the following applications software for Intellivision:
 - word processing (a la Fileform)
 - Financial "spread sheet" (a la Finform)
 - stock market analysis
 - expanded educational software

II. Schedule

- We should work towards delivering these products as soon as possible as they truly broaden Intellivision's scope as a true "home computer/information system."
- Showing a modem capability tied to CompuServe or The Source at SCES in June would be ideal. If not possible, we should charge ahead to demonstrating at our summer/fall trade "previews" with a large formal showing at WCES in January.

III. Pricing

- I believe to be successful the basic "communications connection" should retail in the same range as a good consumer modem: \$75.00 maximum retail.
- I believe the mass-memory peripheral should also be designed to retail in the \$100.00-\$150.00 retail maximum.
- If a serial communications keyboard (cable/"wireless") is required, it should retail for no more than \$40.00-\$60.00 and be a very deluxe model.

IV. Quota

- These peripherals will address both our base of owners and be instrumental in selling the "systems" to non-owners in 1984 against very heavy competitive pressures.

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- With, hopefully, 3 million Intellivision owners going into 1984, and probably 500M-1000M reachable in 1984, I believe we can sell between 250M-1000M of these peripherals in the years 1984/1985. Of course, this is personal opinion at present. We need to do a great deal of research towards more objective commitments.

I would be interested in discussing this assessment with you at your earliest convenience.

GSM:pg

VIDEOTEX PERIPHERAL SPECIFICATION

Description:

A peripheral unit designed to plug into the cartridge port of Intellivision I or II or Lucky with a new cartridge port. All normal cartridges should play through the unit with no effect from the unit. Videotex application cartridges plug into the unit making it adaptable to specific applications such as home banking and software downloading.

Contains:

Modem - Programmable 300 Baud full duplex; 1200 Baud receive, 75,150, or 300 send for US or European standards.

WITH AUTO DIAL AND ANSWER

Hi Resolution Alphanumeric Display - 40 characters/line, 24 lines

Serial Interface for Keyboard

4 Wire modular telephone jack (power, ground, signal, line reserved for future use).

Suitable for:

Cable connected keyboard

RF receiver plug in unit for wireless keyboard

2K bytes static RAM with battery back-up and low battery indication on tv screen.

PC board and interface for 16K (32K?) decles dynamic RAM

Provision for an on board ROM may be needed

Perhaps an interface for high volume data storage

Physical design must be functionally compatible with Intellivision I and II and Lucky.

Esthetically the design should be as acceptable as possible with both Intellivision I and II.

In addition to provision for connecting a keyboard, the software should provide a "soft keyboard" option permitting limited alphabetic character entry using the hand controlelr.

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Contains:

Modem - Programmable 300 Baud full duplex; 1200 Baud receive, 75,150, or 300 send for US or European standards.
WITH AUTO DIAL AND ANSWER

Hi Resolution Alphanumeric Display - 40 characters/line, 24 lines

Serial Interface for Keyboard

4 Wire modular telephone jack (power, ground, signal, line reserved for future use).

Suitable for:

Cable connected keyboard

RF receiver plug in unit for wireless keyboard

2K bytes static RAM with battery back-up and low battery indication on tv screen.

PC board and interface for 16K (32K?) decles dynamic RAM

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VIEWDATA SYSTEM SPECIFICATION
AND DESCRIPTION

In reference to Fig. (1); the system consists of a Viewdata module that plugs directly to the Intellivision's Master Component via a 40 pin connector; on the other end of the module there is a 40 pin connector where a cartridge may be plugged in. Up to 4K program can be programmed into such cartridge. With the Viewdata module plugged into the Master Component; the user may plug either a game cartridge for game play or a Viewdata cartridge for Viewdata program.

Attached to the Viewdata module a light pen used for data entry; a Keyboard (Optional) and a modular phone cord for plugging the unit directly to the phone lines.

Note: That there is no extra power cord needed to power the system as all power is supplied from the Intellivision Master Component.

SYSTEM OPERATION

In order to make the man-machine interface as simple as possible and to prevent errors from long LOG-IN procedures the phone number and the LOG-IN sequence will be stored in the cartridge PROM; so on power-on and at a touch of a button or a stroke of a Light Pen the unit will dial up the host computer and LOG-IN to the system.

In an interactive mode of operation; the user may use the Light Pen AND/OR the Keyboard to select one of several services offered by the host computer (e.g. Homebanking, Yellow Pages, Ticket Reservation, Mainevent Schedules,...etc.).

On the screen there will be different display modes; where graphics and alpha-numeric data can be displayed simultaneously; also different sizes of the alpha-numeric data can be displayed (For more details see display Features section).

The Viewdata unit will have a modular cable, which is directly pluggable in the wall phone jack; so there is no acoustic coupler or any extra accessories needed for connection with the phone lines. (For more details see Communications section).

There are two different means of data entry:

- a) Light Pen
- b) Keyboard (Optional)

The Light Pen can be used for menu selection by pointing at a high-lighted spot on the screen corresponding to the selected item. It can be used also for alpha-numeric data entry by pointing at the desired character from a full Keyboard displayed on the lower or upper 4 lines of the screen.

The Keyboard can be used for menu selection by typing in the number corresponding to the selected item from the menu. Also it can be used as a regular Keyboard for alpha-numeric data entry. The following sections will outline the main features of the Viewdata system.

SYSTEM FEATURES

1. Plugs directly to the cartridge port of the Intellivision Master Component.
2. No extra power cord needed for the system as power is supplied from the Master Component.
3. Viewdata module is completely transparent to the Master Component i.e. user can plug a game cartridge and have all the game features without unplugging the Viewdata module.
4. Just by changing cartridges different protocol standards (AT & T, NBC, ...) can be met.
5. Directly pluggable into wall phone-jack via a modular plug for direct connection to the phone lines i.e. no acoustic couplers needed.

DISPLAY FEATURES

There are two display modes that can co-exist on the screen. HI-RES Mode and Color Graphics Mode.

a) HI-RES Mode

1. 40 pastel characters/line, 24 lines/screen. On a colored screen.
2. Full ASCII character set; (5X7 matrix on a 6X8 card.)
3. A complete AT&T Mosaic Set.
4. A complete AT&T seperated mosaic set.
5. Full ASCII character set in a double width mode.
6. Full ASCII character set in a double height mode.
7. A double width double height full ASCII character set.
- *8. Two different intensities in displaying the character set (Regular and Hi lighted).
- *9. Regular character set can be displayed in reverse video mode.
10. The regular character set and mosaics can be displayed in a Flashing Mode.

* Due to hardware limitation reverse video and half intensity cannot CO-EXIST with double width and double hight on the same screen simultaneously.

b) Color Graphics Mode

1. 20 Cards/line 12,lines/screen each card is an 8X8 matrix.
2. Full ASCII colored character set up to 8 different colors can be displayed simultaneously.
3. Very powerful colored graphics capabilities (up to 16 different colors).
4. 64 Different DRCS (Dynamically redefinable character set). Can CO-EXIST on a particular screen.

COMMUNICATION

Communication with the host computer is done over the phone line directly i.e. no acoustic coupler is needed.

Features:

1. Auto dial the host computer at a touch of a button.
2. Programmable data rate that can match several different communication standards.

e.g.

a - 300 BAUD, Bell 103 Standard

b - 1200/75 BUAD, CCITT V.23

c - 600/75 BAUD, CCITT V.23

DATA ENTRY

A. LIGHT PEN

1. Transparent to the host computer i.e. There is no software overhead at the host computer side needed to handle the Light Pen.
2. Optimum for menu selection.
3. Can be used for alpha-numeric data entry by pointing at the desired character from a full type-writer like Keyboard displayed on the screen.
4. Rugged and very easy to use.
5. Replaceable.

B. KEYBOARD (OPTIONAL)

1. Full type-writer Keyboard.
2. Can be used for menu selection or alpha-numeric data entry.

The following is a list of AT&T Presentation Level Protocol (PLP) functions; some of which can be implemented by the Mattel's viewdata peripheral (Marked * under yes) and others can't be implemented (Marked* under no). Also some of the functions are implemented partially (Marked * under partial).

	YES	NO	PARTIAL
1. TEXT			
1.1 ASCII Alphanumerics	*		
1.2 Mosaics and separated mosaics	*		
1.3 Supplementary Graphics character set		*	
1.4 DRCS Although 96 DRCS's can be dawn loaded; only 64 different ones can co-exist on the screen simultaneously			*
2. PDI			
2.1 Control			
2.1.1 Domain	*		
2.1.2 Text			
a. Rotation		*	
b. Character Path	*		
c. Inter character spacing		*	
d. Inter-Row spacing 1 or 2 spaces only			*
e. Cursor style Block and under score			*
2.1.3 Texture		*	
2.1.4 Color Control 16 fixed colors			*
2.1.5 Blink	*		
2.1.6 WAIT	*		
2.1.7 Reset	*		

	YES	NO	PARTIAL
2.2 Geomatic Primitives		*	
3. Control Sets			
3.1 CØ Set	*		
3.2 Cl Set	*		
3.2.1 Macro PDIS		*	
3.2.2 Transmit Macros		*	
3.2.3 DRCS Download	*		
3.2.4 Def Texture		*	
3.2.5 Unprotected field	*		
3.2.6 Text Control Char			*
Repeat	*		
Repeat to EOL	*		
Reverse Video	*		
Normal Video	*		
Small Text		*	
Medium Text		*	
Normal	*		
Double High	*		
Double Size	*		
Word Wrap On	*		
Word Wrap Off	*		
Scroll On-Off		*	
Underline Start/Stop		*	
Flash Cursor	*		
Steady Cursor	*		
Cursor Off	*		
Blink Start	*		
Blink Stop	*		