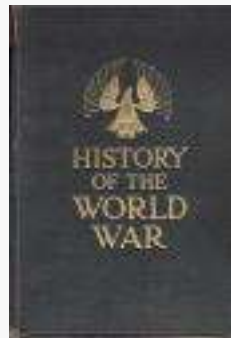


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# The Chronicle of the Great EPG War



**Yakov Kamen**

## **About myself:**

I was founder and CTO of iSurfTV Corporation that developed first 3D-enabled TV guide aiming to compete with Gemstar's market monopoly. I invented a concept of 3D EPG and created over 50 issued and pending patents. Today iSurfTV is a property of Tribune Corporation....

I had been one of “field combat officers” at the great EPG war and my presentation is not a fundamental historic document but is an entertainment story.

Enjoy it!

**Yakov Kamen**

March-April 2005

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**PART-I**

**HISTORY OF THE TV  
PROGRAM GUIDE**

## **EPG means “Electronic Programming Guide”:**

### **What is it?**

EPG Developer would say that EPG is a:

- Complex system that aggregates, filters, delivers, visualizes TV schedule data

TV user would say that EPG is an:

- On-screen application that let me surf channel schedules, search for my favorite shows, and set reminders

PVR (personal video recorder user) would say that EPG is an :

- On-screen system allowing me to do a single click recording and control a list of recorded TV programs

Gemstar-TV Guide would say that EPG is :

- TV Guide+

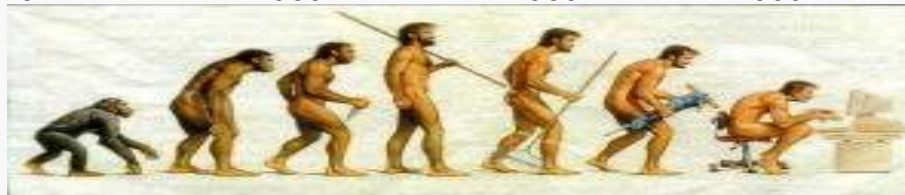
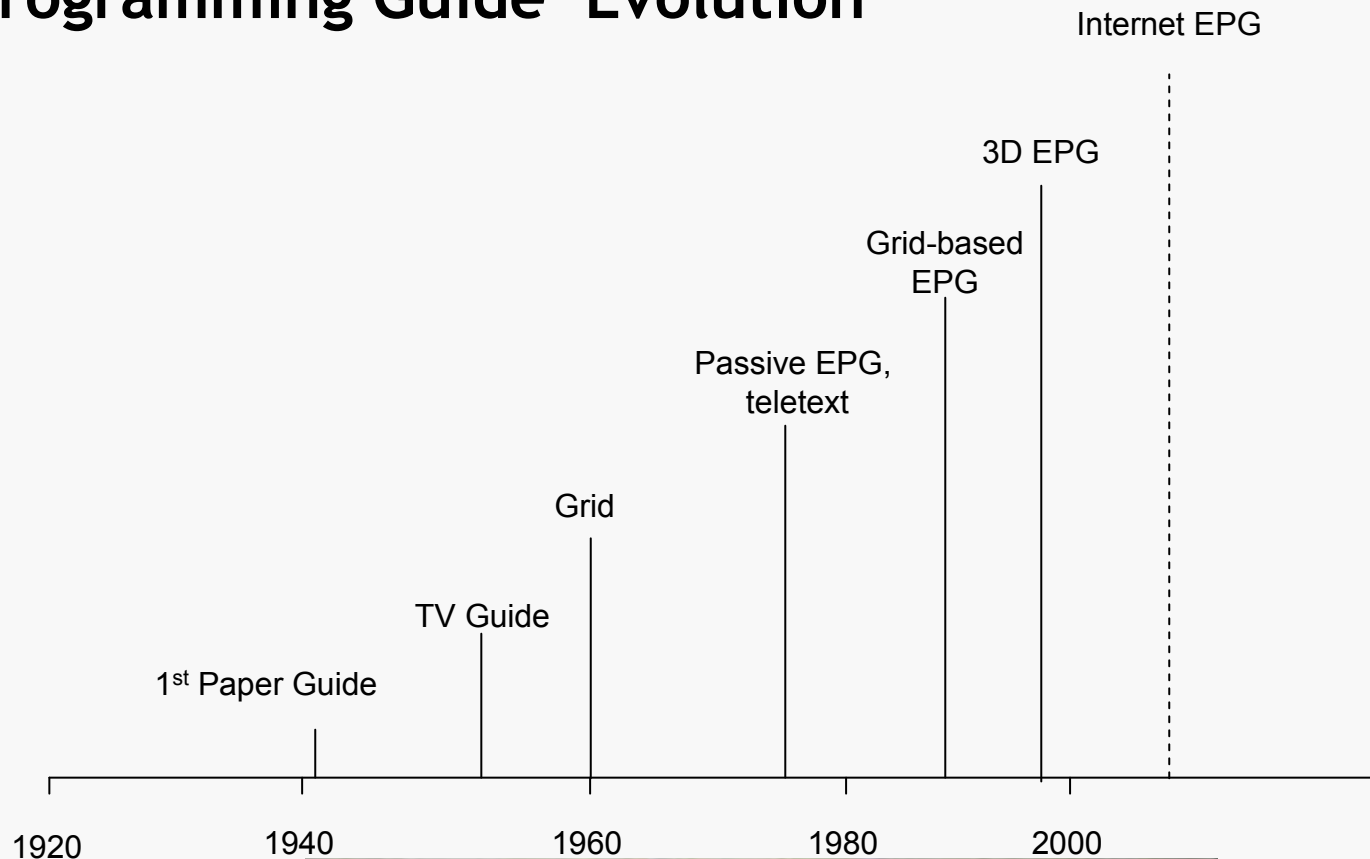
Cable Service Providers (MSOs) would say that EPG is a :

- Pain on the neck

Yakov Kamen would say that EPG is a :

- The unique application replacing Windows and browser on TV screen. This is the only application needed on TV

# Programming Guide Evolution



# History

## First Paper Guide, 1941

No. 1 *Television Program* (Preserve For Posterity)

**STATION WNBT**  
NATIONAL BROADCASTING COMPANY

WEEK OF JUNE 30th — JULY 5th, 1941

Audio frequency 55.75 mc. | NEW YORK CITY  
Video frequency 51.25 mc.

**P.M.**

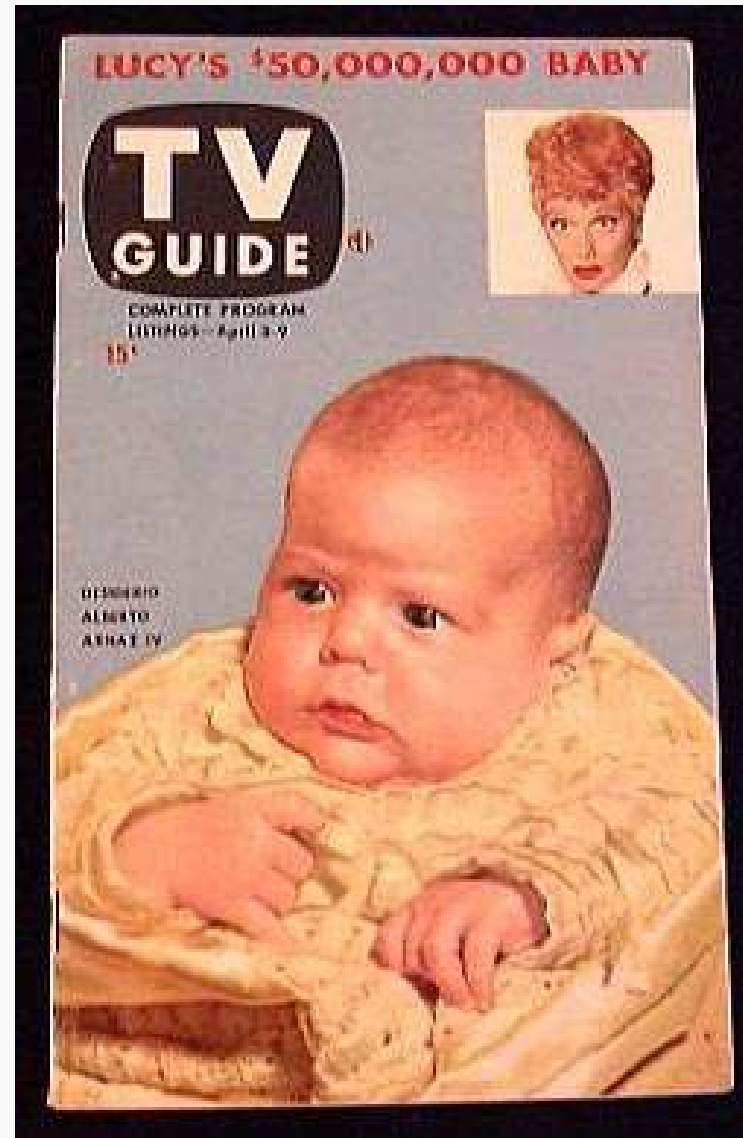
|                              |                   |   |
|------------------------------|-------------------|---|
| <b>MONDAY</b><br>June 30th   | <b>9:00-11:00</b> | (1) Amateur Boxing at Jamaica Arena.  |
| <b>TUESDAY</b><br>July 1st   | <b>2:00-5:00</b>  | (2) Baseball--Brooklyn Dodgers vs. Philadelphia at Ebbets Field.  |
|                              | <b>6:45-7:00</b>  | (3) Lowell Thomas.  |
|                              | <b>9:00-10:00</b> | (4) Culmination of U. S. O. Drive with:<br>Mr. Thomas E. Dewey<br>Mrs. Winthrop W. Aldrich<br>Mr. Walter Hoving<br>Lt. General Hugh Drum<br>Admiral Adolphus Andrews<br>Mrs. Ogden L. Mills |
|                              |                   | (5) Excerpts from the "Bottlenecks of 1941"--Fort Monmouth Signal Corps Replacement Training Center Show.   |
|                              |                   | (6) Truth or Consequences with Ralph Edwards.   |
| <b>WEDNESDAY</b><br>July 2nd | <b>2:30-5:00</b>  | (7) Eastern Clay Court Tennis Championships at Jackson Heights.   |
|                              | <b>9:00-10:00</b> | (8) Feature Film "Death From A Distance" with Russell Hopton and Lola Lane.   |
| <b>THURSDAY</b><br>July 3rd  | <b>2:30-5:00</b>  | (9) Eastern Clay Court Tennis Championships at Jackson Heights.   |
|                              | <b>9:00-10:00</b> | (10) Variety.<br>(11) Julien Bryan, Photographer-Lecturer.  |
| <b>FRIDAY</b><br>July 4th    | <b>2:30-5:00</b>  | (12) Eastern Clay Court Tennis Championships at Jackson Heights.  |
|                              | <b>9:00-10:00</b> | (13) Film "Where the Golden Grapefruit Grows"<br>(14) "Words On The Wing", a Streamlined Spelling Bee.  |
| <b>SATURDAY</b><br>July 5th  | <b>2:30-5:00</b>  | (15) Eastern Clay Court Tennis Championships at Jackson Heights.  |

● ALL PROGRAMS SUBJECT TO CHANGE WITHOUT NOTICE

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## History

First TV Guide Magazine, 1953



# History

## First Usage of the Grid

1960

|     | 8:30 | 7:00                  | 7:30                | 8:00                 | 8:30                   | 9:00                             | 9:30                           | 10:00                                | 10:30                            |
|-----|------|-----------------------|---------------------|----------------------|------------------------|----------------------------------|--------------------------------|--------------------------------------|----------------------------------|
| SAT | ABC  | Local                 | Local               | The Roaring Twenties |                        | Leave It to Beaver               | Lawrence Welk                  |                                      | Flight of the Witch              |
|     | CBS  | Local                 | Local               | Perry Mason          |                        | Checkmate                        |                                | Have Gun, Will Travel                | Gunslinger                       |
|     | NBC  | Local                 | Local               | Bonanza              |                        | Tell Me                          | The Deputy                     | The Nation's Future                  |                                  |
| SUN | ABC  | Walt Disney Presents  |                     | Maverick             |                        | Lawman                           | The Rebel                      | The Islanders                        |                                  |
|     | CBS  | The Twentieth Century | Lasalle             | Dennis the Menace    | Ed Sullivan Show       |                                  | The General Electric Theater   | Jack Benny Program                   | Cardinal Camera                  |
|     | NBC  | People Are Funny      | Shirley Temple Show |                      | National Velvet        | Tab Hunter Show                  | Drink Show or The Chevy Show   | Loretta Young Show                   | This Is Your Life                |
| MON | ABC  | Local                 | Local               | John Daly—News       | Oxyenne                |                                  | Sunside 6                      |                                      | Adventures in Paradise           |
|     | CBS  | Local                 | Local               | Douglas Edwards—News | To Tell the Truth      | Pete & Gladys                    | Bringing Up Bucky              | Danny Thomas Show                    | Andy Griffith Show               |
|     | NBC  | Local                 | Local               | Riverboat            |                        | Tales of Wells Fargo             | Kondike                        | Dante                                | The Barbara Stanwyck Theater     |
| TUE | ABC  | Local                 | Expedition!         | Bugs Bunny           | The Rifleman           | Wyatt Earp                       | Stagecoach West                |                                      | Alcoa Presents                   |
|     | CBS  | Local                 | Local               | Douglas Edwards—News | Local                  | Father Knows Best                | The Many Loves of Dobie Gillis | Tom Ewell Show                       | Red Skelton Show                 |
|     | NBC  | Local                 | Local               | Laramie              |                        | Alfred Hitchcock Presents        | Thriller                       |                                      | Speciale                         |
| WED | ABC  | Local                 | Local               | John Daly—News       | Hong Kong              | The Adventures of Ozce & Harriet |                                | Hawaiian Eye                         |                                  |
|     | CBS  | Local                 | Local               | Douglas Edwards—News | The Aquanauts          |                                  | Wanted—Dead or Alive           | My Sister Eileen                     | I've Got a Secret                |
|     | NBC  | Local                 | Local               | Wagon Train          |                        | The Price Is Right               | Perry Como's Kraft Music Hall  |                                      | Peter Loves Mary                 |
| THU | ABC  | Local                 | Local               | John Daly—News       | Guestward Ho!          | Doris Reed Show                  | The Real McCoys                | My Three Sons                        | The Unouchables                  |
|     | CBS  | Local                 | Local               | Douglas Edwards—News | The Witness            |                                  | Dick Powell's Zero Grey One    | Angel                                | Ann Sothern Show                 |
|     | NBC  | Local                 | Local               | Outlaws              |                        | Bet Matherson                    |                                | The Ford Show (Tennessee Ernie Ford) | You Bet Your Life (Groucho Marx) |
| FRI | ABC  | Local                 | Local               | John Daly—News       | Matty's Funday Funnies | Harrigan & Son                   | The Flintstones                | 77 Sunset Strip                      |                                  |
|     | CBS  | Local                 | Local               | Douglas Edwards—News | Rawhide                |                                  | Route 66                       |                                      | The Garland Touch                |
|     | NBC  | Local                 | Local               | Den Raven            |                        | The Westerner                    | Bet Telephone Hour or Speciale |                                      | Michael Shayne                   |



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**PART-II**  
**GREATER EPG WAR**

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## Objective of the War: TV Screen Control



# WAR GENERALS

**Henry C. Yuen**



*High technology entrepreneur*

**Born:** 1951

**Birthplace:** China

Yuen's family moved came to the United States from China when he was 17 years old. He received a B.S. in mathematics from the University of Wisconsin in Madison, and a Ph.D. in applied mathematics from the California Institute of Technology in 1973. He later earned a law degree from the Loyola University School of Law. Yuen and his college friend Daniel Kwoh founded Gemstar International to manufacture electronic products in 1989. Yuen and Kwoh invented the VCR Plus, offered for sale in 1990, to make it easier to record TV programs. Sales skyrocketed and consumer electronics manufacturers paid Gemstar for the right to use the technology in their products. Gemstar also gets royalties from *TV Guide* magazine, which publishes the number assigned to each program. By the late 1990s, Gemstar was worth \$3 billion. The company came under the scrutiny of the Securities and Exchange Commission in Oct. 2002 and Yuen was fired from Gemstar in April 2003.

**Rupert Murdoch**



*Media Tycoon*

**Born:** 1931

**Birthplace:** Australia

Owner and CEO of News Corp. Empire

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# WAR GENERALS

**Bill Gates**



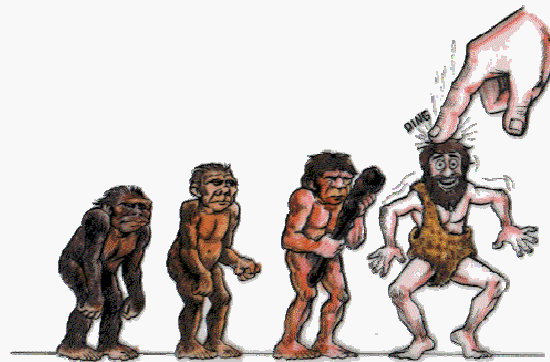
**Born:** 1951  
**Birthplace:** Seattle  
No comments

**John Malone**



*Media Tycoon*  
**Born:** 1941  
**Birthplace:** USA  
Owner and CEO of Liberty Media Holding

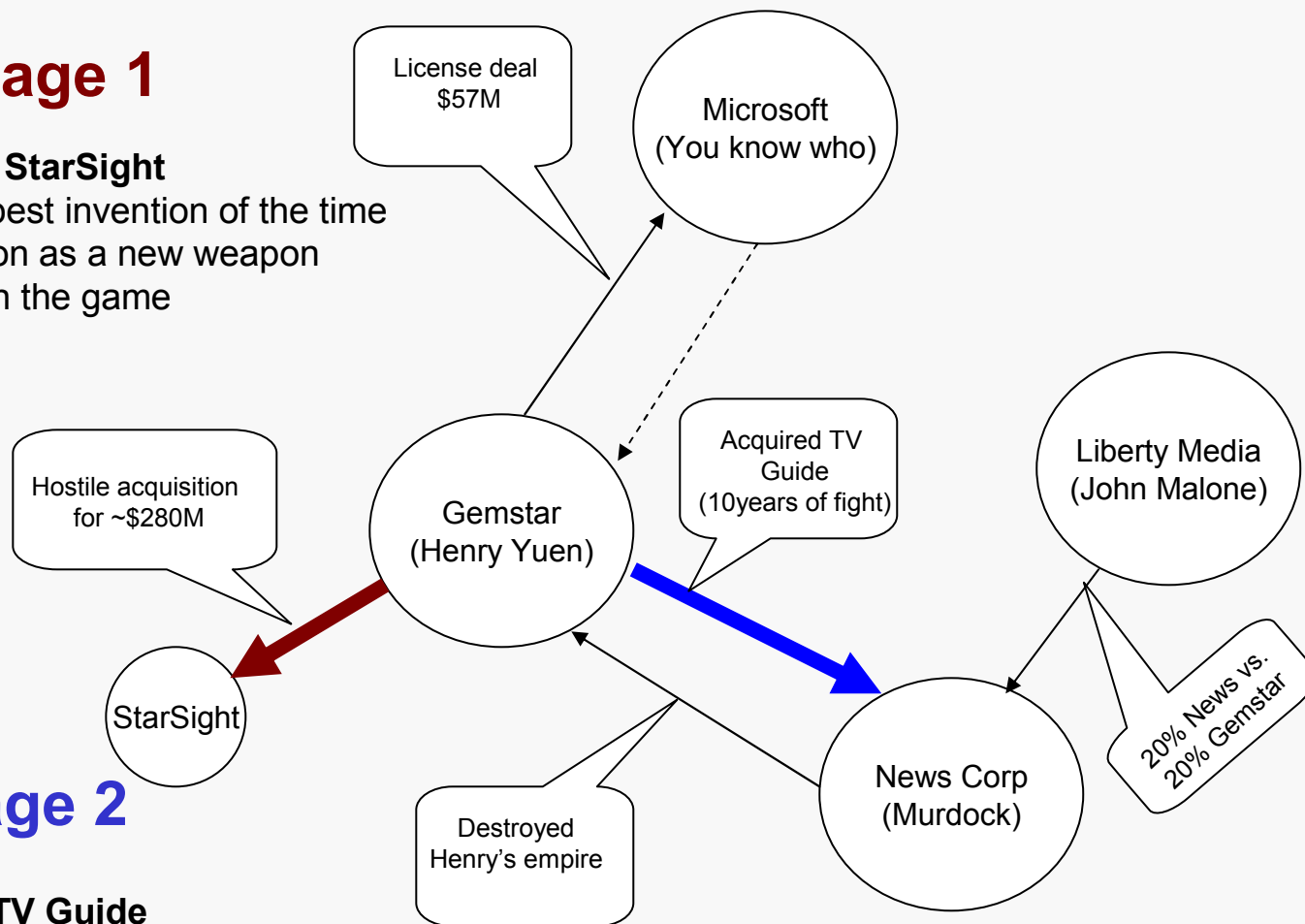
**Other**



## WAR: Stage 1

### Gemstar versus StarSight

- VCR+ was the best invention of the time
- Patent acquisition as a new weapon
- Henry Yuen won the game



## WAR: Stage 2

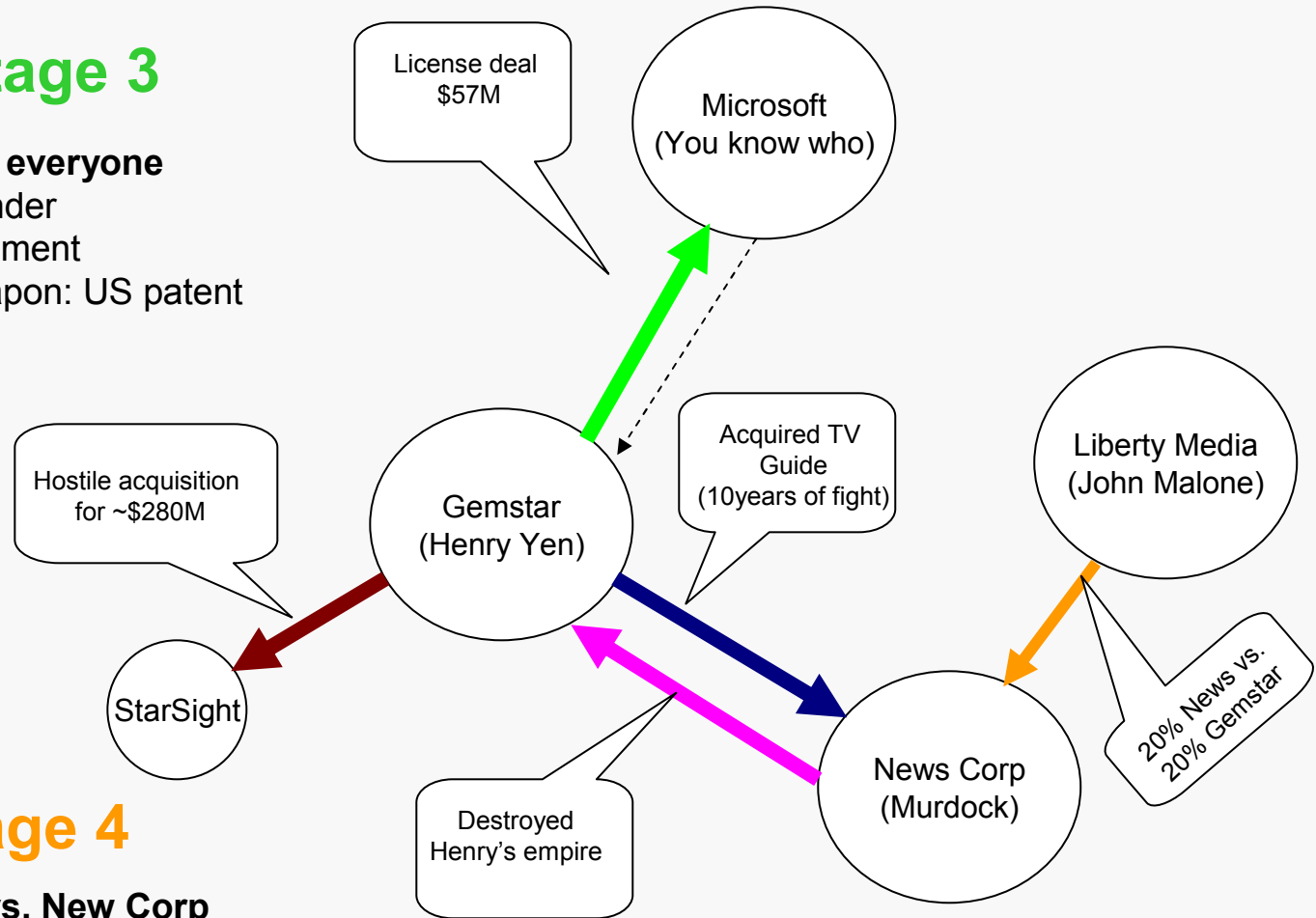
### Gemstar versus TV Guide

- 10 year of litigation
- The most spectacular victory of Gemstar

## WAR: Stage 3

### Gemstar versus everyone

- Microsoft surrender
- GI \$200M settlement
- New secret weapon: US patent



## WAR: Stage 4

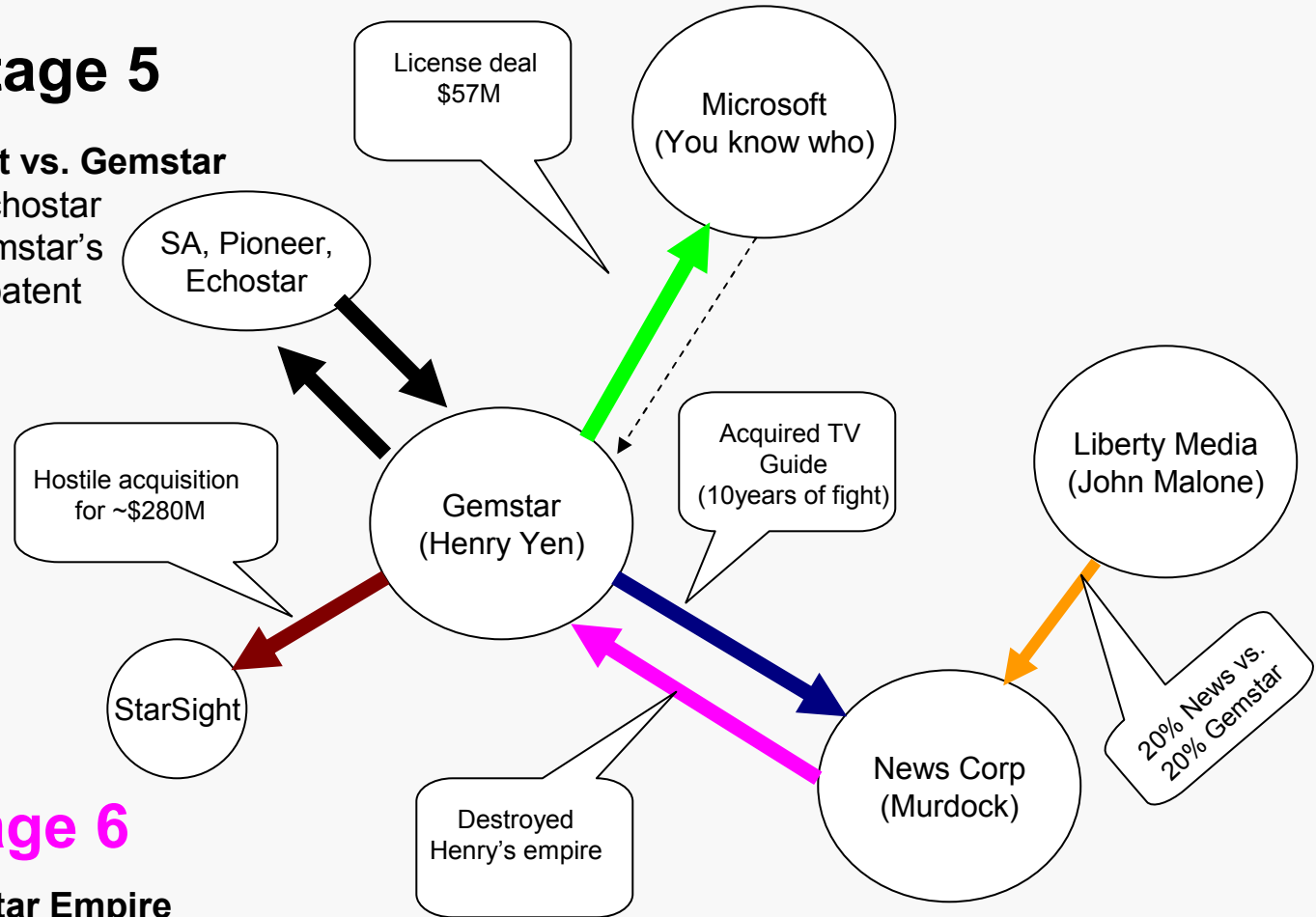
### Liberty Media vs. New Corp

- 20% of GMST vs. 20% of NEWS

## WAR: Stage 5

### Rebel Movement vs. Gemstar

- SA, Pioneer, Echostar said “No” to Gemstar’s request to pay patent “retributions”



## WAR: Stage 6

### Death of Gemstar Empire

- \$70+M SA license financial problem
- Stock cap go down from ~\$30B to \$1B
- Murdock fight back and fired Henry Yuen

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# END OF WAR



**Securities and Exchange Commission** Litigation Release No. 18530 / January 6, 2004

**Accounting and Auditing Enforcement** Release No. 1937 / January 6, 2004

**SEC Sues Three Additional Former Senior Executives of Gemstar-TV Guide For Their Part in Financial Fraud**

***Securities and Exchange Commission v. Henry C. Yuen et al., Case No. CV 03-4376 NM (MANx) (C.D. Cal.)***





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## Post war time:

Winners:

- Comcast (Guideworks)
- Microsoft (IPTV/MCE)
- News (DirecTV)

Losers:

- Gemstar-TV Guide
- Sony
- Cablevision



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# **PART-III**

## **EPG TECHNOLOGIES OVERVIEW**

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“Guide can be 3D”



## Major Components of Advanced IPG

### **Preview (Mini IPG)**

**Allows fast sneak information preview**

### **Scroll**

**Allows fast search of the best currently available show**

### **Search**

**Allows advanced search of the data in the TV schedule**

### **Menu, Settings and Help**

**Allows to choose one of the components, to set service settings, and find help**

### **Portal**

**Allows multiple application navigation**

### **My Shows**

**Creates listing of recorded shows**

### **Recording Functionality**

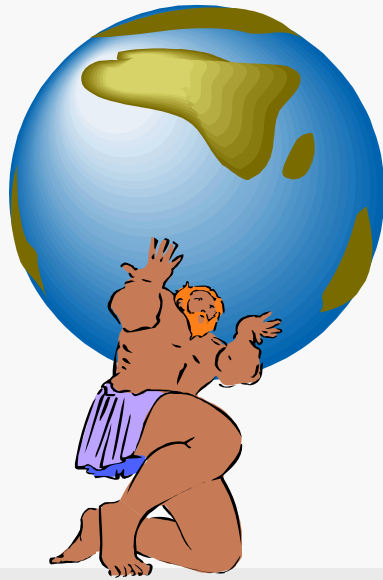
**Provides all conventional recording functions**

### **Remote Controller (RC) and Keyboard**

## PART IV: FUTURE BATTLEFIELD



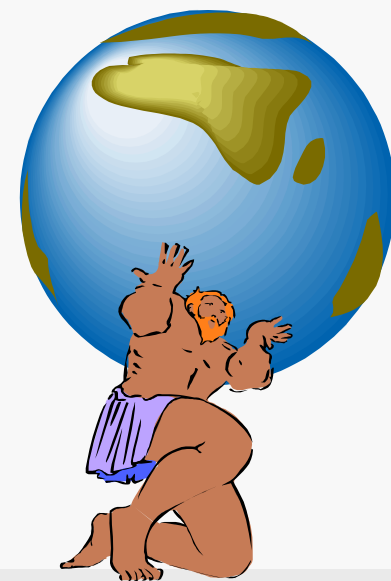
# Gemstar CE IPG: Three Major Strengths



VBI



Grid IP



TV Guide  
Brand

# Gemstar CE IPG: Three major weaknesses

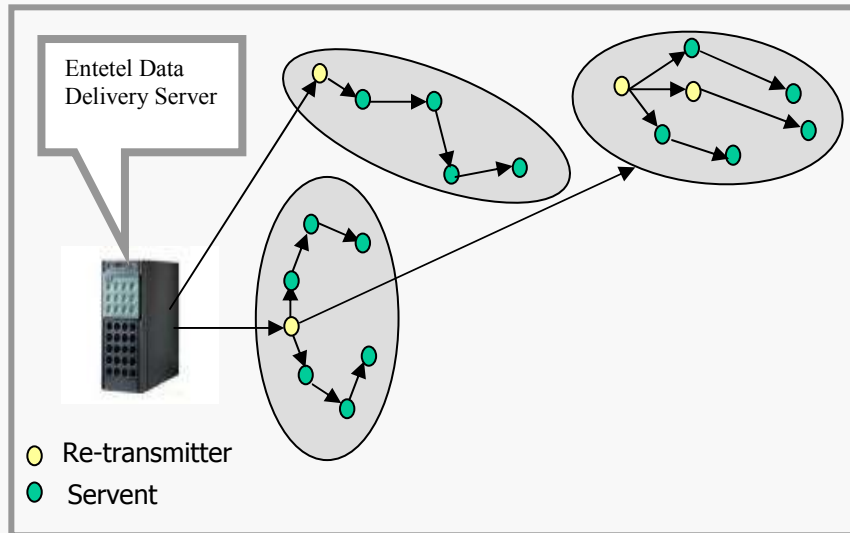


No  
Cost-effective  
TCP/IP support

Grid IP  
portfolio is  
maturing

TV Guide is  
not a Media  
Center

# TCP/IP will win over VBI



P2P will make it cheaper

| Compression Type                                      | Daily data transfer (assume 100 channels) |
|---|---|
| None  | <b>900 – 1,000 KB</b>                     |
| Semantic compression                                  | 450 – 600 KB                              |
| Syntactic compression                                 | 120 – 160 KB                              |
| Optimal Semantic compression<br>Syntactic compression | <b>50 – 90 KB</b>                         |
| Max Semantic compression<br>Syntactic compression     | <b>40 – 50 KB</b>                         |

Optimal schedule data compression:  
Will make personal data delivery cost invisibly small



# XGrid is a next step after the Grid



Optimal TV Listing  
Visualization and Navigation:  
- 3x listings surfing speed increase

## **DIRECTION TO GO:**

- Space Shifting (view recorded content anytime anywhere)
- Dynamic Tuners Support
- Inline advertisement insertion
  - EPG will make as much money in TV direct access ads as Google is making on the Web
- EPG Integration with Internet
  - VOD over Internet by P2P streaming and file sharing

**Yakov Kamen**

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