



ETC®  
Entertainment  
Technology Center

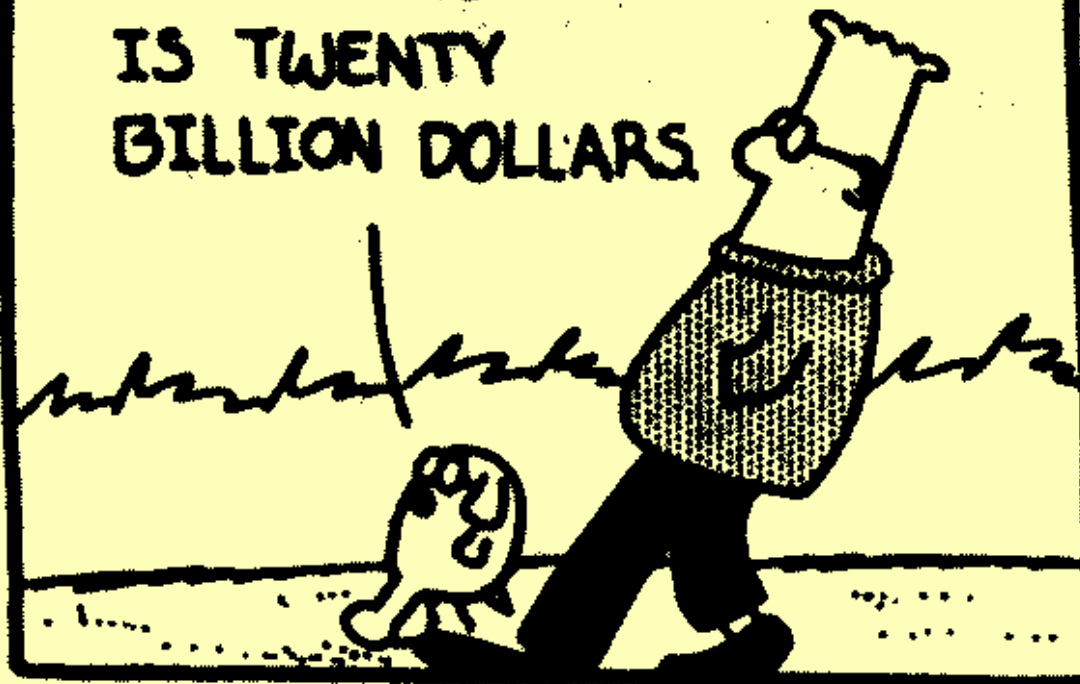
# The Future of Content Distribution: The Law of Unintended Consequences

Charles S. Swartz  
Executive Director & CEO

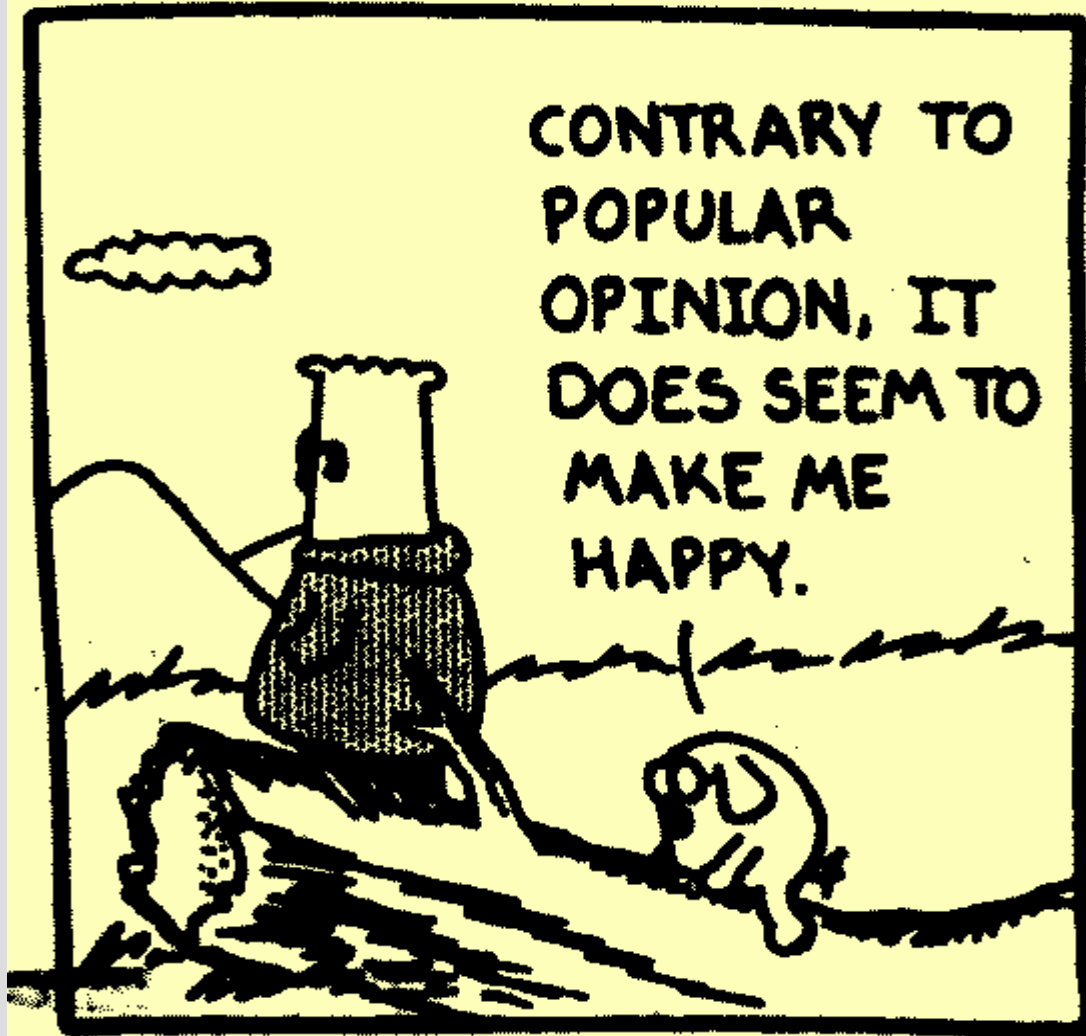
[www.etccenter.org](http://www.etccenter.org)



THANKS TO MY  
SOFTWARE EMPIRE,  
MY NET WEALTH  
IS TWENTY  
BILLION DOLLARS.



S. Adams E-mail: SCOTTADAMS@AOL.COM



CONTRARY TO  
POPULAR  
OPINION, IT  
DOES SEEM TO  
MAKE ME  
HAPPY.

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MONEY  
CAN'T BUY  
A SUNSET,  
DOGBERT.

NO, BUT I WAS  
ABLE TO  
LICENSE THE  
DIGITAL  
RIGHTS.



# What Is an Engineer?

- Mathematician—a device for converting coffee into theorems.
  - Paul Erdős (1913 -1996)
- Engineer—a device for converting coffee into standards.



# The Law of Unintended Consequences

- Actions of people always have effects that are unanticipated or 'unintended.'

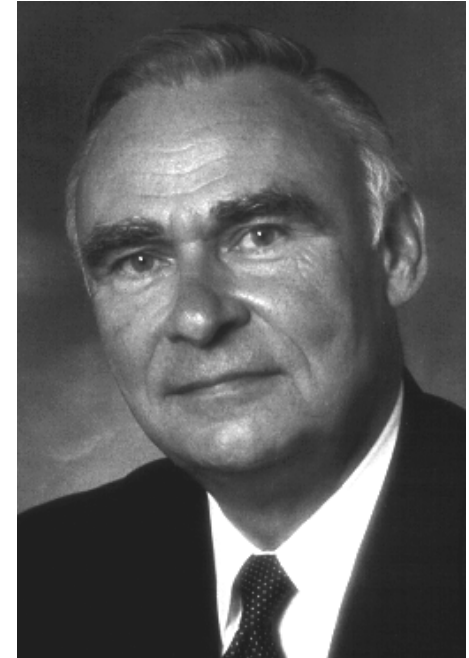


# Robert K. Merton

## Sociological Ambivalence and Other Essays (1979)

“The Unanticipated Consequences of  
Purposive Social Action”

- the self-defeating prediction
- the self-fulfilling prophecy



# Dietrich Dorner

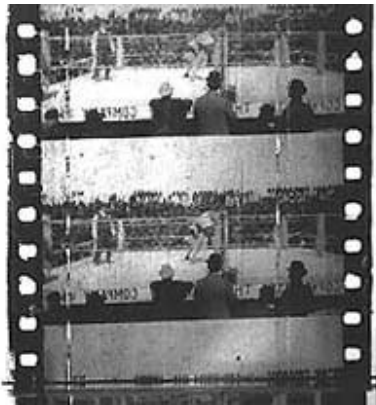
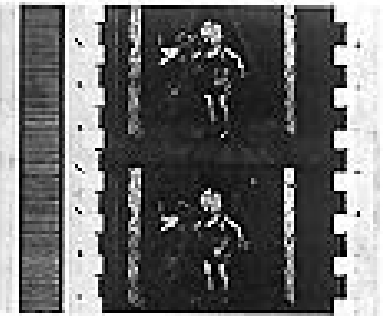
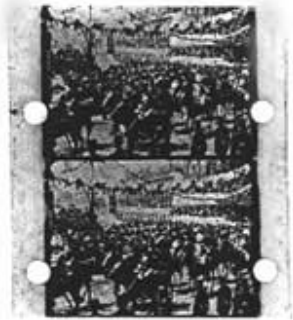
## The Logic of Failure: Why Things Go Wrong and What We Can Do To Make Them Right (1996)

- Complexity
- Dynamics
- Intransparency
- Ignorance and mistaken hypotheses





# Early Film Gauges



# Standard Talking Machine Model AA (1905)



# Standard Talking Machine Model A (1908)



# Spindle Hole Size



# Red Book Audio (1980)

- Vinyl LP more than 30 years old
- Phonograph more than 100 years old
- Today: 84% of US households have audio CD players -- 88.7 million
- MP3 and Walkman
- DVD Audio & SACD?



# Internet (1969)

- Born in 1969 as ARPANET
- DARPA mandated TCP/IP in 1983
- Could Red Book designers in 1980 foresee peer-to-peer (Napster et al)?



# 1.85:1

- CinemaScope (1953), VistaVision and SuperScope (1954) Todd-AO (1955), Panavision (1957)
- Intended as a temporary solution
- 50% of all movies in 2004\*
- 35% of available negative wasted

\* John Pytlak, Kodak



# The New Digital Home

- On demand
- Digitally delivered, saved, moved, and enjoyed
- Home is a network domain





# Three Lenses

- Bits To the Home
- Bits In the Home
- Bits To the User



# Where Are Standards Important?

- Bits To the Home
- Bits In the Home
- Bits To the User



# DRM

- Copy protection
- Rights permissions



# Our Goal as an Industry

- High quality content
- Meet and exceed consumer expectations
- Sustainable business model



# Who We Are

- Research center in USC School of Cinema-Television
- Funding Support
  - Industry sponsors – Studios and Technology companies
  - Project fees (testing & screenings)
- Past Projects
  - The Integrated Studio
  - Hollynet
- Current Projects
  - Digital Cinema
  - The New Digital Home



# Mission

- Neutral setting for the entertainment industry
- Advance the use of technology
- Impact of technology on the creative process
- Testing and evaluation of proposed technology solutions
- Identify new business models
- Improve the consumer experience and advance the art

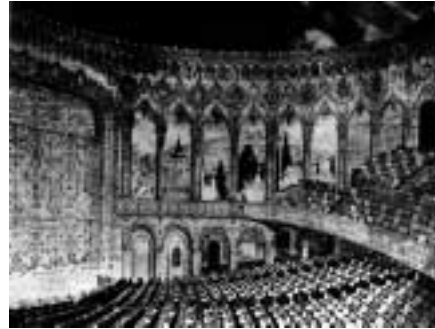


# Digital Cinema Laboratory Goals

- Global leader to provide test bed for digital cinema
- Evaluate proposed technology solutions
- Reach out to the creative community
- Work with efforts underway around the world
- Showcase for the best in cinema presentation.

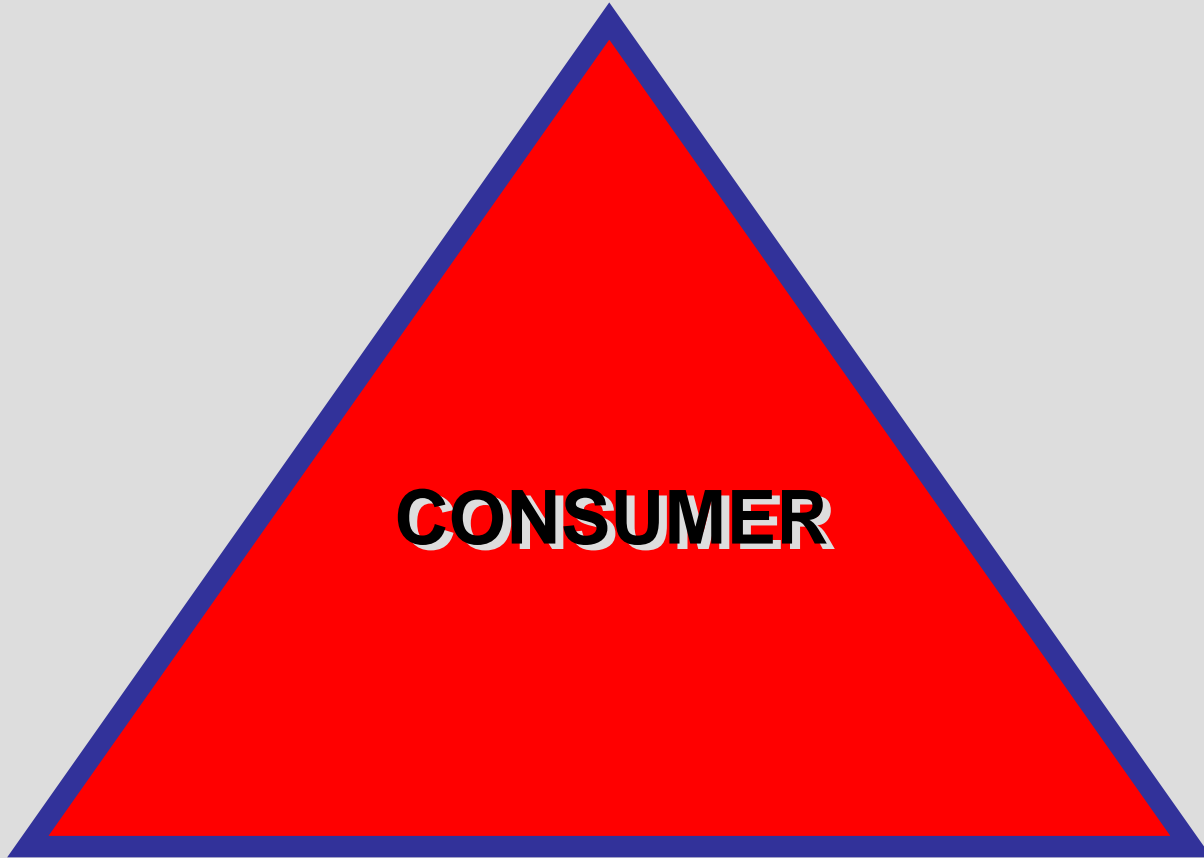


# Digital Cinema Laboratory





**ART**



**CONSUMER**

**BUSINESS**

**TECHNOLOGY**

# For More Information

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