

# Digital Media Drives IC Content

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# Factors Affecting our Semiconductor Universe

- Digital Media revolution Drives Semi Content
- Standardization vs Customization Pendulum swings drive design methodologies
- Impacts of Geographical shifts in workforce impacts

# 1) Digital Media Enables Unchaining Consumer

- Digital Content
  - MP3
  - DVD, CD
  - MPEG, JPEG
- Digital Transimission
  - DTV
  - XFM
  - IP/TCP
- Digital Processing
  - Audio/Video Enhancements
  - Compression

Unchains Consumer to enjoy digital media on their “lifestyle” terms

- When
- Where
- What

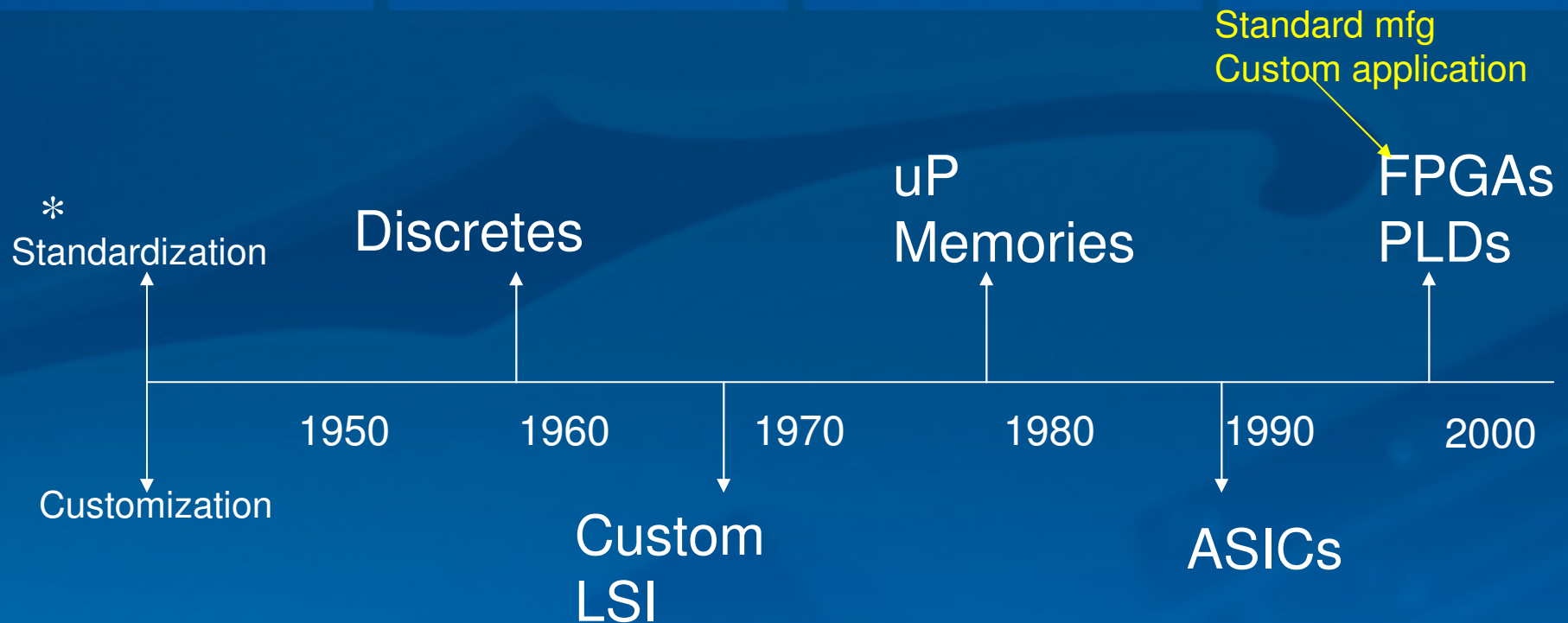
# 1) Digital Media Drives increasing Semi Content

- Cameras (\$400)
  - Film: \$4 Semi Content
  - Digital: \$50 Semi Content
- Television:
  - Analog: <\$20 Semi Content
  - Digital: >\$120 Semi Content
    - 50% HDTV CAGR



Digital Media drives 5-10X Semiconductor content increases in consumer devices

## 2) Std vs Custom Paradigm Swings



Managing complexity drives methodology shifts

Verification continually increasing –

- 50% IC design resources allocated to verification/debug

\* “Makimoto’s Wave”

### 3) Geographical Shifts of Workforce – 2 Way Street

- Semi Companies (designing chips)
  - US: about 600 companies
  - Austin: about 25 (5%)
- Electronics in China
  - Started with assembly – moving to system design
  - IC competency relatively new
    - Graduating about 3500 annually
    - Goal to have 40,000 IC designers by 2010
- But, Asian Digital Media companies also shifting work to US
  - Product Development (product mktg, test, ID)
  - Marketing, Sales
  - HQ

# Summary

- Digital Media driving Semi content – more chips to design!
- Paradigm shifts every 10 years to manage complexity – but verification/debug continually increasing as percentage of IC/system development resources
- Geographical shifts continue to occur → channeling technology more efficiently into the market - but opportunities continue to be here locally