

It's *not* the End of the World  
(but, yes, the World *is* Changing Awfully Fast)

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# The Big Picture

- Yes, there are non-trivial issues
- But overall, web infrastructure is improving overall

# What's a "browser" ?

- An execution environment for mobile code
- "web page" = self-modifying chunk of mobile code
- Browsers provide “underpinnings” for “web apps”

# 10+ Years ago

- one hugely dominant proprietary browser
- typically being run with many proprietary plugins
  - java, flash, activeX
  - All with plethora of vulnerabilities (“vulns”)
- infrequent updates

# Today and Near Future

- Multi-browser world
- Convergencing on open-standards-based plugin-less browsers
- Security Model Restriction frameworks

# Multi-browser World

- Open standards based
- Some are open-source
- Robust competition
- Trend to rapid fixes and updating

# Emergent Open Web Standards Constellation

- HTML5
  - with Audio, Video, Images, etc. built-in
  - Pluginless
- Receiving open multi-party scrutiny

# Security Model Restriction Frameworks

- Content Security Policy (CSP)
- Frame-Options
- HTTP Strict Transport Security (HSTS)
- Cross-Origin Resource Sharing
- OAuth



# Issues

- "Transition" period
- Existing Web Apps
  - difficult to update to new underpinnings
  - may acquire new vulns as browsers evolve
- New vulns in browsers as they evolve

# Way Forward

- Accept & understand the “transition” dynamic
  - Factor into..
    - Design, implementation, deployment practices
    - “practices” applies to both
      - Underpinnings
      - Web Apps