

第74回DSC勉強会

ウェブディベロッパーから見た テレビブラウザへの期待と課題

2013年9月10日

株式会社ニューフォリア 取締役 最高技術責任者

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@futomi



futomi.hatano

自己紹介

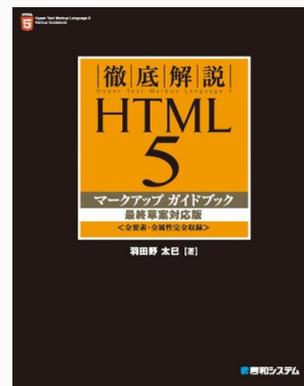
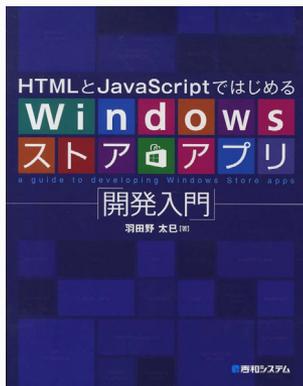
羽田野 太巳(はたの ふとみ)

ウェブディベロッパー

- 言語：HTML, JavaScript, CSS, Perl, etc.
- 端末：PC, Smart Phone, Tablet, TV, IM, etc.



<http://www.html5.jp/>



会社紹介



株式会社ニューフォリア

企画/製作から **ウェブ** 運用まで



デジタルサイネージ



モバイル



アジェンダ

- W3C Web-based Signage BG
- テレビブラウザ
- API実装度
- パフォーマンス
- 開発における課題
- 業務用途への応用に向けて

W3C Web-based Signage BG

Web-based Signage BG

The screenshot shows a web browser window displaying the W3C Community and Business Groups website. The browser's address bar shows the URL <http://www.w3.org/community/websignage/>. The page features the W3C logo and the text "W3C Community and Business Groups" at the top. A navigation menu includes "CURRENT GROUPS", "REPORTS", and "ABOUT". On the left side, there are links for "Mailing List", "Wiki", "Chat", "RSS", and "Contact Group". The main content area is titled "Web-based Signage Business Group" and includes a description: "The Web-based Signage Business Group is aimed at companies and organizations interested in the standardization of Web based digital signage. The goal of the group is to identify use cases and system image/model for expansion of web browser based digital signage and smarter integration of existing Web standards." Below this, there is a "Reports" section with the text "No reports yet published. The Chair is responsible for publishing reports." and a "News" section with the text "Add new post →". On the right side, there is a "Get involved!" section with the text "Anyone may join this Business Group. All participants in this group have signed the W3C Community Contributor License Agreement (CLA). Please also see information about Business Group fees for non-W3C Members." and a "JOIN THIS GROUP" button. Below the button, there is a link to "learn how to join or request an account." At the bottom right, there is a "Participants" section.

W3C W3C Community and Business Groups

LOG IN GET AN ACCOUNT MY ACCOUNT SKIP

CURRENT GROUPS REPORTS ABOUT

Mailing List Wiki Chat RSS Contact Group

Community & Business Groups → Web-based Signage Business Group

Web-based Signage Business Group

The Web-based Signage Business Group is aimed at companies and organizations interested in the standardization of Web based digital signage. The goal of the group is to identify use cases and system image/model for expansion of web browser based digital signage and smarter integration of existing Web standards.

Reports

No reports yet published. The Chair is responsible for publishing reports.

News

Add new post →

Get involved!

Anyone may join this Business Group. All participants in this group have signed the W3C Community Contributor License Agreement (CLA). Please also see information about Business Group fees for non-W3C Members.

[JOIN THIS GROUP](#)

or learn how to join or request an account.

Participants

<http://www.w3.org/community/websignage/>

Architecture and Requirements for Web-based Signage

- Core Profile
 - defines requisite minimum, such as playlist, transition effects, tickers, etc
- Basic Media Profile
 - defines requirements for playing videos and audios
- Pre-fetch/Offline Profile
 - defines requirements for a offline situation, such as pre-fetching, storeing all contents

Architecture and Requirements for Web-based Signage

- Basic Reporting Profile
 - defines what type of information should be stored in terminals, and uploaded to log servers
 - Interactive Menu Profile
 - Basic functions for interactive menu
 - Emergency Information Profile
 - defines how emergency information should be shown on signs.
- etc.

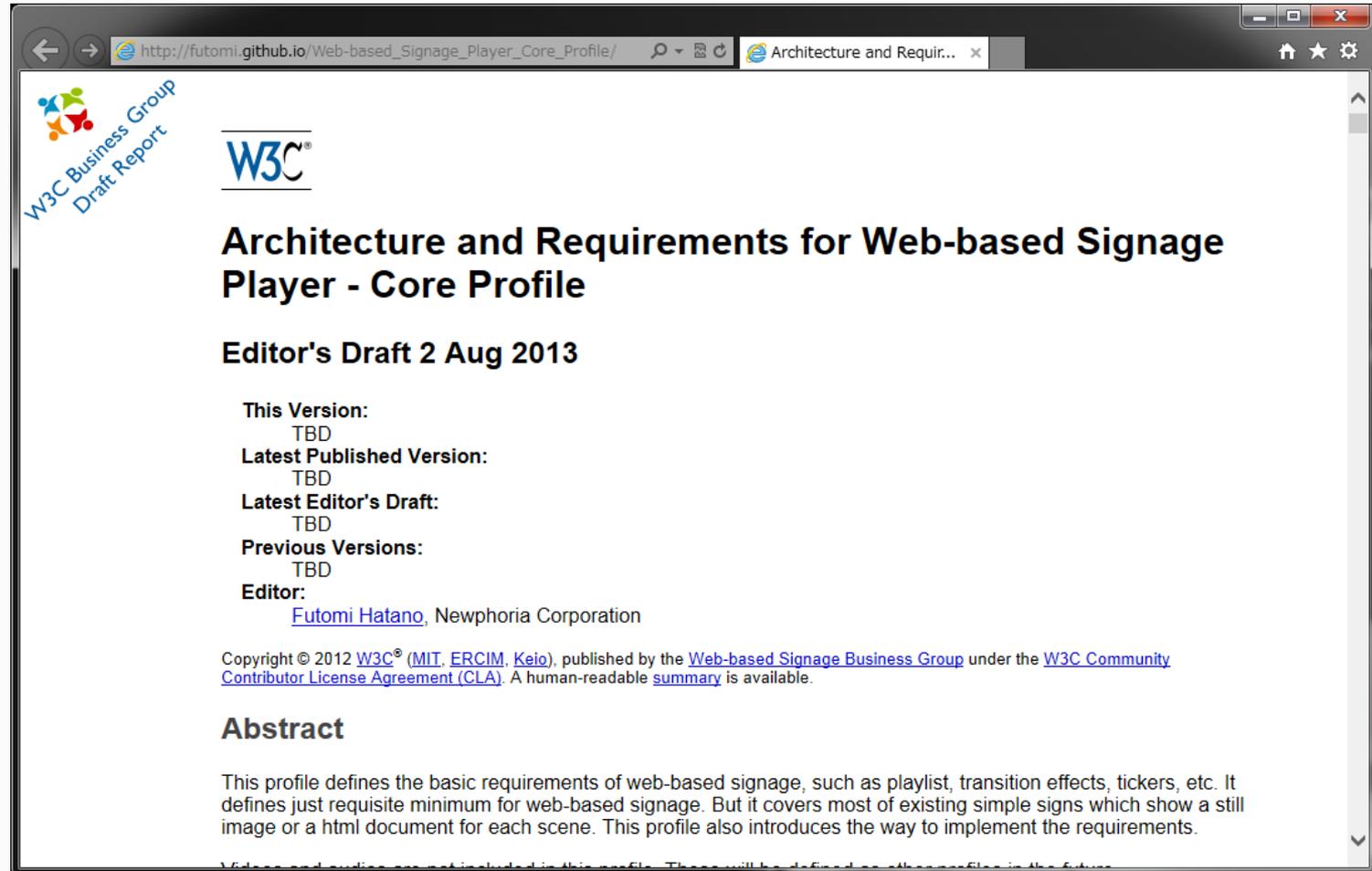
Aim of the profiles

- Diffuse
web-based signage in the digital signage industry
- Share
technical knowledge of web-based signage in the digital signage industry
- Find
required APIs or functions for web-based signage, and propose the relevant working groups as necessary

Use of the profiles

- Product specification sheets
of web-based signage products for vendors
- RFP (Request For Proposal)
used by the signage operators to request SDCs (Systems Development Corporations) to develop a web-based signage system
- etc.

Core Profile



W3C Business Group
Draft Report

W3C

Architecture and Requirements for Web-based Signage Player - Core Profile

Editor's Draft 2 Aug 2013

This Version:
TBD

Latest Published Version:
TBD

Latest Editor's Draft:
TBD

Previous Versions:
TBD

Editor:
[Futomi Hatano](#), Newphoria Corporation

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Abstract

This profile defines the basic requirements of web-based signage, such as playlist, transition effects, tickers, etc. It defines just requisite minimum for web-based signage. But it covers most of existing simple signs which show a still image or a html document for each scene. This profile also introduces the way to implement the requirements.

Video and audio are not included in this profile. These will be defined as other profiles in the future.

http://futomi.github.io/Web-based_Signage_Player_Core_Profile/

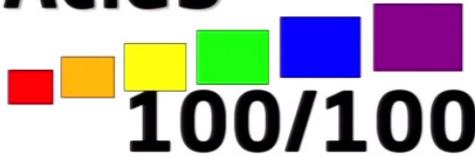
テレビブラウザ



espial

Espial TV Browser

Acid3



To pass the test, a browser must use its default settings, the animation has to be smooth, the score has to end on 100/100, and the final page has to look exactly, pixel for pixel, like [this reference rendering](#)



Espial TV Browser:

"Enabling future browser technology – today. Watch a cool video of the Espial TV Browser capabilities on Connected TVs shipping now"

Watch Now >>



http://www.espial.com/products/evo_browser/



Opera TV





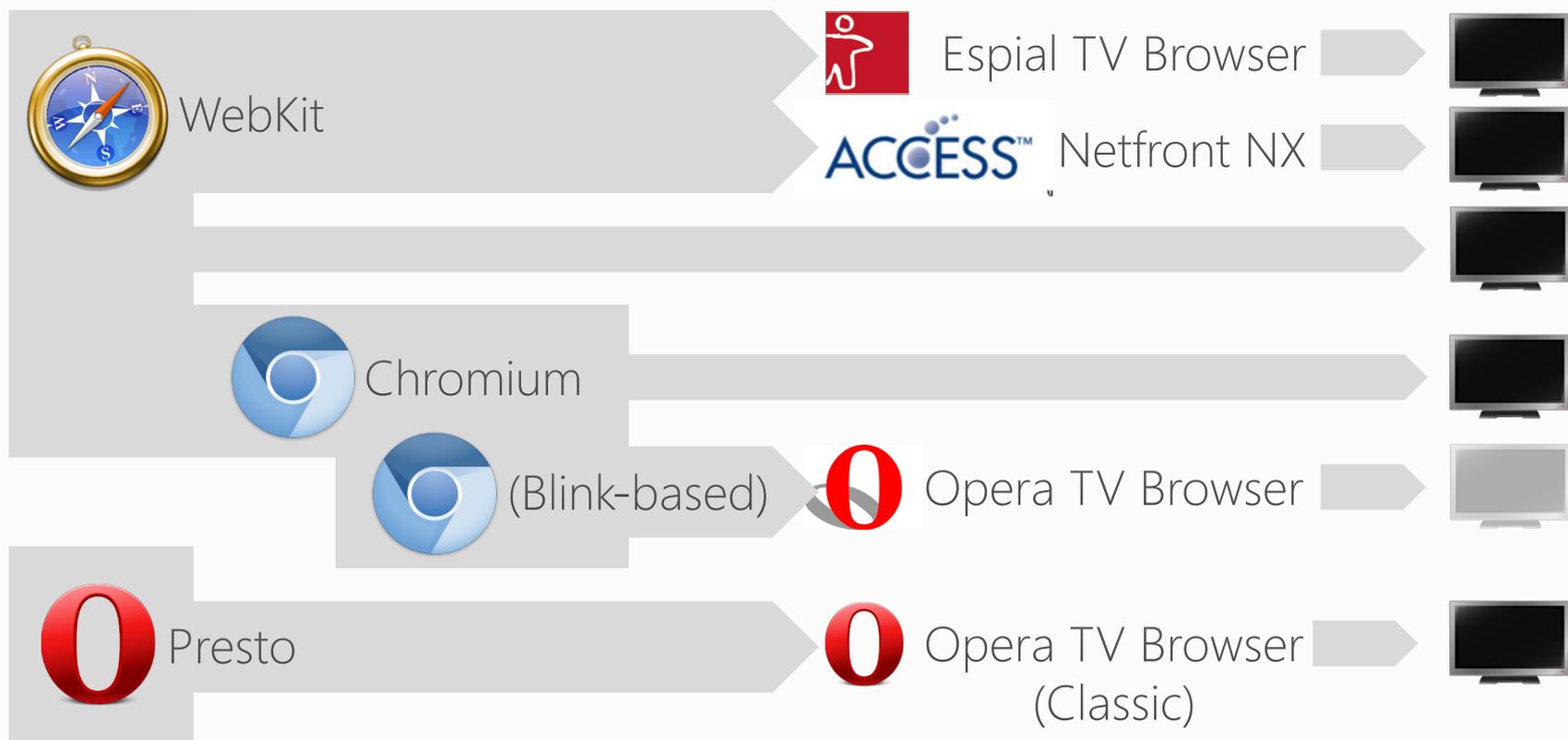
Nintendo Wii U

ACCESS NetFront Browser NX



テレビブラウザの系統

スマートフォン向けブラウザ事情に酷似
ウェブアプリ開発の環境が整う



API実装度

your browser

other browsers

compare

about the test

your browser scores

357

AND 7 BONUS POINTS

out of a total of 500 points

100K+

6.6k

837

Tweet

Like

+1

The HTML5 test score is an indication of how well your browser supports the upcoming HTML5 standard and related specifications.

Even though the specification isn't finalized yet, all major browser manufacturers are making sure their browser is ready for the future. Find out which parts of HTML5 are already supported by your browser today and compare the results with other browsers.



You are using Espial 6.0.5 on a television

Correct?

Parsing rules

1/11

<!DOCTYPE html> triggers standards mode	Yes
HTML5 tokenizer	No
HTML5 tree building	No

HTML5 defines rules for embedding SVG and MathML inside a regular HTML document. Support for SVG and MathML is not required though, so bonus points are awarded if your browser supports embedding these two technologies.

SVG in text/html <http://html5test.com/> No

MathML in text/html No

SPONSORS

IT'S FOR
HTML5 DEVS
WHO LIKE SPEED

jq.Mobi



	Toshiba L7200 (Espial)	365
	Sharp Aquos (Espial)	365
	国内テレビメーカーA	323
	国内テレビメーカーB	317



Chrome 25 for Android

417



iOS 6

386



Toshiba L7200 (Espial)

365



Sharp Aquos (Espial)

365



国内テレビメーカーA

323



Windows Phone 8

320



国内テレビメーカーB

317



Android 4.0

297



Android 2.3

200

当てにならない実装度評価

- 同じブラウザでもメーカーごとに異なる実装度
- 実際には機能しないAPI
 - スコアだけは高く見えるが実際は使えない
 - テレビブラウザ独特の開発者泣かせの現象

```
if( window.localStorage ) {  
    window.localStorage.setItem("key", "text");  
    // オブジェクトが存在するにもかかわらず、  
    // 使おうとすると例外発生  
}
```

パフォーマンス

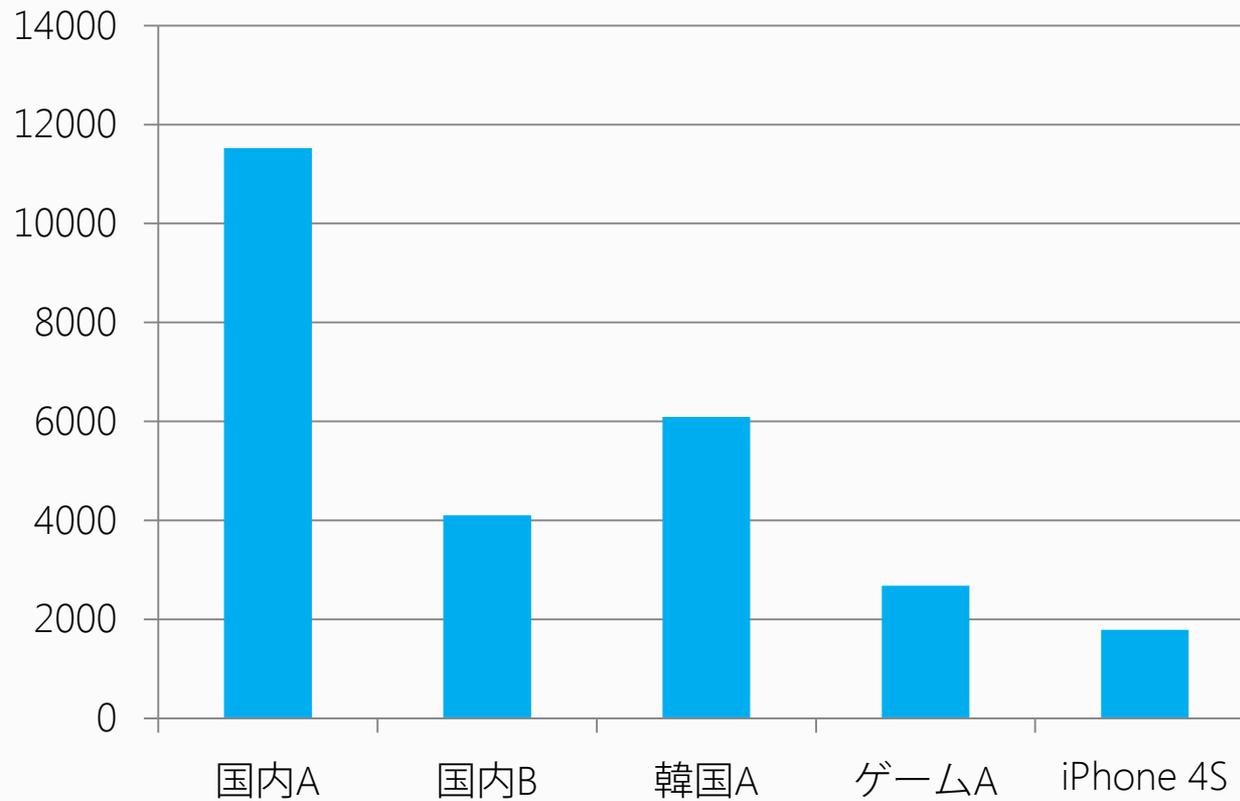
アプリ基盤としての課題

- パフォーマンス
 - JS処理速度、描画速度、フレームレート
- メモリー消費
 - メモリー不足によるクラッシュ
- 実装API不足
 - 特にデバイスアクセス系

遅いJavaScript処理速度

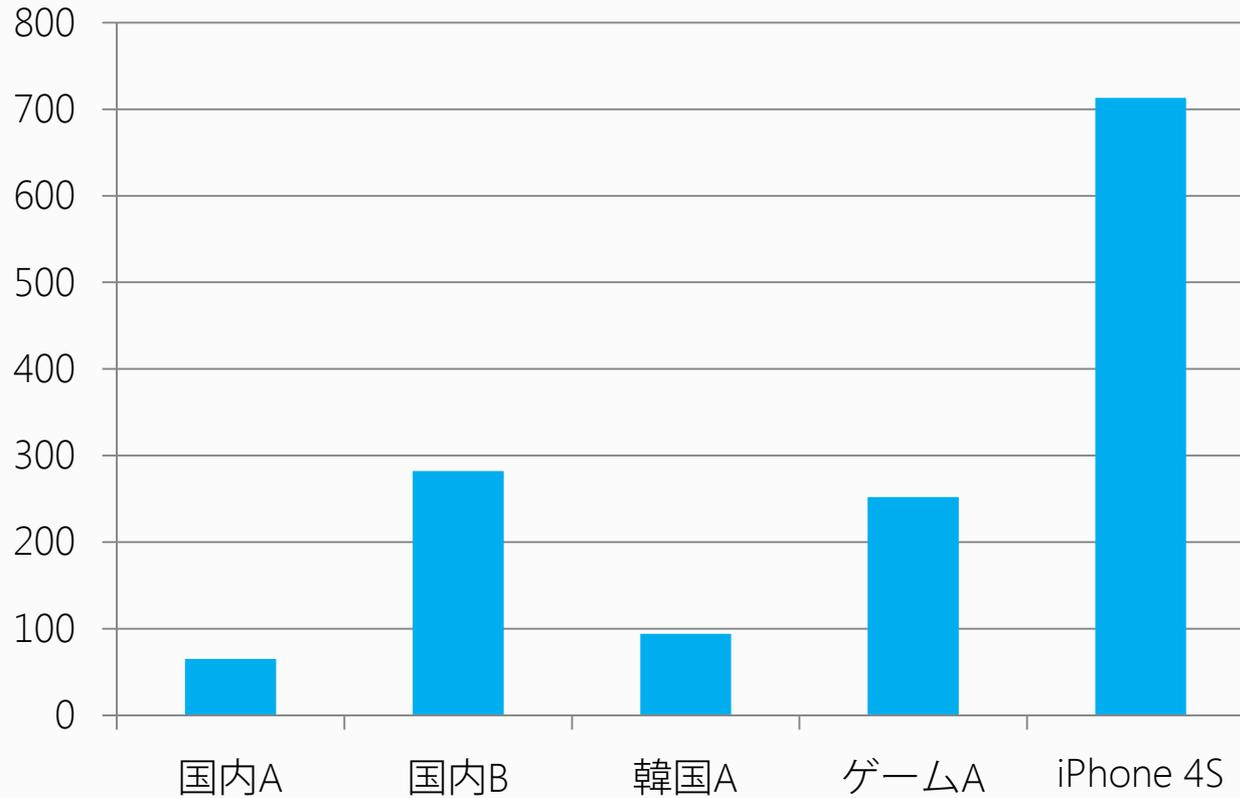
- 演算処理のパフォーマンス
- パフォーマンスチェッカー
 - SunSpider
 - V8 Benchmark Suite
- スマートフォンに遠く及ばない

SunSpider 0.9.1



単位：ミリ秒（時間が短いほど良い）

V8 Benchmark Suite 3



単位：スコア（スコアが高いほど良い）

移動アニメーション手法

DOMアニメーション

JavaScriptのタイマー
古いブラウザでも動作

CSSアニメーション

CSS Animations/CSS Transitions
GPUアクセラレーション

主流

SMIL(SVG)アニメーション

SVGコンテンツにて利用



低いフレームレート

- テレビブラウザ共通の問題
- 感覚的に20fps以下
- 描画領域の大きさにかかわらず遅い
- GPUアクセラレーションが未実装？
- スマートフォンに使い慣れたユーザーには受け入れがたい
- ティッカーとしては使えない

開発における課題

デバッグ環境

- テレビブラウザのデバッグ環境がない
- 動作しない理由が分からない
- アプリが作れない、または、コストがかかる
- せめてデバッグコンソールは必要
- USBまたはWiFi経由のリモートデバッグ環境
- スマートフォンでは当たり前

Elements Resources Network Sources Timeline Profiles Audits Console

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN" "http://www.w3.org/TR/1998/REC-html40-19980424/loose.dtd">
<html>
  <head>...</head>
  <body>
    <div align="center">
      <div id="pane-main">
        <div style="padding:0 10px 0 10px">
          <!--noindex-->
            <div class="logobar">...</div>
            <div class="topnav">...</div>
          <!--noindex-->
            <div class="promo-home">...</div>
            <div class="newsbar" style="margin-top:5px;position:relative">...</div>
            <div class="three-boxes">...</div>
            <script>...</script>
          <!--noindex-->
            <div class="foot-copyright">...</div>
          <!--noindex-->
        </div>
      </div>
    </div>
  </body>
</html>
```

Computed Styles Show inherited

Styles + [icon] [icon]

element.style { }

Matched CSS Rules

body { styles.css:7

margin: 20px 10px

20px 20px;

background-color:

#e7e7e7;

background-image:

url(/images/ui/bg ...

background-repeat: repeat-x;

}

body, p, td styles.css:5

{

font-family: Arial,

Helvetica, sans-

1 [icon]

業務用途への応用に向けて

自動起動モード

- テレビの電源を入れたらブラウザを自動起動するモードが求められる
- iOSシングルアプリモード
 - 業務向け専用端末として活用可能



URL または検索



Goo



ブラウザーUIの非表示

- コンテンツのみを表示
 - Internet Explorer 10 for Windows 8
 - Safari for iOS Standalone mode
 - `<meta name="apple-mobile-web-app-capable" content="yes">`
- 不要なバー
 - アドレスバー
 - スクロールバー
 - コンテンツがViewportに収まる場合は非表示に

解像度

- テレビブラウザの解像度は1280×720
- フルHD相当の解像度が求められる
 - 特に広告系コンテンツ

1920 × 1080

1280 × 720

A diagram illustrating resolution requirements. It features a large black rectangle representing a 1920x1080 resolution frame. Inside this frame, there is a smaller gray rectangle representing a 1280x720 resolution area. The text '1920 × 1080' is positioned at the top left of the black frame, and '1280 × 720' is positioned at the top left of the gray rectangle.

ストレージ



- データを蓄積する仕組み
 - Web Storage
 - Indexed Database API + ObjectURL ※
 - File API: Directories and System
- 利用例
 - データキャッシュによる通信パフォーマンス向上
 - オフライン対応

まとめ

安価なプレイヤーの実現

- テレビブラウザの当面の課題

- パフォーマンス不足
- 実装API不足
- 開発環境不足
- 業務向け機能不足



- 課題がクリアできれば

- テレビブラウザ+HTML5アプリで
- STB不要のサインージプレイヤー
- Consumerizationの恩恵が受けられる



ご清聴ありがとうございました

株式会社ニューフォリア 取締役 最高技術責任者
羽田野 太巳 (はたのふとみ)



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