



# THE WEB

## AS IT SHOULD BE

Martin Beeby

*Microsoft*

# PAVING THE WAY TO THE END USER

- ▶ Hotbed of innovation
- ▶ World of standards
- ▶ Ever-closer user experiences

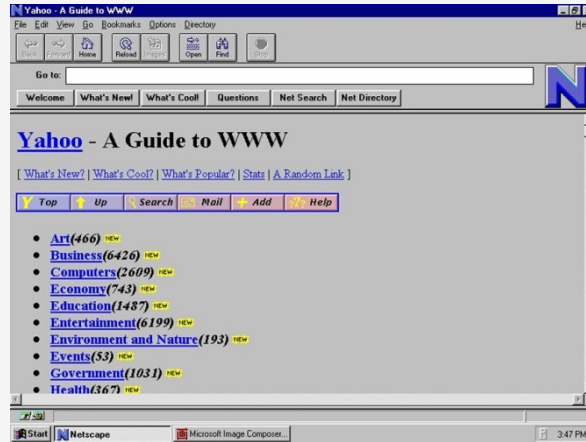


# IN THE BEGINNING...

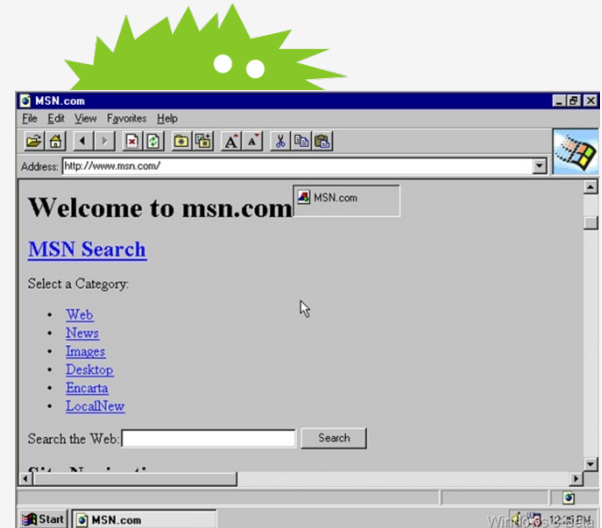


**MOSAIC**

1994



**NETSCAPE NAVIGATOR**



**INTERNET EXPLORER V1**

August 1995

# 2001 A SPACE ODYSSEY

Internet Explorer 6 - Microsoft won the Web





**WE ALL  
MAKE  
MISTAKES**



# THE RISE OF THE COMPETITION

- ▶ Amazing browsers came on-line
- ▶ Microsoft had a long journey to catch up



# THE JOURNEY SO FAR

MARCH 2011

## INTERNET EXPLORER 9

- ▶ Great browser
- ▶ Constant development momentum
- ▶ Eight-week beta-launch cycles
- ▶ One-year launch cadence





**INNOVATE OR DIE**



# STANDARDS-BASED BROWSING

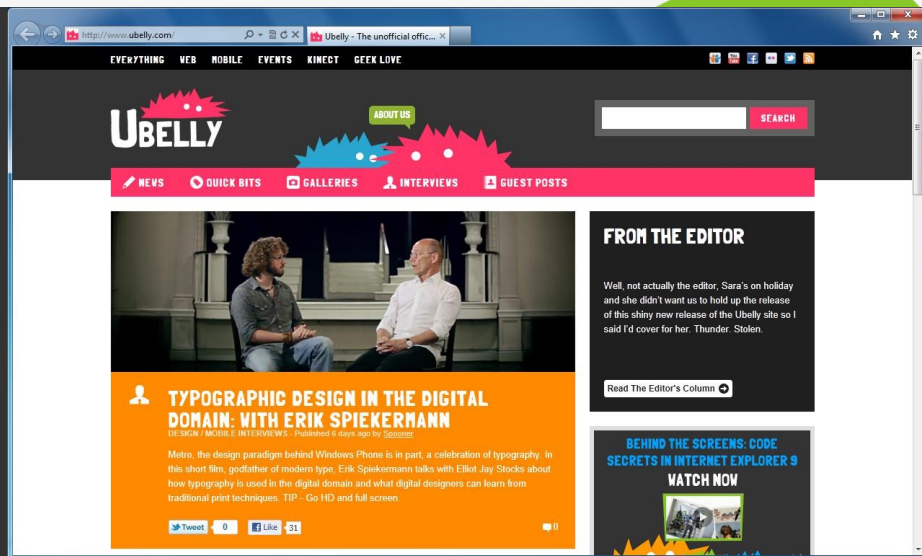
▶ HTML5

▶ WC3:

Sixteen full-time employees

Most test cases submitted  
around 1,700

▶ But we still innovate



# THE SMALLEST CHROME



# BRINGING USERS CLOSER



# WEB SITES AS APPLICATIONS



- ▶ Fully-fledged Applications

HTML5

CSS3

Standards-based Web technologies

**IE10 IS A  
DISTINCT APPLICATION  
DELIVERY PLATFORM**



# COOKBOOK DEMO



## Cookbook Demo



### Pound Cake (Sour Cream)

#### Comments

This cake actually tastes better if you let it stand for a day. To make this recipe, you'll need a very large mixer; a hand-mixer won't hack it. Recipe provided by Allison Klein @ fatmornings.com

#### Keywords:

chocolate, cake, pound cake

#### Ingredients

- 3 cups sugar
- 1 cup butter, at room temperature
- 6 eggs, separated
- 1 cup sour cream
- 3 cups flour
- 1 pinch of salt
- 1/4 teaspoon (heaping) baking soda
- 1 teaspoon vanilla
- 3 tablespoons rum (optional)

#### Instructions

1. Preheat oven to 325 degrees.
2. Whip egg whites until stiff; set aside.
3. Cream butter and sugar together until fluffy. Add the egg yolks one at a time to creamed mixture, mixing until well combined.
4. Combine the dry ingredients (flour, salt, and baking soda). Add the dry ingredients to the creamed mixture, alternating with the sour cream, but starting and ending with the flour mixture. When the flour mixture and sour cream have been thoroughly mixed in, add the vanilla and mix until just combined.
5. Gently fold in the egg whites, and then pour batter into a large, floured and buttered bundt pan. Bake for 1 hour and 10 minutes, or until cake is golden brown and begins to pull away from the sides of the pan. If in doubt, it is better to slightly underbake this cake.
6. Let cake cool in pan for 10 to 15 minutes, and then invert the cake onto serving platter. Let cake cool for about 10 more minutes, and then sprinkle rum evenly over the cake. Let cool completely before serving.

# OFF-LINE ACCESS



# BENEFITS



## APPLICATIONS WORK CORRECTLY AT ALL TIMES

- ▶ User-generated data can be stored off-line
- ▶ Improved overall performance by spreading the load between the cloud and client



# APPCACHE CREATION FLOW



First run fetches  
info from network

**CACHES**  
→ **RESOURCES** →  
**LOCALLY**



Later runs fetch  
info from cache


# APPCACHE

## HOW IT WORKS



- ▶ **Behind the scenes** after Web content displayed
- ▶ Manifest file **specifies resource URIs** to cache
- ▶ Cache only created if **all resources** are downloaded
- ▶ **Easy-update** of manifest file to update **target cache** content
- ▶ Applications can **access cached resources** using URLs and URIs

# APPCACHE VS HTTP CACHING

- 
- ▶ **Guaranteed availability** of cached resources
  - ▶ **Correct off-line resolution** of URLs

**HTTP CACHING CAN OPTIMISE  
APPCACHE BEHAVIOUR**

# INDEXED DB



# INDEXED DB VS RELATIONAL DB



Concept	Relational DB	IndexedDB
Database	Database	Database
Tables	Tables contain columns and rows	objectStore contains Javascript objects and keys
Query Mechanism, Join, and Filters	SQL	Cursor APIs, Key Range APIs, and Application Code
Transaction Types and Locks	Lock can happen on databases, tables, or rows on READ_WRITE Transactions	Lock can happen on database on VERSION_CHANGE transaction, on an objectStores on READ_ONLY and READ_WRITE transactions. There is no object level locking.
Transaction Commits	Transaction creation is explicit. Default is to rollback unless I call commit.	Transaction creation is explicit. Default is to commit unless I call abort or there is an exception that is not caught.
Property Lookups	SQL	Indexes are required to query object properties directly
Records/Data	Normal form and single valued properties	De-normal form and can have multi-valued properties

# INDEXED DB

## HOW IT WORKS



```
var oRequestDB = window.indexedDB.open("Library");
oRequestDB.onsuccess = function (event) {
  db1 = oRequestDB.result;
  if (db1.version == 1) {
    txn = db1.transaction(["Books"], IDBTransaction.READ_ONLY);
    var objStoreReq = txn.objectStore("Books");
    var request = objStoreReq.get("Book0");
    request.onsuccess = processGet;
  }
};
```

# INDEXED DB BENEFITS




- ▶ Optimised way of querying data objects
- ▶ Website access to large amounts of related data
- ▶ Data filtering using KeyRange objects
- ▶ “Master” cloud and local IndexedDB database architecture
  - Faster searches
  - Off-line data access

# WEBSOCKETS AND XHR





# WEBSOCKETS AND XHR BENEFITS

- 
- ▶ Better off-line application performance
  - ▶ Improved user stickiness to the application

**GREATER OPPORTUNITY  
FOR YOUR BUSINESS**

# WEB APPLICATION USER EXPERIENCE



THE

BEAUTY

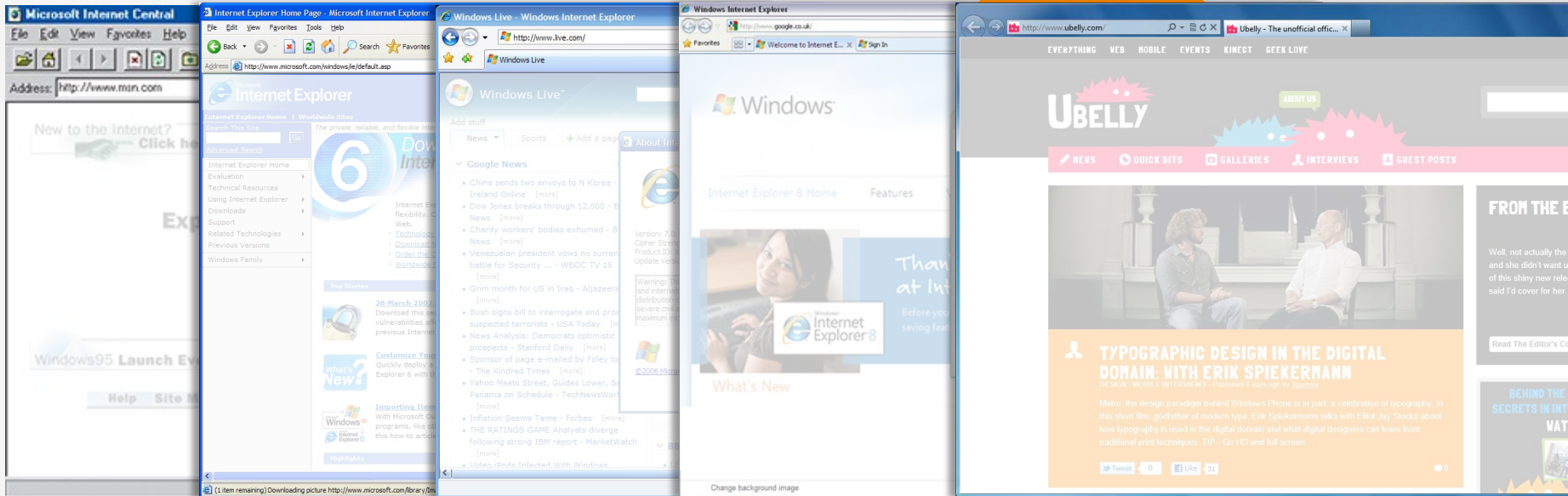


OF HTML5

# THE BROWSER TO APPLICATION ECO-SYSTEM



# ACHIEVING BROWSER INVISIBILITY



# HANDS UNDER THE BONNET



- ▶ **Hands On:**  
[Windows 8 HTML5 Platform](#)
- ▶ Showcase of new HTML5 features in development
- ▶ Vendor Prefixed and optimised for your browser

# TEST DRIVE

<http://ie.microsoft.com/testdrive/>



## DOWNLOAD

- ▶ Internet Explorer 10 beta
- ▶ Developer kits
- ▶ Videos, blogs and more

# THE WEB

## AS IT SHOULD BE



- ▶ WC3 standards-based: [HTML5](#), [CSS3](#), [Web-browsers](#)
- ▶ Application delivery platform
- ▶ Compelling end-user experiences
- ▶ Driven by innovation



# CONTACT

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