

Towards Web 2.0

and beyond...

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SICS (<http://www.sics.se>)

W3C (<http://www.w3.org>)



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SICS, Swedish Institute of Computer Science

National research institute

- R&D in information and communication technologies

Objective:

- conduct advanced and focused research in strategic areas of computer science



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Structure of presentation

1. Where were we, a moment ago?
2. What has changed?
3. What is this thing called Web 2.0?
4. Ajax – technology toolbox
5. "So what? What's in it for me?"
6. And beyond?



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1. Where were we, a moment ago?

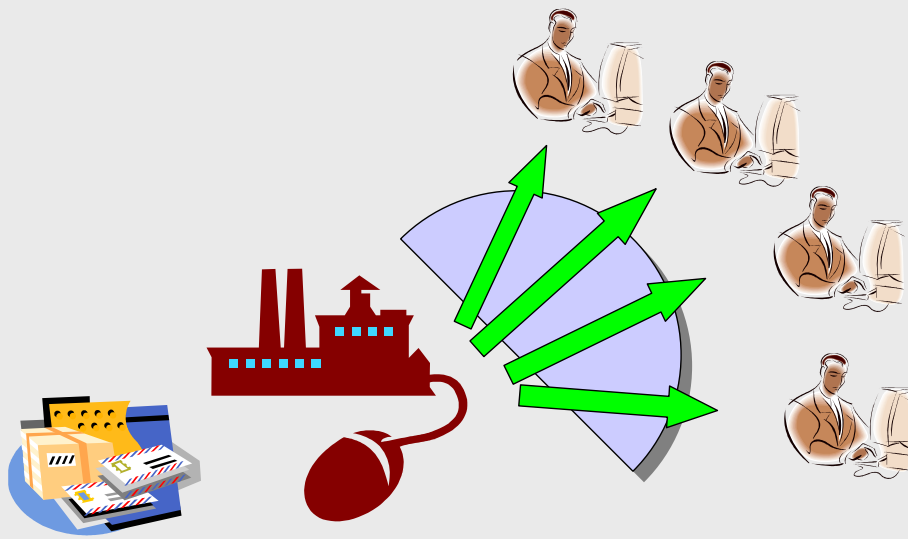
Photo: rob patrick



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The producer-consumer web



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The "content web"

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The "service web"



Isn't this enough?

- The web: an unprecedented success – invented 1990!
- Will the future be "more of the same"?
- Or?
- There is always a next generation coming up from behind, *thinking differently!* ("Net Generation")



Photo: Duncan Davidson

2. What has changed?

The open public web

New ...

- Actors and sites
- Content and services
- Expectations and interests

Key concepts:

- User-generated content
- Communities

User-generated content - Flickr



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flickr GAMMA™

The best way to **store, search, sort and share** your photos.

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In the [colorful reflection](#) we have what is [life](#). - J.W. v. Goethe

Find a photo of... [GO](#)

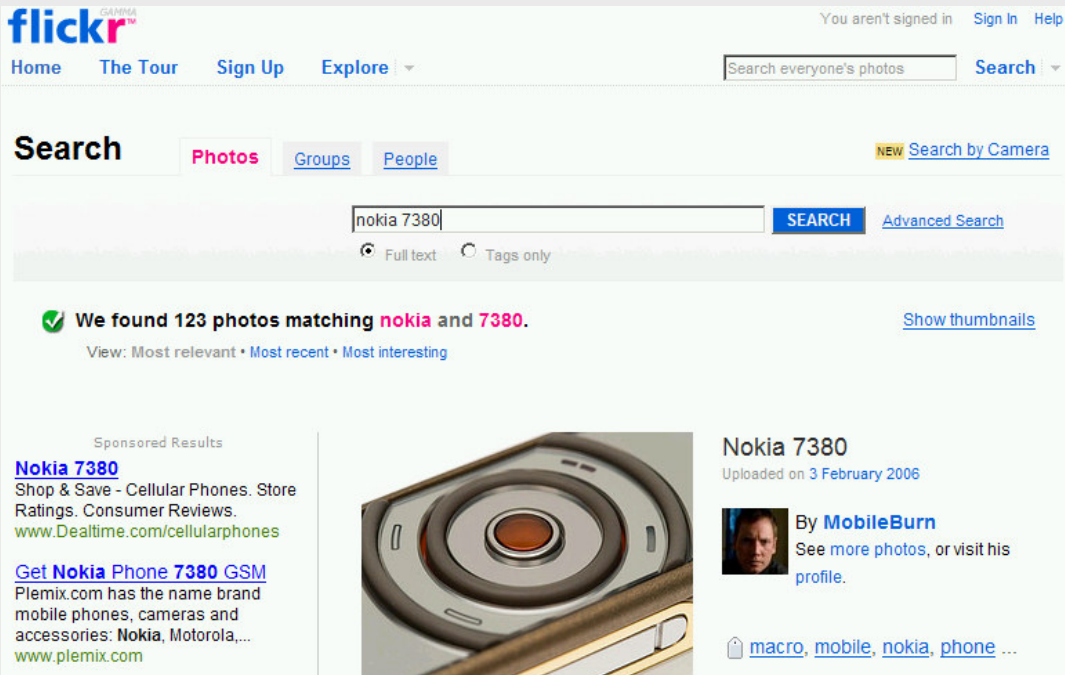
Or, browse [popular tags?](#)

[Explore Flickr](#)

Browse interesting photos shared over [the last 7 days.](#)

NEW See popular cameras with [Camera Finder](#)

Content and descriptions - Flickr



flickr GAMMA™

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Search [Photos](#) [Groups](#) [People](#) [NEW Search by Camera](#)

[SEARCH](#) [Advanced Search](#)

☒ Full text ☐ Tags only


✓ **We found 123 photos matching nokia and 7380.** [Show thumbnails](#)

View: [Most relevant](#) • [Most recent](#) • [Most interesting](#)

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Shop & Save - Cellular Phones. Store Ratings. Consumer Reviews.
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Nokia 7380
Uploaded on 3 February 2006

By **MobileBurn**
See [more photos](#), or visit his [profile](#).

[macro](#), [mobile](#), [nokia](#), [phone](#) ...

User-generated content - YouTube

The screenshot shows the YouTube homepage with the logo "You Tube Broadcast Yourself™". Navigation tabs include "Videos", "Categories", "Channels", "Community", and "Upload Videos". A search bar is at the top right. Below the navigation, there's a "Director Videos" section with four video thumbnails: "The Jaeger Report...", "250ml Rhythm - 'Red...'...", "LisaNova Does P. Diddy", and "Ask A GAY MAN : Den...". To the right, a "My:" section lists "Videos - Favorites - Playlists - Inbox - Subscriptions", and a "Most popular CHANNELS this week" banner. The "Featured Videos" section displays "Off The Wall Episode 1: 'Lady Troubles'" by TheAlexmeister, with a description about Wallby betting on Nick getting a girlfriend. A large video player on the right shows a man in a dark shirt.

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Content and descriptions - YouTube



Nokia 7380 Review



Added February 27, 2006
From [phonescoop](#)
Provided By: [phonescoop](#)
DIRECTOR
Phone Scoop's review of Nokia's 7380 fashion phone. Designed for small pockets and tiny purses, the 7380 is the ultimate nightlife accessory - with plenty of features to impress your friends or that hottie you just met. More at [www.phonescoop.com](#) ([less](#))
Category [Howto & DIY](#)
Tags [Phonescoop](#) [Nokia](#) [7380](#) [cellphone review](#) [lipstick](#) [fashion](#) ([less](#))
URL [http://www.youtube.com/watch?v=zb_cGG1S_](#)
Embed `<object width="425" height="350"><param name="`

Related [More from this user](#) [Playlists](#)
Showing 1-20 of 30 [See All Videos](#)
[Nokia 7380 Review - parody](#)

Director Videos



[1000 Days at Sea Update from Reid Stowe!](#)
05:09
From: [GoodNewsBroadcast](#)



[The Vegetarian Makeover](#)
02:00
From: [Unsustainables](#)

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User-generated content - Amazon



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Pragmatic Ajax: A Web 2.0 Primer (Pragmatic) [ILLUSTRATED] (Paperback)
by [Justin Gehtland](#) (Author), [Ben Galbraith](#) (Author), [Dion Almaer](#) (Author)
★★★★★ (9 customer reviews)

List Price: \$29.95
Price: **\$19.77** & eligible for **FREE Super Saver Shipping** on orders over \$25. [Details](#)
You Save: \$10.18 (34%)

Availability: In Stock. Ships from and sold by **Amazon.com**. Gift-wrap available.

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Search Books GO Find Gifts

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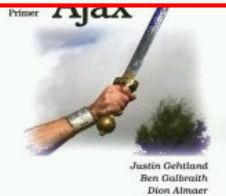
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User-generated content - Amazon

Customers who bought this item also bought

[Ajax in Action](#) by Dave Crane
[Head Rush Ajax \(Head First\)](#) by Brett McLaughlin
[Agile Web Development with Rails \(Pragmatic Programmers\)](#) by Dave Thomas
[Rails Recipes \(Pragmatic Programmers\)](#) by Chad Fowler
[Programming Ruby: The Pragmatic Programmers' Guide, Second Edition](#) by Dave Thomas

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[Rails Recipes \(Pragmatic Programmers\)](#) by Chad Fowler

[Programming Ruby: The Pragmatic Programmers' Guide, Second Edition](#) by Dave Thomas

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Spotlight Reviews

[Write an online review](#) and share your thoughts with other customers.

19 of 19 people found the following review helpful:

★★★★☆ **Great Primer for AJAX and Web 2.0**, May 23, 2006

Reviewer: **Andrew Violette "www.andrewviolette.net"** (Hoffman Estate)

The only way to really learn Ajax (and the wider "Web 2.0") is write the code and understand Javascript. The writers behind this book know this because they give examples (as in "Ajax in Action"), but have instead given a wide survey of information.

The book starts out with a very readable overview of Ajax and follows that with a fascinating deconstruction of Google Maps. In subsequent chapters, they cover the mechanics of making asynchronous calls with Javascript. Since most people

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User-generated content - Amazon

The screenshot shows the Amazon.com product page for the book 'Ajax in Action' by Kai Bielenberg. Several sections are highlighted with red boxes to illustrate user-generated content:

- Customers who bought this item also bought**: A section at the top left of the product page.
- Spotlight Reviews**: A section below the 'Customers who bought this item also bought' section.
- Tags customers associate with this product**: A section below the 'Spotlight Reviews' section, showing a list of tags like 'ajax', 'programming', 'google maps', etc., and a 'See all 17 tags...' link.
- Tag this product (What's this?)**: A section below the 'Tags customers associate with this product' section, showing a 'Your tags: Add your first tag' input field.

The page also displays the book's title, author, price (\$15.00), and a description. The footer includes the W3C logo and the text 'Svenska W3C kontoret'.

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User-generated content - Amazon

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- Spotlight Reviews**: Located below the 'Customers who bought this item also bought' section.
- Tags customers associate with this product**: Located below the 'Spotlight Reviews' section.
- Tag this product (What's this?)**: A sub-section within the 'Tags customers associate with this product' box.
- Customer Discussions Beta (What's this?)**: A section below the tags, featuring a 'New!' badge and a description: 'Receive e-mail when new posts are made. Click the "Track it!" button on any discussion page.'
- This product's forum (0 discussions)**: A sub-section within the 'Customer Discussions' box, with a description: 'Ask questions, Share opinions, Gain insight'.
- Start a new discussion**: A sub-section within the 'This product's forum' box, featuring a 'Topic:' input field and a 'First post:' text area.

Other visible elements on the page include the Amazon logo, navigation links (Your Account, Cart, Lists, etc.), search bar, and product details like the price (\$3.99) and a 'Sign in' link.

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User-generated content - Amazon

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- Start a new discussion**: A sub-section within the 'This product's forum' box, featuring a 'Topic:' input field and a 'First post:' text area.
- So You'd Like to...**: A section below the 'Customer Discussions' box, featuring a list of related books and guides:

- Understand Web Design: A guide by Frank Stepanski**
- Make great web sites and computer programs: A guide by Michael L. Schwab**
- Create Awesome Standards-Compliant Web Interfaces: A guide by Amy**

Other visible elements on the page include the Amazon logo, navigation links (Your Account, Cart, Lists, etc.), search bar, and product details like the price (\$3.99) and a 'Sign in' link.

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Leveraging on users - threadless

threadless™ **SHOP** PARTICIPATE SERVICE
Nude No More 0 items **CHECKOUT** You aren't logged in :(Would you like to [login](#) or [join us?](#)

New & Amazing! announced on **APRIL 23**
 Check out these hot new tees, awesome new submissions and sexy new gallery photos!

Grand Prize Winner!

KICKIN' IT OLD SKOOL **threadless RESULTS!**

Battlefield 1986
by [Josh Agerstrand](#) and [Andrew Barger](#)

Tiny Toy Talons by [James Liepolt](#)

12 random submissions

[View all designs in the running](#)

New tee-riffic photos!

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User-created designs - threadless

threadless™ **SHOP** **PARTICIPATE** SERVICE
Nude No More **Score Designs Submit Ideas** **TEE-riffic PHOTOS** **STREET TEAM** **BLOG FORUM**

The Secret Lives of Luggage by [Steven E. Hughes](#)

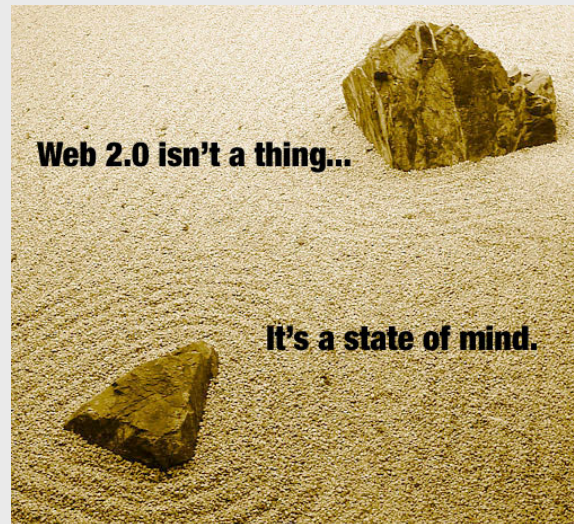


Photo: Daniel F. Pigatto

3. What is this thing called Web 2.0?

Business value – user-contributed

- Explicitly added content
 - Easy to add – interface considerations
 - Management in the hands of the user
- Implicitly added content
 - Tracking users / behaviors
 - Correlating behaviors and descriptions
 - Inferring significant patterns
- Engaged users
 - Returning users

User value – why it works

- **Previously:** the "fetch web"
 - Users were consumers
- **Now:** the participatory web
 - Users are consumers *and* producers – "prosumers"
 - Content originate at the edge of the network
- Access to content from other users
 - Eroding the wall between what's private and what's public
 - But user can define access restrictions
- Users visible
 - Detect interests and competence
 - Connect
- "One interconnected web"
 - Not isolated islands of sites

Web 2.0 business

New kinds of ...

- Business models:
 - Example: threadless (t-shirt designs)
- Competitive edge:
 - Example: Amazon (customer behavior and content)
- Business processes:
 - Example: Wired magazine (crowd-sourcing)
- Customer relationship management
 - Example: T-Mobile (customer community wiki)

Web 2.0 in one slide

- It is about what you can do in a web browser
- The browser has a desktop-like behavior
- The web turns into a read-write web
- Content is contributed and shared
- Content is described and tagged
- Descriptions and tags are unconstrained
- Content is reused in innovative ways
- Communities of users emerge
- Originally for personal use, now into business

Three views on Web 2.0

Persons surfing on the web:

- "That's a nice site! I like it."
- What makes a good user experience?

Businesses that offer content and services:

- "This gives us added-value. ... and our customers."
- In what ways can business be improved ?

IT staff that builds and manages IT infrastructures:

- "This makes us work faster and more cost-effective!"
- What kind of technology should we use, and how?"

Different kinds of answers.

Different opinions on what Web 2.0 is!

The business perspective

- External web 2.0
 - The Web 2.0 landscape "out there"
 - How our user / customers / clients see us
 - What will attract / satisfy users?
 - Future users – the Net Gen!
- Internal web 2.0
 - The Web 2.0 landscape "in-house"
 - IT support for our business
 - How do we support our employees?
 - Future employees – the Net Gen!

The external web 2.0

What we see in the external web:

- Blogs
 - Provide "personal faces"
 - Invite feed-back
- Wikis
 - User-generated knowledge bases
 - E.g., on product use, customer support
 - "Customer-to-customer"
- Tagging
 - For search and navigation
- Rating
 - Capture user satisfaction



The internal web 2.0

What we see in the internal web :

- RSS feeds
 - Light-weight news announcements
- Wikis
 - Instead of email and office documents
 - Encourages community mentality
- Systems tagging resources / social bookmarking
 - Tag resources with labels
 - Not controlled vocabulary
 - Retrieve using tags
 - Retrieve via others' tags (community!)
- Mashups
 - Merging data from disparate sources

Web 2.0 in the enterprise

Basically:

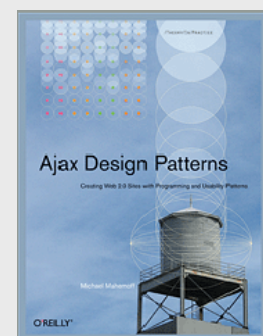
- turning users (external & internal) into participants
- allowing them to easily
 - create,
 - share, and
 - connectwith
 - dynamic information,
 - applications, and
 - people



4. Ajax – technology toolbox

AJAX technologies

- AJAX (first coined 2005):
 - "Asynchronous JavaScript and XML"
- Set of technologies:
 - CSS,
 - JavaScript,
 - XML,
 - XMLHttpRequest
- Existing technologies used in new ways
 - Pushing the limits of what present implementations support
 - Create attractive user experience!




The reactive interface

- Styling in webbish ways, not like glossy magazines
 - CSS
- Dynamic visual modifications, no page loads
 - DHTML, JavaScript, DOM
- Context sensitive user options, no server checks
 - DHTML, JavaScript, DOM
- Asynchronous data fetch, no bulk data (re)load from server
 - XMLHttpRequest
- Behave like a desktop application!

Technology providers

- Industrial AJAX toolboxes:
 - GWT, Oracle, SAP, ... Dojo Foundation, OpenAjax, ...
 - Support authoring/programming AJAX sites
- Based on existing and emerging standards!:
 - [X]HTML, RSS, Atom, FOAF,
 - HTTP, Atom (WS: SOAP, ...)
- I.e., the infrastructure of the web – that we have!
 - plus a few emerging standards.

World Wide Web Consortium

-  **World Wide Web Consortium** (1994-)
- Industry consortium – specifies webbstandards
- Approx 400 members – industry, public sector, reserach
 - Global coverage
- Produces standards ("W3C Recommendations") via a consensus-based process
 - HTML, HTTP, XML,

Technology Stack



Assuring AJAX interoperability

- *W3C, Rich Web Client Activity:*
 - Compound Document Formats Working Group
 - Web API Working Group
 - Web Application Formats Working Group

Also important ...

- *W3C Mobile Web Initiative:*
 - Mobile Web Best Practices Working Group
 - Device Description Working Group

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5. "So what? What's in it for me?"

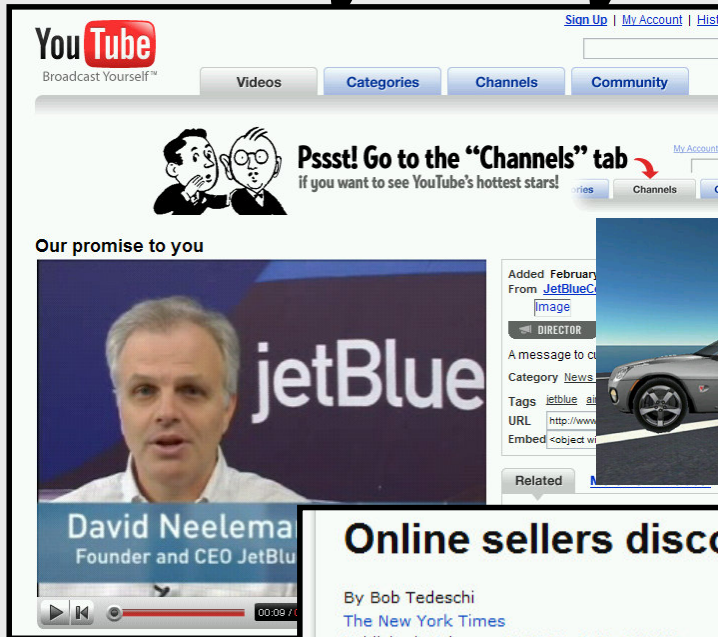
Photo: Brian Talbot



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Industry/Society in the new game



Online sellers discover the power of video clips

By Bob Tedeschi
The New York Times
Published: February 5, 2007, 6:13 AM PST
[TalkBack](#) [E-mail](#) [Print](#) [del.icio.us](#) [Digg this](#)
It was just a matter of time. Online retailers have begun capitalizing on the YouTube craze, offering a video platform for

nytimes.com
The New York Times

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6. And beyond?



Photo: Brian Talbot

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Directions of innovation

- Improved information interoperability
 - Support for convergence of tagging
 - Increased use of microformats
 - Leveraging on semantic web technologies
- Embedding of content and services in artificial worlds
 - Spatial metaphors for structure and navigation
 - Natural representations of communities
 - Example: SecondLife
- Seamless integration in mobile world
 - Intelligent mobile devices

Conclusion

Web 2.0 and you

- Web 2.0 has arrived
- New expectations about the web
- New expectations about sites
- Tailoring to personal use, needs, preferences
- Empower users!
- Mutual benefits of communities!
- What communities do you serve?
 - external
 - Internal

Links

- The presentation:
<http://www.w3c.se/resources/office/talks/20070508/>

Thank you!

