From Web 2.0 Architectures by J. Governor, D. Hinchcliffe and D. Nickull

Tim O’Reilly’s original definition (2005) : “Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 apps are those that make the most of the intrinsic advantages of that platform: delivering software as a continually updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an “architecture of participation,” and going beyond the page metaphor of Web 1.0 to deliver rich user experiences”

Tim’s list of Web 1.0 versus Web 2.0 examples

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| --- | --- |
| Web 1.0 | web 2.0 |
| DoubleClick | Google Sense |
| Ofoto | Flickr |
| Akamai | BitTorrent |
| mp3.com | Napster |
| Brittanica Online | Wikipedia |
| personal website | bloggiing |
| evite | upcoming.org, EVDB |
| domain name speculation | search engine optimizattion |
| page views | cost per click |
| screen scraping | web services |
| content management systems | wikis |
| directories (taxonomy) | tagging (folksonomy) |
| stickiness | syndication |

Web 2.0 Patterns sorted roughly from the most abstract to the most concrete:

* Service-Oriented Architecture (SOA) -- Architects a framework for matching needs and capabilities. Integrates services that are owned and managed independently. Mashup and SaaS rely on it. Example: An App server offering a SOAP endpoint where consumers can invoke a service to get a stock quote is a classic example of this pattern
* Software as a Service (SaaS) -- Delivers computational functionality to users without them having to persist the entire app or system on their computers. Applies SOA to software. Shifts away from the older model of locally installed, self-contained software. Has evolved largely from web aware apps. The ultimate expression is virtualization, the pattern behind cloud computing.
* Participation-Collaboration – focuses on self-organizing communities and social interactions in web 2.0 participants. Embraces reuse of content, fractional updates or contributions to collective works, the constant beta, trusting your users, and making the user a core part of the architecture and model for web 2.0. Wikipedia (example). AKA as harnessing collective intelligence.
* Asynchronous Particle Update – core pattern behind Asynch JavaScript and XML (AJAX), yet it can also be implemted other ways. Instead of updating the whole page, a smaller part of the whole can be updated asynchronously. Trigger from timeouts, user activity, changes in state, and preset parameters. Trigger can happen on a server, client, or in cloud computing.
* Mashup – relies on services, aggregating content or computational resources from multiple sources, and mixing them together to create something new that seamlessly combines the two. Example: Google map with financial data overlaid on it.
* Rich User Experience (RUE) – synonymous with a RIA (Rich Internet App). RUE is a replication of the complete, real-world interaction between the two entities, rather than some part of the interaction. Combines several aspects, including visual presentation, contextually relevant info, and apps that are modeled to understand the complex interactions between users and software. An offline eg. : a conversation with an employee at a travel agency, where each party learns fromm and reacts to the other (compare that with picking up a travel brochure). *Our TQM may benefit from this*.
* The Synchronized Web – here, multiple apps or users share the same state or view of the same state. Online video gamers are able to play games together online. It is an essential pattern that supports multiple forms of interaction, including req/resp, subscribe/push, probe and match, pull, and others.
* Collaborative Tagging – Commonly referred to as folksonomy, it refers to the ability of users to add “labels” (or tags) to link resources with semantic symbols that themselves are grounded in a conceptual domain (ontology). Top down efforts to create a semantic web have failed to take hold. The Collaborative tagging is a bottom-up effort that has created a semantic layer to the internet. See: del.icio.us – users apply labels to public bookmarks.
* Declarative Living and Tag Gardening –In the real world, people make stmnts about just everything. Declarative Living is the act of encoding those declarations in syntax that a machine can process, and making them visible to other entities on the Web. Tag Gardening is the act of harvesting the declarations to learn about the users’ collective state. At Twitter.com, users make declarations about their daily activities that others can access.
* Semantic Web Grounding – assembles interactions that monitor the links between declarations (eg semantic tags) and resources, as well as how users interact based on those artifacts. Facilitates self-learning, self-healing software, as observing the patterns of interactions can lead to inferences. Google Search is an example.
* Persistent Rights Management – users retrain their CRUD (create, read, update, delete) rights on every copy of a digital artifact.
* Structural Information – microformats. These are small formats with highly specialized abilities to mark up precise info within documentation. In conjunction with XHTML, Internet users address content at a much more granular level than HTML. Eg. XML Friends Network (XFN).