order to avoid the above, SEO engineers developed alternative techniques that replace nofollowed tags with obfuscated Javascript and thus permit PageRank sculpting. Additionally several solutions have been suggested that include the usage of iframes, Flash and Javascript.[27]

In December 2009, Google announced it would be using the web search history of all its users in order to populate search results.[28]

On June 8, 2010 a new web indexing system called Google Caffeine was announced. Designed to allow users to find news results, forum posts and other content much sooner after publishing than before, Google caffeine was a change to the way Google updated its index in order to make things show up quicker on Google than before. According to Carrie Grimes, the software engineer who announced Caffeine for Google, "Caffeine provides 50 percent fresher results for web searches than our last index..."[29]

Google Instant, real-time search, was introduced in late 2010 in an attempt to make search results more timely and relevant. Historically site administrators have spent months or even years optimizing a website to increase search rankings. With the growth in popularity of social media sites and blogs the leading engines made changes to their algorithms to allow fresh content to rank quickly within the search results.[30]

In February 2011, Google announced the Panda update, which penalizes websites containing content duplicated from other websites and sources. Historically websites have copied content from one another and benefited in search engine rankings by engaging in this practice, however Google implemented a new system which punishes sites whose content is not unique.[31] The 2012 Google Penguin attempted to penalize websites that used manipulative techniques to improve their rankings on the search engine,[32] and the 2013 Google
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