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A Lead Provided by Bookmarks - Intelligent Browsers

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Abstract: Browsers are applications that allow Internet access. A defining characteristic is their unidirectionality: Navigator-> Internet. The purpose of this article is to support the idea of Intelligent Browsers that is defined by bidirectional: Navigator-> Internet and Internet-> Navigator. The fundamental idea is that the Internet contains huge resources of knowledge, but they are "passive". The purpose of this article is to propose the "activation" of this knowledge so that they, through "Intelligent Browsers", to become from Sitting Ducks to Active Mentors. Following this idea, the present article proposes changes to Bookmarks function, from the current status of Favorites to Recommendations. The article presents an analysis of the utility of this function (by presenting a research of web browsing behaviors) and in particular finds that the significance of this utility has decreased lately (to the point of becoming almost useless, as will be shown), in terms data-information-knowledge. Finally, it presents the idea of a project which aims to be an applied approach that anticipates the findings of this study and the concept of Intelligent Browsers (or Active Browsers) required in the context of the Big Data concept.

Keywords: recording search sequence; bookmarks; active data; passive data; redundancy

1 Introduction

Web 2.0 revolution and the explosion of mobile communications have changed the way we relate to internet and how we access it. On one hand the concept of user-content, on the other hand small size display required by mobile technologies "requested" more intuitive, more convenient and faster interfaces.

"Automation" process for certain actions based on reasons to reduce redundant movements included a "tendency to anticipate" users' intentions, an application of behavioural insights gained by graphical user interface architects.

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2 Why Atavisms Survive?

The user has been "liberated" as many technical obligations to feel free to create content. One of eliminated redundancies was, generally speaking, query about user's intentions that GUI "architects" noticed that users actually declared by repeated actions. In this anticipations list Bookmarks Facility has appeared that lately has morphed into Bookmark Function.

A facility became function. Bookmarks Facility is a tool that allows user to voluntarily store and classify links. Bookmark Function is called automatically adjusted setting using information from History (recording all accessed links) depending on their weight and automatically performs a memory most commonly accessed links. Until now user has adjusted browser, now browser adapts himself. The Bookmark Function is the browser who "looks" at the user and which "learn" him. From a hidden feature in browser Menu, Bookmark Function arrived in the address bar, pervasive, being a director concept.

However, the Bookmarks Facility has not disappeared. It lies hidden in the Menu, an atavism of the "architects" could not discard. The question is why? And the answer is simple: because It is used. The conclusion is that the Bookmark Function is different from Bookmarks Facility.

3 Residents and Navigators

The Facility and The Function satisfy each different kind of public. This segmentation became obvious when, with the birth of Web 2.0 as space inhabited by the content creators users, who began increasingly to impose The Network use as an "appliance". They "demanded" automation and short access procedures. Impatient and unidirectional, content creators living in network rather than browsing. Their places are Facebook, Youtube, World of Warcraft, etc. Favorite addresses should no longer be "marked" in Bookmarks because they are few and repetitive. The first letter of your favorite location address 'name' claim entire address: "y" + Enter go directly to Youtube, "f" + Enter directly into Facebook.

To the opposite of this new generation of inhabitants have still remained still Seafarers Network. Function Bookmark is Inhabitant's and Facility Bookmarks is Seafarer's.

4 "Hic suntdracones"

At this point of defining Navigator profile, we meet the concept of Big Data, in both quantitative and qualitative complexity acceptance. Here we face for the first time two semantic misunderstandings: the first comes from the perception that the Searching Engines are Finder Engines, and the second come from Facility Bookmarks association with the Search Engines (eg Google) or Data Bank (eg Wikipedia).

Navigator seeks information. The searching is usually conducted using a Search Engine or directly in a Data Bank. Finding is extrinsic teleology of the Search. Therefore The Engine Search is perceived as The Engine Finder. Finding's Phantasm lures Navigator away to unmapped areas. In his journey, The Navigator marks in Bookmarks interesting places that he leaves behind. His notes appear during the search but not mark "The Find" but "findings". As magpie collects shiny objects, and bibliophile collects books, so Navigator adds bookmarks for potential further benefits.

Subsequently, these collections of bookmarks classified in folders or not, prove to be huge: tens and hundreds of folders, each containing tens or hundreds of links. Thus the whole collection of bookmarks is useless.

5 A Search Sequence (definitions and conventions)[1]

The idea that solving caducity of Facility Bookmarks will reveal the actual observation a Search and Marking process led to scoring a first operation of an act of Search:

(1) Bookmark World Web > (2) Social bookmarking > (3) Tag Knowledge > (4) Knowledge management > (5) Knowledge base > (6) Knowledge base system > (7)Ontology (information science) @ > (8) Semantic Web #

(7) @ > (9)Data mining & >(10) Machine learning
> (11) Data Pre-processing > (12) Garbage in , Garbage out > (13) Misnomer > (14) Buzzword > (15) Knowledge extraction > (16)Unstructured data &
(16) & > (17) Natural language Processing
> (18) Text analytics
> (19) Noisy text analytics @&
> (20) Part-of-speech tagging @&
> (21) UIMA
(19) @& > (22) Noisy unstructured @
> (23) Parsing
(22) @ > (24) Noise
(20) @&> (25) Corpus linguistics
> (26) Brown corpus
> (27) & Hidden Markov models > (28) Statistical Markov model

The act itself of scoring a sequence search led to the identification of defining Concepts[2] and called for the establishment of the Conventions[3]:

5.1 Notational

> - Jump to Search
& - Node of Searches
@ - Point of Return
- Search Closure
@& - Return and Node

5.2 Concepts

Jump to Search

A Jump to Search is a leap from a single page to another. A Jump to Search can be an effective jump, i.e. leaving the current page by following a hyperlink, or may be a new Tab (without closing the

[1]Conceptualization process is in progress and will probably undergo changes due to what is presented in the article.
[2] Identified Concepts are more or less specific to a particular Search Style. The author assumed that they have a weight that can pass as generally valid regardless of style but this will be studied.
[3] Most likely in this study is the addition of sign (*) to represent (A Marked Link) in Bookmarks, along with specifying the directory where has been marked. It's also predictable addition of the sign (&@) representing (Node and Return) because it seems to be a difference between this situation and the reverse one (Reverse and Node) symbolized by convention (@&).

source page, and, in this case, can be either a sign that page was not fully read at the time of the jump or was not thorough, whether it has potential to become Node of Search) opened in the browser, from a hyperlink or from a simple word (in this case you can select the word and search in Google using the right mouse implicit function). Closed pages from which jump is initiated are usually not marked in Bookmarks.

Node of Search

The Node of Search page is a Jump to Search page that is not left and from which at least two Tabs are opened. Usually these pages are marked in Bookmarks.

Search Closure

A Search Closure is a page from which the Jump is no longer performed. Usually these are not marked in Bookmarks and are followed by turning points.

Points of Return

The Turning Point is usually a page (a Tab) to which the user returns, either due to closures or from another page which contains a notion explained in a previous Tab. Points of Return can also be Nodes of Search. Usually these pages are bookmarked.

6 RSP

Analyzing some recorded Search Sequences, generated the idea of a "unit" Registration Search Sequences (RSP - Record Searching Path). "The Device" is basically a plugin installed in any browser interface displays, with a RSP button which, once activated when initiating a "Searching Sequence", generates a "Report"[1] (or more) that contains:

6.1 Homogeneous Data (time dependent data)

1)The order of search: a chronological sequence search.

2) The length of Search: Total (from opening declaration to closing declaration<may take longer periods of time), Sessions (can be one or more sessions per day), Remaining (time spend on a page).

6.2 Hererogeneous Data (data whos depending on User)

1) Jump to Search;

2) Node of Search;

3) Point of Return;

4) Search Closure;

5) Quality of Jumps, Nodes, Points and Closures;

6) Fluency;

7) Sources of Search;

8) The Interest.

[1] Report can be viewed by the User or can be used for augmentation in RSP search processes

6.3 Quality of Jumps, Nodes, Points and Closures

Qualities are attributes that define the elements of a Sequence of Search.

Jump to Search Quality is defined by the position of the Word of Salt in a Salt Page and by Weight of Concept represented by that word in searching process. The purpose of Search can be announced before RSP will be started (but this requires adding this option and the existence of a clear idea of the Seeker) or can be automatically defined by the RSP at the end of the sequence). Defining the purpose and lead to evidence of registration of the concepts covered axiology depending on which one can appreciate their importance ("weight").

Node of Search Quality is defined by the number of jumps generated, by the quality of these jumps (like Referrals system used by Google), by the relation between Jump Page and Landing Page(related, complementary or different) and by Weight of Node (assessed as Quality of Jump).

Point of Return Quality is taxonomical and sets the attribute to be or be not published after a Closure. Significance of returning at a certain Tabs is also a subject that can be analyzed by RSP.

Search Closure Quality is defined by justification of closing from Search Finality point of view.

6.4 Fluency

Searches are discursive (coherently follow one subject) or discursive (follow many subjects not necessarily related).

6.5 Sources of Search

Source of Search (e.g. Google, Wikipedia, etc.), Sources quality, meaning of choices. All of these are elements that define users' culture.

6.6 The Interest

Marked pages, unmarked pages, time spent on each one.

7 Future Developments

In the first instance recorded list of attributes may increase as the "RPS" progresses. Then will develop different "deliverables" and ways to analyze this information. Records and test results can be viewed by the Navigator and /or used directly by RPS for search augmentation becoming RSPA (Record Path Searching augmented).

Records results can be materialized in Direct Deliverables (or Simple) or Indirect Deliverables (or Compound).

Direct Deliverables are RSP data recorded and used as such: Sequence listings, Charts.

Indirect Deliverables are generated from Analysis. Analyses are processing one or more Direct Deliverables. One of the most interesting analysis is Style of Searching.

7.1 Style of Searching

Style of Searching is the result of several information provided by RSP, which identifies different heuristics of Seafarers and will materialize from recording and analysis of the actions that they will undertake in the search process. Reading a full page text and returning to certain concepts or at the first interesting concept opening another Tab? Opening a Tab at every interesting concept witch will

they met and covering later reading those pages? Are the tools and structure of sites used where it discovers an article?[1] From which location will start searching (Google, Wikipedia, etc.)?The search starts from a keyboard input, they follow a hyperlink or a word from a text is selected and then looked after it using the contextual menu (right click)? ...and so on…

7.2 Other Indirect Deliverables:

Recommendation of a taxonomy when Seafares decide to mark a page. Adding Notes Over a directory that contains relevant passages or keywords contained in that directory. Seafares may need to make different notes, and these notes to be assigned in a Project. A search can be defined by several Search Sessions and Bookmarks will unify automatically in the same folder....

8 Related and Complementary Directions

8.1 Intelligent Browsers[2]

Classic browsers are Windows through which The User looks in the Net. It is a unidirectional browser. A new breed of browser, will include RSPA incorporated in Bookmarks Facility. It will be an interface thru which User see the Net and his self. Will be a bidirectional browser, equal Windows and Mirror.

Unlike Windows Browsers, who also react at Users navigation habits, memorizing them and self-setting, but not more that car's intelligent system doing (memorizing seat preferences, steering wheel position, preserving but doing nothing to improve driver abilities), Mirror Browsers[3] analyze User actions and suggest solutions to improve his actions (to be more efficient in finding, storing and remembering).

Consequence of Shift paradigm generated by RSPA, Active Browser (Mirror Browser) is a browser which acts, a browser which reveals. The Shift[4] is shown in the very moment in which RSPA convert data which who interact from Passive Data in Active Data.

8.2 Passive Data

Passive Data is data which "sit" in Network waiting to be found. They do not play any role in this "meeting" with the Seeker (Navigator). The consequence of this feature (passivity), academic taxonomies that are able to "dictate" currently Bookmarks organization. They are instances of movable types are guttenbergiene reflexes. This model of the world, proposing unique collection of categorized concepts, which are then used in different configurations.

8.3 Active Data

Active data are closer to how concepts are and "move" the human mind in cognition processes. They do not expect any dynamic "agent" to use them; They act themselves as a necessary solution for a mind problem. Active Data is like iron filings near a magnet. It is an active part of the "meeting"; is "information charged".

[1] Wikipedia uses an architecture consisting of Menus, Table of contents, Taxonomies, References, etc. Contents are formalized and contain elements that can be used as "tools" (i.e. Category "Criticism").
[2] The concept of Intelligent Browser is used since 2006 but includes features found in current browsers.
[3] The metaphor naming this type of browseris borrowed from the terminology imposed by Jacques Lacan.
[4] Paradigm Shift occurs, according to Thomas Kuhn, when "production" of new concepts reach a critical mass which requires the development of new categories.

8.4 Redundancy

In Active Data mindset, RSPA will not hesitate to propose redundant bookmarks. A page will appear not in one directory but every concepts present from a page might be relevant.

Redundant elements, removed by the Window Browsers is recovered now, encouraged and speculated in Mirror Browsers as a defining attribute of Active Data. It establishes the concept of "information whit charge" as agent of movement and Active Data.

9 Conclusions

Search is a sequential process, excursive or discursive. As a unit, the Search Sequence is new kind of information, different that acts who compose it, information by itself.

Search Sequence Registration open fields of study in several disciplines (Behaviorism, Sociology and Anthropology <Styles Search>, Cognitivism<bookmarking as an extension of memory>, Epistemology, Linguistics and Philosophy of Language <Redundancy, Passive Data, Active Data, Charged Information>) and base for various IT projects (Intelligent Browser, Active Bookmarks, etc.).

Inventing a tool to bring to the light something hidden is a legitimate and valuable act. The discovery itself has no more value that has shovel for archaeologist. Electronic microscope, telescope, rocket or submarine, all of this and more as RSP, are nothing but tools that bring researchers in the proximity of what is hidden and exciting.

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