

WEB INTELLIGENCE

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Introduction

Web intelligence is a new pathway for scientific research and development with more impact of artificial intelligence and advanced technology for web-empowered systems and services. Web intelligence comprises of two terms- web analytics and business intelligence. Web analysis is the technique how users search and interact with the website's page. It makes them comfortable to use the features of the web site. Business intelligence is a pathway to management for strategic decisions by using the data of customer purchasing and demand trend. In global market place it is very much necessary for the companies to analyze the data how customers use company's website, how much it is helpful to generate e-business.

Web Intelligence (WI) comprises of two terms, web analysis and business intelligence. In competitive world companies are expanding their reach into global market place so there is a need of analysis, how customers use their web site to learn about their products and services. Business intelligence in web analysis improves the corporate decision making and sharing information with concerned people. WI deploys a supply chain extranet to customer and supplier for analysis and identifies the purchase pattern. This solution minimizes the cost and complexity. Not only companies, but all users are benefited with minimal learning curve, multi block reports. This paper describes the uses of WI in business and how its different tools helping growth and development of business. This paper also highlights the challenges in research and development of WI with its future prospects in globalization.

Web Intelligence is evolving with development of web as a media for information gathering, processing, storage and utilization. It is ever-changing and inseparable branch of computer science. As the web offers the new means of execute and transmit information eminent beyond the other media. So it is a new revolution in information intelligence.

Role of Search Engine

Searching the information on web sometimes make a situation more thorns than roses. The critical situation is to find a needle in the hay stack. Overload of the searching information is threat to overwhelm the RAM. Though search engines have many capabilities but they lack deduction capability—the capability to synthesize the information from knowledge base in response of a query. The main aim of web intelligence is to evolve search engines into easy form of question answering. This can be achieved by jumping into Web IA of existing search engine.

Elements of WI for Business

WI Server

This server provides the intelligent solution to the business. It is useful for both remote and occasionally accessed users. It also controls the in house activities. It controls the data mart and its related operations required for business decisions.

Session Management

WI has characteristics to keep a track of sessions and other services provided to web clients. It checks the discontinuation of session and cleaning up after the movement of user.

File Management

It manages the file naming and transfer services used by the clients. Users use the different data and report format for their business. WI manages all the features and named it as directory management.

Time Management

WI provides the business a service to manage the scheduling time for reports and queries generated by the user. Information refreshes on the scheduled time. Eg. Reports are generated and sent using web technologies if there is an increase in sale beyond a certain level.

Load Balancing

Load balancing services manages the resources clustered like environment. Cluster is the group of two or more resources that act as a single unit. It is required when many users want to use the same resource.

Application Services

These services of WI enable the web browsers as powerful tool for front end query. Therefore these are known as the brains of operations. Some BI vendors offers complete web enabled solution for analysis and report generation.

Web Agents

Intelligent web agents are software programs of making decision on behalf of their users. They do self improvement even in unpredictable task environments. Web agents have two important functions. One is to prototype the entities for exhibiting and explaining web generated regularities. Second is to act as autonomous entity for exploiting web based services. Web agents provide an information gateway to users for immediate access to relevant information. The information provided by them is just in time and up to minute. Web agents give reward and motivate the users for more proliferation of content. Free download of software and collaborative chat, auction and scheduled plans for promotional deals are such rewards. Web agents also take web topology and information distribution into account to simulate user surfing behaviour and explore the origin of regularities on the www surfing. Liu and Zhang designed the power law of distribution of user surfing depth which states that there is unique distribution of user interest that leads to the regularities in user surfing behaviour. They have shown that the regularities in web are interrelated and not artifacts of particular surfing process. Regularities in web surfing also depend on the type of user and familiarity with the web.

Apart from the Web based regularities web agent also serves in web based services with different roles.

Personalized Multimodal Interface

Web agents provide the user a friendly environment to user for presentation that personalizes the content and user interaction. This includes the cognitive aids like tables, charts, executive summaries, indices etc. Web agents act as interface to ease of using the electronic services with these cognitive aids. It also

allows the manipulations if required. Web agents make the information understandable based on user's previously customized cognitive style.

Push and Pull Advertising

In this type of advertising user interact with web agent for his favorites and web agent in response of that sends information about the requested items. Sending the request to web agent is called pull advertising whereas push advertising is getting back information from web agent. These agents increase the positive externality of products. The information is passed to required and better customers.

Pattern Recognition and Self-Organization

Web agent enables to detect the buying pattern of the user and help the business organization to know how the individuals are aggregated in group. They make a virtual market place for users and help to manage online commerce.

Information Gateway

Web agents help the users to access the information timely and with immediate effect. Filtration and delivery of information is done by manipulating the various heterogeneous web sources like data warehouse, newswire and electronic bulletin. These sources tailored the information and give it to users just in time. The web agents provide the up to minute information. Users can go with comparison shopping by using mobile and filtering capabilities.

Reward

Web agents motivate the users to enter and re-enter certain electronic services. Web agents educate the users through push technology. They play a crucial role to consume audience's attention. Rewarding adds the value and is paid in form of monetary and motivational value. The motivational rewards or incentives can be created by offering free access to certain information and utility resources, opportunities to participate in multi-user information.

Matchmaking

Web agents can serve as new means for trading commodities. Web agents act dynamically to exchange the information about product and services with users and business organizations. Web agents help the users to have more choice on the products. Wholesale dealer sales what they have in their store and customers are bound to buy the products whatever they find. Web agents customized business transactions to change the existing online buying and selling scenario. They follow the new schemes. Dealers identify the purchase pattern and nature of the customers and customers are free to buy the products of their own interest.

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