

[FIRST EDITION]

A Brief Study of Patent # 6,101,482 and Its Impact on Universal Shopping Cart and Product Comparison Technologies Used on the Internet

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Written by Yakov Shafranovich, CIO of SolidMatrix Technologies, Inc.

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Contact: research@solidmatrix.com

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www.solidmatrix.com

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Chapter 1 – OVERVIEW AND INTRODUCTION.

1.1. About This Document.

This document discusses briefly a particular patent (US # 6,101,482), extent of its coverage on different technologies, possible workarounds and the resulting impact on the marketplace. All information in this document referring to the actual patent has been taken from the database of the *US Patent & Trademark Office* at their website (www.uspto.gov). All other information was obtained from publicly available sources. Some knowledge of the Internet and its underlying technologies is assumed.

1.2. Introduction to Comparison Shopping.

In today's increasingly connected world more and more consumers, businesses, governments and organizations are turning to the Internet to buy and sell various products and services. An increased number of companies are developing all kinds of "comparison" websites and products: for everything from computers to bank accounts. These offerings empower individuals and organizations by giving them an ability to get a better view at the offers available on the market by "comparing" various features and prices. This process is commonly called "comparison shopping" and when based on prices alone "price comparison". These products start out by collecting data on available offers either by contacting the companies offering them or by extracting this data from companies' websites. Once the data is collected, it is compiled into a searchable database and presented to subscribers.

The first approach to collecting data is straightforward: each company submits information about their offers at regular intervals. For the purposes of this document we will refer to it as "submission based" since it requires companies to submit their data. It involves minimum technological overhead (from the side of the company compiling this information) once everybody agrees on a common format of the data and how it is

delivered since compiling the data into one database doesn't take a genius to figure out. Using this technique, everything can be done with off-the-shelf database tools in very little time. The downside to this approach is that only companies that agree to provide the data are included excluding the rest of the market. The results delivered using this method are not objective since most of the time companies are charged for this service. What you get is similar to shopping based on advertisements in a newspaper: only the ones that pay for the ads are displayed. Examples of products using this method are *PriceWatch*® (www.pricewatch.com), *PriceGrabber*® (www.pricegrabber.com) and *CNET*® *Shopping* (www.shopping.cnet.com) [NASDAQ: CNET]. There are also several products that charge the subscribers instead (mainly Business-To-Business (B2B) exchanges). They usually suffer from the same problem because only the companies that are willing to join are displayed.

The second approach to collecting data is called "spidering", an analogy drawn from the name of the World Wide Web. "Spiders" are programs traveling around the "Web" following links from one site to another and recording the content of the sites they visit. The process is similar to a spider traveling on its web gathering prey caught in it. Most of us are familiar with general search engines like *Google*® (www.google.com) and *AltaVista*® (www.altavista.com) [owned by *CMGI, Inc.*, NASDAQ: CMGI]. These sites rely on "spidering" to collect content of webpages. For "comparison shopping" specialized "spiders" are used which are trained to extract pricing and other product data from websites. This approach yields the biggest variety of results across the entire market but is only good as the technology used in the "spider". Thus, tremendous technological overhead and development is required. So far, most of these "spiders" make a small number of mistakes. Examples of such sites are *DealTime*® (www.dealtime.com) and *PriceScan*® (www.pricescan.com).

In addition, lately there have been hybrid approaches used utilizing both "submission based" method and "spidering". These products combine results of both methods giving the widest possible market, or "spider" information from subscribing websites (carrying the same problems as regular "submission based" sites). They usually make money either by charging the subscribers to view the data, advertising or charging some companies. In return, they usually offer to place subscribing companies higher on the list of returned results similar to the way phone companies sell enhanced yellow page listings. A good example would be *MySimon*® (www.mysimon.com) (owned by *CNET, Inc.* [NASDAQ: CNET]) which "spiders" most of its listings but also has a "submission based" program for some merchants allowing them to appear higher on the list of results.

To summarize: "comparison shopping" is a process where information from many vendors is collected, compiled and displayed allowing a side-by-side comparison of different products and services; if the main point of comparison is the price that is called "price comparison". The information is collected either via a "submission based" model where each company submits its information, via "spidering" where information is extracted from websites of companies or a hybrid combination of both. It is then compiled and presented to consumers.

1.2. Introduction to Universal Shopping Carts.

It is not just enough to display different offers available on the market; the next logical step is to help individuals and organizations purchase products and services easier. That is the idea behind a "universal shopping cart": it is akin to a consumer shopping at a mall and paying once when leaving. Even though such solution is not yet possible in the real world, many companies have started to implement it in the digital world. A universal shopping cart stores customer information such as name, address and credit card numbers. This information is stored either on a server or on customers' computers. Whenever a customer visits a retailer that supports such cart, he or she can select the products to purchase and store the selections for the future. When the customer finishes shopping one click of a mouse sends his or her information to all the retailers that the customer shopped at and in some cases even generating only a single bill. This feature allows for convenience and an easier shopping experience. There are two kinds of universal shopping cart products: entire platforms using many websites, retailers and customers, and single websites that provide a place to store customer information and facilitate purchasing.

The first type is usually a complete solution offered to retailers and customers. The customer either registers at the provider's website and/or downloads a special client or a browser plug-in. As the customer shops at participating retailers either he or she is prompted to enter their ID or the client program automatically detects

the site. Once the customer finished shopping at a particular website, his or her selections are recorded either on the provider's server or inside the downloaded client. When the customer wants to buy the items he or she picked, a click of a mouse at either the provider's website or inside the downloaded client takes care of everything. Customer's data is submitted to each retailer with the purchase selections and receipts are generated. This solution is especially well suited for mobile devices where there are usually no client-side solutions possible. Two of the companies marketing such platforms are *RedCart Technologies, Inc.* (www.redcart.com) and *SNAZ Commerce Solutions (part of Shopnlist, Inc.)* (www.snaz.com).

The second type is usually used by price comparison websites to help customers buy products easier. They store customer's data on their website including any selections made by the customer while "comparison shopping" on their website. Once the customer wants to make a purchase the website submits his or her information to the retailers. The biggest difference between this type and the first type is the fact that this type of product is usually only found on a single website, companies have to sign up with the website to use it, and it is usually not as advanced as the first type. This type of product is provided as an add-on to an existing website. Some examples of this type are *DealTime®* (www.dealtime.com) and *ClickTheButton®* (www.clickthebutton.com).

To summarize: a "universal shopping cart" is a process wherein a customer can shop at many retailers and see his or her selections in a single shopping cart. When the customer decides to place the orders his or her data is submitted automatically to all the retailers. There are two types of universal shopping carts on the market: complete solutions that are open to anybody; and single websites that provide the feature as an add-on and require customers and retailers to use their main product in order to use this feature.

1.3. Introduction to Patents and Patent Law.

The patent law in United States and other countries provides the inventor with protection of his or her invention for a period of twenty [20] years (eighteen [18] years in the U.S.) in return for making the details of the invention public. The procedure by which the government grants this protection is called "granting a patent". The word "patent" refers to the protection. This protection consists giving of giving exclusive control of the invention to the inventor and forbidding anyone else to use it without the permission of the inventor. If someone else uses it without permission ("infringes on the patent"), the inventor can sue and recover damages. The inventor can also discontinue any future use of the patent unless it is done on his or her terms. Anyone who wishes to use it may have to pay the inventor a fee called "royalty" for the use of the patent. This process is usually called "licensing" the patent since the inventor gives a "license" to use the patent. In most countries, this protection starts from the date the patent was filed. However, in the United States this protection starts from the time the invention is invented as long as the inventor filed for a patent within one [1] year. The actual owner of the patent is not always the inventor but can be anyone else that the inventor gave or has to give by law ownership of the patent. The actual owner is called the "assignee" of the patent, and the process of giving ownership is called "assignment". Thus, the patent may cover an invention made by person A, who asks the patent to be "assigned" to person B who is called the "assignee". The assignee is considered by law in place of the inventor and can do anything the inventor can including suing, licensing, charging royalties, etc. In order for the patent to be granted the invention has to be new. Anything that was invented or existed before the invention was invented is called "prior art". The filer of the patent has to demonstrate that the invention provided something new that is not found in prior art. If it can be proven that the invention exists beforehand, the patent (if granted) can be invalidated.

The patent application itself is divided into several sections. The first section is called the "claims section", it sets out several claims that the inventor claims are new and should be protected by a patent. This section is the main section of the patent application describing what exactly is protected under the patent. The next section is called the "background section" describes the background of the invention, why the prior art was deficient and how the invention overcomes those deficiencies. It then explains in detail what the claims in the previous section are. The next section describes the "preferred embodiment" of the patent.

1.4. Brief Summary of the Patent.

On August 8, 2000, the *United States Patent and Trademark Office* (www.uspto.gov) assigned patent # 6,101,482 to the *International Business Machines Corporation a.k.a. IBM®* (www.ibm.com) [NYSE: IBM]. The inventors on record are Michael F. DiAngelo and Valerie J. Fox. The patent was filed on September 15, 1997. A patent grants the assignee a right to use it exclusively for a period of eighteen (18) years (in this case until August 8, 2015 or 2018). The period between the filing and the assignment is also protected. All patent applications are kept secret while being processed until assignment. The assignee can sue any violators for “patent infringement” and even recover damages. It can also charge royalties for usage of the patent.

The event has gone unnoticed since the *Patent Office* doesn't publicly announce newly issued patents. As far as I know it has not been covered in any media sources so far. Neither has *IBM®* done something about it, they are keeping it quiet so far. Of course, they have eighteen years to sue so they can afford to wait and see! It is a great concern to a large number of companies (including my own) the extent of the claims described in this patent since it can effectively put them out of business. It is also a great concern to many industry leaders the way the *Patent Office* issues so called “business method” patents such as “one-click shopping” assigned to *Amazon.com®*. A great controversy surrounds many of these issues and a number of lawsuits [such as the one between *Barnes & Noble®* (www.bn.com) [NASDAQ: BNB] and *Amazon®* (www.amazon.com)] [NASDAQ: AMZN] have been already filed.

Chapter 2 – Details of the Patent.

2.1. Synopsis of the Claims Section.

The first section of the patent is the claims sections which describes the claims that the inventors “claim as new and desire to secure” by the patent (language in quotes taken from the patent). This is the “meat” of the patent so to speak: it describes what the invention is and what the inventors want to be covered by the patent. There are 32 claims mentioned which can be broadly divided into five (5) sections. The claim numbers refer to the patent document. Any language in quotes is taken from the actual patent.

Claims	Description
# 1- #16	<p>“A method of purchasing products and services” using a client connected to many servers over a network. Includes gathering the information about offers like price (#4); information being from “pushed” the server like <i>BackWeb®</i> (www.backweb.com) (#12); processing, converting and filtering data (#5, 6,7,8, 9); displaying the data based on user criteria (#9), updating the information live (#10); and making the actual purchases even if it only at one server (#3). “Network” includes Internet and “servers” includes websites (#14). This section effectively is describing a combined comparison/universal shopping cart feature where the consumer is presented data gathered from many sources and then makes a choice which to buy with the software processing the transaction.</p> <p>Please note that later in the end of the patent document (second paragraph from the bottom) it is stated: “Of course, a client should be broadly construed to mean one who requests or gets the file and server is the entity which downloads the file”. That effectively means that even a server-side shopping cart completely residing on the web server and using cookies for example to track users is also covered under this patent, not just a browser plug-in described later on the patent. This also covers any kind of device like a <i>Palm® Computing's</i> device (www.palm.com) [NASDAQ: PALM] or a WAP-enabled phone (www.wapforum.org) connected over a wireless network.</p> <p>Another thing should be noted that this section covers the entire process of buying from seeing all the offers to making the purchase. The process of just seeing and comparing offers is not covered in this section. One more thing should be noted that the patent uses expression “products and services” applying to anything.</p> <p>Bottom Line: This section covers any kind of universal shopping cart on any device or website which obtains data from many other servers or websites.</p>
#17-#21	This section describes a universal shopping cart residing on “a client running a web browser”

	specifically and accessing several websites. This section seems to concentrate just on the purchasing and emphasizes the fact that it is used on the Internet. This seems to describe a client-side universal shopping cart residing as a plug-in in the browser while the previous section describes a more general cart, which can also reside on the server. This is the main claim of the patent that is illustrated in the “Preferred Embodiment” section later on in the patent. Bottom Line: This section covers such cart residing as a plug-in in the browser including the API.
#22-#25	This section covers a computer program that performs such task.
#26-#29	This section covers a computer equipped to perform such task.
#30-#32	Now, this section seems to describe comparison-shopping which doesn’t necessarily use an integrated universal shopping cart but any method, which will complete a purchase by “at a given time, re-establishing a connection between the client and a given one of the plurality of web sites and taking the action” (#30) and as claim #32 elaborates “wherein the action is a purchase selection” One thing should be noted: Unlike the first section where any client and server is covered this section specifically covers only “a client running a web browser” (#30). Bottom Line: this section covers a price-comparison service running as a plug-in in a web browser.

2.2. Extent of the Patent.

As seen from the claims section there are basically two technologies covered in this patent: universal shopping carts in any form or function, and product-comparisons running from a client equipped with a web browser. The main point of both technologies is an ability to collect data from disparate websites, filter it; present to the user and possibly take action on it. The difference between comparison-shopping and universal shopping carts is the presence of the last step.

Universal shopping carts are covered in all forms and functions whether they reside on the client or the server, over any connection and any device. The different “claim” sections cover different forms of the same technologies in all possible combinations. This can also be apparent from the last three paragraphs of the document. The patent extends to any form of client¹ collecting information from any number of servers² over any kind of network or protocol³. This includes browser plug-ins, server side solutions, possible even WAP (www.wapforum.org), WML (www.phone.com) or HDML solutions as well (www.sprintpcs.com) [NYSE: PCS]. Any ROM chip, computers, terminals, handheld computers and generally all hardware implementations are covered. The main concept covered is any form of software or hardware client collecting information from several servers, compiling and filtering it, displaying it based on predefined criteria, saving state information on those connections or maintaining them “live”, and using the information to make one or more purchases⁴. The patent also goes to great lengths to cover all kinds of products/services to be used with this technology⁵. However, as apparent from the body of document⁶, so called “wallets” that just store personal information to facilitate purchases and do not collect information from websites are not covered by the patent.

Product comparisons are not covered as extensively as shopping carts. Even though the document tries to cover all possible services, products and features (see footnote 5 above) ONLY “a client running a web browser”⁷ seems to be covered (of course that is debatable since the later sections try to give very loose

¹ “As used herein, “Internet client” should be broadly construed to mean any computer or component thereof directly or indirectly connected or connectable in any known or later-developed manner to a computer network, such as the Internet”. Patent document, second paragraph from the bottom.

² “The term “Internet server” should be broadly construed to mean a computer, computer platform, an adjunct to a computer or platform, or any component thereof” ibid.

³ “connectable in any known or later-developed manner to a computer network, such as the Internet” ibid.

⁴ “Of course, a “client” should be broadly construed to mean one who requests or gets the file, and “server” is the entity which downloads the file” ibid.

⁵ “The present invention is not limited to purchase of any products or services. The terms “products” or “services” should thus be broadly construed to cover all types of items, including ...”. Patent document, last paragraph, first sentence.

⁶ “Background of the Invention”, clause 2: “Description of Prior Art”, paragraph #2: “During the success...”

⁷ Claim # 30

definitions). The reason for that is that at the time of filing (September 1997) the most practical way to use such comparison technologies was in a browser (similar to **Microsoft®** Wallet [www.microsoft.com]) [*NASD: MSFT*] as opposed to a website. In fact, one of the first price-comparison companies, **Asces, Inc.** (acquired by **DealTime, Inc.** [www.dealtime.com], currently provides the books/music/video sections of their website) started out by distributing a downloadable program. Even the patent document itself describes a plug-in to a web browser as an example⁸.

As stated above both technologies are basically the same. The main thrust of the patent is to cover a method wherein information is compiled from many websites, stored and used for comparison-shopping or purchasing. It is questionable whether a solution that consists of many pieces distributed over many computers is protected (such as the actual data stored on the client's computer, the program which processes it on one server, the program which collects it on another servers, etc.) although **IBM** [*NYSE: IBM*] might argue that it is considered one "client" under the patent. It is also questionable whether this is a valid "business-method patent" or it is too broad to be one.

Chapter 3 – Impact on the Marketplace.

3.1. Effect on Universal Shopping Cart Technology.

In the current marketplace there are several companies using one or more of these technologies that can possibly be greatly affected by this patent. At least two companies are actively marketing universal shopping cart technology: **Redcart Technologies, Inc.** (www.redcart.com) and **SNAZ Commerce Solutions** (part of **Shopnlist, Inc.**) (www.snaz.com). **Redcart Technologies, Inc.** even filed patents in November of 1999 in both United States and across the world. Two of them have been already granted in June of 2000: Australian patent # AU00020296A5 and world patent # WO00031657A2 (granted by the **World Intellectual Property Organization** [www.wipo.org]). Another company, **BuyWiz, Inc.**, which was marketing a universal shopping cart to consumers has been acquired by **ClickTheButton.com, Inc.** (www.clickthebutton.com) which shut down their website and so far has not shown any sign of life. All these companies offer a client-side or server-side universal shopping cart and seem to be infringing on this patent. In addition, several other companies such as **American Freeway, Inc.** (www.smartshop.com), **DealTime, Inc.** (www.dealtime.com) and **CNET, Inc.** (www.shopping.cnet.com) [*NASD: CNET*] offer universal shopping cart-like features for their comparison sites.

For the first group of companies, the ones that actually market this technology the patent has grave sequences. These companies are mainly dot-coms or startups that are unlikely to have the resources to fight a giant company like **IBM®**, especially given the current state of the market and unavailability of venture capital. This was very well illustrated recently by **Napster** (www.napster.com), **MP3.com** (www.mp3.com) [*NASD: MPPP*] and several other music sites that were sued by the **Recording Industry Association of America** (www.riaa.org) for copyright infringement. They were forced either to settle like **MP3.com**, close down like **Scour** or to continue waging an expensive legal battle like **Napster** (it's ironic that one of the companies that sued **Napster**, **Bertelsmann AG** (www.bertelsmann.de), holds a big stake in **DealTime, Inc.** (www.dealtime.com) and might be sued by **IBM®** over this patent). However, it is questionable whether **IBM** will decide to sue altogether: it is very possible that they don't even know they have it. The most probable thing that will happen is that they will start paying royalties to **IBM**. For some like **RedCart** that will not necessarily be good since they rely on the uniqueness of their technologies. These vendors specialize in universal shopping carts exclusively and will not be able to switch to another line of business easily.

As for the second group of companies, the ones that have developed universal-cart features on their sites, the patent will probably not have as big of an impact. These companies do not make universal shopping carts their main business and will probably just pay royalties or outsource the features from whoever owns the patents. The impact on their business will be minimal.

⁸ Section titled "Detailed Description of the Preferred Embodiment"

3.2. Effect on Product Comparison Technology.

There are several types of comparison technologies use in today's marketplace. They range from sites that charge vendors for submitting their information to sites that extract information from the Web automatically. The patent will have little or no effect on most comparison sites. Since the patent only covers price-comparison sites that specialize in helping consumers choose a proper product are not affected. Within price-comparison sites most sites are web-based and are not affected. The only companies that are in danger are ones which distribute a downloadable browser plug-in or add-on. However, even the server-based sites can be in danger if **IBM** decides to interpret the patent broadly and sue them. The expense of waging a lawsuit might be highly prohibitive. Some of the companies involved are start-ups while others are a subsidiaries of existing companies such as **CNET's** (www.cnet.com) [*NASD: CNET*] **MySimon.com**. As mentioned in the previous section possibilities range from paying royalties to **IBM** to closing down completely due to legal costs.

However, unlike universal shopping cart providers it is less likely that **IBM** will decide to proceed with the lawsuit and that any existing companies will be affected. Since the possibility to the patent applying to price-comparison is very strenuous, it is very likely that **IBM** will decide to pursue infringers or even if it does that the patent will be upheld by the courts.

Chapter 4 – Possible Workarounds to Avoid Infringement.

The possible workarounds can be many considering the recent ruling of the courts that a small change can make the patent non-applicable. Regarding this particular patent it is questionable if a system that uses more than one server or client and has many gateways in between is covered as long as those gateways are not acting as a part of a computer network. However, the easiest workaround is in price-comparison technologies: don't use a browser plug-in or any kind of client side program. As stated before the patent only applies in price-comparison areas where a client-side plug-in is used.

Chapter 5 – Other Patents.

A few other patents are related and should be mentioned. First, as stated before **Redcart Technologies, Inc.** filed patents in November of 1999 in both United States and across the world. Two of them have been already granted in June of 2000: Australian patent # AU00020296A5 and world patent # WO00031657A2 (*granted by the* World Intellectual Property Organization [www.wipo.org]). However, it seems that **Redcart** has gone the same path as other dot-coms and is now defunct. What happened to the intellectual property is unknown and in any case it is questionable whether their patents are even valid in light of **IBM's** patent described here.

Second, **AltaVista**, a unit of **CMGI, Inc.** (www.altavista.com) [*NASD: CMGI*] claims to possess several general patents on search engine technologies. These patents will probably apply to price-comparison and universal shopping carts since some of them have to do with retrieved and indexing information. However, regardless of their stern promise to pursue infringers there has been much action.

Third, U.S. patent # **5,895,454** filed on April 17, 1997 and issued on April 20, 1999 affects universal shopping carts. This patent, "Integrated interface for vendor/product oriented internet websites", covers shopping malls such as **Yahoo Shopping** (www.shopping.yahoo.com) [*NASD: YHOO*] which contain many sites under one roof and use a universal shopping cart. The inventor, **Juliette Harrington** of New Zealand represented in United States by a patent brokerage called SBH files a lawsuit against **Yahoo** on November 9, 1999 in U.S. District Court in St. Louis (link to Wired story: <http://www.wirednews.com/news/print/0,1294,32475,00.html>). However, everything has been quiet since then.

Another patent worth checking out is U.S. patent # **5,758,328** filed on February 22, 1996 and issued on May 26, 1998 to **Joseph Giovannoli** of New Jersey. This patent, "Computerized quotation system and method", describes a system to make automated quotes similar to price-comparison. It is worth looking into.