Opinion: Theft and Infringement

• Compulife’s software copyright infringed

• Compulife’s trade secrets misappropriated
Qualifications

• 50+ years Information Technology/Software Design

• 15+ years experience software intellectual property

• Extensive startup and innovation history:
  • Poqet Computer
  • Inventor of LANScape (US patent 6,288,739)
  • Inventor of Your Video on the Web
  • Inventor of Digit-Eyes
Basis of This Opinion

• Testimony of the parties

• Use and review of Compulife’s software and documentation: user manual, usage instructions, online help, online video tutorials

• Compulife’s copyright deposit materials

• Documents provided to me and the defendants by Compulife (including computer system logs)
Compulife’s Assets

- Database of information about insurance companies and products

- “Back Office” software that builds and maintains the database

- Host software that reads the database and provides user quotes

- Browser-based software that allows user to obtain a quote
Compulife System

Bob Barney codes and maintains database in the “back-office”

Compulife Primary Database and Compulife Servers

Compulife Web Server uses a Licensed Copy of the Web Quoter to Provide Insurance Comparisons to Visitors

PC Quoter Software and Data Licensed by Agents for their own PC

Internet Quote Engine Software and Data Licensed by Agencies for their Own Servers and Agents
Compulife Assets Deployed Three Ways

1. Buyers of insurance can access through the web page http://www.term4sale.com

2. Insurance agents can purchase a licensed copy of the software and data to install on a desktop PC

3. Insurance agencies can buy a license for a certain number of users and install the software and database on their server to share among their agents.
Compulife Assets Are Worth Protecting

Informational content not generally known
- Compulife obtains data from many insurance companies
- Compulife transforms this information into a proprietary database that is formatted so the data can be compared

Calculation methods not generally known
- Compulife’s forms quantify the requirements of the individual
- Using proprietary algorithms and form data, Compulife identifies and compares similar plans from many companies in relationship to individual requirements
- Compulife uses proprietary algorithms to calculate premiums for the individual

Calculation results not generally known
- The results of the premium calculations are not generally public.\(^1\)

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\(^1\) 93:32-96:9, Deposition of Robert Barney
Compulife Assets Are Protected

Copyright Protection

• Compulife’s software is protected by copyright
• The parameters for using the Compulife server are copyrighted
• The process whereby Compulife creates and presents the data is also protected by copyright

Trade Secret Protection

• The compilation of information in the Compulife database is a trade secret
• The software methods used to format requests to the database and the proprietary encoding of the values in the database are also trade secrets
Issues in Copyright Protection

Copyright obtained for Compulife Software

- Server software is copyrighted, distributed as object code

- Copyrighted Software also includes HTML for the form to access server:
  - each parameter name and its value are original and creative
  - Format and presentation is protected
  - HTML is visible in any browser ("view source")
Improper Use of Copyrighted HTML

The NAAIP website
• Submitted parameters and data to a program on the NAAIP server

The NAAIP server
• Used credentials issued to licensed user (Brian McSweeney) to improperly access the server at MSCC Corporation which was running a licensed copy of the Compulife software

• Transmitted the data and proprietary parameters to the Compulife software on the MSCC computer system

• Received back a compilation of information from the Compulife system on the MSCC computer system

• Displayed the misappropriated information on the NAAIP website

Compulife, upon discovering this, promptly blocked NAAIP access
NAAIP Copied 81% of Compulife’s HTML

282 of 347 lines of Compulife’s copyrighted HTML on NAAIP Website

(the 62 gray lines are English, not HTML)
NAAIP Used Compulife’s Assets

• State Selection code and numbering
  • More than simply alphabetical list of states
  • Structure includes D.C. and bifurcation of NY into business and non-business
  • Choice of “52” as value for NY business only understandable in context

• Birthdate Selection code
  • Unusual combination of names

• Gender (Sex)
• Smoker
• Health codes
• Category selection codes
• Mode Used
• Sort Override
• Face Amount
Issues in Trade Secret Protection

Key Points: the extent to which

- The information is known outside claimant’s business
- The information is known to employees and others in the business
- Measures are taken to guard the secrecy of the information
- The information has value to the business and competitors
- The business spent money or effort to develop the information
- The ease by which the information could be acquired or duplicated by others.

Compulife software and database:

- Is not generally known and is kept private, even within the business
- Is protected by Compulife
- Has value to Compulife and its competition
- Required substantial investment to create and maintain
- Is not easily acquired or duplicated by others
Digital Watermarks Identify Data

• Each licensed user of the Compulife software is granted a license number

• The Compulife Software inserts small watermarks based on the encrypted user license number into each copy of the database

• No two users have the same license number, and every legitimate copy of the data will have a different watermark

• The watermark is designed to be unobtrusive and even look like a data-entry “glitch” and is displayed as data
Compulife Digital Watermark Example

The value “kR”, as shown below, is the encrypted value of the serial number assigned to software running on the Term4Sale website.
During the Labor Day weekend, a data-mining robot, operating from the address 5.29.63.18 at Hot-Net Internet Services in Israel performed 871,055 accesses to Compulife’s system, of which 870,626 were quote requests.

Assuming that each request “scraped” an average of 50+ quotes (example right), the robot obtained data for more than 43,500,000 quotes.

The “scraped” data includes the digital watermarks for the licensed copy of the host software used by the website (“kR”).
Stolen Data on the NAAIP Website

The data on the NAAIP Website on November 22, 2016 contains digital watermarks that show it is a copy of the data that was taken from the Compulife Website in September 2016.

The value “kR” is a digital watermark inserted in the title of the insurance offering from Savings Bank Life Insurance Company of Massachusetts.
Robot Used Compulife’s Parameters

Static Parameters

- TEMPLATEFILE=TEMPLATE_TERM4SALE_COM.HTM
- HTEMPLATEFILE=HTEMPLATE_TERM4SALE_COM.HTM
- INITFILE=HINIT_TERM4SALE_COM.HTM
- HEALTHFILE=HEALTH_TERM4SALE_COM.HTM
- ERCFILE=ERC.COM.HTM
- IRCFILE=IRC.COM.HTM
- ERRORTEMFILE=ERRORTEM.COM.HTM
- PICKVIEWFILE=PICKVIEW.COM.HTM
- ModeUsed
- SortOverride1
- ErrOnMissingZipCode
- State

Variables

- ZipCode
- BirthMonth
- Birthday
- BirthYear
- Sex
- Smoker
- Health
- NewCategory
- FaceAmount
- CompRating
Compulife’s Input Parameters

Term4Sale Input Form 2016

Variables

- ZipCode
- BirthMonth
- Birthday
- BirthYear
- Sex
- Smoker
- Health
- NewCategory (insurance type)
- FaceAmount
- CompRating
Robot Attack!

A program at 5.29.63.18

- Used the copyrighted parameters from the Compulife website
- Interpolated variable values to create many individual quote requests
- Submitted the quote requests to the Compulife server at the rates of up to 10 requests per second, simulating access from the website
- Received back large amounts of data (up to 50 quotes per request)
# Attack Focused on Two Zip Codes

## Quote Requests by Day

<table>
<thead>
<tr>
<th>Date</th>
<th>Quote Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.29.63.18</td>
<td></td>
</tr>
<tr>
<td>1-Sep-16</td>
<td>113,481</td>
</tr>
<tr>
<td>2-Sep-16</td>
<td>148,093</td>
</tr>
<tr>
<td>3-Sep-16</td>
<td>245,935</td>
</tr>
<tr>
<td>4-Sep-16</td>
<td>363,117</td>
</tr>
<tr>
<td>5.29.63.18 Total</td>
<td>870,626</td>
</tr>
</tbody>
</table>

## Quote Requests by Zip

<table>
<thead>
<tr>
<th>Zip Code</th>
<th>Location</th>
<th>Quote Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.29.63.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZipCode=10458</td>
<td>Bronx, NY</td>
<td>435,312</td>
</tr>
<tr>
<td>ZipCode=33433</td>
<td>Boca Raton, FL</td>
<td>434,334</td>
</tr>
<tr>
<td>All Other Zip Codes</td>
<td></td>
<td>980</td>
</tr>
<tr>
<td>5.29.63.18 Total</td>
<td></td>
<td>870,626</td>
</tr>
</tbody>
</table>

**TOTAL QUOTES EXCEEDED 43 MILLION BASED ON NUMBER OF REQUESTS**
ROBOT Attack Explained

• Example of one line from attack:

```
```

301 767 "-" "Java/1.8.0_101"
Zip Codes in NAAIP Database

NAAIP produced the source code of a PHP program that accesses the NAAIP database, displays the HTML form and gets user input.

This script retrieves information from the database using a query:

```php

$HealthType = $SESSION['healthtype'];
$checkquote = mysqli_query($connect, "CALL GetLifeQuotes('$state1','$sgdr','$smoker','$HealthType','$insurance_type','$FaceAmount','$Sage','$Said')");

if($State == 'NY' || $State == 'New York' || $State == 'New%20York') {
    $state1 = 10458;
} else {
    $state1 = 33433;
}
```

There are two possible values to “state1” and these prove to be the zip codes used in the robot attack on Compulife’s website.
Summary Opinion

Copyright Infringed

• Compulife’s HTML parameter names are copyrighted
• HTML parameter values are copyrighted
• NAAIP had access to the HTML
• NAAIP used Compulife’s HTML parameter names and values to access Compulife’s data

Trade Secrets Misappropriated

• Compulife’s data and software
  • Is kept private, even within the business,
  • Is not generally known
  • is protected by Compulife
  • has value to Compulife
  • required substantial investment to create and
  • is not easily acquired or duplicated
• NAAIP demonstrably obtained Compulife data
  • By “spoofing” access through the MSCC website
  • By copying and using a copy of Compulife’s database