VBA program that automatically updates your social network

Daniel Howell
ISYS 540
April 11, 2011

Executive Summary

I have written a VBA program that auto-uploads scheduled social media content to sites like Twitter, Facebook, and other social networks by way of an intermediary site, Ping.fm. The program publishes its queue of content only if a particular content item has not been previously published AND the current date is equal to or greater than a message's scheduled publication date. Specifically, the program performs the following operations:

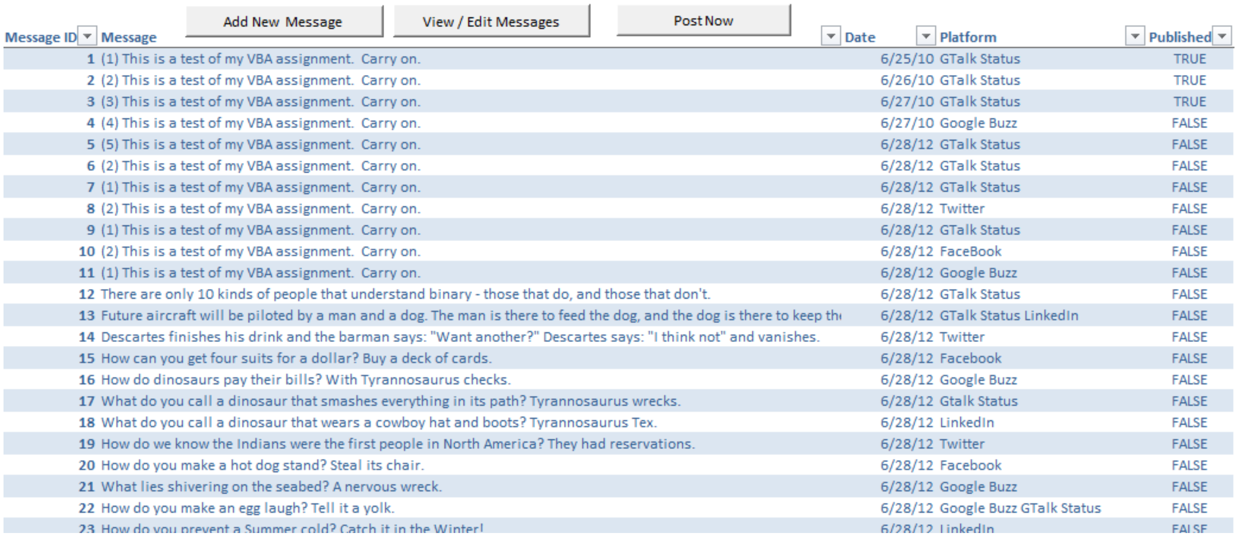
1. Provides a means to compose content and store it in the spreadsheet
2. Gives the user the option to choose which social platforms to publish to
3. Checks to see if the content is scheduled to be uploaded based on the current date
4. Establishes an authenticated connection with Ping.fm
5. Pushes the content out to the platforms that are specified
6. Closes the connection and exit the sub-procedure

Implementation

There were two parts of development for this project. One half dealt with the scheduling and management of the content items and the other half dealt with actually pushing the content items out to relevant social networks at the correct time. Where appropriate, I have included code from the program to illustrate how the VBA accomplishes certain tasks.

Spreadsheet Setup:

The following is a screenshot of the organization of the messages in the spreadsheet:

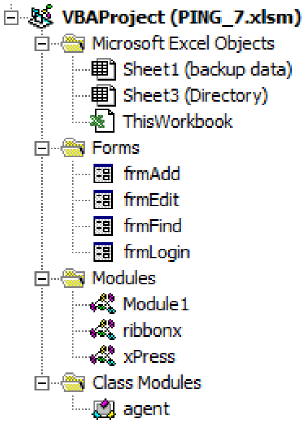


Message ID	Message	Date	Platform	Published
1	(1) This is a test of my VBA assignment. Carry on.	6/25/10	GTalk Status	TRUE
2	(2) This is a test of my VBA assignment. Carry on.	6/26/10	GTalk Status	TRUE
3	(3) This is a test of my VBA assignment. Carry on.	6/27/10	GTalk Status	TRUE
4	(4) This is a test of my VBA assignment. Carry on.	6/27/10	Google Buzz	FALSE
5	(5) This is a test of my VBA assignment. Carry on.	6/28/12	GTalk Status	FALSE
6	(2) This is a test of my VBA assignment. Carry on.	6/28/12	GTalk Status	FALSE
7	(1) This is a test of my VBA assignment. Carry on.	6/28/12	GTalk Status	FALSE
8	(2) This is a test of my VBA assignment. Carry on.	6/28/12	Twitter	FALSE
9	(1) This is a test of my VBA assignment. Carry on.	6/28/12	GTalk Status	FALSE
10	(2) This is a test of my VBA assignment. Carry on.	6/28/12	FaceBook	FALSE
11	(1) This is a test of my VBA assignment. Carry on.	6/28/12	Google Buzz	FALSE
12	There are only 10 kinds of people that understand binary - those that do, and those that don't.	6/28/12	GTalk Status	FALSE
13	Future aircraft will be piloted by a man and a dog. The man is there to feed the dog, and the dog is there to keep th	6/28/12	GTalk Status LinkedIn	FALSE
14	Descartes finishes his drink and the barman says: "Want another?" Descartes says: "I think not" and vanishes.	6/28/12	Twitter	FALSE
15	How can you get four suits for a dollar? Buy a deck of cards.	6/28/12	Facebook	FALSE
16	How do dinosaurs pay their bills? With Tyrannosaurus checks.	6/28/12	Google Buzz	FALSE
17	What do you call a dinosaur that smashes everything in its path? Tyrannosaurus wrecks.	6/28/12	Gtalk Status	FALSE
18	What do you call a dinosaur that wears a cowboy hat and boots? Tyrannosaurus Tex.	6/28/12	LinkedIn	FALSE
19	How do we know the Indians were the first people in North America? They had reservations.	6/28/12	Twitter	FALSE
20	How do you make a hot dog stand? Steal its chair.	6/28/12	Facebook	FALSE
21	What lies shivering on the seabed? A nervous wreck.	6/28/12	Google Buzz	FALSE
22	How do you make an egg laugh? Tell it a yolk.	6/28/12	Google Buzz GTalk Status	FALSE
23	How do you prevent a Summer cold? Catch it in the Winter!	6/28/12	LinkedIn	FALSE

Each message occupies a single row and is associated to a message ID, a publishing date, a list of platforms to publish to, and a publish status.

VBA Setup:

The structure of the VBA program was set up in the following manner:



- **VBAProject (PING_7.xlsm)**
  - Microsoft Excel Objects
    - Sheet1 (backup data)
    - Sheet3 (Directory)
    - ThisWorkbook
  - Forms
    - frmAdd
    - frmEdit
    - frmFind
    - frmLogin
  - Modules
    - Module1
    - ribbonx
    - xPress
  - Class Modules
    - agent

There are four user forms that handle the interaction and publishing of the data. There are also three modules and one class that handle logical operations of the program. Module 1, acts as the main conduit for controlling the agent class and Ping.fm. ribbonx adds a button to the Data tab to start the message search and edit process. xPress provides a simple sub-procedure that auto-populates login information to the frmLogin Form because It's annoying to type usernames and passwords repeatedly. The agent class is a module that manages internet activities, including user authentication, written by Professor Allen.

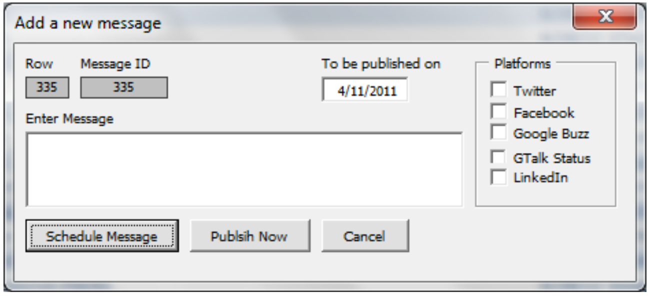
Content management:

The user uses the first three forms to manage the messages in the queue. Users use these forms to add a new message, find existing messages, or update existing messages.

Form 1: Add a new Message

The "Add a new message" Form creates an entry directly following the last Message ID created (see Figure 1) at the bottom of the table. This is optimal because if rows are deleted manually, the message ID is preserved to avoid duplicate message IDs. Each message requires a date (which auto-fills to today's date), at least one social platform, and a message contents. Messages are automatically trimmed to the appropriate character length for sites such as Twitter.

Figure 1



Add a new message

Row: 335

Message ID: 335

To be published on: 4/11/2011

Enter Message:

Platforms
☐ Twitter
☐ Facebook
☐ Google Buzz
☐ GTalk Status
☐ LinkedIn

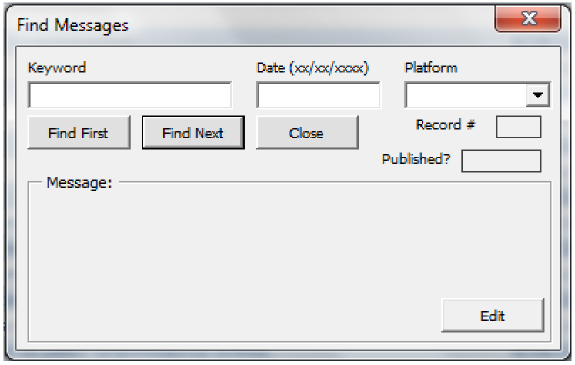
The user, at this point, can select “Schedule Message,” which appends the record onto the last row of the table or “Publish Now” which calls up the publishing sub procedures mentioned later. The user is also given the option of canceling the operation, which closes the current form window. The crucial code for data entry is simply:

```
Sub enterData()
   lblRow.Caption = rowNum + 1
' write data into row ----------------
   Sheets("Directory").Cells(rowNum, 1).Value = lblRow.Caption
   Sheets("Directory").Cells(rowNum, 2).Value = frmAdd.txtMessage.Text
   Sheets("Directory").Cells(rowNum, 3).Value = frmAdd.txtDate.Text
   Sheets("Directory").Cells(rowNum, 5).Value = "False"
' set Platform ----------------
   Dim Act As String
   Act = ""

   If frmAdd.chkTwit.Value Then
      Act = Act & "Twitter "
   End If
   If frmAdd.chkFace.Value Then
      Act = Act & "Facebook "
   End If
   If frmAdd.chkGB.Value Then
      Act = Act & "Google Buzz "
   End If
   If frmAdd.chkGT.Value Then
      Act = Act & "GTalk Status "
   End If
   If frmAdd.chkLI.Value Then
      Act = Act & "LinkedIn "
   End If

   Sheets("Directory").Cells(rowNum, 4).Value = Act
End Sub
```

Form 2: Find Messages

The second form is “Finding Messages” (Figure 2). Here, the user can search for a partial string within the message (Keyword search), date, or platform. The platform dropdown list is populated by reading the number of distinct entries in the platform column on the spreadsheet.

Figure 2



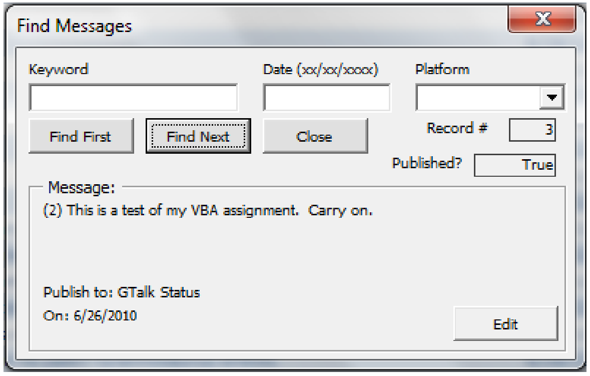
By clicking the “Find First” button, the user sees the first matching record containing all of the search parameters. The “Find Next” button likewise finds the next record that matches the parameters. When there are no more records to be found, a message is displayed and the search form is reset. The code for finding the next messages in the table as follows:

```
Dim rowNum As Integer
Private Sub cmdNext_Click()

Dim x As Integer
Dim LastRow As Long

With ActiveSheet
  LastRow = .Cells(.Rows.Count, "A").End(xlUp).Row
End With

For x = rowNum To LastRow
  If (InStr(1, Sheets("Directory").Cells(x, 2).Value, frmFind.txtKey.Text) > 0) _
    And (InStr(1, Sheets("Directory").Cells(x, 3).Value, frmFind.txtDate.Text) > 0) _
    And (InStr(1, Sheets("Directory").Cells(x, 4).Value, cboState.Text) > 0) _
    And (Sheets("Directory").Cells(rowNum + 1, 1).Value > "") Then
          Cells(x, 1).EntireRow.Select
          showData
          rowNum = rowNum + 1
          Exit For
          Else
            If LastRow < rowNum + 1 Then
              Beep
              MsgBox "Item not found in remaining records.  Click OK to search again from beginning of
        data"
               lblRow.Caption = ""
               lblMessage.Caption = ""
               lblPlat.Caption = ""
               lblDate.Caption = ""
              rowNum = 1
            End If
  End If
  rowNum = rowNum + 1
Next
End Sub
Sub showData()
 lblRow.Caption = rowNum
 lblMessage.Caption = Sheets("Directory").Cells(rowNum, 2).Value
 lblPlat.Caption = "Publish to: " & Sheets("Directory").Cells(rowNum, 4).Value
 lblDate.Caption = "On: " & Sheets("Directory").Cells(rowNum, 3).Value
 lblPub.Caption = Sheets("Directory").Cells(rowNum, 5).Value
End Sub
Public Sub setActivity()
 If InStr(1, Sheets("Directory").Cells(rowNum - 1, 4).Value, "Twitter") > 0 Then
  frmEdit.chkTwit.Value = True
 Else
  frmEdit.chkTwit.Value = False
 End If
 If InStr(1, Sheets("Directory").Cells(rowNum - 1, 4).Value, "Facebook") > 0 Then
```

```
  frmEdit.chkFace.Value = True
 Else
  frmEdit.chkFace.Value = False
 End If
 If InStr(1, Sheets("Directory").Cells(rowNum - 1, 4).Value, "Google Buzz") > 0 Then
  frmEdit.chkGB.Value = True
 Else
  frmEdit.chkGB.Value = False
 End If
 If InStr(1, Sheets("Directory").Cells(rowNum - 1, 4).Value, "GTalk Status") > 0 Then
  frmEdit.chkGT.Value = True
 Else
  frmEdit.chkGT.Value = False
 End If
 If InStr(1, Sheets("Directory").Cells(rowNum - 1, 4).Value, "LinkedIn") > 0 Then
  frmEdit.chkLI.Value = True
 Else
  frmEdit.chkLI.Value = False
 End If
End Sub
```

To aid in the search process as a record is found, the form previews the current record's content, publishing date, status, and platforms in the Message box (Figure 3)

Figure 3



Record # 3

Published? True

Message:

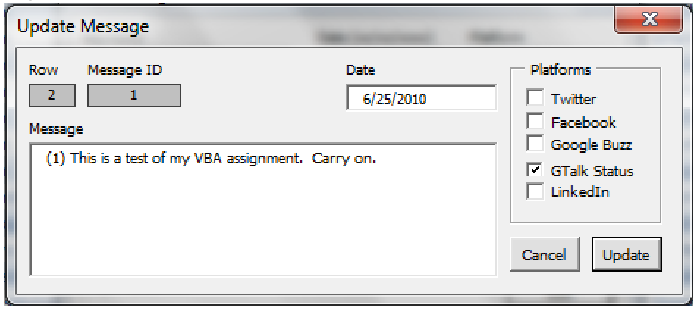
(2) This is a test of my VBA assignment. Carry on.

Publish to: GTalk Status
On: 6/26/2010

Form 3: Update Messages

The final content management form is accessed by clicking the edit button on the Find Messages Form. Here, the user is given the option to edit all the parameters of the currently selected message except for the row number and message ID (Figure 4).

Figure 4



Row 2

Message ID 1

Date 6/25/2010

Message

(1) This is a test of my VBA assignment. Carry on.

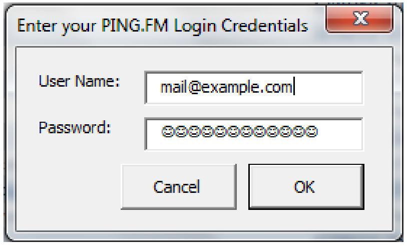
Platforms
□ Twitter
□ Facebook
□ Google Buzz
☑ GTalk Status
□ LinkedIn

The cancel button would close the form window and return the user to the Find Messages Form. Otherwise, the update button overwrites the messages row with the updated set of information. The "Update" button will execute code very similar to the "Add Message" form mentioned above.

Publishing

The other half of the program deals with publishing the content. By selecting the "Post Now" button from the spreadsheet, the user accesses a login form to access the required functionality of Ping.fm (Figure 5).

Figure 5



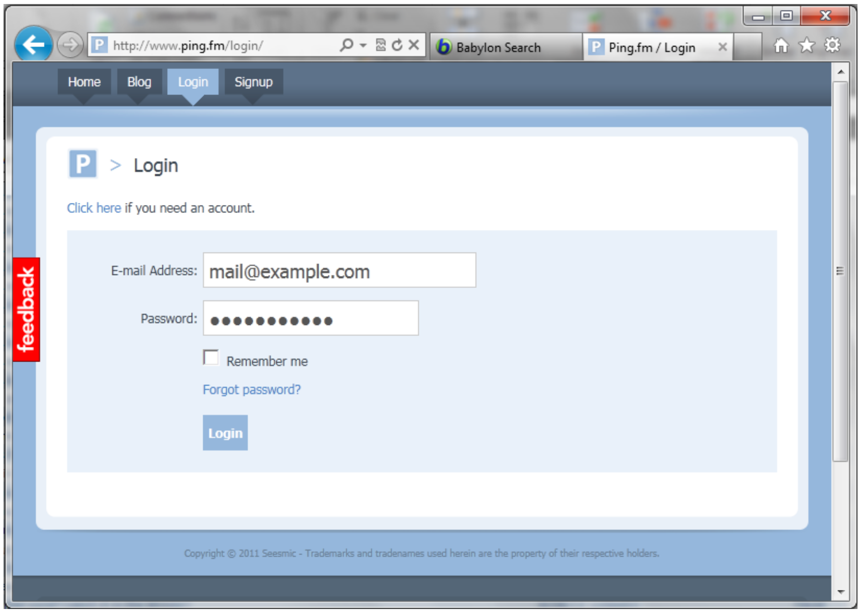
Enter your PING.FM Login Credentials

User Name: mail@example.com

Password:

This small form captures the user's login information and passes it to the web agent class. When the "OK" button is clicked, a new instance of the agent is opened and directed to "http://www.ping.fm/login" where the proper credentials are entered into the form (Figure 6)

Figure 6



http://www.ping.fm/login/

Login

Click here if you need an account.

E-mail Address: mail@example.com

Password: ●●●●●●●●●●●

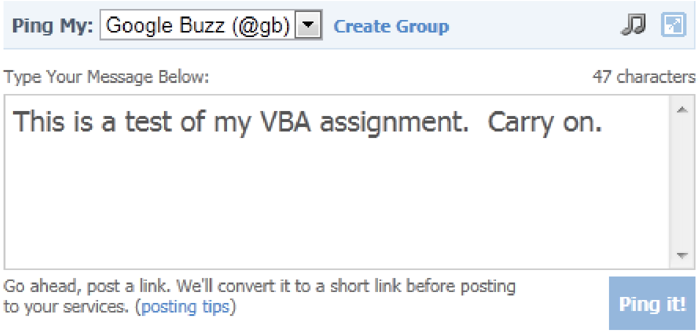
□ Remember me

Forgot password?

Copyright © 2011 Seesmic - Trademarks and tradenames used herein are the property of their respective holders.

The agent then submits the form and directs itself to Ping.fm's user dashboard. There, the agent checks to see if there are any records from the spreadsheet that have a publishing date that is less than today AND have not yet been published according to the message's status. If it finds a record that is ready to be published, it copies and pastes the message text into Ping.fm's Message box (Figure 7).

Figure 7


Ping My: Google Buzz (@gb)

Type Your Message Below:

47 characters

This is a test of my VBA assignment. Carry on.

Go ahead, post a link. We'll convert it to a short link before posting to your services. (posting tips)

For each platform listed on the message, the agent changes the value of the dropdown menu to the corresponding platform and submits the form with the current message. The code for this operation is as follows:

```
Dim pingFM As New agent
Sub login(uname As String, pass As String) ‘comes from xPress login module
   pingFM.visible = True
   pingFM.openpage "http://www.ping.fm/login"
   pingFM.explorer.document.body.all("email").Value = uname
   pingFM.explorer.document.body.all("password").Value = pass
   pingFM.explorer.document.body.all("login").Submit
    pingFM.waitForLoad
   txtEnter
   pingFM.openpage "http://www.ping.fm/logout"
   pingFM.explorer.Quit
End Sub
Sub txtEnter()

Dim x As Integer
Dim LastRow As Long

With ActiveSheet
   LastRow = .Cells(.Rows.Count, "A").End(xlUp).Row
End With

For x = 2 To LastRow

   If Now() < Sheets("Directory").Cells(x, 3).Value Then
      Sheets("Directory").Cells(x, 5).Value = False
   Else
      '----post to Twitter -------
      If Sheets("Directory").Cells(x, 5).Value = "False" _
      And InStr(1, Sheets("Directory").Cells(x, 4).Value, "Twitter") > 0 Then
         pingFM.waitForLoad
         pingFM.explorer.document.body.all("service").Value = "@tt"
         pingFM.explorer.document.body.all("message").Value = Sheets("Directory").Cells(x, 2).Value
         pingFM.explorer.document.body.all("postbtn").Click
         pingFM.waitForLoad
      End If
      '----post to Facebook -------
      If Sheets("Directory").Cells(x, 5).Value = "False" _
      And InStr(1, Sheets("Directory").Cells(x, 4).Value, "Facebook") > 0 Then
       pingFM.waitForLoad
         pingFM.explorer.document.body.all("service").Value = "@fb"
         pingFM.explorer.document.body.all("message").Value = Sheets("Directory").Cells(x, 2).Value
         pingFM.explorer.document.body.all("postbtn").Click
         pingFM.waitForLoad
      End If
      '----post to Google Buzz -------
      If Sheets("Directory").Cells(x, 5).Value = "False" _
      And InStr(1, Sheets("Directory").Cells(x, 4).Value, "Google Buzz") > 0 Then
         pingFM.waitForLoad
         pingFM.explorer.document.body.all("service").Value = "@gb"
         pingFM.explorer.document.body.all("message").Value = Sheets("Directory").Cells(x, 2).Value
         pingFM.explorer.document.body.all("postbtn").Click
         pingFM.waitForLoad
      End If
      '----post to GTalk Status -------
      If Sheets("Directory").Cells(x, 5).Value = "False" _
      And InStr(1, Sheets("Directory").Cells(x, 4).Value, "GTalk Status") > 0 Then
         pingFM.waitForLoad
         pingFM.explorer.document.body.all("service").Value = "@gt"
         pingFM.explorer.document.body.all("message").Value = Sheets("Directory").Cells(x, 2).Value
         pingFM.explorer.document.body.all("postbtn").Click
         pingFM.waitForLoad
      End If
      '----post to LinkedIn -------
      If Sheets("Directory").Cells(x, 5).Value = "False" _
      And InStr(1, Sheets("Directory").Cells(x, 4).Value, "LinkedIn") > 0 Then
         pingFM.waitForLoad
         pingFM.explorer.document.body.all("service").Value = "@li"
         pingFM.explorer.document.body.all("message").Value = Sheets("Directory").Cells(x, 2).Value
         pingFM.explorer.document.body.all("postbtn").Click
         pingFM.waitForLoad
      End If
      Sheets("Directory").Cells(x, 5).Value = True
   End If
Next

End Sub
```

After the message has been submitted to all the intended platforms, the message’s status is set to “true” and it moves on to the next record that is ready to be published. If the program has published all outstanding messages, then the agent logs out of Ping.fm and closes any open forms.

Challenges with the project:

Even though the content of the spreadsheet is straightforward, I found difficulties in streamlining the user interface. For example, I would like to have the Find and Edit forms to be the same form. That way, I can remove an extra click for the end user. Unfortunately, there were weird errors and conflicting actions that confused the sub procedures handling of the messages. I was unable to overcome these difficulties, so I kept the finding and editing forms separate.

Secondly, the platforms dropdown menu on the Find Form takes all distinct entries in the platforms column. Currently the form will display all permutations and combinations of the platforms, i.e., “Google Buzz” and “Google Buzz LinkedIn” are two separate entries. Ideally, there should be only 4 entries in the list; one for each platform. Such a feature would be helpful, but was not necessary for the functionality of the project.

Finally, I only programmed the code to interact with four popular social networks. There is capacity to connect with every other partner Ping.fm can broadcast to, but I didn’t bother because I only had accounts with those four social networks.

Overall, I am happy to have successfully combined elements from the examples in class and homework projects to produce a fully functioning program on my own. Who would have known I could do that!

Future considerations:

It is not at all unimaginable to think that other features could be added to increase the usefulness of the program. For example, a simple sub procedure could go an import birthdays of friends or colleagues and auto-generate well-wishes to add to the queue of messages. Similarly, the program could grab RSS feeds or other syndicated content to be rebroadcast to additional social channels automatically.

It would also be fairly easy to set this program up as a batch file and run as a scheduled task. This would fully automate the updating process as along as the computer is on. This way, one could appear to be quite socially active online without ever having to personally go on the internet. Instead, that user can perhaps go outside or go on a date, or whatever he or she chooses instead.