



# Streamlining the Revit Process with Custom Add-ins

Nick Kovach

BIM Manager, BOKA Powell

Twitter: @BOKAP\_BIM



## Class summary

In this instructional demo, we will discuss ideas on how to get started programming custom Add-ins and how to Beta test your creations company-wide. We will also investigate how to calculate the difficulty level for coding a specific idea and when it is time to take your code to the next level.

# Key learning objectives

At the end of this class, you will be able to:

- Use the sample code examples and create a starting template
- Determine how to best implement new Add-ins company-wide
- Understand the level of difficulty for specific Add-in tasks
- Decide when a custom Add-in is worth building or buying

**A little about myself..**

## My background

- Registered Architect
- Full-time BIM Manager
- Programming was a hobby (no formal training)
- Started with the Revit API over 5 years ago
- Teamed with Stephen Faust, Revolution Design

# A few ground rules..

This is only a 60 minute class, I will move quickly, therefore:

- Save questions until the end – unless it is of great importance
- Keep in mind that I am not formally trained in programming
  - Not as concerned with teaching the terminology or acronyms (DLLs)
- Handout contains more detail on the installation and specifics
- The examples I will show are in C# (No VB, Macros or Dynamo)

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# Setting up your Programming Environment

- Download the Current Revit SDK
  - Plenty of resources available
- Download Visual Studio Express (Microsoft)
- Download RevitLookup Tool (Github)



# Using the Sample code examples

- Installing Add-in Manager
- Installing RevitLookup Tool
- Create Visual Studio Starting Template
- Using Revit Add-in Samples
  - Samples from RevitAPI.chm (Help File)
  - How RevitLookup Tool works

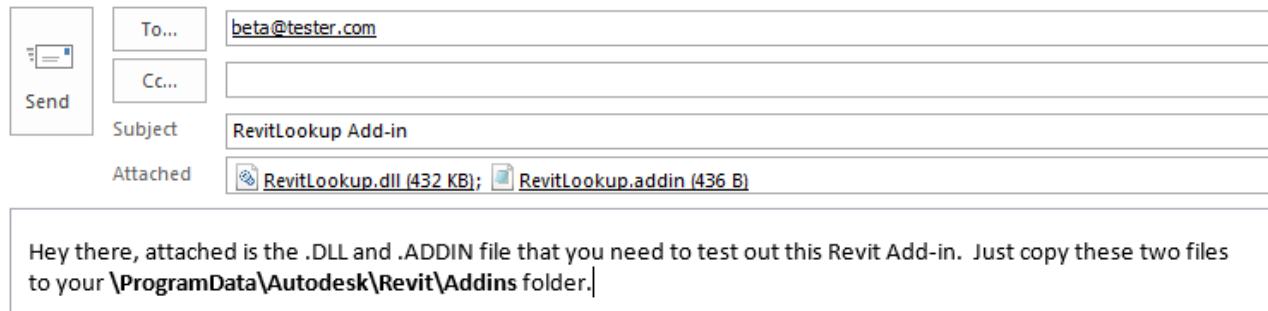
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# Implement your Add-in inside your company

- Sending your Add-in files through email



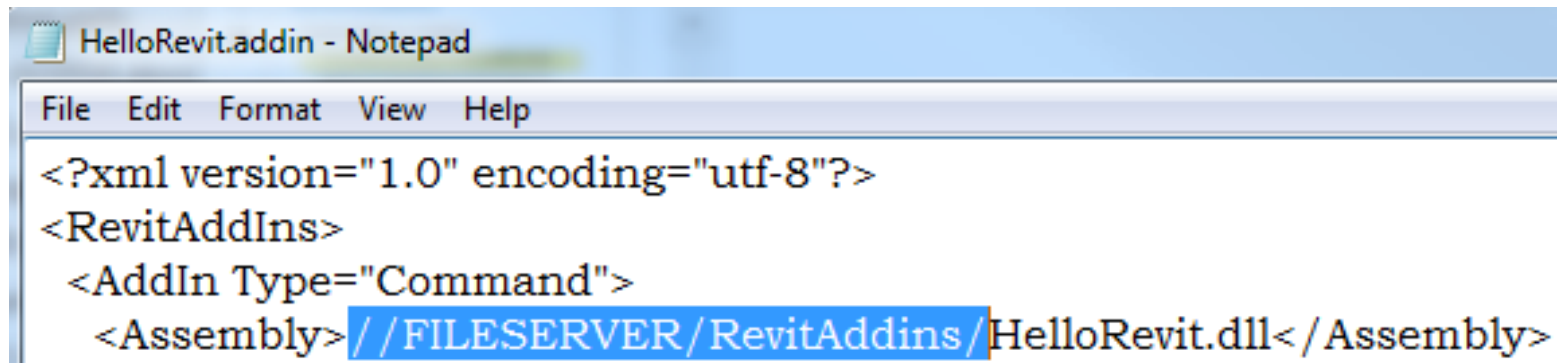
The screenshot shows an email composition window. On the left is a 'Send' button with an envelope icon. To its right are fields for 'To...', 'Cc...', 'Subject', and 'Attached'. The 'To...' field contains 'beta@tester.com'. The 'Subject' field contains 'RevitLookup Add-in'. The 'Attached' field shows two files: 'RevitLookup.dll (432 KB)' and 'RevitLookup.addin (436 B)'. Below these fields is a text area containing the message: 'Hey there, attached is the .DLL and .ADDIN file that you need to test out this Revit Add-in. Just copy these two files to your \ProgramData\Autodesk\Revit\Addins folder.'

To...	beta@tester.com
Cc...	
Subject	RevitLookup Add-in
Attached	RevitLookup.dll (432 KB); RevitLookup.addin (436 B)

Hey there, attached is the .DLL and .ADDIN file that you need to test out this Revit Add-in. Just copy these two files to your \ProgramData\Autodesk\Revit\Addins folder.

# Implement your Add-in inside your company

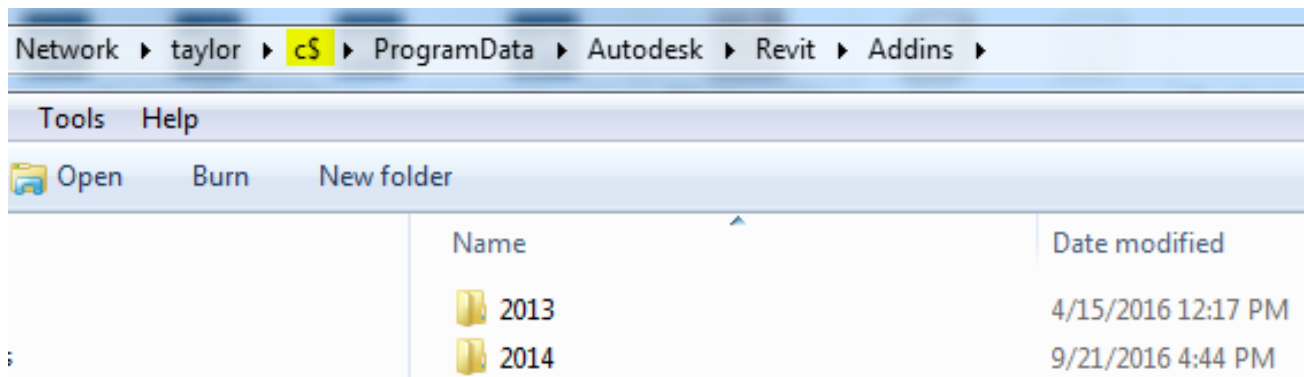
- Modifying the .Addin file to point to a file server



```
HelloRevit.addin - Notepad
File Edit Format View Help
<?xml version="1.0" encoding="utf-8"?>
<RevitAddIns>
  <AddIn Type="Command">
    <Assembly>//FILESERVER/RevitAddins/HelloRevit.dll</Assembly>
  </AddIn>
</RevitAddIns>
```

# Implement your Add-in inside your company

- Copying files remotely to individual computers



# Implement your Add-in inside your company

- Pushing out files using I/T management software

The screenshot displays the 'File Folder Operation' web interface. The 'Name and Description' section has a 'Name' field containing 'Revit 2017 Add-ins' and an 'Add Description' link. The 'Configure File Folder Operation' section has tabs for 'Copy', 'Rename', 'Move', and 'Delete'. The 'Copy' tab is active, showing 'Select Type' with 'Copy using HTTP' selected. Under 'Copy using HTTP', 'Select Action Type' has 'Files' selected. The 'Upload Files' section lists '1. RevitLookup.addin' and '2. RevitLookup.dll', each with a red 'x' icon. An 'Add More' link is at the bottom right of the upload list. The 'Destination Folder' field contains 'ogramData\Autodesk\Revit\Addins\2017'.

File Folder Operation

Name and Description

Name:  [Add Description](#)  
[Maximum 100 characters]

Configure File Folder Operation

[Copy](#) | [Rename](#) | [Move](#) | [Delete](#)

Select Type : ☒ Copy using HTTP ☐ Copy using Network Share/Copy with Local Computer

[Copy using HTTP](#)

Select Action Type : ☒ Files ☐ File as Archive ?

Upload Files

1. RevitLookup.addin ✗  
2. RevitLookup.dll ✗

[+ Add More](#)

Destination Folder :  ☆

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# The Difficulty level of building your Revit Add-in

Rocket Science



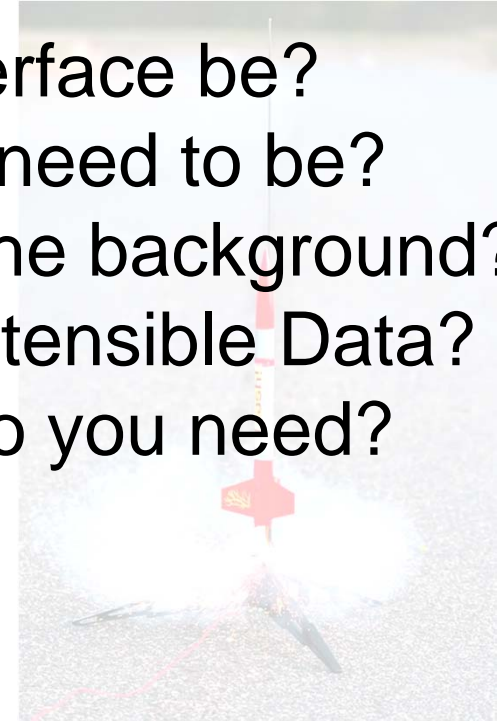
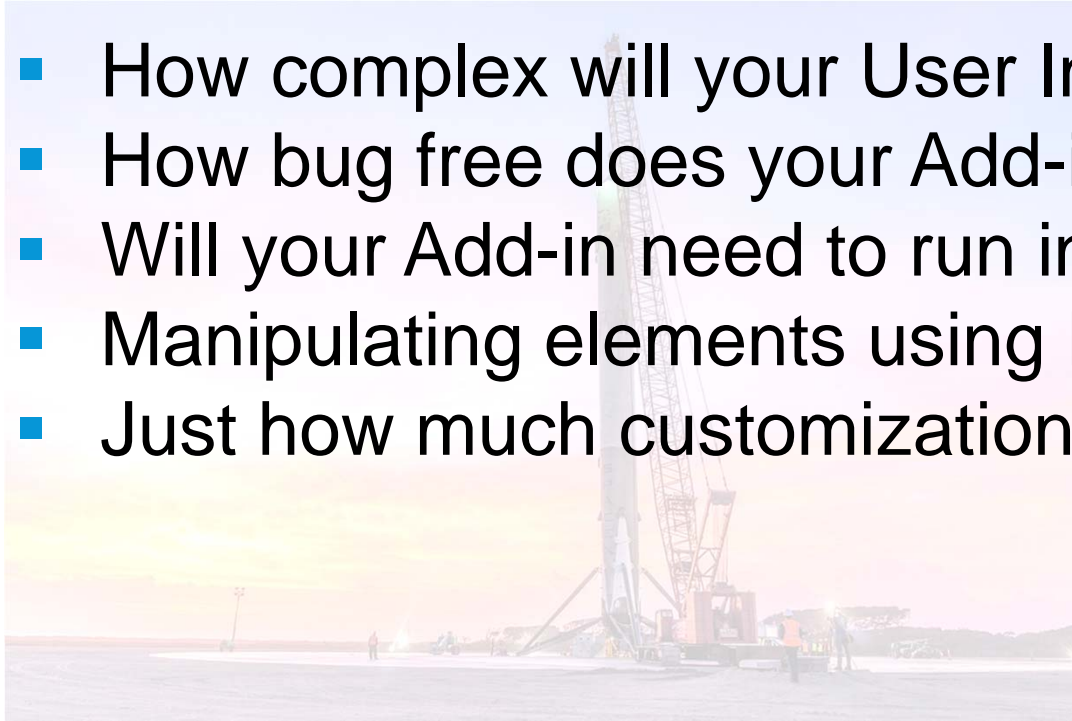
VS. Amateur





# The Difficulty level of building your Revit Add-in

- How complex will your User Interface be?
- How bug free does your Add-in need to be?
- Will your Add-in need to run in the background?
- Manipulating elements using Extensible Data?
- Just how much customization do you need?



# The Difficulty level of building your Revit Add-in

## Complex tasks

- Instant Updaters and Extensible Storage
- 3D element manipulation (Transform coordinates)
- Complex User Interface – Real-time drag-drop

## Simple tasks

- List all elements from Revit project
- Update specific parameters
- Simple data shown in Dialog Boxes

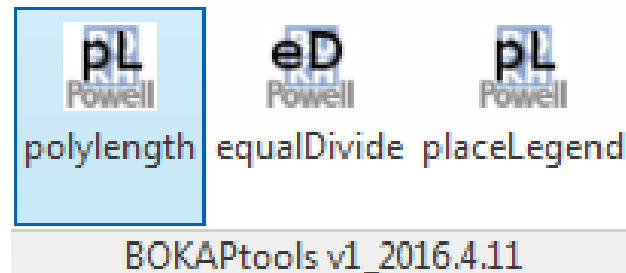
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# Your Revit Add-in: To Build or Buy?

- Does your firm expect a custom solution?



# Your Revit Add-in: To Build or Buy?

- Can you purchase a Network(portable) License?

## *License Type Comparison*

	<i>Standalone License</i>	<i>Portable License</i>
❓ Single Dialog Activation	✓	✓
❓ Move License(s) Between Computers		✓
❓ Internet Connection Required For Checkout / Return		✓
❓ Can be Used Offline	✓	✓
❓ Check Out or Return a License From Anywhere		✓

# Your Revit Add-in: To Build or Buy?

- How do you make suggestions or get support?

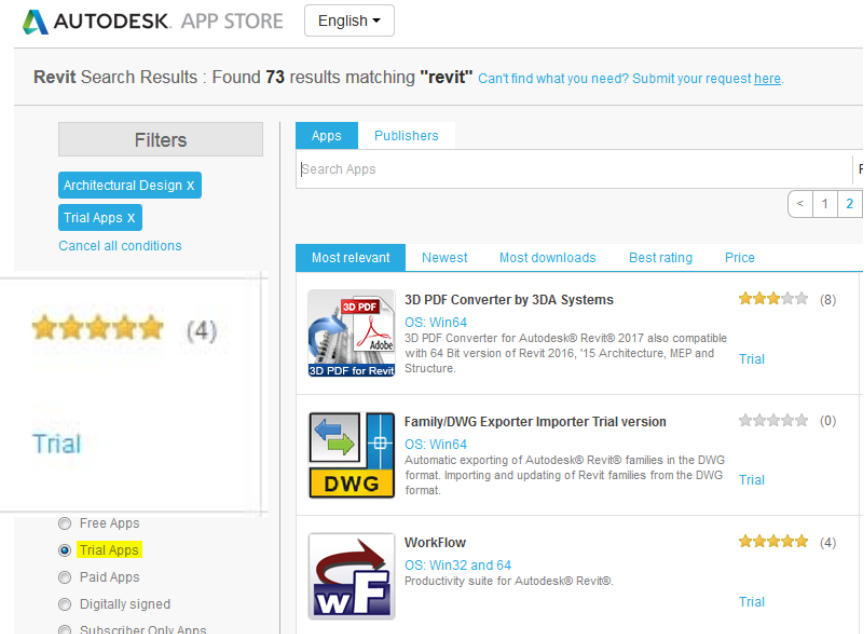


# Your Revit Add-in: To Build or Buy?

- Is there a trial version available?



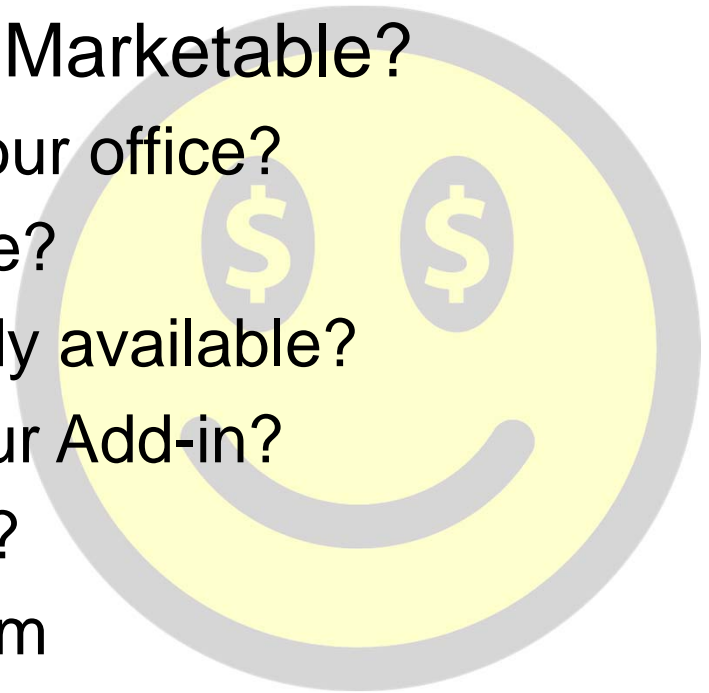
The screenshot shows the 'WorkFlow' app listing. It features a logo with a red arrow and the letters 'wF'. The text reads: 'WorkFlow', 'OS: Win32 and 64', 'Productivity suite for Autodesk® Revit®', and 'Trial'. There are five yellow stars and a '(4)' next to them. Below the app listing, there are filter options: 'Free Apps', 'Trial Apps' (selected), 'Paid Apps', 'Digitally signed', and 'Subscriber Only Apps'.



The screenshot shows the Autodesk App Store search results for 'revit'. The header includes the Autodesk logo, 'AUTODESK APP STORE', and a language dropdown set to 'English'. Below the header, it says 'Revit Search Results : Found 73 results matching "revit"'. There are tabs for 'Apps' and 'Publishers'. A search bar is present. Below the search bar, there are filter options: 'Architectural Design X' and 'Trial Apps X'. A 'Cancel all conditions' link is also visible. The results are sorted by 'Most relevant'. The first result is '3D PDF Converter by 3DA Systems', which is a 'Trial' version. The second result is 'Family/DWG Exporter Importer Trial version', also a 'Trial' version. The third result is 'WorkFlow', which is a 'Trial' version. The 'WorkFlow' app is also listed in the first screenshot.

## Conclusion: Where do I go next with my Add-in?

- So, you created something Marketable?
  - Did you design it while at your office?
  - Marketing and Selling online?
  - Competition – Add-in already available?
  - How much to charge for your Add-in?
  - Simple Installer or complex?
  - Setting up a licensing system





# Class Survey – Help me, Help you..

- Please fill out your Class survey!
  - Chance to win something  
(No Coding necessary)



