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## IDENTIFYING THE OPTIMAL MULTI-USER DOCUMENT SHARING PLATFORM

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Summary of Report: The Sustainable Local Food Systems Research Group requires an affordable multi-user document-sharing platform with sufficient size limit, accessibility, compatibility, usability and other relevant features. The purpose of this project is to identify the platform that would be most effective, and outline optimal uses for that platform. Specifically, this report considers whether or not Dropbox (the current platform being used) is the best option and provides document management suggestions to reduce conflict versions, which is presently a problem associated with multiple-user access through Dropbox.



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## TABLE OF CONTENTS

<b>Table of Contents</b> .....	<b>2</b>
<b>Introduction</b> .....	<b>3</b>
Background.....	3
<b>Methods</b> .....	<b>3</b>
Sources.....	3
<b>Results/Findings</b> .....	<b>4</b>
Document-sharing options .....	4
• Dropbox.....	4
• Google Drive .....	4
• SkyDrive.....	4
• Summary.....	5
<b>RECOMMENDATIONS</b> .....	<b>5</b>
Recommended usage guidelines .....	5
Viewer user guidelines .....	5
Editor user guidelines.....	8
Recommended file maintenance .....	8
Recommended instructions to users .....	8
<b>References</b> .....	<b>9</b>
<b>Appendices</b> .....	<b>10</b>
SkyDrive .....	10
Google Drive.....	10
Dropbox .....	11





## INTRODUCTION

### BACKGROUND

The Sustainable Local Food Systems Research Group (or Nourishing Ontario) requires an affordable multi-user document-sharing platform with sufficient size limit, accessibility (by country), compatibility (PC, Mac, Linux), usability and other relevant features. The purpose of this project is to identify the platform that would be most effective, and outline optimal uses for that platform. Specifically, this report considers whether or not Dropbox (the current platform being used) is the best option and provides document management suggestions to reduce conflict versions, which is presently a problem associated with multiple-user access through Dropbox.

Define Key Terms:

- **Compatibility** means that a platform can be used on Windows, Mac and Linux operating systems.
- **Multi-user document sharing platform** refers to a document sharing website or program that allows multiple users to access the same document.

## METHODS

### SOURCES

To locate relevant references on multi-user document-sharing platforms, internet search combinations for “Dropbox,” “Google Drive,” and “SkyDrive” were used.



## RESULTS/FINDINGS

### DOCUMENT-SHARING OPTIONS

The following explores three multi-user document-sharing platforms – SkyDrive, Google Drive and Dropbox. These platforms were selected based on popularity and accessibility.

#### Dropbox

Dropbox provides live syncing and allows users to expand their free account by recruiting new users. Free Dropbox users are upgraded with 500MB of additional space for each direct referral. Free accounts are expandable up to 21.75GB. Dropbox also allows documents to be saved locally on both PC and Mac computers. Folders can be shared with users, allowing for organized file sharing. Dropbox also allows the user to restore previous versions, which may be valuable when multiple users access the same document. To use this service, the user must generate an account, which can be done using any email domain. If the Dropbox account is generated with an educational email account, Dropbox will grant larger size limits.

#### Google Drive

Google Drive is a multi-user platform that allows sharing of multiple document types. Google Drive offers a chat interface for shared documents and exhibits word processing features similar to the Microsoft Office suite. Google Drive is limited to 5GB of storage. Google Drive has been criticized for its formatting. Based on the kinds of documents generated by Nourishing Ontario (i.e. Microsoft Office files, sometimes including hyperlinked Table of Contents, heading fonts, page numbers, and other formatting details), using Google Drive may cause undesired formatting alterations. An additional consideration is that Google Drive requires users to generate a Gmail account or use an educational email domain free of charge (Google, 2013).

#### SkyDrive

SkyDrive is a Microsoft software designed specifically for use with Microsoft Office Suite. SkyDrive is limited to 7GB of storage. The multi-user platform features easy upload but does not allow any local file syncing on computers. This means, unlike Dropbox and GoogleDrive, documents must be uploaded in a manner similar to email attachments (up to 100MB). Despite this limitation, SkyDrive allows the user to edit singular documents simultaneously (similar to Google Drive). This means multiple users can access and edit a document at the same time from different computers. Live changes are updated to SkyDrive when the user presses the “Save” icon that double serves as an auto refresh feature. This feature, however, has been more reliable when edits are made on the same local network. Skydrive allows any user to generate a Microsoft account to use its services.



### Summary

Regarding worldwide accessibility, Dropbox, Google Drive and SkyDrive may be subject to accessibility problems in China (The Dropbox Forums, 2011; Wong, 2012; Holman, 2012). Of the three multi-user platforms, SkyDrive may prove to be the most valuable storage platform based on size, but a significant drawback is that documents cannot be saved locally on individual computers. Google Drive offers opportunities to edit, however, given the complexity of the documents being shared by the Nourishing Ontario group, it may result in undesired formatting changes. Dropbox may prove to be the most usable multi-user platform based on ease to use with live document syncing from the computer. Details on each of the three platforms are provided in Appendix A. Table 1 summarizes the differences between SkyDrive, Google Drive and Dropbox.

## RECOMMENDATIONS

### RECOMMENDED USAGE GUIDELINES

Based on the current document-sharing challenges being experienced by Nourishing Ontario and the available platform options, restructuring file organization within Dropbox may be the simplest and most effective solution.

One of the primary problems with the current system is versioning – i.e. the creation of multiple copies of Microsoft Office Word, PowerPoint and Excel documents each time they are opened for viewing by a user. To address this problem, it is important to recognize that there are different types of users. A viewer is a user who wants to view and/or print documents without making changes. An editor is a user who wants to potentially make changes to a document. In order to help limit the creation of multiple file versions, files can be saved in two ways – 1) in pdf format in a “Read Only” folder, which would be designated for viewing and printing and 2) in Word, PowerPoint or Excel format in a folder that would be designated for shared editing. The pdf documents can be compressed to reduce storage space usage. The proposed dual folder structure is illustrated in Figure 1.

### VIEWER USER GUIDELINES

To view documents, the Viewer can access the project level, identify the subproject level and access the folder designated Read only (Figure 1). Accessing the Read only folder will direct the user to pdf files, which are static files for viewing. Multiple users can access the document without versioning issues, since the document will not be edited and only viewed in the Adobe Reader or Adobe Acrobat.

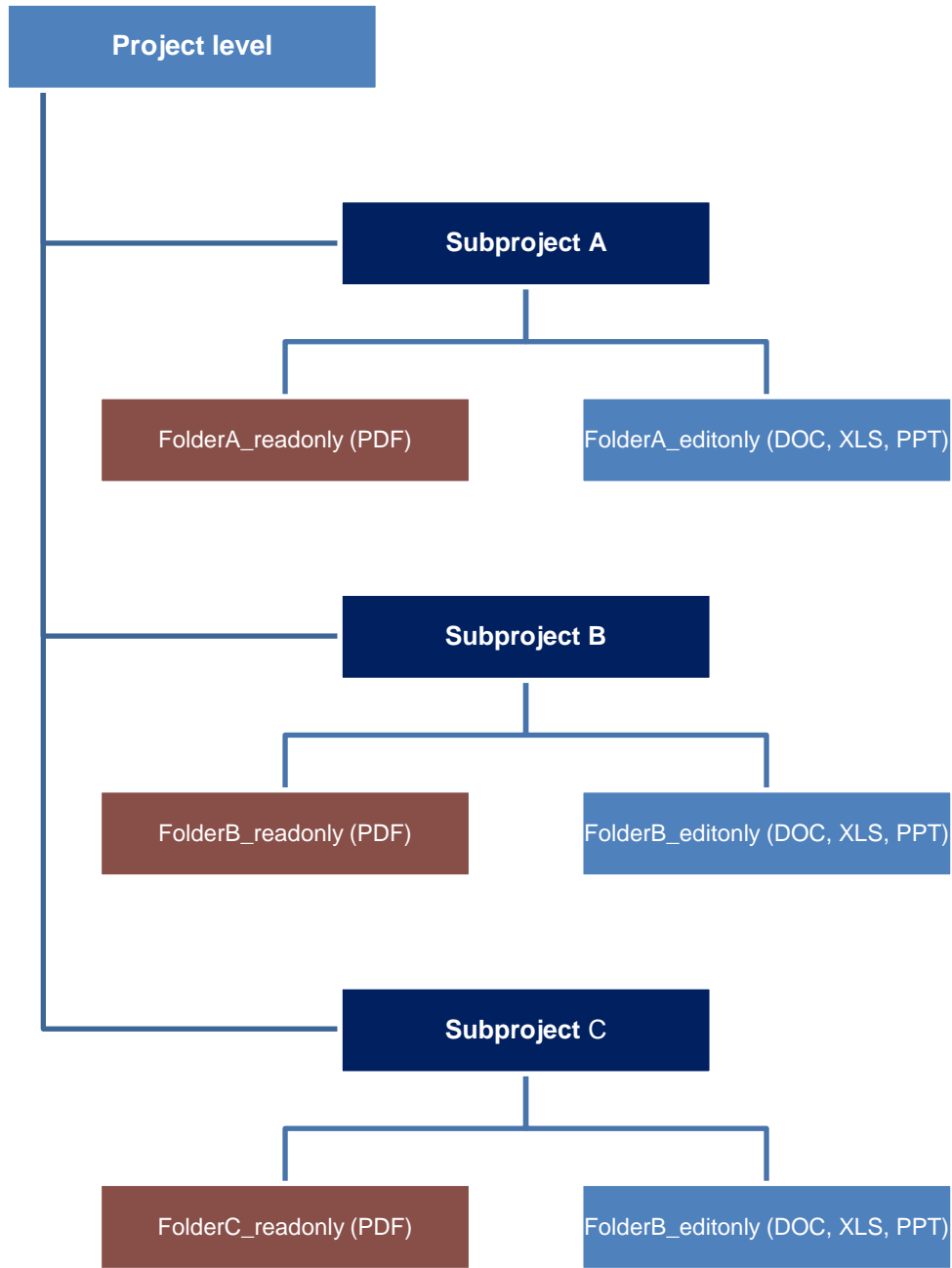


**Table 1. Comparing SkyDrive, Google Drive and Dropbox.**

	SkyDrive	Google Drive	Dropbox
<b>Supported platforms</b>			
Windows	X	X	X
Mac	X	X	X
iOS			X
Linux			X
BlackBerry			X
Android		X	X
iPhone / iPad	X		
Windows Phone	X		
<b>Storage</b>			
Free storage	7GB	5GB	2GB
Bonus storage	Early bird special and legacy users may have larger size limits	None	Expandable to 21.75GB (by referrals, by social network and mobile photo upload)
Paid storage	20GB addt'l (\$10/yr) 50GB addt'l (\$25/yr) 100GB addt'l (\$50/yr)	25GB (\$2.49/mo) 100GB (\$4.99/mo) More plans available	100GB addt'l (\$9.99/mo or \$100/yr) 200GB addt'l (\$19.99/mo or \$200/yr) Team plans Up to 5 users for 1TB (\$795/yr) More plans available
<b>Features</b>			
Built-in viewers	Yes	Yes	Yes
Other software formats	Office documents, PDFs, videos and images	Office documents, PDFs, videos, images, Photoshop mockups, and AutoCAD drawings	Office documents, PDFs, videos and images
Security	Basic user name and password.  SSL and encryption	Two-step protection and non-authorized users cannot access.  Data encryption	Basic user name and password.  SSL and AES-256 bit.
File search	Searches document that are common in Microsoft Office formats	Google Drive OCRs scanned documents and photographs, thus documents can be retrieved by search	Returns file names that match keyword search
Offline access	Skydrive requires document to be exported to access offline	Document can be accessed offline and mobile	Document can be accessed offline and mobile
Selective sync	None	Selectively sync folders per computer	Selectively sync folders per computer
Edit simultaneously	Yes	Yes	No
<b>File history</b>			
File history recovery	None	None	30 day file recovery and version recovery
Tracked version	Yes	Yes	Yes



IDENTIFYING THE OPTIMAL MULTI-USER DOCUMENT-SHARING PLATFORM



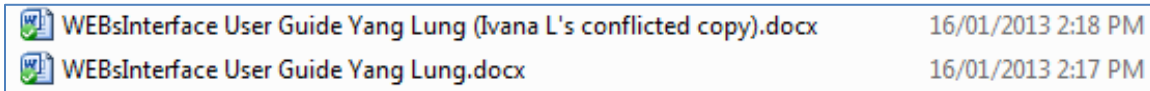
**Figure 1. Recommended folder structure.**





**EDITOR USER GUIDELINES**

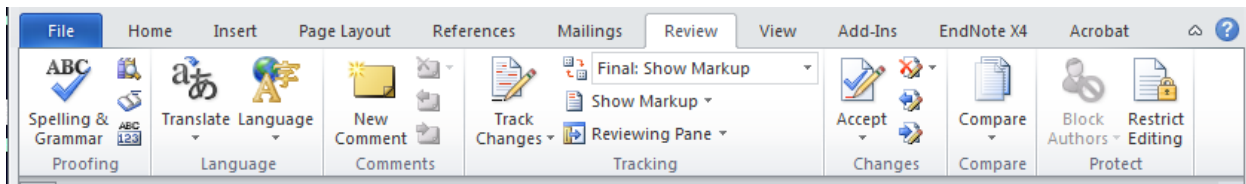
To edit documents, the Editor can access the project level, identify the subproject level and access the folder designated Edit only (Figure 1). Accessing the Edit only folder will direct the user to an editable document (i.e. doc, xls, ppt). Since these documents are dynamic, multiple user access may result in versioning or conflict copies (Figure 2). It is therefore recommended that users access this document for editing purposes only.



**Figure 2. Document versioning.**

**RECOMMENDED FILE MAINTENANCE**

As more individuals access the Dropbox shared documents, it is important to designate an individual to review the folder content and remove version or conflict copies on a regular basis. To eliminate version copies, it is important to compare the documents using the Review...Compare feature in MS Word (Figure 3). This feature will allow users to compare the document difference. If no differences are detected, simply delete the unnecessary versions. If there are minor differences, review the document differences and select a version (typically the most recently updated version is correct). If differences exist, multiple versions could be saved using the date or some other identifier within the file name.



**Figure 3. Review and compare document.**

**RECOMMENDED INSTRUCTIONS TO USERS**

When initially sharing the folder with new users, a generic email can be distributed describing the file handling recommendations outlined above. It should be noted that all users who have access to the shared folder will be listed online on the Dropbox website, under “folder sharing properties”.





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## APPENDICES

The following describes how to access the multi user document sharing platforms described in this report.

### SKYDRIVE

Link: <http://skydrive.live.com>

SkyDrive requires the user to generate a Microsoft account to use the document sharing services. User may generate this using an existing email account from any domain. Figure 4 shows the login screen to access SkyDrive.

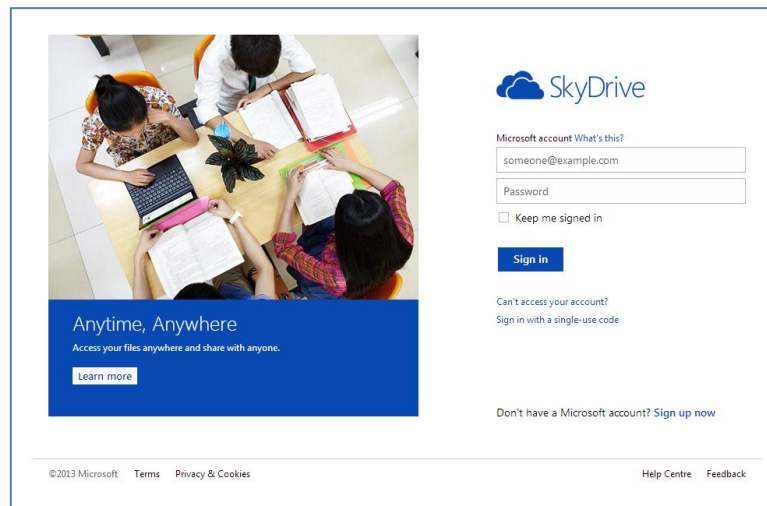


Figure 4. SkyDrive login screen.

### GOOGLE DRIVE

Link: <http://drive.google.com>

Google Drive requires the user to generate a Google account to use the document sharing services. User may generate this using an existing email account if it is for educational services. Figure 5 shows the login screen to access Google Drive.



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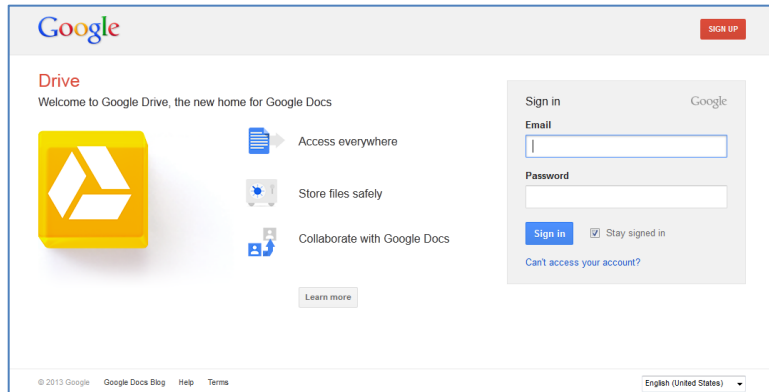


Figure 5. Google Drive login screen.

## DROPBOX

Link: <http://www.dropbox.com>

Dropbox requires the user to generate a Dropbox account to use the document sharing services. User may generate this using an existing email account from any domain. Figure 6 shows the login screen to access Dropbox.

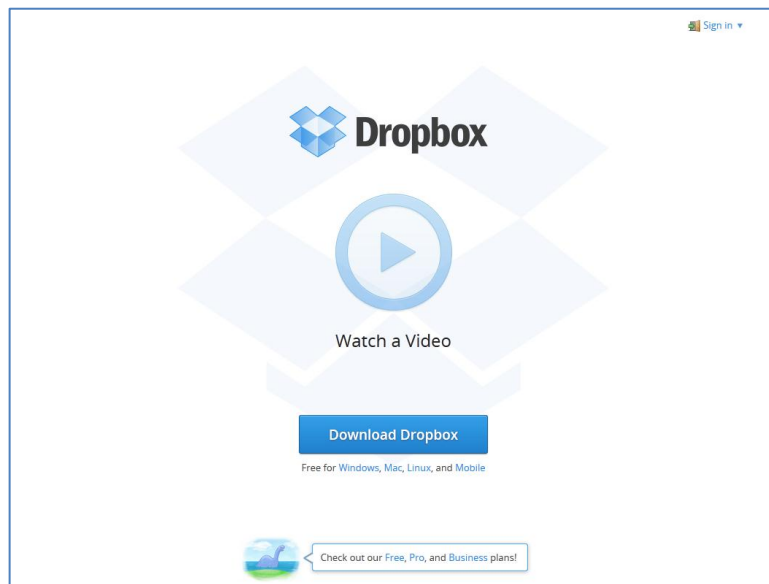


Figure 6. Dropbox login screen.



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