ERP Consolidation Accounting Serial Exercise

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Abstract: This project looks at an Enterprise Resource Planning (ERP) system from a pedagogy academic accounting point of view. Microsoft Dynamics GP, formerly known as Great Plains, is used in a serial consolidation exercise/homework problem. Include focus on Access to ERP was done using cloud computing. The ERP information is entered in journal form in GP and then aggregated with Management Reporter.

Keywords: Enterprise Resource Planning (ERP) system, Cloud Computing, Microsoft Dynamics GP

INTRODUCTION

When students learn consolidation accounting, a learning opportunity exists for accounting information systems to address the various financial statement issues included in the process. Specific textbook problems typically utilize a spreadsheet approach, generally with EXCEL. The "real world" uses Enterprise Resource Planning (ERP) systems for the accounting cycle of an investor company and its subsidiary in contrast with the Pacioli double-entry bookkeeping spreadsheets that serve university instruction learning purposes. Fulford writes that many companies use some form of ERP (Fulford, 2011). Further evidence of businesses wanting and using ERP can be inferred from an NZ Business article which basically says that while ERPs can be very expensive the cloud has allowed the software to be treated as a service which makes it more cost-available to smaller companies (Bill, 2013). In addition, an article by Kanellou and Spathis along with an article by Liu and Weng suggests that ERP software affects accounting on a world-wide scale (Kanellou & Spathis, 2013; Liu & Weng, 2013). Thus, for students to secure employment, they should utilize the technology used in the work place. And, based on this perceived demand, the present article satisfies the educational need to show students how to process accounting cycle information in multiple entities and "roll up" the information into ERP consolidated reports which have applicable consolidation elimination entries. In summary, this consolidation serial exercise addresses a set of educational needs both in accounting and accounting information systems. The following section gives a review of serial multi-chapter accounting textbooks. Then section three covers the serial exercise example material. Section four discusses navigation issues to speed the introductory learning curve to GP. Lastly, section five gives the summary and conclusions.

BACKGROUND REVIEW

Little literature exists about accounting serial exercise applications. Introductory and intermediate texts employ serial exercises in accounting cycle pedagogy. However, as of this writing, the consolidation texts with one known exception (Hoyle et al., 2011) have not incorporated multi-chapter problems in ERP systems as presented in the current study's project. Thus, the current work basically breaks ground in this aspect of pedagogy articles. While other examples of consolidation serial exercise problems exist, this project focuses on how to work a problem using current industrial software. Anecdotal student evidence reports that the serial exercise provides useful knowledge for actual work.

Notwithstanding push-down accounting, three different consolidation approaches: cost, partial equity, and equity have coverage in texts. All of these approaches do result in the same consolidated statements; however, professors have challenges in giving a big picture hands on view for students' comprehension. As matter of simplification, this serial exercise follows the equity method.

SERIAL EXERCISE AND REPORT

Overview

This paragraph overviews the serial exercise. Subsequent paragraphs give details. The initial purchase features of a combination are described below. One firm TopDrawer buys 100 percent ownership of another (BottomShelf) at the beginning of period XXX1 in a fairly straight-forward combination. The firms remain separate legal entities. As discussed previously, each period includes more complex features of business activities which require appropriate reporting. The next learning objective addresses non-controlling interests with a purchase of 10 percent of the subsidiary BottomShelf by outside parties (i.e., non-controlling interests [NCI]) in period XXX2. For an interaffiliate asset transfer learning objective, TopDrawer sells equipment to BottomShelf and inventory is sold between the affiliates in period XXX3. Period XXX4 has an interaffiliate debt transaction learning objective. As the semester project moves forward, specific transactions are taken from the fact pattern and the serial exercise demonstrates how to put into GP. Everyday entries do not vary much from each other; hitting upon characteristics critically different from EXCEL seemed better than working the entire problem. The spreadsheet version of this project can be available upon request. Faculty should modify these example spreadsheets every semester so that student copying does not occur. Simply, multiplying the data by a factor works well.

ERP Features

Each company requires an ERP setup process, but it will not appear here in regards to the main consolidation theme of this serial exercise. Also, this project utilized a cloud computing company's ERP site which addresses some issues. According to an article by Grandzol and Ochs, faculty and schools have usually been apprehensive moving forward in teaching with new technology applications that are current with the business world (Grandzol & Ochs, 2010). Research by Banham and research by Boulianne both suggest that exposure to different methods of working accounting problems can build a knowledge base that can aid in using new technology (Banham, 2010; Boulianne, 2012). Using this ERP software with the cloud has the advantage that neither students nor faculty have to set up the company in the computer … only the accounts. Also, students do not have to come to school to work on their project or buy GP. There can be one school provided server with the software which students can log onto through the internet and then work from basically anywhere.

In keeping with the idea to provide students with a competitive edge upon graduating, this project used Microsoft's Dynamics GP software because of its focus on small and medium-sized companies. GP has two components. One module contains the data entered in journal form. Students have familiarity with journal entries enabling a keep-it-simple process. The other component does a reporting program. This study includes GP ERP examples of transaction journal entries and elimination entries for the acquisition. Journal entries establish the books for TopDrawer and BottomShelf along with an elimination entry.

All ERP computer programs require an account identification schema. This project uses a nine digit scheme XXX-YYYY-ZZ where XXX is a company identifier (e.g., 000 is TopDrawer and 001 is BottomShelf) YYY is a four digit line item (e.g., 1100 for cash) account specification. ZZ is a category identifier of 00 for account, 09 for elimination entry and 08 for non-controlling interest. This project generally follows Hoyle et al. (2011) which has a specific non-controlling interest column. Other texts (e.g., Baker, 2011) utilize debit and credit fields for eliminations that include the non-controlling interest effects. For teaching purposes, XXX specifies student groups (e.g. 700 and 701 for group 7). Pedagogy best practices should use groups. Students can interact with each other, and college evaluations reward the use of group activity. Also, if faculty create individual student companies, it requires additional time consuming set-ups.

The software has a fairly complex ERP closing process in practice which creates pedagogy issues. This ERP example employs closing journal entries at the beginning of a subsequent period similar to textbook approaches. Thus, the ERP example tries to keep it simple. The ERP software project utilized "months" periods representative of a year for the same closing entry practice problems. For example, Year XXX1 is January, Year XXX2 is February and so forth. The following example material only shows a walkthrough of the journal entries and report for the acquisition of BottomShelf by TopDrawer. Faculty may ask for the full four years' GP reports from the authors by request. This current study contains information sufficient to start the process, but does not to publicly disclose all information to potential students.

Acquisition

At the beginning of Year XXX1, TopDrawer acquires 100 percent of the outstanding common stock of BottomShelf Company. To acquire these shares, TopDrawer issues $400,000 in long-term liabilities and 20,000 shares of common stock having a par value of $1, but a fair value of $31.50 per share. TopDrawer pays $60,000 to accountants, lawyers, and brokers for assistance in the acquisition and another $24,000 in connection with stock issuance costs. In TopDrawer's appraisal of BottomShelf, it deems two accounts to be undervalued on the subsidiary's books: Land by $40,000 and Buildings by $60,000. The Buildings have an expected 10 year life. See Figure 1 for the EXCEL spreadsheet view.

Beg Year XXX1	***TopDrawer***	***TopDrawer***	***BottomShelf***	***Consolidation Entries***		***Consolidated***
Accounts	***Company***	***Company****	***Company***	***Debit***	***Credit***	***Totals***
Assets						
Cash	**120,000**	**36,000**	**40,000**			**76,000**
Receivables	**540,000**	**540,000**	**180,000**			**720,000**
Inventory	**720,000**	**720,000**	**280,000**			**1,000,000**
Land	**400,000**	**400,000**	**360,000**	40,000		**800,000**
Buildings (net)	**840,000**	**840,000**	**440,000**	60,000		**1,340,000**
Equipment (net)	**320,000**	**320,000**	**100,000**			**420,000**
Investment BottomShelf	**0**	**1,030,000**	**0**		920,000	**0**
					110,000	
Goodwill				10,000		**10,000**
Total Assets	**2,940,000**	**3,886,000**	**1,400,000**			**4,366,000**
Liabilities & Equity						
Accounts payable	**300,000**	**300,000**	**80,000**			**380,000**
Long-term liabilities	**860,000**	**1,260,000**	**400,000**			**1,660,000**
Common stock	**220,000**	**240,000**	**240,000**	240,000		**240,000**
Add. paid-in capital	**720,000**	**1,306,000**	**0**			**1,306,000**
Retained earnings,	**840,000**	**780,000**	**680,000**	680,000		**780,000**
Total Liab. & Equity	**2,940,000**	**3,886,000**	**1,400,000**	1,030,000	1,030,000	**4,366,000**

Figure 1: Acquisition worksheet

Year XXX1 – Ordinary Transactions for 100% Ownership of Subsidiary:

TopDrawer: (1) Sells inventory on account for $500,000 which cost $232,000; (2) Collects $200,000 cash from accounts receivables; (3) Recognizes other operating expenses of $60,000 with $12,000 being paid in cash, $32,000 being recognized for depreciation for Buildings (net), and $16,000 being recognized for Equipment (net); (4) Declares and pays dividends of $60,000 to its shareholders; (5) Recognizes its portion of BottomShelf's net income equal to $24,000 for the equity method; (6B) Recognizes its portion of BottomShelf's dividends equal to $36,000 for the equity method.

BottomShelf: (1) Sells inventory on account for $140,000 which cost $90,000; (2) Collects $56,000 cash from accounts receivables; (3) Recognizes other operating expenses of $20,000 with $10,000 being paid in cash, $4,000 being recognized for depreciation for Buildings (net), and $6,000 being recognized for Equipment (net); (6A) Declares and pays dividends of $36,000 to its shareholders. See Figure 2 for journal entries; Figure 3 for the financial statements and Figure 4 for elimination entries.

	Year XXX1 Transactions	TopDrawer		BottomShelf	
		Debit	***Credit***	***Debit***	***Credit***
1A.	Accounts Receivables	500000		140000	
	Revenues		500000		140000
1B.	COGS	232000		90000	
	Inventory		232000		90000
2.	Cash	200000		56000	
	Accounts Receivables		200000		56000
3.	Other operation expenses	60000		20000	
	Cash		12000		10000
	Buildings (net)		32000		4000
	Equipment (net)		16000		6000
4.	Dividend	60000			
	Cash		60000		
5.	Investment in BottomShelf	24000			
	Equity Income BottomShelf		24000		
6A.	Dividend			18000	
	Cash				18000
6B.	Cash	18000			
	Investment in BottomShelf		18000		

Figure 2: Year XXX1 – ordinary transactions

Year XXX1 Financials *Accounts*	*TopDrawer Company*	*BottomShelf Company*	*Consolidation Entries Debit*	*Consolidation Entries Credit*	*Consolidated Totals*
Revenues	**500,000**	**140,000**	**0**	**0**	**640,000**
Cost of goods sold	**232,000**	**90,000**	**0**	**0**	**322,000**
Other operation expenses	**60,000**	**20,000**	**6000**	**0**	**86,000**
Equity income BottomShelf	**24,000**		**24000**	**0**	**0**
Net income	**232,000**	**30,000**	**0**	**0**	**232,000**
			0	**0**	**0**
Retained earnings (beg)	**780,000**	**680,000**	**680000**	**0**	**780,000**
Net income (above)	**232,000**	**30,000**	**0**	**0**	**232,000**
Dividends distributed	**60,000**	**18,000**	**0**	**18000**	**60,000**
Retained earnings (end)	**952,000**	**692,000**	**0**	**0**	**952,000**
Assets					
Cash	**182,000**	**68,000**	**0**	**0**	**250,000**
Accounts Receivables	**840,000**	**264,000**	**0**	**0**	**1,104,000**
Inventory	**488,000**	**190,000**	**0**	**0**	**678,000**
Land	**400,000**	**360,000**	**40000**		**800,000**
Buildings (net)	**808,000**	**436,000**	**60000**	**6000**	**1,298,000**
Equipment (net)	**304,000**	**94,000**	**0**	**0**	**398,000**
Investment in BottomShelf	**1,036,000**	**0**	**18000**	**920000**	**0**
				110000	
				24000	
Goodwill			**10000**		**10,000**
Total assets	**4,058,000**	**1,412,000**	**0**	**0**	**4,538,000**
Liabilities & Equity			**0**	**0**	**0**
Accounts Payable	**300,000**	**80,000**	**0**	**0**	**380,000**
Long-term Liabilities	**1,260,000**	**400,000**	**0**	**0**	**1,660,000**
Common stock	**240,000**	**240,000**	**240000**	**0**	**240,000**
Additional paid-in capital	**1,306,000**	**0**	**0**	**0**	**1,306,000**
Retained earnings (above)	**952,000**	**692,000**	**0**	**0**	**952,000**
Total liabilities & equity	**4,058,000**	**1,412,000**	**107800 0**	**1078000**	**4,538,000**

Figure 3: Year XXX1 worksheet

Elimination Entries XXX1	***Debit***	***Credit***
BottomShelf Common	240000	
BottomShelf Retained Earnings (Beg)	680000	
Investment BottomShelf		92000
Land	40000	
Buildings	60000	
Goodwill	10000	
Investment BottomShelf		110000
Equity Income BottomShelf	24000	
Investment BottomShelf		24000
Investment BottomShelf	18000	
Dividends		18000
Other operation expenses	6000	
Buildings (net)		6000

Figure 4: XXX1 elimination entries

Year XXX2 Transactions Including Creation of NonControlling Interest:

TopDrawer: **(**1) Sells inventory on account for $550,000 which cost $254,000; (2) Collects $240,000 cash from accounts receivables; (3) Recognizes other operating expenses of $66,000 with $18,000 being paid in cash, $32,000 being recognized for depreciation for Buildings (net), and $16,000 being recognized for Equipment (net); (4) Sell 10% of its investment in BottomShelf for cash of $101,800 to a 3rd party, NCI; (5) declares and pays dividends of $60,000 to its shareholders; (6) Recognizes its portion of BottomShelf's net income equal to $23,400 for the equity method; (7B) Recognizes its portion of BottomShelf's dividends equal to $36,000 for the equity method.

BottomShelf: (1) Sells inventory on account for $154,000 which cost $98,000; (2) Collects $62,000 cash from accounts receivables; (3) Recognizes other operating expenses of $24,000 with $14,000 being paid in cash, $4,000 being recognized for depreciation for Buildings (net), and $6,000 being recognized for Equipment (net); (7A) Declares and pay dividends of $40,000 to its shareholders. See Figure 5 for ordinary transactions; Figure 6 for financials and Figure 7 for elimination entries.

	Year XXX2 Transactions	TopDrawer		BottomShelf	
		Debit	***Credit***	***Debit***	***Credit***
1A.	Accounts Receivables	550000		154000	
	Revenues		55000		154000
1B.	COGS	254000		98000	
	Inventory		254000		98000
2.	Cash	240000		62000	
	Accounts Receivables		240000		62000
3.	Other operation expenses	66000		24000	
	Cash		18000		14000
	Buildings (net)		32000		4000
	Equipment (net)		16000		6000
4.	Cash	103600			
	Investment in BottomShelf		103600		
	10% sale to NCI				
5.	Dividend	60000			
	Cash		60000		
6.	Investment in BottomShelf	23400			
	Equity Income BottomShelf		23400		
7A.	Dividend			40000	
	Cash				40000
7B.	Cash	36000			
	Investment in BottomShelf		36000		

Figure 5: Year XXX2 – ordinary transactions

Year XXX2 Financials	TopDrawer	BottomShelf	Consolidation Entries		NCI	Consolidated
Accounts	Company	Company	Debit	Credit		Totals
Revenues	550,000	154,000	0	0		704,000
Cost of goods sold	254,000	98,000	0	0		352,000
Other operation expenses	66,000	24,000	6000	0		96,000
Equity income BottomShelf	23,400		23,400	0		0
Consolidated Net income	253,400	32,000	0	0		256,000
NCI income			0	0	2600	2,600
Net income to controlling interest						253,400
Retained earnings (beg)	952,000	692,000	692,000	0		952,000
Net income (above)	253,400	32,000	0	0		253,400
Dividends distributed	60,000	40,000	0	36,000	4000	60,000
Retained earnings (end)	1,145,400	684,000	0	0		1,145,400
Assets						
Cash	483,600	76,000	0	0		559,600
Receivables	1,150,000	356,000	0	0		1,506,000
Inventory	234,000	92,000	0	0		326,000
Land	400,000	360,000	40000			800,000
Buildings	776,000	432,000	54000	6000		1,256,000
Equipment (net)	288,000	88,000	0	0		376,000
Investment in BottomShelf	919,800	0	36000	838800		0
				93600		
				23400		
Goodwill			10000			10,000
Total assets	4,251,400	1,404,000	0	0		4,833,600
Liabilities & Equity			0	0		0
Accounts Payable	300,000	80,000	0	0		380,000
Long-term Liabilities	1,260,000	400,000	0	0		1,660,000

Common stock	**240,000**	**240,000**	**240000**	**0**		**240,000**
Additional paid-in capital	**1,306,000**	**0**	**0**	**0**		**1,306,000**
NCI (Beg)				**93200**	**93200**	
				10400	**10400**	
NCI (End)					**102200**	**102,400**
Retained earnings (above)	**1,145,400**	**684,000**	**0**	**0**		**1,145,400**
Total liabilities & equity	**4,251,400**	**1,404,000**	**1101400**	**1101400**		**4,833,600**

Figure 6: Year XXX2 worksheet

<u>Elimination Entries XXX3</u>		
BottomShelf Common	240000	
BottomShelf Retained Earnings (Beg)	684000	
Investment BottomShelf		831600
NCI		92400
Land	40000	
Buildings	48000	
Goodwill	10000	
Investment BottomShelf		88200
NCI		9800
Equity Income BottomShelf	43200	
Investment BottomShelf		43200
Investment BottomShelf	36000	
Dividends		36000
Other operation expenses	6000	
Buildings (net)		6000
Cost of goods sold	10000	
Inventory		10000
Gain on Equipment	22000	
Equipment		22000
Equipment (net)	4000	
Other operation expenses		4000

Figure 7: XXX3 elimination entries

Year XXX3 Transactions Including An Inter-affiliate Asset Sale:

TopDrawer: (1) Sells inventory on account for $600,000 which cost $280,000; (2) Collects $264,000 cash from accounts receivables; (3) Other operating expenses of $96,000 were recognized with $50,000 being paid in cash, $32,000 being recognized for depreciation for Buildings (net), and $14,000 being recognized for Equipment (net); (4) pays $400,000 cash for additional inventory; (5) declares and pays dividends of $100,000 to its shareholders; (7A) At the beginning of the year, TopDrawer makes an intercompany downstream sale of some of its equipment to BottomShelf. The cash received from BottomShelf was $60,000 and the carrying value of the equipment was $38,000 which resulted in a gain of $22,000; (8) Recognizes its portion of BottomShelf's net income equal to $41,000 for the equity method; (9B) Recognizes its portion of BottomShelf's dividends equal to $36,000 for the equity method; (10A) Defers the full amount of the gain equal to $22,000 on the intercompany downstream sale for the equity method; (10B) Amortizes the downstream sale gain of $2,200 for the equity method. Straight-line depreciation was used based on a 10 years useful life.

BottomShelf: (1) Sells inventory on account for $210,000 which cost $108,000; (2) Collects $190,000 cash from accounts receivables; (3) Recognizes other operating expenses of $32,000 with $16,000 being paid in cash, $4,000 being recognized for depreciation for Buildings (net), and $12,000 being recognized for Equipment (net); (3B) Recognizes an extra $6,000 depreciation expense because of the purchase of equipment from its parent (see journal entry #7B); (4) Pays $100,000 cash for additional inventory; (6) Makes an intercompany upstream sale of inventory to its parent company, TopDrawer. Sales on account were $40,000 which cost $24,000. At the end of the year, TopDrawer still had intercompany profits of $10,000 from the upstream sale; (7B) Buys some of TopDrawer's equipment for $60,000 cash; (9A) Declares and pays dividends of $40,000 to its shareholders. See Figure 8 for transactions, Figure 9 for financials and Figure 10 for the elimination entries.

	Year XXX3 Transactions	TopDrawer		BottomShelf	
		Debit	***Credit***	***Debit***	***Credit***
1A.	Accounts Receivables	600000		210000	
	Revenues		600000		210000
1B.	COGS	280000		108000	
	Inventory		280000		108000
2.	Cash	264000		190000	
	Accounts Receivables		264000		190000
3A.	Other operation expenses	96000		26000	
	Cash		50000		16000
	Buildings (net)		32000		4000
	Equipment (net)		14000		6000
3B.	Other operation expenses			6000	
	Equipment (net)				6000
4.	Inventory	400000		100000	
	Cash		400000		100000
5.	Dividend	100000			
	Cash		100000		
6A.	Cash			40000	
	Revenue				40000
6B.	COGS			24000	

	Inventory				24000
	In XXX3, BottomShelf sold goods for 40,000 to TopDrawer which cost 24,000.				
	10,000 of gross profit remains at year end.				
7A.	Cash	60000			
	Equipment (net)		38000		
	Gain on Equip Sale		22000		
7B.	Equipment (net)			60000	
	Cash				60000
	TopDrawer sold equipment (net) of 38,000 for 60,000 to BottomShelf at 1/1/XXX3. Equipment had a 19 years life at 1/1/XXX3. BottomShelf sets the equipment life to be 10 years				
8.	Investment in BottomShelf	41000			
	Equity Income BottomShelf		41000		
9A.	Dividend			40000	
	Cash				40000
9B.	Cash	36000			
	Investment in BottomShelf		36000		
	Defer unrealized gain				
10A.	Equity Income BottomShelf	22000			
	Investment in BottomShelf		22000		
	Reverse year xxx3 deferred gain				
10B.	Investment in BottomShelf	2200			
	Equity Income BottomShelf		2200		

Figure 8: Year XXX3 – ordinary transactions

Year XXX3 Financials	***TopDrawer***	***BottomShelf***	***Consolidation***		**NCI**	***Consolidated***
Accounts	***Company***	***Company***	***Debit***	***Credit***		***Totals***
Revenues	**600,000**	**250,000**	40000	0		**810,000**
Cost of goods sold	**280,000**	**132,000**	10000	40000		**382,000**
Other op. expenses	**96,000**	**32,000**	6000	4000		**130,000**
Gain on equip sale	**22,000**		22000			**0**
Equity income BottomShelf	**43,200**		43200	0		**0**
Consolidated Net income	**289,200**	**86,000**	0	0		**298,000**
NCI income			0	0	7000	**7,000**

Net income to controlling interest						291,000
Retained earnings (Beg)	**1,145,400**	**684,000**	68400 0	0		**1,145,400**
Net income (above)	**289,200**	**86,000**	0	0		**291,000**
Dividends distributed	**100,000**	**40,000**	0	36000	4000	**100,000**
Retained earnings (End)	**1,334,600**	**730,000**	0	0		**1,336,400**
Assets						
Cash	**293,600**	**90,000**	0	0		**383,600**
Receivables	**1,486,000**	**376,000**	0	0		**1,862,000**
Inventory	**354,000**	**60,000**	0	10000		**404,000**
Land	**400,000**	**360,000**	40000			**800,000**
Buildings	**744,000**	**428,000**	48000	6000		**1,214,000**
Equipment (net)	**236,000**	**136,000**	4000	22000		**354,000**
Investment in BottomShelf	**927,000**	**0**	36000	831600		**0**
				88200		
				43200		
Goodwill			10000			**10,000**
Total assets	**4,440,600**	**1,450,500**				**5,027,600**
Liabilities & Equity						
Accounts Payable	**300,000**	**80,000**	0	0		**380,000**
Long-term Liabilities	**1,260,000**	**400,000**	0	0		**1,660,000**
Common stock	**240,000**	**240,000**	24000 0	0		**240,000**
Additional paid-in capital	**1,306,000**	**0**	0	0		**1,306,000**
NCI (Beg)				92400	92400	
				9800	9800	
NCI (End)					105200	**105,200**
Retained earnings	**1,334,600**	**730,000**	0	0		**1,336,400**
Total liab. & equity	**4,440,600**	**1,450,000**	1183200	1183200		**5,027,600**

Figure 9: Year XXX3 worksheet

Elimination Entries XXX3		
BottomShelf Common	240000	
BottomShelf Retained Earnings (Beg)	684000	
Investment BottomShelf		831600
NCI		92400
Land	40000	
Buildings	48000	
Goodwill	10000	
Investment BottomShelf		88200
NCI		9800
Equity Income BottomShelf	43200	
Investment BottomShelf		43200
Investment BottomShelf	36000	
Dividends		36000
Other operation expenses	6000	
Buildings (net)		6000
Cost of goods sold	10000	
Inventory		10000
Gain on Equipment	22000	
Equipment		22000
Equipment (net)	4000	
Other operation expenses		4000

Figure 10: XXX3 elimination entries

Year XXX4 Transactions Including Interaffiliate Debt Activity:

TopDrawer: (1) Sells inventory on account for $620,000 which cost $290,000; (2) Collects $282,000 cash from accounts receivables; (3) Recognizes other operating expenses of $102,000 with $56,000 being paid in cash, $32,000 being recognized for depreciation for Buildings (net), and $14,000 being recognized for Equipment (net); (4) Pays $300,000 cash for additional inventory; (5) Declares and pays dividends of $100,000 to its shareholders; 10. (9, 10 and 11) Rates almost immediately rapidly fall after BottomShelf's bond issue and BottomShelf decides to retire the debt and refinance. To do the deal, TopDrawer buys the bonds for 106,710 based on an 8 annual percent yield; (12B) Recognizes its portion of BottomShelf's net income equal to $41,000 for the equity method; (12B) Recognized its portion of BottomShelf's dividends equal to $36,000 for the equity method; (13) Recognizes its portion of BottomShelf's net income equal to $54,553 for the equity method; (14) Continues to amortize the downstream sale gain of $2,200 for the equity method.

BottomShelf: (1) Sells inventory on account for $222,000 which cost $118,000; (2) Collects $198,000 cash from accounts receivables; (3) Recognizes other operating expenses of $38,000 with $22,000 being paid in cash, $4,000 being recognized for depreciation for Buildings (net), and $12,000 being recognized for Equipment (net); (4) Pays $114,000 cash for additional inventory; (6, 7 and 8) In an exchange of debt on 1/1/XXX4, BottomShelf issues $100,000 in 10 year bonds with 9% cash interest. Because of market conditions BottomShelf sold the debt for $93,854 for a 10% effective yield; (12A) Declares and pays dividends of $40,000 to its shareholders. Figure 11 has the transactions; Figure 12 has the financials; and Figure 13 has the elimination entries.

	Year XXX4 Transactions	TopDrawer		BottomShelf	
		Debit	***Credit***	***Debit***	***Credit***
1A.	Accounts Receivables	620000		222000	
	Revenues		620000		222000
1B.	COGS	290000		118000	
	Inventory		290000		118000
2.	Cash	282000		198000	
	Accounts Receivables		282000		198000
3.	Other operation expenses	102000		38000	
	Cash		56000		22000
	Buildings (net)		32000		4000
	Equipment (net)		14000		12000
4.	Inventory	300000		114000	
	Cash		300000		114000
5.	Dividend	100000			
	Cash		100000		

In an exchange of debt on 1/1/XXX4, BottomShelf issued 100000 in 10 year bonds with 9% cash interest.

Because of market conditions BottomShelf sold the debt for 93854 for a 10% effective yield.

Rates almost immediately rapidly fall and BottomShelf decides to retire the debt and refinance.

To do the deal, TopDrawer buys the bonds for 106710 based on an 8 annual percent yield.

		TopDrawer Debit	TopDrawer Credit	BottomShelf Debit	BottomShelf Credit
6.	Cash 1/1/XXX4			93854	
	BottomShelf Bonds				93854
7.	Other operation expenses/Interest expense at BottomShelf 12/31/XXX4			9000	
	Cash				9000
8.	Other operation expenses/Interest expense at BottomShelf 12/31			386	
	BottomShelf Bonds				386
9.	Invest in BottomShelf Bonds 7/1/XXX4	106710			
	Cash		106710		

10.	Cash 12/31/XXX4	900 0				
	Interest income		9000			
11.	Interest income 12/31/XXX4	464				
	Investment in BottomShelf Bonds		464			
12A.	Dividend				40000	
	Cash					40000
12B.	Cash	36000				
	Investment in BottomShelf		36000			
	BottomShelf Bonds	94240				
	Interest income	8536				
	Loss on retirement of bond	12856				
	Investment in BottomShelf bonds		106246			
	Interest Expense		9386			
	Consolidation Memo					
		Book beg	Eff. Int	Cash	Amort	Book end
	Investment	106710	8536	9000	464	106246
	Bond	93854	9386	9000	386	94240

TopDrawer sells Inventory from BottomShelf of Year XXX3 end to outsider purchaser.

At the end of Year XXX4, TopDrawer still owes BottomShelf 13,000 from interfiliate sales that occurred in Year XXX3.

13.	Investment in BottomShelf	54553	
	Equity Income BottomShelf		54553
	Reverse year xxx4 deferred gain		
14.	Investment in BottomShelf	2200	
	Equity Income BottomShelf		2200

Figure 11: Year XXX4 – ordinary transactions

Year XXX4 Financials						
	TopDrawer	***BottomShelf***	***Consolidation Entries***		**NCI**	***Consolidated***
Accounts	***Company***	***Company***	***Debit***	***Credit***		***Totals***
Revenues	**620,000**	**222,000**	0	0		**842,000**
Cost of goods sold	**290,000**	**118,000**	0	10000		**398,000**
Other operation expense (revenue)	**93,464**	**47,386**	6000	4000		**142,000**
			8536	9386		
Equity income BottomShelf	**56,753**		56753	0		**0**
Bond extinguishment			12856			**12,856**
Consolidated Net income	**293,289**	**56,614**	0	0		**289,144**
NCI income			0	0	6061	**6,061**
Net income to controlling interest						**283,083**
Retained earnings (Beg)	**1,334,600**	**730,000**	720000	0		**1,334,600**
			10000			
Net income (above)	**293,289**	**56,614**	0	0		**283,083**
Dividends distributed	**100,000**	**40,000**	0	36000	4000	**100,000**
Retained earnings (End)	**1,527,889**	**746,614**	0	0		**1,517,683**
Assets						
Cash	**57,890**	**196,854**	0	0		**254,744**
Receivables	**1,824,000**	**400,000**	0	13000		**2,211,000**
Inventory	**364,000**	**56,000**	0	0		**420,000**
Land	**400,000**	**360,000**	40000			**800,000**
Buildings (net)	**712,000**	**424,000**	42000	6000		**1,172,000**
Equipment (net)	**222,000**	**124,000**	4000	19800		**330,200**
Bond investment BottomShelf	**106,246**			106246		
Investment in BottomShelf	**947,753**	**0**	36000	864000		**0**
			19800	82800		
				56753		
Goodwill			10000			**10,000**
Total assets	**4,633,889**	**1,560,854**	0	0		**5,197,944**
Liabilities & Equity			0	0		**0**
Accounts Payable	**300,000**	**80,000**	13000	0		**367,000**
Long-term Liabilities	**1,260,000**	**400,000**	0	0		**1,660,000**
BottomShelf Bonds		**94,240**	94240			
Common stock	**240,000**	**240,000**	240000	0		**240,000**
Additional paid-in	**1,306,000**	**0**	0	0		**1,306,000**

capital						
NCI (Beg)				96000	96000	
				9200	9200	
NCI (End)					107261	**107,261**
Retained earnings (above)	**1,527,889**	**746,614**	0	0		**1,517,683**
Total liabilities & equity	**4,633,889**	**1,560,854**	1313185	1313185		**5,197,944**

Figure 12: Year XXX4 worksheet

<u>Elimination Entries XXX4</u>

BottomShelf Retained Earnings (Beg)	10000	
COGS		10000
BottomShelf Common	240000	
BottomShelf Retained Earnings (Beg)	720000	
Investment BottomShelf		864000
NCI		96000
Land	40000	
Buildings	42000	
Goodwill	10000	
Investment BottomShelf		82800
NCI		9200
Investment BottomShelf	19800	
Equipment (net)		19800
Equity income BottomShelf	56753	
Investment BottomShelf		56753
Investment BottomShelf	36000	
Dividends		36000
Other operation expenses	6000	
Buildings (net)		6000
Equipment (net)	4000	
Other operation expenses		4000
Other operation expenses	8536	
Bond extinguishment	12856	
BottomShelf Bonds	94240	
Other operation expenses		9386
Bond Investment BottomShelf		106246
Accounts Payable	13000	
Accounts Receivable		13000

Figure 13: XXX4 elimination entries

GP APPLICATION TO THE CLASSROOM

Success depends on choosing the appropriate ERP package (Pajk, 2012). Also, planning will be crucial to the success of students having gains from learning this software. Classroom experiences of this application suggest that having a computer workshop initially to acquaint students with GP Cloud facilitates a better learning process with fewer complaints. The information system structure/process presents navigation issues to the novice user. After the login to cloud computer, students must register for their specific user group. Then, students must select their homework project company. At that point, students must choose the general ledger package or the report writer which produces financial statements. In summary, faculty should give first time users detailed instruction to the log-in process which has multiple steps and the two program modules: the general ledger, and the report writer. Once students can navigate, then demonstrate a walkthrough of a journal entry. Students generally find challenging the first step in the learning curve. Once students get over the beginning hump, they usually do well. Note, this project can serve as an example for end of the chapter exercises in accounting major core courses past introductory classes. But always make sure students receive navigation training. A sampling of the GP computer reports from the serial exercise follows. Figures 14 and 17 are reports from the GP Journal Inquiry Report. Figures 15, 16, and 18 are reports from FRx Management Reporter.

System: 9/30/2012 4:10:46 PM
Page: 1
User Date: 9/30/2012
User ID:

JOURNAL INQUIRY REPORT

General Ledger

Journal Entry: 1 Batch ID: YR0TOP

Transaction Date: 1/2/2012 Reference: YR0Top
Source Document: GJ Currency ID: Z-US$
Audit Trail Code: GLQJE00000001 Orig Journal:
Orig Audit Trail Code: GLQJE00000001

Account	Description	Debit	Credit
	Distribution Reference		
1100-000-000	Cash-Checking	$36,000.00	$0.00
1160-000-000	Accounts Receivable	$540,000.00	$0.00
1270-000-000	Investments	$1,030,000.00	$0.00
1400-000-000	Equipment	$320,000.00	$0.00
1460-000-000	Buildings	$840,000.00	$0.00
1500-000-000	Land	$400,000.00	$0.00
2100-000-000	Accounts Payable	$0.00	$300,000.00
2140-000-000	Notes Payable	$0.00	$1,260,000.00
3000-000-000	Retained Earnings	$0.00	$780,000.00
3100-000-000	Common Stock	$0.00	$240,000.00
3110-000-000	Additional Paid in Capital - Common	$0.00	$1,306,000.00
1200-000-000	Inventory	$720,000.00	$0.00
Difference: $0.00	Totals:	$3,886,000.00	$3,886,000.00

System: 9/30/2012 4:21:41 PM Page: 1
User Date: 9/30/2012 JOURNAL INQUIRY REPORT User ID:
General Ledger

Journal Entry:	2	Batch ID:	BOTTOMYR01
Transaction Date:	1/2/2012	Reference:	2
Source Document:	GJ	Currency ID:	Z-US$
Audit Trail Code:	GLQJE00000002	Orig Journal:	
		Orig Audit Trail Code:	GLQJE00000002

Account	Description Distribution Reference	Debit	Credit
3000-001-000	Retained Earnings	$0.00	$680,000.00
1100-001-000	Cash	$40,000.00	$0.00
1160-001-000	Accounts Receivable	$180,000.00	$0.00
1200-001-000	Inventory	$280,000.00	$0.00
1500-001-000	Land	$360,000.00	$0.00
1460-001-000	Building	$440,000.00	$0.00
1400-001-000	Equipment	$100,000.00	$0.00
2100-001-000	Accounts Payable	$0.00	$80,000.00
2140-001-000	Notes Payable	$0.00	$400,000.00
3100-001-000	Common Stock	$0.00	$240,000.00
Difference: $0.00	Totals:	$1,400,000.00	$1,400,000.00

System: 9/30/2012 4:25:41 PM Page: 1
User Date: 9/30/2012 JOURNAL INQUIRY REPORT User ID:
General Ledger

Journal Entry:	3	Batch ID:	3
Transaction Date:	1/2/2012	Reference:	Inital Elimination
Source Document:	GJ	Currency ID:	Z-US$
Audit Trail Code:	GLQJE00000003	Orig Journal:	
		Orig Audit Trail Code:	GLQJE00000003

Account	Description Distribution Reference	Debit	Credit
1500-000-009	Land	$40,000.00	$0.00
1460-000-009	Buildings	$60,000.00	$0.00
1730-000-009	Goodwill	$10,000.00	$0.00
1270-000-009	Investment	$0.00	$1,030,000.00
3100-000-009	Common Stock	$240,000.00	$0.00
3000-000-009	Retained Earnings	$680,000.00	$0.00
Difference: $0.00	Totals:	$1,030,000.00	$1,030,000.00

Figure 14: Journal inquiry report 1

Management Reporter Row Definition

A Row Code	B Description	C Format Code	D Related Formulas / Rows / Units	E Format Override	F Normal Balance	G Print Control	H Column Restriction	I Row Modifier	J Link to Financial Dimensions
30		DES							
60		DES							
90		DES							
120	**Assets**								
150	Cash-Checking								+Segment1 = [1100]
180	Accounts Receivable								+Segment1 = [1160]
210	Inventory								+Segment1 = [1200]
240	Land								+Segment1 = [1500]
270	Buildings								+Segment1 = [1460]
300	Equipment								+Segment1 = [1400]
330	Investments								+Segment1 = [1270]
332	Goodwill								+Segment1 = [1730]
334		---							
338	**Total Assets**	TOT	150:332						
342									
345	**Liabilities and Equity**								
360	Accounts Payable								+Segment1 = [2100]
390	Notes Payable								+Segment1 = [2140]
420	Common Stock								+Segment1 = [3100]
450	Additional Paid in Capital - C...								+Segment1 = [3110]
480	Retained Earnings								+Segment1 = [3000]
510		---							
575	**Total Liabilities / Eq...**	TOT	360:480						
600		DES							
660		===							
690		DES							
750		DES							

Management Reporter Column Definition

	A	B	C	D	E	F
Header 1						
Header 2		TopDrawer	BottomShelf	Consolidation	Consolidated	
Header 3				Entries		
Column Type	DESC	FD	FD	FD	CALC	
Book Code / Attribute Category		ACTUAL	ACTUAL	ACTUAL		
Fiscal Year		2012	2012	2012	2012	
Period		1	1	1	1	
Periods Covered		PERIODIC	PERIODIC	PERIODIC		
Formula					B+C+D	
Column Width	30	13	13	13	14	
Extra Spaces Before Column						
Format / Currency Override						
Print Control	WT	WT	WT	WT	WT	
Column Restrictions						
Reporting Unit						
Currency Source						
Currency Filter						
XBRL Currency						
XBRL Dimension						
Dimension Filter		+Segment...	+Segment...	+Segment...		
Attribute Filter						
Start Date		1	1	1		
End Date		3	3	3		
Justification						

Figure 15: FRx management reporter 1

Management Reporter Acquisition Report

GPAMP
Balance Sheet
Acquisition
As of Tuesday, January 31, 2012

	TopDrawer	BottomShelf	Consolidation Entries	Consolidated
Assets				
Cash-Checking	$36,000	$40,000		$76,000
Accounts Receivable	540,000	180,000		720,000
Inventory	720,000	280,000		1,000,000
Land	400,000	360,000	40,000	800,000
Buildings	840,000	440,000	60,000	1,340,000
Equipment	320,000	100,000		420,000
Investments	1,030,000		(1,030,000)	
Goodwill			10,000	10,000
Total Assets	3,886,000	1,400,000	(920,000)	4,366,000
Liabilities and Equity				
Accounts Payable	(300,000)	(80,000)		(380,000)
Notes Payable	(1,260,000)	(400,000)		(1,660,000)
Common Stock	(240,000)	(240,000)	240,000	(240,000)
Additional Paid in Capital - Common	(1,306,000)			(1,306,000)
Retained Earnings	(780,000)	(680,000)	680,000	(780,000)
Total Liabilities / Equity	(3,886,000)	(1,400,000)	920,000	(4,366,000)

Figure 16: FRx Management Reporter 2

```
    System:     10/21/2012 4:57:38 PM
Page:    1
    User Date:  10/21/2012                            JOURNAL INQUIRY REPORT
                                                          General Ledger
     Journal Entry:        7                  Batch ID:                TOPXXX1

     Transaction Date:     1/31/2012          Reference:               TOPXXX1
     Source Document:      GJ                 Currency ID:             Z-US$
     Audit Trail Code:     GLQJE00000006      Orig Journal:
                                              Orig Audit Trail Code:   GLQJE00000006

     Account                  Description                                  Debit          Credit
    -------------------------------------------------------------------------------------------
                              Distribution Reference
    -------------------------------------------------------------------------------------------
     1100-000-000             Cash-Checking                          $146,000.00           $0.00

     1160-000-000             Accounts Receivable                    $500,000.00           $0.00

     1160-000-000             Accounts Receivable                          $0.00     $200,000.00

     1270-000-000             Investments                                  $0.00      $18,000.00

     1270-000-000             Investments                             $24,000.00           $0.00

     1400-000-000             Equipment                                    $0.00      $16,000.00

     1460-000-000             Buildings                                    $0.00      $32,000.00

     3120-000-000             Common Dividends Declared               $60,000.00           $0.00

     1200-000-000             Inventory                                    $0.00     $232,000.00

     4101-000-000             Revenues                                     $0.00     $500,000.00

     4500-000-000             COGS                                   $232,000.00           $0.00

     5101-000-000             Other Operation Expenses                $60,000.00           $0.00

     7041-000-000             Equity Income from sub                       $0.00      $24,000.00

                                                               -------------------   -----------
             Difference:                 $0.00    Totals:            $1,022,000.00 $1,022,000.00
                                                               ================== =============


    System:     10/21/2012 5:00:34 PM
Page:    1
    User Date:  10/21/2012                            JOURNAL INQUIRY REPORT
                                                          General Ledger
     Journal Entry:        8                  Batch ID:                BOTXXX1

     Transaction Date:     1/31/2012          Reference:               BOTXXX1
     Source Document:      GJ                 Currency ID:             Z-US$
     Audit Trail Code:     GLQJE00000007      Orig Journal:
                                              Orig Audit Trail Code:   GLQJE00000007

     Account                  Description                                  Debit          Credit
    -------------------------------------------------------------------------------------------
                              Distribution Reference
    -------------------------------------------------------------------------------------------
     1100-001-000             Cash                                    $38,000.00           $0.00

     1160-001-000             Accounts Receivable                    $140,000.00           $0.00

     1160-001-000             Accounts Receivable                          $0.00      $56,000.00

     1200-001-000             Inventory                                    $0.00      $90,000.00

     1460-001-000             Building                                     $0.00       $4,000.00
```

1400-001-000	Equipment	$0.00	$6,000.00
4101-001-000	Revenues	$0.00	$140,000.00
4500-001-000	COGS	$90,000.00	$0.00
5101-001-000	Other Operation Expenses	$20,000.00	$0.00
3120-001-000	Dividend	$18,000.00	$0.00
Difference: $0.00	Totals:	$296,000.00	$296,000.00

System: 10/21/2012 5:01:35 PM
Page: 1
User Date: 10/21/2012

JOURNAL INQUIRY REPORT
General Ledger

Journal Entry:	9	Batch ID:	ELIMXXX1
Transaction Date:	1/31/2012	Reference:	ELIMXXX1
Source Document:	GJ	Currency ID:	Z-US$
Audit Trail Code:	GLQJE00000008	Orig Journal:	
		Orig Audit Trail Code:	GLQJE00000008

Account	Description Distribution Reference	Debit	Credit
1270-000-009	Investments	$0.00	$1,036,000.00
1500-000-009	Land	$40,000.00	$0.00
1460-000-009	Buildings	$60,000.00	$0.00
1460-000-009	Buildings	$0.00	$6,000.00
1730-000-009	Goodwill	$10,000.00	$0.00
3100-000-009	Common Stock	$240,000.00	$0.00
3000-000-009	Retained Earnings	$680,000.00	$0.00
7041-000-009	Equity Income BottomShelf	$24,000.00	$0.00
3120-000-009	Dividend	$0.00	$18,000.00
5101-000-009	Other Operation Expenses	$6,000.00	$0.00
Difference: $0.00	Totals:	$1,060,000.00	$1,060,000.00

Figure 17: Journal inquiry report 2

Management Reporter YRXXX1

GPAMP
Balance Sheet
YRXXX1
As of Tuesday, January 31, 2012

	TopDrawer	BottomShelf	Consolidation Entries	Consolidated
Year XXX1				
Income Statement				
Revenues	($500,000)	($140,000)		($640,000)
Cost of Goods Sold	232,000	90,000		322,000
Other Operation Expense	60,000	20,000	6,000	86,000
Equity Income BottomShelf	(24,000)		24,000	
Net Income	(232,000)	(30,000)	30,000	(232,000)
Retained Earnings Beg	(780,000)	(680,000)	680,000	(780,000)
Net Income	(232,000)	(30,000)	30,000	(232,000)
Dividends	60,000	18,000	(18,000)	60,000
Retained Earnings End	(952,000)	(692,000)	692,000	(952,000)
Assets				
Cash-Checking	182,000	68,000		250,000
Accounts Receivable	840,000	264,000		1,104,000
Inventory	488,000	190,000		678,000
Land	400,000	360,000	40,000	800,000
Buildings	808,000	436,000	54,000	1,298,000
Equipment	304,000	94,000		398,000
Investments	1,036,000		(1,036,000)	
Goodwill			10,000	10,000
Total Assets	4,058,000	1,412,000	(932,000)	4,538,000
Liabilities and Equity				
Accounts Payable	(300,000)	(80,000)		(380,000)
Notes Payable	(1,260,000)	(400,000)		(1,660,000)
Common Stock	(240,000)	(240,000)	240,000	(240,000)
Additional Paid in Capital	(1,306,000)			(1,306,000)
Retained Earnings	(952,000)	(692,000)	692,000	(952,000)
Total Liabilities / Equity	(4,058,000)	(1,412,000)	932,000	(4,538,000)

Figure 18: FRx Management Reporter 3

SUMMARY AND CONCLUSIONS

This project shows how to formulate a serial exercise for consolidation accounting utilizing ERP GP systems. The exercise works through consolidations from the initial purchase to progressively more difficult inter-affiliate situations such as sales of depreciable equipment between entities. The ERP GP processes include entity journal entries and Management Reporter reports of consolidations. A major strength of this serial exercise is that students are able to work their way up the learning curve of increasingly difficult problems while being able to keep in perspective the big picture of the entities' financials. From a teaching point of view this project demonstrates how to investigate "real world" ERP in the classroom with consolidation accounting in a manner heretofore unutilized.

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Biographical Notes

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