

Making Slide Shows More Productive and Interactive

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This paper illustrates a new way to organize and present slide shows in order to make them more productive and interactive. This is done by the way in which the slides in the slide show are ordered and by the way in which the contents of each slide are presented. This method of preparing slide shows is robust and can be used in the presentation and discussion of any concept or topic. To demonstrate, the paper takes the well-known financial concept of “current ratio,” and focuses on the method of ordering the slides in the slide show and the method of presenting the contents of each slide.

JEL Classification: A2, G3, M4

1. Introduction

This paper illustrates how slide shows can be made more productive and interactive by the way in which the slides in the slide show are ordered and by the way in which the contents of each slide are presented. This innovative method of preparing slide shows is robust in the sense that it can be used in the presentation and discussion of any concept or topic.

The slide presentation method discussed in this paper is brand new and no one has ever discussed or used this approach before. People use slide shows in their one-way lectures, but this paper, for the first time, shows how this one-way communication can be converted into a two-way interactive discussion. Furthermore, the slide presentation method discussed in this paper is far superior to the “hand-out” method which was traditionally used as a teaching tool. In the hand-out method, the teacher distributed among students in class, copies of the hand-out such that every student received one copy and kept it at hand. The teacher, while looking at his/her hand-out, made reference to specific content on the hand-out, and his/her expectation was that each student, while looking at their hand-outs, would be able to recognize to which specific information on the hand-out the teacher was referring. However, this expectation was seldom met, and always there were students who were wandering to which specific piece of information the teacher was referring. In contrast, the method of slide show discussed in this paper is based on the fact that the slide show is presented on the screen in front of the class and the teacher points to the specific information on the slide, and accordingly, everyone in the class would look at the same piece of information, and therefore, no one will be lost or confused.

To illustrate the new slide show method, this paper shows how the well-known financial concept of “current ratio” can be discussed in a more productive and interactive fashion when it is presented in a slide show where the slides are ordered in a particular way and the contents of each slide are colored in a specific way.

In accomplishing this goal, the paper focuses more on the introduction of the method and allocates less space to the standard explanation of the concept of current ratio, which is

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discussed in most introductory finance textbooks, such as Berk, DeMarzo & Harford (2012), Brealey, Myers & Marcus (2012), Brigham & Ehrhardt (2011), Brigham & Houston (2013), Keown, Martin & Petty (2011), and Ross, Weterfield & Jaffe (2010). In demonstrating the method, the paper makes reference to PowerPoint Slides found at the end of this paper. The author actually uses these PowerPoint slides in his classes when teaching and discussing the concept of current ratio.

The paper is organized as follows. Section 2 reviews the literature and discusses the educational benefits of PowerPoint presentations. Section 3 demonstrates how the method introduced in this paper can be used in the presentation and discussion of the concept of the current ratio. Section 4 is the conclusion.

2. Literature Review

There is widespread belief that PowerPoint presentations positively influence learning. See, for example, Allen (1990), Bartsch & Cobern (2003), Bryant & Hunton (2000), Clark (1983), Cohen & Saslona (1990), Connor & Wong (2004), Hagen *et al.* (1997), Hanna & Remington (1996), Kask (2004), Klemm (2007), Lowry (1999), Mantei (2000), Nouri & Shahid (2005), Nowaczyk, Santos & Patron (1998), Parkinson & Hollamby (2003), Peek (1987), Stone (1999), Susskind (2005), Thompson, Simonson & Hargrave (1992), and Wilmoth & Wybraniec (1998). Mason & Hlynka (1998) state that the use of PowerPoint helps the teacher in structuring content and processing lesson or lecture. Cook (1998) points to another advantage of using PowerPoint: it aids the learners in note-taking and in facilitating their studying. Parks (1999) concludes that students appreciate the lecture outline and graphs on the screen, and that PowerPoint presentation has a positive influence on students. For Harrison (1999), PowerPoint presentations enhance instruction and motivate students to learn.

PowerPoint presentations incorporate imagery, i.e., graphics, animation, and color. Human information processing theories (Moore, Burton & Myers, 1996) explain the function of human memory in gathering, transforming, compacting, elaborating, encoding, retrieving, and using information. There are three major storage structures in human brain: sensory registers, short-term memory, and long-term memory. The sensory system registers stimuli and holds them for a brief period of time, during which they are either recognized or lost. Short-term memory receives information from sensory registers. It has limited capacity, but it holds information longer than the sensory registers through a rehearsal process, i.e., repeatedly recycling the information. Long-term memory receives information from both sensory registers and the short-term memory system. It is the permanent store of human knowledge. Research has shown that attention plays an important role in further processing the information from sensory registers to short- and long-term memory. For instance, if information is left unattended, it quickly gets lost in the sensory registers stage. Reynolds & Baker (1987) report that materials presented on a computer led to increased attention, and increased attention, in turn, led to increased learning.

Human information processing theories can help to explain how PowerPoint imagery (graphics, animations, color, etc.) influence learning. According to Paivio's (1986) dual coding theory of memory and cognition, imagery and verbal systems are two subsystems of human information processing. The dual coding theory suggests that the imagery system processes information from nonverbal objects, such as shapes, pictures, models, animation, color, and sound.

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According to Paivio (1990), information encoding results in a memory trace, and that information can be encoded at a representational, referential, or associative level. Information encoded at the representational level leaves a short-term memory trace. Information encoded at the referential level generates both referentially-related verbal and non-verbal memory traces of a longer-term nature. Information encoded at the associative level results in memory traces that include information about multiple verbal or nonverbal items.

The referential encoding is most closely related to PowerPoint presentations. The imagery nature of the PowerPoint translates into the presentation of the information (e.g., instructional materials) in non-verbal forms that arouses students' imagery systems. This would then contribute to better comprehension, and improved short- and long-term memory. According to Clark and Paivio (1991), in a PowerPoint presentation, topics are presented hierarchically with graphic, color, and animation, students can use a mental image of that outline to perform their educational tasks, such as to study, to retrieve the information on a test, and to organize their thought to write an essay question. Rose (2001) also confirms that the presentation of learning materials in graphical form is beneficial to students.

According to Bryant & Hunton (2000), the degree of the positive influence of PowerPoint presentations on learning depends on a complex set of interactions among learner and medium attributes. This paper introduces a new way of preparing and using PowerPoint presentations in order to further enhance the benefits of such presentations.

3. The Slide Show for Current Ratio

This section illustrates how the method introduced in this paper is used in the presentation and discussion of the concept of the current ratio.

Financial statement analysis involves the comparison of the company's performance with that of other firms in the same industry and the evaluation of trends in the company's financial position over time. Financial ratios are designed to evaluate financial statements. They are standardized numbers to facilitate comparisons in order to highlight weaknesses and strengths of the company under consideration. Financial statement analysis is used by manager, creditors, stockholders, stock analysts, suppliers, customers, employees, and regulators.

The most important ratios are divided into five major categories: liquidity ratios, asset management ratios, debt management ratios, profitability ratios, and market value ratios. Liquidity ratios deal with the company's ability to pay off its short-term liabilities. Two commonly used liquidity ratios are: current ratio and quick, or acid test, ratio. The current ratio (CR) indicates the extent to which claims of short-term creditors are covered by short-term assets. It is calculated as the ratio of current assets (CA) over current liabilities (CL).

In what follows, this section focuses on the method of making the slide show for the presentation and the discussion of current ratio more productive and interactive. For ease of reference, slides are numbered and the slide number appears on the top-right-hand corner of the slide.

Slides number 1, 2, and 3, respectively, provide the income statement, the left-hand side of balance sheet, and the right-hand side of the balance sheet for the company under consideration for the most recent two years. By showing these three slides in this sequence, the students in class will have the necessary information for their reference.

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The interactive discussion can start by the instructor calling on the students to answer the questions the instructor asks. The instructor, while showing Slide number 4, calls on the student by the name of James and asks: What is the formula for current ratio so that we can use it to calculate the current ratio for 2013? James correctly answers: The formula for current ratio is: current assets divided by current liabilities. Then, the instructor shows Slide number 5 that shows the formula for the current ratio and confirms the correct answer provided by James. If James had not provided the correct answer then the instructor would have asked another student to participate in the discussion in order to provide the answer.

Then, the instructor calls on Nancy and asks: In which financial statement do we find the value of current assets? Nancy correctly replies: Balance sheet. Then, the instructor asks: Where on the balance sheet? Again, Nancy correctly responds: Top-left quadrant. Then, the instructor confirms Nancy's response by showing Slide number 6 that provides the bird's-eye view of the balance sheet, and immediately after that the instructor shows Slide number 7 and asks Nancy: What is the value of current assets for the year 2013? Nancy correctly states: \$2,680,112. The instructor confirms Nancy's correct statement by showing Slide number 8 that shows the highlighted value for current assets as \$2,680,112. The instructor also shows Slide number 9 that shows the value of current assets inserted in the formula for current ratio.

It should be noted that when the instructor shows Slide number 7 then all students look at the same financial statement on the screen. Similarly, when Slide number 8 is shown, again, all students look at the same value for current assets on the screen. This is more productive than the traditional distribution of hand-outs in class, where everyone in class looks at their own individually-held hand-outs and in most cases no one is certain if everyone is looking at the same hand-out and at the same item on the appropriate hand-out.

It should also be noted that Slide number 7 and Slide number 8 are identical, except that in Slide number 8 the current assets and its value are represented in bold typeface – on the actual digital slide show which is used in the classroom the current assets and its value can be represented in a different color than the color which is used to represent the rest of the items on the slide that shows the left-hand side of the balance sheet. It is important to note that since Slide number 7 and Slide number 8 are identical, the transition from Slide number 7 to Slide number 8 from the point of view of the students, who are in the classroom and look at the same screen, is experienced as looking at one slide that shows the left-hand side of the balance sheet with all items represented in non-bold typeface (Slide number 7) and then in that same slide (which is really Slide number 8) one item, i.e., the current assets, is represented in bold typeface. It is important to delete the slide number in the actual slide show used in the classroom so that students do not see the transition from one slide (Slide number 7) to the next (Slide number 8).

In continuation of class discussion, the instructor calls on Kevin and asks: On which financial statement do we find the value for current liabilities? Kevin correctly replies: The balance sheet. Then, the instructor asks: In which section of the balance sheet do we find the value for current liabilities? Kevin correctly responds: Top-right quadrant. The instructor then shows Slide number 10 to confirm Kevin's correct response. Then, the instructor shows Slide number 11 and asks Kevin: What is the value for current liabilities? Kevin correctly answers: \$1,444,800. Then, the instructor confirms Kevin's correct answer by showing Slide number 12 that shows the highlighted value for current liabilities as \$1,444,800. Then the instructor shows Slides numbered 13 and 14 that respectively show the value of current liabilities inserted in the denominator of the current ratio and then the calculated value for the current ratio.

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In this way, in a sequence of slides, first the formula for current ratio is represented, secondly the value for current assets is inserted in the numerator of the ratio, thirdly the value for current liabilities is inserted in the denominator, and fourthly the quotient is calculated and the final value for current ratio is represented. These steps are taken one at a time, with the participation of students in each step.

Then the instructor shows Slide number 15 that superimposes the value of the current ratio for an average firm in the industry by that of the company under consideration. Then, the instructor asks Jane: How do we interpret the results? Jane correctly responds: The ability of the company to meet its short-term obligations with short-term assets is below the average firm in the industry.

This example demonstrates that by organizing the order of the slides in the slide show and by organizing the order of contents within each slide one can more productively and interactively discuss and communicate ideas and data in class, and use class time more productively.

4. Conclusion

This paper illustrated an original idea regarding how slide shows can be made more productive and interactive by the way that the slides in the slide show are ordered and by the way that the contents of each slide are presented. The ideas presented in this paper are very timely as slides shows are currently very prevalent and are used in almost all presentations. However, they are not interactive, and therefore, they are not as productive as they can be. This paper shows how slide shows can be made interactive, and therefore, more productive, and hence, the ideas presented in this paper are very timely. The method of preparing slide shows, as described in this paper, has advanced our knowledge of creating and presenting slide shows that are interactive, and therefore, more productive. The implication of this knowledge is that it is very robust, in the sense that it can be used in the presentation and discussion of any concept or topic. As an example, the paper presented the well-known financial concept of "current ratio," by focusing on the method of ordering the slides in the slide show and the method of presenting the contents of each slide. The limitation of the method described in this paper is that its implementation is relatively more time-consuming.

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The Slide Show for Current Ratio

1

Income Statement		
	2013	2012
Sales	7,035,600	5,834,400
COGS	5,728,000	5,728,000
Other expenses	680,000	680,000
Depreciation	116,960	116,960
Tot. op. costs	6,524,960	6,524,960
EBIT	510,640	(690,560)
Interest exp.	88,000	176,000
EBT	422,640	(866,560)
Taxes (40%)	169,056	(346,624)
Net income	253,584	(519,936)

2

Balance Sheet: Assets		
	2013	2012
Cash	85,632	7,282
AR	878,000	632,160
Inventories	1,716,480	1,287,360
Total CA	2,680,112	1,926,802
Gross FA	1,197,160	1,202,950
Less: Deprec.	380,120	263,160
Net FA	817,040	939,790
Total assets	3,497,152	2,866,592

3

Balance Sheet: Liabilities and Equity		
	2013	2012
Accounts payable	436,800	524,160
Notes payable	600,000	720,000
Accruals	408,000	489,600
Total CL	1,444,800	1,733,760
Long-term debt	500,000	1,000,000
Common stock	1,680,936	460,000
Retained earnings	(128,584)	(327,168)
Total equity	1,552,352	132,832
Total L & E	3,497,152	2,866,592

4

Calculate Current Ratio for 2013	

5

Calculate Current Ratio for 2013	
$CR_{13} = \frac{CA}{CL}$	

6

Balance Sheet	
Assets	Liabilities & Equity
Current Assets	Current Liabilities
Fixed Assets	Long-Term Financing
Total Assets	Total Liab. & Equity

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7		
Balance Sheet: Assets		
	2013	2012
Cash	85,632	7,282
AR	878,000	632,160
Inventories	1,716,480	1,287,360
Total CA	2,680,112	1,926,802
Gross FA	1,197,160	1,202,950
Less: Deprec.	380,120	263,160
Net FA	817,040	939,790
Total assets	<u>3,497,152</u>	<u>2,866,592</u>

8		
Balance Sheet: Assets		
	2013	2012
Cash	85,632	7,282
AR	878,000	632,160
Inventories	1,716,480	1,287,360
Total CA	2,680,112	1,926,802
Gross FA	1,197,160	1,202,950
Less: Deprec.	380,120	263,160
Net FA	817,040	939,790
Total assets	<u>3,497,152</u>	<u>2,866,592</u>

9	
Calculate Current Ratio for 2013	
$CR_{13} = \frac{CA}{CL} =$	<u>\$2,680,112</u>

10	
Balance Sheet	
Assets	Liabilities & Equity
Current Assets	Current Liabilities
Fixed Assets	Long-Term Financing
<u>Total Assets</u>	<u>Total Liab. & Equity</u>

11		
Balance Sheet: Liabilities and Equity		
	2013	2012
Accounts payable	436,800	524,160
Notes payable	600,000	720,000
Accruals	408,000	489,600
Total CL	1,444,800	1,733,760
Long-term debt	500,000	1,000,000
Common stock	1,680,936	460,000
Retained earnings	(128,584)	(327,168)
Total equity	1,552,352	132,832
Total L & E	<u>3,497,152</u>	<u>2,866,592</u>

12		
Balance Sheet: Liabilities and Equity		
	2013	2012
Accounts payable	436,800	524,160
Notes payable	600,000	720,000
Accruals	408,000	489,600
Total CL	1,444,800	1,733,760
Long-term debt	500,000	1,000,000
Common stock	1,680,936	460,000
Retained earnings	(128,584)	(327,168)
Total equity	1,552,352	132,832
Total L & E	<u>3,497,152</u>	<u>2,866,592</u>

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