



Are You Ready for Digital Case Studies?

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WHY GO DIGITAL?

Case writing is in many ways storytelling with a didactic purpose. Much has been reported in the popular and academic press about the disruption of printed stories by digital media, not to mention the need to engage students in collaborative learning via storytelling, in order to improve digital literacy (Alexander, 2011: 217). Digital literacy is the ability to find, evaluate, utilize, share, and create content using information technologies and the Internet (Cornell University, 2009). According to Jones-Kavalier and Flanagan (2006), mastering digital literacy includes the ability to read and interpret media (text, sound, images), to reproduce data and images through digital manipulation, and to evaluate and apply new knowledge gained from digital environments.

Digital case defined. A digital case differs from a written case in that it typically uses new multimedia tools—such as Camtasia, iMovie, and Dipity—to create and edit content and capture that content for viewing and listening in class or in online courses via personal computers, tablet computers, and mobile devices. The instructor’s manual for a digital case, however, probably works best in a traditional written format, although some aspects of an instructor’s manual may lend themselves to multimedia, as will be discussed later in this essay.

Reducing cognitive load. A digital case, in contrast to a written case, may also reduce cognitive overload for students. Cognitive overload is the result of excessive demands made on the cognitive processes, in particular, working memory (Roberts 2009). Mayer and Moreno (2003) demonstrate that reducing cognitive load is a central consideration in the design of multimedia instruction. Muller et al. (2008) observe that, “students who watched a video dialogue involving alternative conceptions reported investing greater mental effort and achieved higher posttest scores than students who received a standard lecture-style presentation.” Rummer et al. (2011) find that, “When a sentence has to be recalled immediately after its presentation, there is an advantage of auditory presentation, whereas a visual advantage is found when further verbal information intervenes between sentence presentation and recall. A tentative explanation is that subsequent auditory verbal information is more disruptive than subsequent

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visual information.” Martin (2012) investigates how the use of advanced multimedia software in secondary school English classes eases cognitive overload. Other researchers in the fields of cognitive psychology suggest that a hybrid approach, combining the written word with the audio-visual story, ensures greater accessibility for those students with different learning styles (Chen and Wu, 2015), for students are not especially proficient readers (Alderton, 2010), or for students who are trying to master English as a second—or possibly even third—language (Park and Kim, 2011).

Achieving learning objectives. Digital cases develop students’ capability to make educated judgments about what is discovered online (Gilster, 1997). Digital cases can also enhance students’ technological skills, decision-making skills, and leadership skills (Kawulich, 2011). Another researcher, Meghan Griffin, opines:

The digital case is important not just because it is a preferred medium for today’s students, nor because it is an efficient way to store and retrieve case study material, but because the language of hypertext and the use of digital media have become essential competencies in today’s business environment. The digital case allows users to introduce and take advantage of the very technologies that businesses are using to gain competitive advantage. (Griffin, 2009: 706.)

To summarize, digital cases can help achieve the following learning objectives:

1. Provide novel ways to participate in simulated or vicarious real-life decision-making experiences or tap into and abstract from actual experiences (Kawulich, 2011; Garvin, 2007).
2. Expose students to multiple perspectives and the ambiguities inherent in sifting through information from multiple sources (Griffin, 2009).
3. Develop associative rather than merely syllogistic or linear ways of thinking about the current challenges facing organizations (Griffin, 2009).
4. Foster higher levels of collaboration (e.g., interactivity and engagement) among students and between students and the instructor via co-creation of learning content (Watson and Sutton, 2012).
5. Give students practice in evaluating and reflecting upon the credibility and usefulness of the information they have gathered and communicated via digital media (Gilster, 2007).
6. Build students’ audio-visual and digital technology skills to enhance their job portfolios (Alexander, 2011).

These objectives can be mapped to show how they support a program’s learning outcomes. See **Exhibit 1** for an example of how digital case learning objectives can be linked supportively to the learning outcomes for one undergraduate business administration program.

Exhibit 1: Mapping Program Learning Outcomes to Digital Case Learning Objectives

Outcome/Objective	Digital Cases					
	Provide Experiential Learning	Expose Multiple Perspectives	Develop Associative Thinking	Foster Collaboration and Co-creation of Learning Content	Evaluate/Reflect on Data Credibility and Use	Build Technology Skills for Job Portfolio
Program LOs—BS Business Administration						
LO1—Demonstrate general business problem-solving skills	*	*	*	*	*	*
LO2—Employ ethical reasoning	1	*	*	1	*	0
LO3—Apply global perspectives	1	*	*	*	*	0
LO4—Interpret quantitative applications	*	1	*	1	*	1
LO5—Demonstrate written communication skills	*	1	1	*	*	*
LO6—Show oral communication skills	*	1	1	*	1	*

*Key: 0 = does not directly support this objective; 1 = supports this objective; * = greatly supports this objective.*

Source: Prepared by the authors for this article.

Learning styles of Generations Y and Z. Perhaps one of the best reasons to get started in digital case writing is that our students primarily represent or soon will be entirely composed of the Generation Y (1973–1997, also known as the Millennials) and Generation Z (1998–present)—generations that came of age not only with the Internet already in widespread use but also reliant upon sending and receiving messages in mixed media formats (SMS texts, social media, Instagram, Vine, YouTube, Twitter, SnapChat, etc.). However, even though many students of these generations engage with a variety of media for personal communication that doesn't mean they know how to use it in an educational setting (Koutropoulos, 2011). Members of the Generation Z cohort have been characterized as: (1) creators and curators of their own digital personas, (2) entrepreneurial, and (3) nonlinear with respect to education and information (cf. the slide deck from sparks and honey, 2015). Today's (and tomorrow's) students pursue education differently than prior generations, but still need support in learning to apply new technology in the classroom. Linear, print media approaches have become much less appealing to learners than mixed media that includes images; there is already some evidence that suggests better learning retention outcomes with mixed media (cf. Low and Sweller, 2005; Schnotz et al., 2014). Moreover, digital cases can be of mutual benefit for the student as well as for the corporate, small business, or non-profit case client. Students develop technological, analytical, and retention skills; case clients often see value in a digital case for new employee orientation and training.

We now turn to the subject of fashioning a digital case study, ending with some cautionary notes for authors seeking to get started on digital case projects.

Getting Started

A digital case can be either a substitute for or a supplement to a written case. From our perspective the challenge is to create a digital case that can be used on a stand-alone basis in class or assigned prior to class in a hybrid or fully online learning environment. Most supplemental media materials (e.g., videos) for cases from textbook publishers, etc. have traditionally been prepared only to be shown in class, i.e., to set the stage for a discussion about the written narrative, or heighten certain parts of the ensuing debate over alternatives, or to provide an epilogue. Many existing case video supplements are traditionally from company public relations departments or from permissioned reports from the news media, so instructors have to be vigilant about any biases inherent in how the content in those videos was edited and presented. While it is impossible to remove all authorial bias from a case study, creating your own digital case allows material to be presented objectively and multiple viewpoints to be incorporated.

Choosing a case client. The more or less standard advice for case writers who are seeking a case client has included: drawing from personal experience, contacting a local organization with ties (or with desired ties) to a university, building on a student project (such as small business consulting or student case), approaching an alumnus with an interesting story, or portraying a company or non-profit whose recent challenges have been reported in the popular press. Case authors may wish to prepare a formal agreement letter to allow them to create a case, and others, at some institutions, will need to seek prior approval from their instructional review boards. In any event, a final approval letter to disseminate the case for academic purposes is required. All are well-worn paths to select and receive approval from a client for a digital case to be sure, but a couple of *caveats* need to be noted here.

First, any prospective digital case client has to lend itself well to a multimedia approach, i.e., promise some unusual visual or aural appeal. A written case familiarizes readers with the unfamiliar via verbal description or visual exhibits. A digital case relies on audio-visual cues (e.g., sound-bites, sonic collages, photo tableaux, digital timeline, live action, animation, or infographics) and in some instances, via hyperlinks to other narratives in prose or multimedia formats.

Second, the Aristotelian rules describing the three unities for drama—unity of action (the decision or challenge), unity of place (i.e., the operating entity), and unity of time (a case must be rooted in a particular time period) that apply to written cases can be somewhat relaxed. Digital media can easily depict past actions that are not necessarily time- or place-bound, show a protagonist's development over time, and can provide flashbacks. That is, actions could conceivably take place across seasons or business cycles if the case client and protagonist are willing to be available for a prolonged period of time or can supply archival records (photos, movies, video, audio recordings) that lend themselves readily to digital media.

Similar to written cases, a digital case works best when there is a clear dynamic (some case writers refer to this as urgency) surrounding the decision focus. While each case situation is unique, the most successful digital cases will portray a central protagonist (or protagonists) who face(s) a business or operational challenge and must make a decision among competing alternatives regarding how to move forward. A digital case should alert viewers and listeners to the point of time when a decision needs to be

made, specify what might be the constraints to certain approaches, and provide a clear, balanced portrayal of the person or persons who will make the decision.

Content Creation

Narrative arc. As a guide to preparing a digital case, authors can use a standard case-study format that includes five sections: (1) the strategic crisis or challenge (and its urgency); (2) an industry overview; (3) company background; (4) alternatives; and (5) future directions or options.¹ One of the great advantages to case writers inured to print media and to criticism about verb-tensing issues, is that a digital media case—unless it is performed by actors using scripts to simulate a “live” performance—is automatically set in the past!

The digital case analysis or instructor’s manual should cover the following topics: (1) synopsis of the case (i.e., 30–90-second “teaser” if done using multimedia); (2) background and reflection on the writing of the case; (3) learning objectives and potential contribution of the case to knowledge; (4) theoretical foundation for the case and case analysis; and (5) questions posed in developing the case, rationale for those questions, and suggested answers with evidence and data to support. An epilogue may be in either digital or written format (i.e., as a case supplement or handout), depending upon budget and time available for the project.

Navigational Aids

To summarize and provide case writers with guidance in crafting a digital media case, we have prepared several exhibits for ease of reference. **Exhibit 2**, “Choosing a Focus,” provides a matrix of learning processes, potential case foci, and suggested questions to be addressed in the creation of the digital case.

Exhibit 2: Choosing a Focus for Your Digital Case Project		
Learning Processes	Possible Focus	Key Question(s) to Be Asked and Captured in a Multimedia Format
<i>Description of problems or challenges encountered in . . . (Target subject matter area or discipline)</i>	<ul style="list-style-type: none"> • Customer acquisition and value proposition • Decision-making processes • Data and information • Entrepreneurial processes • Family businesses • Goal-setting • Leadership and execution • Organizational behavior • Social entrepreneurship • Supply chain management • Stakeholders and public interest • Talent acquisition and management • Values, vision, mission, etc. 	<p>What are your goals and how well are you achieving those goals?</p> <p>Are some very ambitious? (i.e., “stretch” goals)</p> <p>How will students be able to <i>visualize</i> these goals?</p>

Exhibit 2: cont.		
<p><i>Evaluation of problems or challenges via understanding of useful theoretical approaches encountered in . . . (Target subject matter area or discipline)</i></p>	<ul style="list-style-type: none"> • Business model • Data integrity and security • Demographic analysis • Environmental scanning • Expectancy theory • Financial ratio analysis • Generic strategy • Industry mapping • Key performance indicators • Leadership styles • Lifestyle vs. high-growth ventures • McKinsey 7s • Positioning / 4 P's • Operations management • Opportunity recognition • Organizational structure • Porter's 5 forces • Resources and capabilities (VRIN) • Risk and uncertainty • Sales forecasting • Stages of team development • SWOT analysis • Triple bottom-line • Valuation techniques, etc. 	<p>What are your options?</p> <p>What are the pros and cons of each option?</p> <p>What <i>criteria</i> would you use to select from among those? (E.g., cost, utility, time, know-how, staff resources, competitive advantage, regulatory compliance, etc.)</p> <p>How will students be able to <i>visualize</i> the criteria and assumptions used to choose among options?</p>
<p><i>Generation of alternative courses of action and application of useful theoretical approaches to defend solutions to challenges encountered in . . . (Target subject matter area or discipline)</i></p>	<ul style="list-style-type: none"> • Activity-based costing • Corporate social responsibility • Culture • Diversity • Diversification • Ethics • Globalization • Innovation • Intergenerational succession • Interventions • Professional development • Social issues management • Sustainability, etc. 	<p>How do you know if an approach or implementation plan will work?</p> <p>How do you plan to manage the probable responses of your various stakeholders?</p> <p>What would a <i>picture</i> of this organization look like the day after the decision is made? In one year? In three-to-five years?</p>
<p><i>Source:</i> Prepared by the authors for this article.</p>		

Exhibit 3, “Some Questions (and Answers) about Digital Cases,” is based on correspondence between the authors and another case writer about the process of crafting a digital case.

Exhibit 3: Some Questions (and Answers) about Digital Cases*

Does a digital case substitute for a written case or can it serve as a supplement to a written case? Or, are both possible?

A digital case can be either a substitute for or a supplement to a written case, but from our perspective the challenge is to create a digital case that can be used on a stand-alone basis. Most supplemental media materials (e.g., videos) for cases from textbook publishers, etc. have traditionally been prepared to show in class to set the stage for the written narrative, or heighten debate, or to provide an epilogue. Many of the case video supplements are traditionally from company PR or from permissioned reports in the news media, so there may well be biases or filters inherent in how the content is presented. A digital case can be used both pre-class and during class.

What tools do I need, and how can I access them?

Consider using either Camtasia or iMovie. Follow these links to explore their respective extensive video tutorial libraries.

<http://www.techsmith.com/tutorial.html>

<http://help.apple.com/imovie/mac/10.0/#movc466e35ea>

Another useful tool is Dipity, a free online timeline creation tool that allows you to embed video, audio and images as well as text. Check Dipity's help section to get you over that initial learning curve. Follow this link for a sample timeline:

<http://www.dipity.com/nicoledlawson/US-Wine-Industry-Evolution/#timeline>

What are the copyright issues if I want to include news stories and interviews and music in my video case?

Most all media content today—music, print, ads, news programs, etc. is copyrighted—and permission must be granted by the owner(s). Creative Commons is a new system, built upon current copyright law, that allows you to legally use “some rights reserved” music, movies, images, and other content—all for free. CC offers free copyright licenses that anyone can use (without a lawyer) to mark their creative work with the freedoms they want it to carry. Here is a link to a number of sites where you can find music to use with your case study projects:

<http://creativecommons.org/legalmusicforvideos>

What comes first—the narrative for the digital case or the still images or live footage? Do we need to collect the images first and then write the narrative for each clip?

At least a bare-bones narrative storyboard needs to be prepared in advance of creating or assembling any multimedia material for a digital case to guide the process, otherwise it's going to be a real mess attempting to put all the pieces together in the editing stage. Naturally, things happen or new information may surface during the process of conducting the field research that may require editing in—or out—later, so your storyboard may need to be altered as well. In most instances, however, the voice-over narrative will be added in after the visual media content has been captured and organized.

What are your thoughts on digitizing a case epilogue?

It makes perfect sense to digitize the epilogue and keep it in a protected place, or even create a link to a private YouTube website. If sending the case for review in a refereed journal, however, authors will need to preserve anonymity, and should work with the journal editor to find a neutral site where those links will still remain accessible to reviewers. Taking the additional time and energy (and having the budget) to do so “after the fact” is typically a lower priority for authors than simply writing a “what happened” document or handout.

**Special thanks to Dr. Janet L. Rovenpor, professor of management and marketing, Manhattan College, for providing some of these questions.*

Source: Prepared via transcripts of e-mail correspondence to the authors of this article.

Exhibit 4, “Getting Started on Creating a Digital Case,” is intended for case authors ready to embark on a digital case project.

Exhibit 4: What Authors Need to Do to Create a Digital Case

Begin with the learning objectives

- Lay out your instructor’s manual *before* you begin—3–5 learning objectives, linkages to applicable theory, and questions for discussion.
- Show how the learning objectives (LOs) match up with your program’s LOs and/or course LOs.
- List the salient evidence and data that need to be collected (and possible sources of those) in order to meet the above objectives.

Outline your primary and secondary research strategies in advance

- Obtain written permissions to conduct field research.
- Decide whether or not you will need to impose organizational, character, and/or data disguises.
- Plan for both structured and un-structured interviews.
- Determine whether or not you will be able to capture content using devices already in hand (such as mobile phones, still or video cameras, voice recorders, computer software) or will need to budget for the rental or purchase of professional equipment. (Note: your university library or media studies department or even case client may already have access to those, so it never hurts to ask.)
- Decide whether or not you plan to use presentation tools such as PowerPoint and Prezi to assemble the content into one viewable file.
- Be aware that “canned” media such as TV ads, YouTube videos, music may require copyright permission, whereas originally created materials do not.
- Work with your business librarian to obtain secondary research and data and to help you decide how to present that data, e.g., using infographics.
- Cite source materials and acknowledgements.
- Create a contingency plan in case the case client or protagonist suddenly becomes unavailable, becomes unrecognizable, or is unwilling to proceed through a possibly lengthy testing and review process.

Make decisions about content before you create it

- Decide whether or not you really need a completely digital case, a hybrid case incorporating both a written and a digital case, or just an audio-visual supplement to a written narrative.
- Decide how you plan to ensure access to content for students with disabilities.
- Decide if you want your case to be accessible on mobile devices, which could require:
 - Use of high-definition video capture technology.
 - Use of high quality audio capture technology.
 - Development of a shorter (e.g., <10 minute) case or a case in multiple short segments better suited for viewing on small mobile devices.
- Prepare a visual storyboard. (Note: PowerPoint is well suited for this task.)
- Prepare a written narrative script, at least in outline form.
- Edit into multiple sections or “chapters” to capture audience attention and foster retention of information. (Hint: consider linking each section to a discussion question in the instructor’s manual.)
- Consider creating a 90-second case abstract or teaser preview.
- Make clear separations between the story and the IM analysis (or provide the IM as a separate, written document.)
- Consider creating a digital “What happened next” epilogue if time and budget permit.

Exhibit 4: cont.

Test your case with students and colleagues before you submit for publication

- Test media in front of live audiences and observe or ask for feedback about:
 - Logic of the narrative arc.
 - Length of the narrative.
 - Understanding of the case decision.
 - Awareness of the alternatives under consideration.
 - Gaps in character development.
 - The need for other stakeholders' voices.
 - Comprehension of data and information, e.g., Too little? Too much? Just right?
 - Clarity of sound and images.
 - Need for subtitles or closed captioning.
 - Reliability of narration, e.g., any biases communicated by the narrator.
 - Appropriateness of any ambient sound or music in between interviews.
- Recapture, re-edit, and test with audiences at least once more before classroom use or submission for publication.

Source: Prepared by the authors for this article.

Publishing a Digital Case

In our experience, working closely with a journal editor to lay the groundwork for the review of a multimedia case *before* submitting it for review turned out to be helpful.² For example, multimedia content must be somewhere for reviewers to access but where the authorship of the content is not obvious (i.e., the video cannot really be on the author's personal YouTube channel, or the author's university website, or in the author's drop box).³ It is thus a good idea to submit to journal editors and reviewers any links to your digital content for "anonymous safekeeping" concurrently with any written content. The rationale for doing so is the same as not including information in an instructors' manual that should be in the case itself, or not verbally supplying information to students in class that they otherwise would not know from reading a written case. That is, authors do not want to be playing "gotcha" with journals, much less readers and viewers, regarding information integral to a case.

Before submitting digital content to a journal for review, however, authors should "pre-test" the content in various delivery formats (e.g., online, in class, at a case writers or other academic conference) with both student and collegial audiences. Ask the audience to provide specific feedback on the quality, comprehensibility, and clarity of that content. Doing so will guide any final edits prior to submitting your work to a journal. Be sure to indicate that your case or at least a portion of your case is digital on the submission form and/or in the case title.

Digital case authors need to work closely with journal editors and reviewers and make it clear to all parties involved: (1) why the selection of digital media (e.g., over print) was deemed vital to accomplishing the objectives for the case, (2) how the digital case can be viewed and heard (e.g., on mobile platforms), particularly for students who have disabilities or accessibility challenges, and (3) to what extent the work makes

a unique contribution to the advancement of pedagogy, application of theory to actual practice, or fills an unfilled niche in the collection of case studies in a particular field.

As there is no “best-in-class” standard for an outstanding digital case, no current guidance on how to evaluate digital media, nor are there provisions during the review stages or on review forms for providing feedback specific to digital cases, authors need to be prepared to follow a reviewer or editor’s directives to re-shoot, re-record, and re-edit existing content and possibly add new reviewer-requested content to their cases. Authors should be forewarned that feedback from reviewers and editors could result in a lengthier time-to-publication cycle. The need to capture new content may pose some problems for case authors since organizations and people often undergo visible changes over time and can become unrecognizable, or at worst no longer be available. If the review process is lengthy, the original media platform chosen to capture and present the case could become incompatible or obsolete, due to rapid advances in software and hardware technology.

ON THE HORIZON

The ability to understand, synthesize, evaluate, and also create digital media is becoming an increasingly important career-building skill for graduates of higher education programs across all disciplines. Digital case studies can help achieve mastery of program learning outcomes and begin to close the loop (Alexander, 2011). Several of our graduates have reported that adding evidence of their ability to review and analyze digital cases to their “job search portfolios” gave them “an edge over other candidates” for a position.⁴ This essay has attempted to open a dialogue about the elements that constitute an outstanding digital media case and instructor’s manual.

But challenges still lie ahead. Preserving company and protagonist anonymity (and occasionally, even author anonymity) may be impossible to achieve if persons or settings are recognizable or if forensic-minded readers employ face or voice recognition software to try and “sleuth” who are the real people involved in the case.⁵ Academic conferences need to provide hands-on sessions about how to create (and use) outstanding digital cases for the classroom. In addition, issues around how to capture, store, and keep digital content accessible for future use will need to be addressed. Case writers have yet to come to a consensus on the criteria for what constitutes a “publishable” digital case, as there is currently little or no guidance for editors and reviewers on how to evaluate digital content. There is no single correct answer to the questions of whether or not the abstract or case synopsis, instructor’s manual, and “epilogue” portions of traditional case research and writing should remain as written documents or eventually evolve to digital media. In any event, we will surely need to prepare department chairs and school deans; retention, tenure, and promotion committees; journal ranking agencies and scholarly citation indexes; as well as school and university accrediting bodies to understand the impact of an outstanding digital case. Textbook and journal publishers as well as other distributors of content for educators will need to create outlets to disseminate digital cases. We are still in a period of beta testing for new learning content involving digital cases—but isn’t that what education is all about?

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NOTES

1. Numerous articles and books on case writing provide variants on this approach. See Kirby et al. (2010: 207), Naumes and Naumes (2012: 129), and Vega (2015: 61–69) for guidance on alternative narrative approaches.
2. Readers interested in learning more about the path to publication of a hybrid digital case, "Frog's Leap Winery in 2011—The Sustainability Agenda" in the *Case Research Journal* 32(1) can contact the corresponding author of this article for more details.
3. Thanks to the *CRJ* Editor for making this suggestion.
4. We invited a former MBA student, who worked on a published digital media case, to comment on this article. She wrote, "I think it is the future of case writing . . . as well as the fact [that] having video skills will help with career skills . . . producing a digital case is really not daunting, nor [is it] out of reach for those who aren't in the video industry."
5. Thanks to an anonymous *CRJ* reviewer for contributing this information from their experiences in developing video supplements for a written case.