

# Online Learning and Case Teaching: Implications in an Informing Systems Framework

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## Abstract

As business schools move more of the learning process online, new challenges arise particularly for case method facilitators, students, and researchers. Based on a review of the recent literature and experiences from the field, this article argues that while the learning process and the informing pathways resulting from case studies or discussion based teaching online can appear quite similar, the form and speed of the informing systems might be quite different and the complexities much greater. This article addresses some of the opportunities, advantages, and challenges, particularly for facilitators and researchers, in bringing the real world to the online discussion based “classroom.”

**Keywords:** Informing Systems, Online Learning, Case Studies, Discussion Based Teaching, Participant Centered Learning, Informing Pathways

## Introduction

Universities throughout the world are investing heavily in online learning with very high expectations. In mid-2012, after the launching of EdX, a joint effort by MIT and Harvard, its President declared, “We really haven’t applied technology – computing technology, Internet technology – to education...With online learning we can truly reinvent education” (Hardesty, 2012, p. 1). Interactive case studies, online courses, Web simulations, and distance learning are now part of the curriculum at most leading business schools. The explosive growth of online education is well documented by many, and, in their latest survey of online education, Allen and Seaman (2011) find that almost two thirds of higher education institutions consider it as “critical to the long term strategy of my institution.” A free online Finance course offered by a well-known business school professor had more than 120,000 students in its first offering (Damodaran, 2012), reflecting a trend at business schools noted by many a few years ago (Caliz, 2004; Schweizer, 2004; Serva & Fuller, 2004). The online teaching explosion has important implications especially for institu-

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tions that rely on the case method (Marcus, Taylor, & Ellis, 2004). Campbell (1988) identifies the qualities that make a task complex, and Gill (2011) elaborates on the case method handling of the different dimensions of complexity such as outcome multiplicity, solution theme multiplicity, conflicting interdependence, and outcome uncertainty. The case method, he concludes, is a complex informing tool that is particularly well

suited for analyzing these complex situations. When we add technology in a distance learning process, the complexity can only increase. Different technologies are used online (Bryant, Kahle, & Schafer, 2005) and multimedia cases need well designed environments (Fitzgerald, Hollingsead, Miller, Koury, Mitchem, & Tsai, 2007). In the case method, technology can foster learning but can also burden both the facilitator and the participants (Lee, Lee, Bonk, & Magjuka, 2008)

As informing systems occurs through a network of relationships, changes in the form and speed of these interactions brought about by technology presents new opportunities and challenges, particularly for case method facilitators. Fitzgerald et al., (2007) conclude that, while the case method is certainly effective, “technology-enhanced case usage in and of itself does not ensure learning without effective instructional methods of implementation.” Institutions that use the case method extensively face important adjustments in the different networks and informing pathways created in this new learning process. Based on personal experience and a review of the literature in different fields, the main objective of this article is to shed some light on this process, raising at times more questions than providing definitive answers. After all, this is what the case method is supposed to stimulate.

On a personal note, after obtaining my Masters at the Sloan School at MIT, at the time one of the most technologically oriented MBAs in the world and later my doctorate at Harvard Business School, a required references in case method teaching, I experienced for many years as a student the advantages and disadvantages of very different learning methodologies. As a professor for almost thirty years at INCAE, a business school fully committed to case method teaching, I have both struggled with the many layers of complexities of the case method and have been rewarded with its often unexpected results.

After seven years of using online tools extensively in regular Finance MBA courses and teaching an online module in the Executive MBA, I have personally experienced online learning with the case method in over 500 class sessions with close to 1500 students. The experience has been at times frustrating, informative, interesting, and enjoyable, often in the same class session. With many hits and misses, this article hopes to help other case method facilitators and researchers to leverage the former and avoid the latter.

### **Online Learning: A Metaphor of Flash Mobs**

In one of his seminal articles in *Informing Science*, Cohen (2009) makes use of a metaphor of lasers and lanterns to define the field. Closer to this topic, May and Short (2003) use a gardening metaphor to illustrate some of the issues in teaching online. Following their example, I will use a metaphor of flash mobs to illustrate some key issues in online learning with the case method compared to lectures. Flash mobs are a fairly recent phenomenon facilitated by the explosive growth of social media and the ubiquitous presence of cell phones. While there are infinite versions of flash mobs, in their most common form, groups of people are instructed to be at a certain place and perform a certain task to the surprise and most often enjoyment of participants and onlookers.

For the purpose of this metaphor I will use just two examples of flash mobs. In one of them, 3,500 people are instructed to download an audio file to their cell phone and play it at a certain time. A voice over the phone gives very concrete instructions on what to carry, where to go, what to do, and when to do it. This particular exercise involved going to a park in Manhattan, holding arms with other fellow “flashers”, dividing into “tribes”, shaking lights, and moving in different directions. Viewed from afar, the spectacle is quite impressive. After a few minutes, the mob dissolves, presumably ready for the next experiment in mob psychology. This video is available at <http://improveverywhere.com/2011/07/25/the-mp3-experiment-eight/>

Another quite different flash mob experience was arranged in a shopping mall cafeteria. A single participant received a phone call, stood up, and started singing a *cappella* version of Handel's Messiah. One by one, close to a 100 singers picked up their cue joining a well structured chorus that had been obviously coordinated by a conductor or group leader. This video can be seen at <http://www.youtube.com/watch?v=SXh7JR9oKVE>

There are at least three important differences between these two flash mobs:

1. The “park mob” had only one way instructions from a leader of the group. The “cafeteria mob” had **ownership** of the chorus after it started, making decisions on when and how to join the chorus.
2. The interactions between the members of the “park mob” were secondary to the effect as long as instructions were followed. The “cafeteria mob” needed careful **interaction among participants** responding to their peers to obtain the desired effect.
3. The role of the leader or organizer of the event in the “park mob” was that of an instructor giving strict directions while in the “cafeteria mob” the role was more that of a **facilitator**, perhaps giving cues when and how to start and suggesting the tempo but relying mostly on the interaction of the participants.

In this metaphor, the “park mob” would be more like an online lecture while the “cafeteria mob” would be more what should happen online using the case method or discussion based teaching. The **ownership** by participants, the **interaction** among them, and the special role of a **facilitator or instructor** are three key aspects of the case method. As Christensen, Garvin, and Sweet (1991, p.10) point out:

*The successful practice of discussion teaching...requires three fundamental shifts. The first is a shift from an autocratic classroom, where the instructor is all powerful, to a more democratic environment where students share in decision making. The second is a shift in the locus of attention: from a concern for the material alone to an equal focus on content, classroom process and the learning climate. The third is a shift in instructional skills: from declarative explanations, rooted in analytical skills and knowledge of subject matter, to questioning, listening and responding, which draw equally on interpersonal skills and a sensitivity to group development”*

Some important caveats: while the “cafeteria mob” is more of a participant centered process, this method is not necessarily superior in all circumstances as far as learning is concerned. The “park mob” instructor might have given a brilliant and informing lecture on astronomy to the participants while an unskilled “cafeteria mob” facilitator with unprepared participants will have produced only meaningless noise. As case teaching is not necessarily superior to lectures in all settings, face-to-face teaching is not always superior to online teaching. It depends on many factors. We are not arguing that you need many students as in a MOOC (massive open online course) to create a different learning environment. The main point of this metaphor is that the success of the learning process online is very different for a lecture that for case method or discussion based teaching. Technology has now created additional informing pathways as students might interact by various means before, after and even during a traditional case discussion: more interactions, more informing pathways, more opportunities for confusion but also for learning.

## **Online Case Method Teaching: An Informing Systems Framework**

Providing the foundation for the transdiscipline of informing science, Cohen (2009) defines the field as one that provide their clients with information in a form, format, and schedule that maximizes its effectiveness. He also categorized a framework with a sender, a communication path-

way, and a receiver or client. Even a system with just one sender and one client can become very complex. To mention just a few complications, multiple senders might inform the same client; multiple pathways might be used; the sender may be a member of systems informing different clients and the client might also be a sender. For examples of additional complexities in real

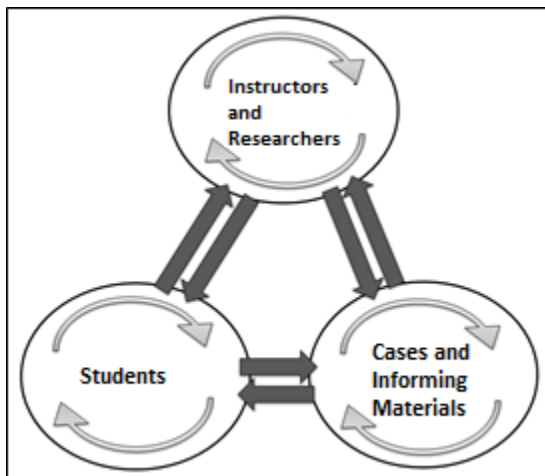


Figure 1. A simplified informing system for online case teaching (adapted from Informing Science, n.d)

world informing systems see Gill and Bhattacharjee (2009). Extending these concepts to the case method taught online, it is easy to see where the sender-pathway-receiver paradigm becomes more complex than the traditional case method.

A simplified informing system for online case teaching would consist of a facilitator (case method instructor), a group of students (dispersed geographically) and a set of informing materials (teaching materials both assigned and unassigned). The resulting system might look like Figure 1 and it is revealing to analyze the possible interactions among the different senders and receivers in online case method teaching and the different pathways that the interactions could take. In the next section, I will suggest alternative protocols to try to address some of the more obvious problems and issues.

## Informing Materials

Lee et al. (2008) point out that excellent cases do not always work online and using an informing system framework, it is easy to see why. In regular case method teaching, the material to be discussed is usually a 10 to 15 page case with several pages of exhibits accompanied perhaps by a technical note. Students are often instructed to stick to the facts in the case but to use their own experience to analyze the material and to present their conclusions and recommendations. As in real life, the information is often incomplete, and at times often confusing and even contradictory. An excellent case, when taught face-to-face, usually allows for different interpretation of the facts, different analyses of the data, and does not have a clear and unique answer. This allows the facilitator to probe, question, and stimulate new and different perspectives on the issues analyzed and generate a vigorous class discussion.

Let's now visualize the use of this same excellent case online. One barrier lies in the different informing pathways of the material. Going back to our "flash mob" metaphor, it would be equivalent to the "park mob" facilitator trying to get the 3,500 participants to sing Handel's Messiah. Even if the communication among the participants were open and fluid (all cell phones interconnected) a distorted feedback mechanism would restrict the success of the experiment. In the informing science language, the informing pathways would become too complex with many possible interactions.

An example might illustrate this point. Gill (2011, p. 53) remarked, "When using a case study for a purpose other than for which it was designed, chances are that it will bomb." The first case I remember using synchronously online was a short case that I wrote where the decision maker was asked to select the appropriate discount rate for an investment project in a developing country. The case presented several alternatives with data from many sources that gave widely different discount rates. In a face-to-face class, this case generated very lively discussions which allowed

the instructor to question the different methods and challenge the participant's conclusions. This case has been one of the most popular Finance cases at our business school.

The online experience teaching the same case synchronously was a total disaster. Students were not clear what numbers were being discussed. Communication delays hindered class participation. As facilitator, it was difficult if not impossible to interpret the student's confusion or interest in the subject. At the same time I was giving control of the microphone to a participant, there was live chat with questions and activity in the online forums on issues discussed previously. Adding to the confusion, some students were downloading information from different sites and questioning the dated information in the case. In desperation, I switched to an improvised online lecture based on the situation. The failure in this situation was not in teaching that particular case online but in making the erroneous assumption that the process would be very similar and not making the necessary adjustments.

Some frustration with online teaching is apparently very common. Crow, Cheek, & Hartman (2003) call their first online experience a "train wreck" citing technological problems, institutional and time constraints, and the lack of student and instructor computer expertise. Other authors have reported serious communication breakdowns (Dede, 1996), software platform limitations (Montelpare & Williams, 2000), poor technical support (Compora, 2003), and high development costs and the need for Faculty training and support (Bryant et al., 2005). Even in a more structured asynchronous arrangement, Gill (2011) notes the challenges in measuring class participation and the need for a reliable technological platform.

Even in synchronous online sessions, it is common to find students using search engines to find information on a company or issue and post their findings at the same time that another student is participating in the session. While this can also happen in face-to-face case teaching, it is easier for an experienced instructor to counteract this issue if he feels that it is counterproductive. Some case teaching schools actually give the facilitator control of access to the Internet to avoid these alternative informing pathways especially during a class discussion. In online sessions this alternative simply does not exist. To summarize the problems of online case teaching in an informing system language, multiple informing pathways can develop beyond the control of the case facilitator; the receivers (participants) become very active senders; the material being discussed mutates while the informing pathways change, and the facilitator as "sender" can become lost in the system.

## **Students**

The second group in this simplified system involves the students or participants who are at the same time receivers and senders of information. In online case teaching, as the previous example illustrates, participants can interact with each other in different and more creative ways than in traditional case discussions. Detailed instructions to students are often necessary (Lee et al., 2008) while Hutchinson (2007) emphasize understanding the needs of learners. Damodaran (2012) stress the discipline critical for both students and instructors in online courses.

While some have found high positive correlation in distance learning between increased interaction and both student achievement and satisfaction (Roblyer & Wienke, 2003), the facilitator in online teaching should be prepared to handle different informing pathways, some quite ingenious. Even though students in my online courses were supposed to be dispersed geographically in more than a dozen countries, I found evidence of students even flying to other countries and renting a house to meet in groups during an online module. Others used Skype for group meetings and reportedly even during class sessions. These interactions are probably more likely when the participants know each other well from previous regular classroom sessions as in this experience but should always be taken into account.

These multiple pathways have been documented by other researchers. Rourke and Anderson (2002) for example, find that “each group supplemented the system that had been assigned to them with additional communication systems in order to complete the project. Each of these systems were used strategically: email was used to share files and arrange meetings, and synchronous voice systems were used to brainstorm and make decisions.” With the widespread availability of social networks, the facilitator must assume they are being used as alternative informing pathways. Rambe and Ng’ambi (2011) report satisfactory student interactions using Facebook in distance learning, and many authors stress the importance of ownership in case discussions (Chen, Shang, & Harris, 2005; Christensen et al., 1991; Webb, Gill, & Poe, 2005). Part of this ownership might consist in opening up these alternative different informing pathways for student interaction instead of trying to block them. As suggested below, the design of the discussion materials might help in this regard.

### **Instructor**

Any case method instructor that has tried to teach online knows what Allen and Seaman (2011) find in numerous surveys but that some academic administrators are still reluctant to accept: it takes much more time to prepare an online version of a course. While the need for faculty training in online teaching is obvious, they found that there is no single approach taken by administrators and the most common training approaches for online faculty are internally run training courses (72 percent) and informal mentoring (58 percent). The different role of the facilitator has been stressed by many (Forman & Rymer, 1999; Gill, 2011). New materials have to be prepared as many traditional cases become useless. The interactions or informing pathways among participants are different and should be accounted for. Many of the tools that a case method facilitator uses are distorted or simply disappear. Sensing the mood of the class stressed by skilled case method teachers or using body language to give feedback and guide the discussion (Christensen et al, 1991) is difficult if not impossible in online teaching. Even the pace of a synchronous discussion depends on the technological platform being used. Technical support might even interrupt a discussion to announce a drop in bandwidth or the connection might be lost altogether for some participants. Even a five second delay seems like an eternity for an instructor used to a rapid fire case discussion. As mentioned before, comments in a synchronous class will be coming to the facilitator from different sources: live audio and video, chats and/or discussion forums, to mention just a few.

In an informing system framework the problems above illustrate the complexity of multiple channels, different senders, different receivers, and multiple informing pathways. Some of these issues cannot be addressed but many can be managed. At least part of the answer lies in the establishment of new protocols for online learning in case or discussion based teaching. Table 1 presents a summary of some of the issues found in the literature.

<b>Perspective</b>	<b>Examples of Evidence in Literature</b>
Informing Materials	Alternative informing pathways (Rourke & Anderson, 2002). Need for adequate technological platform (Crow et al., 2003). New materials have to be prepared (Lee et al., 2008).
Students	Understanding needs of learners (Hutchinson, 2007). Detailed instructions necessary (Lee et al, 2008). Challenges in measuring participation (Gill, 2011). Discipline critical for both sides (Damodaran, 2012)
Instructors	Different role of facilitators (Forman & Rymer, 1999). Need for Faculty training and support (Bryant et al., 2005). More time investment (Allen & Seaman 2011)

## Searching for New Protocols

Gill (2005) recognizes the challenges of teaching cases online by presenting a cleverly designed protocol to maintain the peer-based learning attributes and the ownership of the process central to case method teaching while making important changes in the process. His proposed protocol may be summarized as follows:

- **Asynchronous teaching** was used, “as any synchronous tool would have eliminated the freedom of time benefits derived from discussing a case online”
- The **material** used was a regular case
- **Duration of each class session** was increased from 75 minutes to one week
- 4-5 students were **assigned a topic to discuss** and were given up to 48 hours to open a discussion thread on that topic. Discussion themes based on the case then developed in parallel and not sequentially
- **The intervention of the case facilitator** on an issue will wait at least 24 hours after a post to avoid lecturing that would affect ownership of the process by students
- **Feedback by the instructor would consist of grading** by asking groups of students to post the summaries and place additional comments

The use of this protocol was generally positive and, using its components, I would like to present suggestions for alternative protocols:

### ***Asynchronous vs. Synchronous Case Teaching: Consider Pros and Cons***

This is probably the most important decision in teaching cases online that will affect many others. Gill (2011) discusses the many barriers in synchronous case teaching but is more optimistic on the future of technology to solve at least some of the issues. Even in asynchronous teaching, however, Gill (2011) finds some issues from grading class participation, classifying and archiving posts to the inability of providing nonverbal feedback. Cognitive learning in using asynchronous online case method was reported by Chen et al. (2006) as being lower than in face-to-face case teaching. Others, like Bryant et al. (2005), have found no learning difference in the different media.

While the advantages and disadvantages of online vs. face-to-face teaching might be part of an ongoing debate, the plain truth of the matter, particularly for case method teaching, is that the issues are much more multifaceted. Synchronous case teaching, with the present state of the technology available is even more complex. With current technological platforms, it is often difficult to quickly pass the microphone and video to a participant. If there are multiple channels for discussion like live chats or discussion forums, the informing pathways can become overloaded. In my own experience, discussion based teaching has worked better synchronously when a) there is just one issue at the time being discussed, b) the technology platform is reliable and provides channels for instant feedback, and c) the instructor and students are familiar with the technology. In a recent synchronous discussion of some behavioral finance issues consisting of a set of short cases, I used the technological platform for instant polls. After the often surprising results on the immediately tabulated responses to how a financial problem is framed, I would ask for explanations and implications from the group maintaining the interest in the online discussion. On the other hand, I have found teaching synchronously online a very complex case with various overlapping issues next to impossible. Paraphrasing McLuhan’s (1964) dictum, the message depends on the medium.

### ***Materials: Experiment with Discussion Materials and Exercises***

There are many different options from the traditional case when teaching online and emerging technologies will surely open new alternatives. For example, after the numerous problems in teaching the previously cited case for estimating the cost of capital in emerging countries I had the following assignment for the same purpose:

- The students were first asked to read a chapter on the Capital Asset Pricing Model from a well-known textbook. It is worth noting that most Finance textbooks do not really explain where to obtain or how to estimate the variables in the model.
- I then asked the students to download, from a specific source on the Web, the history of returns for the S&P 500 and for a specific company for the last four years.
- The students downloaded that information to an Excel sheet and were given different alternatives to estimate the beta as a measure of risk for that company. They were asked to compare their estimate with the published estimate from different sources.
- Finally they were requested to estimate the risk free rate, the historical risk premium, and the country risk from suggested sources but were encouraged to find other sources of information for some of the variables.
- With all these variables, the participants were asked to recommend to the company a discount rate for a establishing an operation in a particular country. The results were uploaded in the e-learning platform and the participants were given specific questions to answer to prepare for a synchronous class session.

Adding to the interest in this calculation, the previous month the company selected had announced it was actually analyzing entry into this country, making it a “live case”. While the rules of the course allowed for any student to open a topic in the forums, I noticed that for this exercise few used them but I suspect they communicated by email or by chat (again, different informing pathways). By sheer coincidence, while this exercise was taking place, the company was accused of wrongdoing in another country in Latin America. The resulting eighty minute synchronous discussion on the correct discount rate was one of the richest that I have ever experienced, face-to-face or online. While in a sense this qualifies as a “raw case”, it differs from the complex multimedia cases at some schools that I fear might be very difficult to teach even face-to-face. In an informing system framework, complex multimedia cases online add even more pathways for confusion if they are not handled with extreme care.

This experience also suggests that online discussions might be more apt for introducing current events in a given discussion than in traditional cases. Students already search the Internet for more information on a company but introducing new facts can be confusing in a traditional case discussion as students might have different sources of information. This is the reason many instructors request students to stick to the facts on the case and typically postpone a discussion of the updated information for the closing. In this format, students can be challenged to build and share their own information set on a problem, a skill that could be very useful for their subsequent real life work experience.

### ***Duration: Adapt the Time to the Process***

Here it depends on the subject matter and the scheduling of the course. In our Executive MBA program, modules of ten classes each are taught for each of two courses during an entire week. The regular duration of a class session is 80 minutes. With online teaching, however, there is much more flexibility. I regularly had five class synchronous sessions and up to five asynchronous. For the latter, the assignment might be to view a 30-minute video or even a full movie, post their reactions in the online forums to specific questions relating to other comments by other stu-



dents, and to later upload a summary essay to the online site. Teaching cases online can have a different time frame than regular sessions but sometimes implies full commitment by the facilitator to monitor the students' progress and their comments.

### ***Topics for Discussion: Simplicity and Sequencing Can Pay***

Dividing a case into topics is a technique that many case facilitators have used in online teaching. In just one example, Lampton (2011) uses threaded discussions on selected issues to teach ethics in an accounting course. Before being aware of it, I used a variant of the protocol presented by Gill (2005). While the case to be analyzed had many issues, I chose a few topics in particular, warning the students that there might be controversy in the financial literature on these topics and encouraging them to find the sources with diverging opinions. Topics were to be analyzed and discussed sequentially. One of the topics, for example, consisted of finding out the correct rate for discounting tax shields using Adjusted Present Value. While this is a topic that was hotly debated in the financial literature at the time, it forced the students to think for themselves on various issues that would affect this rate. At the end I circulated a couple of papers discussing this very issue. Too many topics in a case can make the online discussion process much more complex.

### ***Intervention and Feedback by Instructors: Prepare for Many Hurdles***

When the discussion is asynchronous in a forum that is going the wrong way, it is sometimes hard for the instructor not to intervene. I do prefer to wait until somebody identifies the error and if this does not happen, to add additional questions that will hopefully clarify the issue. Intervention becomes a problem as it is not easy to read a class when teaching online. It is much easier to lecture using this medium, but in true case method teaching the ownership of discussion, online or face-to-face, belongs to the students.

In my experience, giving feedback to the students with online teaching can be easier quantitatively but harder qualitatively. On the one hand, with some platforms, the instructor has access to when the material was downloaded or uploaded, how much time the student spent on the site, how often he participated in the forums, how much time he participated in the synchronous sessions as well as the results of quizzes. All these interactions can be measured, weighted, and graded. On the qualitative side, on the other hand, with all the informing pathways in online teaching, the facilitator often cannot tell which student was really responsible for which comment. Even when regular cases are assigned as exams, the instructor might have to use services such as Turnitin.com to reduce plagiarism. Assigning grades in case method teaching is never easy; it is less so with online teaching.

## **Some Guidelines for Case Researchers in Online Courses**

The previous discussion has many implications for case researchers writing materials for use online. The first and most obvious lesson is to take into account the different informing pathways. In a regular case, the case writer can assume that the discussion is going to be restricted to the facts in the case. In face-to-face exchanges, the instructor can sometimes limit access to data that are not in the case at least during the class discussion. In an online discussion, this will be much more difficult. Participants will almost surely access other sources, compare different data, and explore different points of view from other researchers. The various pathways for informing and learning should if possible be leveraged and not constrained.

The second lesson is that cases with clearly defined topics that can be analyzed sequentially or in parallel by different groups are likely to be more successful online. Complex cases with multiple interrelated issues are most likely better handled face-to-face or as online exercises or exams.

Finally, ownership of a case and its subsequent discussion can be much higher when the student participates more thoroughly in constructing the data. In the example cited above, it is different for a participant to read in a case that a beta for an investment is 1.15 than for the participant to have to arrive at a number and be questioned on the assumptions of her calculations. More research on the use of cases online documenting successes and failures will give more specific guidelines.

## Summary and Conclusions

At the beginning of this article it was suggested that as of today we really haven't applied technology to education and that online learning might truly reinvent the field. Many opportunities are certainly opening up at an exponential rate. For case method facilitators, however, the challenges and implications will be at times intimidating:

- Teaching cases online adds a new layer of complexity to an already complex informing system with multiple senders, various informing pathways, and multiple outcome uncertainties and interdependencies
- New discussion materials will have to be developed that are much different than traditional cases now used at business schools
- Hybrid models are already emerging with a combination of face-to-face and online learning, both using cases but under differing premises
- Programs have to move away from the typical, uniform 80 minute class session to time periods that fit the learning objective
- Investment in technology, training and administrative support will be required for cases taught online to become more frequent and successful

While some of these issues can be daunting, as technology advances, the option of not doing anything in the online world will become less attractive for case method facilitators. There is a reason for the exponential growth in online learning. The students will demand it and schools that adapt better and faster will most certainly be a step ahead. The fact that Harvard Business School, that stronghold of the case method, is already offering close to a dozen courses online might be a signal that an evolution, if not revolution, in case method teaching, is already under way.

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## Biography



**Professor Eduardo Luis Montiel** obtained a DBA from Harvard Business School and a Masters of Science from the Sloan School at MIT. He was Dean of INCAE Business School where he still teaches and served as Minister of Finance in his native country, Nicaragua. He also was one of the founders of ProNicaragua, now recognized as one of the leading investment promotion institutions in the world.