SPECIAL SERIES: THE ROLE OF CASE STUDIES IN INFORMING SYSTEMS

The Role of Case Studies in Informing Systems: Introduction to the Special Series

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Abstract

The purpose of this introductory article is to provide an overview of the contributions that make up this Special Series of *Informing Science* on *The Role of Case Studies in Informing Systems*, summarizing the major findings and discussing the key issues. In the first two articles, the founder of a leading consultancy and a veteran Harvard Business School professor offer their unique insights on the multiple dimensions and complexities of the case method, the first highlighting the parallels between business leadership and case teaching as informing systems, and the second revealing the multiple pathways of informing through case research. The next two articles are examples of discussion cases that have opened new informing patterns among researchers, case protagonists, and members of society, having produced impacts that extend to small farmers in Central America and delinquent gangs in Venezuela. The next two articles involve innovations in case development and teaching that open still further informing pathways: the organization of undergraduate students as case writers, interacting with protagonists and leading CEO's in Croatia, and the new informing patterns in case teaching that take place through the use of online technology. In the final article, four business school professors discuss their attempts to measure improvements in critical thinking skills among MBAs that have come about as a result of case method learning.

Keywords: Case Writing, Case Research, Management Education, Informing Systems, Pedagogy

Introduction

This Special Series is dedicated to a particular type of case study that Grandon Gill, Professor of Business Administration now teaching at the University of Southern Florida, has defended and championed in academic circles over the past three decades: the discussion case.

A central motivation for the special series on *The Role of Case Studies in Informing Systems* was to help us better understand the versatility of the discussion case. Of particular interest has been the ability of the discussion case to enable informing flows within and between the worlds of students, researchers, and practice.

Editor: Grandon Gill

Case Method Management

It is appropriate, then, that the first article in this Special Series, "Case Method Management," addresses the role of the discussion case in the education of managers. In this article Harry Strachan, business school professor turned practitioner, argues from experience that the most effective senior managers practice case method teaching in leading and developing their management team. He describes the role of the case method teacher as focusing early on the decision, forcing involvement, challenging assertions, setting the rules of engagement, allowing pauses for reflection, articulating consensus, demanding analytic rigor, but also inspiring, making students and subordinates feel that "he sees gold in me that even I can't see."

Strachan cautions us that not all teachers who use cases are using the case method. A founding partner in Bain & Co. and former INCAE and Harvard Business School professor, he prefers whiteboards to power point presentations, which he believes can subvert the learning goals of the case method by providing students with answers rather than building their analytic muscles in preparation for the heavy lifting they must perform in their jobs after graduation.

Teaching Cases and Research

The practice of case method management, essential for the formation of future business leaders, requires a case for discussion. This may be a "live case," as Strachan describes in consulting situations where the problems and action alternatives are sketched out on whiteboards. The first classes at the Harvard Business School were live cases, presented by Boston businessmen for discussion by students. As the School developed, however, the cases were documented. No one has contributed more to that process than Ray Goldberg, author or supervisor of over a thousand discussion cases. In an interview with Grandon Gill, reproduced in the second article in this Special Series, Goldberg relates how these cases became a critical part only not only of the teaching objectives but of the research objectives of the agribusiness faculty at HBS.

The agribusiness cases developed by Goldberg, often in collaboration with colleagues from other parts of the world, relate to specific commodity systems and specific institutions. By insisting that these cases be both authentic and detailed, he made little distinction between teaching and research. On the contrary, he observed that the discussion of a case may be used as a means of bringing diverse research disciplines to a common understanding of a problem, building trust among members of the agribusiness value chain, and enabling private-public partnerships in research in the food system.

Case: ECOM Coffee

This is precisely what occurred in the ECOM coffee case, described by Bernard Kilian and Roy Zúñiga, in which an innovation (hybrid plants) developed by a Spanish multinational in cooperation with a French public research organization is not adopted by most small Nicaraguan coffee farmers. The problem is studied by a group of MBA students and discussed as a case among the students, the various protagonists, and the faculty supervisors, leading to a common understanding. The reason for the low adoption rates was not that the small coffee growers are irrational but that the new technology, under the terms proposed by ECOM, increased their risk of loss. The assumption of small farmer irrationality among agricultural scientists is well documented (Whyte, 1982).

The common understanding among participants in the case discussion led to a search for alternatives that would satisfy all members of the agribusiness chain. New ideas for incentives and risk sharing were explored, but further analysis led to the conclusion that these, in and of themselves, were insufficient. To implement any solution would require technical assistance to support

changes in cultivation practices, but the research center in Nicaragua lacked a team of extension-ists for this purpose.

All parties benefitted from the informing pathways that were opened by the case research and discussion of the hybrid plant problem. ECOM came to understand that its business was not simply exporting the green coffee beans but managing the change process among their suppliers: the small growers. The French research organization realized that the problem was not just technical. As a result, a new incentive and risk-sharing scheme were accompanied by organizational changes needed for implementation.

The case research and ensuing discussions also opened new informing pathways between ECOM Coffee and the school. ECOM managers who participated in these discussions noted that the analytic process during and after the student presentation was unlike their previous project evaluations, which they attributed to the involvement of business school faculty in the process. This occurred at a critical time for ECOM, when the company had accumulated significant operating losses and was facing a new investment decision. Faculty involvement in this and other decisions has led to on-going cooperation between the company and the school.

Case: Alcatraz

ECOM Coffee is the first of two teaching cases presented in this Special Series. The second, also from the agribusiness sector, is Ron Santa Teresa, a 200-year-old family-owned hacienda in rural Venezuela, which produces both sugar-cane and rum. The problem described in the case, however, is quite different than that which faced ECOM. A pair of delinquents has been caught by company security guards and brought by security chief Jimín Pérez before Alberto Vollmer, young descendant of the founder and recently-named general manager, who must decide whether to turn them over to local police, who are notorious for summary executions of suspected robbers. Instead, he offers to let them work on the hacienda for three months without pay, as punishment, leading to a social innovation as far-reaching as introduction of hybrid plants among small coffee growers. Unexpectedly, dozens of gang members appear at the hacienda gates, seeking work with no compensation. Known as "Alcatraz" after the San Francisco prison, the initiative expands from cane-cutting to community work, with time to learn rugby (the Vollmer family´s favorite sport).

Despite the apparent success of Alberto's social initiative, neither company workers nor his own family liked the idea of bringing gang members onto the hacienda, and the board members questioned the time and energy that he was investing in the project. The teaching case focuses on the dilemma faced by Alberto in trying to reconcile his social innovation with the company mission.

Meanings for Case Protagonists

In their article on "Meanings for Case Protagonists", authors Josefina Bruna-Celli and Rosa Amelia González are primarily concerned, not with the social innovation itself, but with the kind of informing that occurs with the use of the case-method. They explore the features of one such lesser known pathway: the informing that occurs in the direction of a particular practitioner, the case protagonist, in the process of case production and discussion. The lived experience of being chosen as the topic of a case and participating in case discussions, including an international forum at Harvard University, were interpreted by Alberto and Jimín as qualified license for what they were doing, and in the face of critical voices in their work environment they felt reassured and empowered. But the international recognition had a darker side: they reported feelings of guilt about being undeserving and of having been wrongly chosen. The positive feelings (euphoria, reassurance, gratefulness) and the negative ones (anxiety, guilt, unworthiness) combined to enhance their sense of commitment to continue and to improving their innovation. The authors

speculate on the possibility that what is communicated to case protagonists during case production and discussion has gone underexplored in the Informing Sciences because of the IS concern with effectiveness rather than with those situations where information is not necessarily being sent in a purposeful way. They also note that, contrary to Gill's (2011, p. 340) findings, informing pathways between protagonists and students (or with other practitioners) were never fully developed.

Student Case Writers

The difference in the informing pathways between the hybrid coffee plant innovation in Nicaragua and the Alcatraz social innovation in Venezuela may be attributed to the expectations of the protagonists: the ECOM Coffee executives were expecting recommendations to management; the Ron Santa Teresa managers had no such expectations and were pleased to have been selected to participate in an international research project. But another critical difference was the involvement of student teams in the research, by which the informing system is designed to achieve specific educational goals beyond classroom discussion. In the ECOM case, the research was part of a capstone course in "management consulting practice" for second-year MBA´s.

But what if the case research is not part of a structured curriculum and the students are undergraduates? How does this influence the informing flows between case protagonists, students, university faculty, and other practitioners? This is precisely the case of the student case writers in Croatia, described by Mislav Omazić and John Ickis in the fourth article in this Special Series. The project had its beginnings in the spring of 2002, when one of the authors was approached by a pair of top university students and asked to speak to their class about the case method used at the Harvard Business School. This led to the formation of 16 student case writing teams, 13 of which completed their cases. Though none of the students who participated in the case writing initiative ever received academic credit for their efforts, one of the cases was chosen to receive the Rector´s Award for student research, the highest honor given to undergraduate students at the University of Zagreb.

Contacted over ten years later, 23 of the case writers shared their reflections on the significance of the experience, fifteen feeling that it was "very significant" and another seven that it was "of significant value". Many of their testimonials are cited in the article. "Working as a team" and "building analytic skills" were seen as the greatest benefits. Several could point to how the experience had influenced their careers.

The student case writing experience reveals a progression of expanding information flows that may also be seen in the ECOM Coffee and Alcatraz cases, though in different patterns. The case workshops held "without permission" at the University of Zagreb began with a one-way flow from instructors to students that quickly evolved into a reciprocal flow between the two, then expanded to include student-to-student flows as the discussions broadened. This is typical of a case discussion; rarely are practitioners engaged at the outset. In the other two cases, however, they were: in ECOM as clients; in Alcatraz as the subjects of research. A student team presented recommendations to the ECOM executives; no students participated in the Alcatraz research.

Once the student case research began in Croatia, student teams typically engaged in mutual informing among members, with sporadic exchanges with faculty supervisors. Soon afterwards, the students conducted initial interview with a company executive, opening a new informing flow from protagonist to student. As the students gained knowledge of the industry and the company, there was greater reciprocity. The informing flows between faculty and students once again intensified as the cases neared completion. When the cases were presented in the Competitive Business Forum, the informing flows shifted to faculty and practitioners, with final exchanges

between practitioners and the protagonist(s). This was similar to what occurred in the discussions of the Alcatraz case.

What becomes evident from these three cases is that there are opportunities for enriching the informing patterns that typically exist in business schools and other institutions of higher learning. The student case writing project has produced a significant change in the informing patterns among the faculty, students, and practitioners who participated. Student-led case writing further broadens the informing flows to include case protagonists and practitioners in a way that empowers, building self-confidence and team skills. Finally, there is yet another informing pathway that we did not appreciate until resuming contact with the case writers ten years later. As their careers have progressed, they have maintained channels of informing among former team members and, in a few cases, with the executives of companies that were the object of their research.

Teaching Cases Online

Much has changed in the ten years since the student case writing project was completed, and nowhere have there been greater changes than in information technology. There has been, above all, an explosion in on-line courses of all types and nowhere more than in the field of management (Christensen & Eyring, 2011). In his article on "Online Learning and Case Teaching…" Eduardo Montiel addresses the challenges that online platforms create for case method instructors, students, and researchers. Based on a review of the recent literature and experiences from the field, Montiel argues that while the informing pathways that result from leading discussions in the classroom and discussing case studies online can appear quite similar, the form and speed of the informing systems are quite different and the complexities of online teaching are much greater.

Quoting Fitzgerald et al. (2007), he observes 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." Technology, he concludes, can foster learning but can also burden both the facilitator and the participants, but it can also be empowering. If we consider three essential aspects of the case method—the ownership by participants, the interaction among them, and the role of the facilitator—Montiel argues that ownership by and interaction among participants are greatly enhanced by online technology. Using the language of informing systems (Cohen, 2009), multiple informing pathways 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.

To deal with the complexity of online teaching and learning, Montiel offers a protocol that consists of five steps. First, he says, weigh the advantages and disadvantages of asynchronous sessions, synchronous, and a blend, as the choice between these is the most important decision facing the online case facilitator. Second, experiment with discussion materials and exercises that might be more appropriate than traditional cases, where the introduction of new facts from Internet searches may confuse the discussion. Third, adapt the time to the process. Fourth, limit the scope. Too many topics in a case, when dealt with simultaneously rather than sequentially, can make the online discussion process overly complex. Fifth, prepare for many hurdles in evaluating student performance. Online technology makes grading easier quantitatively but harder qualitatively. Assigning grades in case method teaching is never easy; it is less so with online teaching.

The Case Method and Student Learning

Evaluation of student learning by the case method is precisely the topic of the final article in this series, "Are we really having an impact? A comprehensive approach to assessing improvements in critical thinking in an MBA Program." There has been a growing recognition in educational

circles that thinking skills should be taught directly rather than as an indirect consequence of teaching content (Fisher, 2007, p. 1). It has been argued that the case method is an effective vehicle for achieving improvements in critical thinking skills. But how can the impact of case teaching on these skills be measured? This is the question posed by Alfaro, Pérez-Pineda, Quintanilla, and Sanz.

The authors begin by reviewing various definitions of critical thinking, which range from the general such as "a set of higher order metacognitive skills," (Schoenberg, 2007) to those which focus on a particular mode or domain of thinking (Paul, 1990), finally choosing to focus their definition (as does Ennis, 1989) on decision making by relating it to action: it is *reasonable, reflective thinking that is intended on deciding what to do or believe*. This is consistent with one of the major objectives of the MBA program under study: graduates will "…possess an attitude toward action, characterized by the ability to recognize problems and conflicts that occur in organizations, a sense of critical judgment, capability to make firm decisions, and talent to convert their decisions into action programs consistent with the particular situation of their organization (INCAE, 2010).

The authors then review the literature on measuring the development of critical thinking skills in business students and they find that with one exception (a study of online forums by Williams and Lhama, 2009), these studies focus on just one particular subject area such as accounting (McLellan, 2012), financial management (Pomonis & Siriopoulos, 2009), and risk management (Garvey & Buckley, 2011). Furthermore, all authors except Pomonis and Siriopoulos (2009) used only one method to assess critical thinking. This article, in contrast, looks at the development of critical skills not within the realm of one specific subject area, but as part of the achievements of a two year full time MBA program, and it examines the multiple approaches used to evaluate student learning in the program.

Three approaches are discussed by the authors: the application of standardized tests; the evaluation of pre- and post- written case analyses; and the use of an embedded assessment instrument in the capstone "management consulting practice" experience. In the first approach, the authors chose standardized tests that measure two dimensions of critical thinking: the skills and the disposition to use them (Facione, 1990). Test results showed a dramatic increase in inference and induction, two skills closely associated with case method teaching.

Had this been the only approach to assessing critical thinking skills, the authors might have concluded that there was no need for any action to be taken. They were surprised, however, when the results of a pre- post- written case analysis revealed a decrease over the course of the two-year MBA in critical thinking skills associated with defining managerial problems and identifying alternative solutions. Student analyses on the pre-tests were more structured and coherent than on the post-tests. Further examination revealed that the instructions on the pre-test contained highly structured guidelines while the instructions for post-test contained only an open-ended question. This, plus the greater complexity of the case used in the post-test, could explain at least a part of the results. But an important finding emerged from this second approach to measuring critical thinking: students learn early on in the Management Decisions course to define problems and identify alternatives, but these skills are not sufficiently reinforces in other courses, so that graduating students may take these steps in the decision process for granted and rush to make recommendations. As a consequence, a second Management Decision module was added toward the end of the first year.

The third approach, an assessment instrument embedded in the MCP (management consulting practice) experience, showed that second/year students performed relatively well on the skills that had declined in the pre- post- written case analysis. During the MCP experience, explain the authors, students are seldom presented with a stated problem or a set of pre-defined alternatives and

must develop their own deep understanding of the problem and the consequences of each plausible alternative if they are to satisfy the client.

Results of the pre- post- written case analyses suggested that students were not transferring critical thinking skills to unstructured situations outside the realm of the managerial decisions course. An alternative explanation, suggested by the authors and supported by Kahneman (2011), is that critical thinking is a set of higher order thinking skills and that students will exercise only those that the situation specifically calls for, due either to an explicit set of rules (as provided in the Management Decision course) or to a specific set of incentives as offered by the MCP experience. When these rules are absent, students trust their more basic intuitive thinking processes when thrust in a live case situation.

The use of multiple approaches to learning assessment enabled the authors to not only identify improvements and obstacles to the development of critical thinking skills among MBA students but also to take action in overcoming those obstacles. Their discovery that students were not applying the analytic framework outside the Managerial Decisions course opened a new informing pathway between faculty teaching the MD course and their colleagues teaching in the functional areas of management. Similarly, new informing patterns were developed MCP faculty advisors and the MD faculty.

What becomes clear from this experience is that the complexity of the critical thinking process requires the use of more than one appraisal instrument if the objective is to improve these skills among MBA students. The dramatic improvements in inductive and inferential skills among our students masked weaknesses in problem framing and definition, revealed by the pre- post- written case analyses. The greater skills in problem identification, demonstrated by students in the MCP capstone experience, suggest that context influences the application of conceptual frameworks. When confronting a real world situation, students could not assume away the problem and had to draw upon their inductive and inferential skills to define it.

A final lesson of this article is that whatever assessment methods are used, the results of the assessment must be broadly shared through new informing patterns among different groups of faculty (and with other groups), as it is this informing process that leads to program improvements that increase critical thinking skills.

Conclusions

It is adventurous and perhaps even reckless to draw conclusions from a single experience, a set of experiences, or a collection of cases. The following, therefore, are tentative conclusions that are advance as propositions, based on data presented in the cases and articles in this Special Series.

The first such conclusion is that the case method is an effective approach for understanding and resolving management problems. The experiences of Harry Strachan, founding partner of a leading management consulting firm and former visiting Harvard Business School professor, presented in the first article on "Case Method Management," lend credence to this conclusion.

Second, the development of teaching cases is not simply storytelling, but a legitimate form of research. This thesis, advanced in the Gill interview with Professor Ray Goldberg, who has perhaps written and supervised more teaching cases than any other living person, provides convincing evidence of this assertion. This conclusion is illustrated in the "ECOM Coffee" case, presented in the article by Kilian and Zúniga, where the discussion of a management problem – lack of demand among small farmers for hybrid coffee plants – is resolved through discussion among researchers, students, and protagonists. In the course of this discussion, the protagonists become aware that selling technological change to the risk-averse farmers is an essential part of their business.

A third conclusion is that the discussion of teaching cases may lead to the spread of social inventions, an idea proposed by Whyte (1982) and reaffirmed in the case of the "Alcatraz" project in a Venezuelan sugar mill, described in the article by Bruni-Celli and Gonzalez. As the transformation of delinquents in productive farm workers becomes known in international gatherings, the case protagonists become aware of their responsibility in the diffusion of the Alcatraz model.

Fourth, the development of teaching cases is, in itself, a highly educational experience for students of management, even at the undergraduate level, as demonstrated in the article on "Student Casewriting" by Ickis and Omazic. Having learned to discuss cases, the students were unsatisfied, wanting to create their own cases, and this has had a profound impact on the careers of many in the original case-writing groups over the past ten years.

Fifth, the case method is adaptable to technological innovation such as the spread of online learning, but as emphasized by Eduardo Montiel in the article entitled "Online Learning and Case Teaching: Implications in an Informing Systems Framework," the adaptations required are multiple and the learning curve can be steepened through the diffusion of protocols and the exchange of appropriate materials. Complex cases with multiple, interrelated issues should be replaced by those with clearly-defined topics that can be discussed sequentially.

Sixth, use of the case method does a positive have impact on student learning, particularly in the development of critical thinking skills, as substantiated in the seventh and final article on "Are we really having an impact?" by Alfaro, Perez-Pineda, Quintanilla, and Sanz. To demonstrate improvement in these skills, they argue that it is necessary to employ several different measures.

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Biography

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