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ABSTRACT
                This paper provides an introduction to the use of site
visits as a form of live case study in IS (Information Systems) courses at
the University of Canterbury (New Zealand). Site visits are relatively easy
to organize and can effectively complement other teaching methods.
Importantly, students like the reality of site visits and the variety they
bring to a course. Site visits can be a meaningful encounter for students
that encourages active learning. They provide rich opportunities for students
to explore theory and practice. For students with relatively little business
experience, site visits can expose them to the complexity of organizational
life. Site visits can also help educators to keep up to date with current
practices and problems. Topics covered include the site selection process,
active learning, benefits of site visits, the unpredictable nature of site
visits, differences between site visits and written case studies, how to
encourage learning on site visits, and student feedback. A draft e-mail to an
IS manager, an extract from the course outline on the format of site visits,
group site visit presentation guidelines from the course outline, and tables
presenting data on site visits versus case studies and text/readings are
appended. (MES)

# SITE VISITS AS A TEACHING METHOD IN INFORMATION SYSTEMS COURSES

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*This paper provides a substantial introduction to the use of site visits as a form of live case study on IS courses. Site visits are relatively easy to organise and can effectively complement other teaching methods. Importantly, students like the reality of site visits and the variety they bring to a course. Site visits can be a meaningful encounter for students that encourages active learning. They provide rich opportunities for students to explore theory and practice. For students with relatively little business experience, site visits can expose them to the complexity of organisational life. Site visits can also help educators to keep up to date with current practices and problems.*

## INTRODUCTION

Many IS educators use written case studies within their teaching and Huff et al make a strong argument for using case studies. At Canterbury, we use written case studies in our courses, but we also use live case studies in the form of site visits. These site visits complement and reinforce the learning gained through lectures, readings and written case studies. Student feedback indicates that site visits have been a most valuable part of one of our courses, so we recommend them to IS educators.

What is a site visit? A site visit is type of field trip, which has been a popular teaching method within the sciences for many years (Gold & Haigh, 1992). A typical site visit is a one-off visit for the whole class to a local organisation. Its most important elements are presentations from senior management and opportunities for open discussion about how the organisation manages their IS. In addition, many site visits include a demonstration of a strategic information system and, particularly for manufacturers, a short tour of part of the site so that the students can gain a better appreciation of their business, products and processes. The presentations by senior managers typically discuss major products/services, the industry, business strategy, as well as the use and management of IS. Most site visits would take about 3 hours and finish with a minimum of 30 minutes for open discussion.

We include site visits as part of our undergraduate course[1]

titled "management of information systems and technology". The course is taken mainly by students undertaking a three year Bachelor of Commerce degree, although not all the students taking the course intend to become IS professionals. The focus of the course is on organisational issues, including: IT and competitive advantage, IT strategy, IS planning, and change management. Site visits are well suited to this course and we are sure this approach could be adopted and adapted for other IS courses, including systems development/analysis and design.

**The Site Selection Process**

Typically we approach a firm's IS manager at least two months before we would like to visit them. Many want time to think about it but some accept or decline straight away, and others request to be considered for later in the year or for the following year. Most appreciate an email or letter to outline the purpose of the visit, etc. (see appendix 1).

We try to make sure that we visit a range of firms each year. For example, we try to ensure that we visit at least one firm that is in the IT industry, eg, a software house; at least one firm that is in the not-for-profit sector, eg, local government or hospital; at least one service firm, eg, insurance or consulting; and at least one manufacturer. We include up to 6 site visits during our 25 week course. The site visits are in addition to the scheduled weekly class time of two hours per week. With 35-40 students in

the course, some visits are limited to 20 students, often because the organisation does not have a large meeting room. Occasionally the 'visit' has been split into two sessions; the first as an in-class talk to the whole class by, eg, the IS manager, followed by a visit to the firm. We schedule the visits throughout the year; for example, one in term 1, one or two in term 2, two or three in term 3, and one or two in the final term.

We have a local population of 300,000 people with a reasonable manufacturing presence, but with no single dominant employer. There are very few local organisations with over 1000 employees. Most local organisations are small, and many of these are too small and not suited to host a large group of students. In addition, many national firms may have a local branch but with no significant IS presence. Despite these limitations, we have found that there are more than enough local organisations for worthwhile visits, but we tend to re-visit the larger organisations on a 3 or 4 year cycle.

There are very few IS departments in the region with as many as 30 staff. Therefore we often include firms where no IS development takes place, and as few as 2 or 3 people may have any formal IS education. This is not a problem for us as the focus of the course is IS *management* rather than IS *development*.

## Active Learning

ISWorld's pages on Teaching Information Systems with Active Learning Techniques[2], edited by Nelson, refers to many papers that provide support for using active learning approaches with IS students. For example, the pages include a quote from Zelda Gamson[3] on 'active learning':

> The evidence is very strong that these social forms of learning are very effective in increasing retention, encouraging much more complex thinking about complex issues than we have come to expect from our students, and encouraging acceptance of different ways of learning on the part of students and faculty. The motivation for learning goes up [when these approaches are used]. [However] these kinds of approaches don't happen automatically; in fact, they need to be very carefully designed. It isn't just a matter of getting people together and having them discuss (NTLF, May 1996, 5:4).

There are others whose arguments support the use of active learning to enrich a student's educational experience. For example, Boud et al (1993) argue that "experience is the foundation of, and the stimulus for,

learning" (p. 8). They add, "while we commonly assume that teaching leads to learning, it is the experiences which teaching helps create that prompt learning, not primarily the acts of the teacher" (p. 9).

## Why Use Site Visits?

The desire to encourage active learning is in itself a significant reason for us to continue to use site visits. However, site visits can be viewed as live case studies, and have some similar benefits to case studies, as outlined by Huff et al:

> cases can help students develop their ability to deal with complex, ambiguous situations;
>
> cases can motivate students to take greater responsibility for learning;
>
> cases can help students integrate learning across management disciplines.

In addition, site visits provide students with insights into the business world which would be difficult to gain in any other way. Importantly, students can gain insights into organisational strategy, culture, structure, and personalities. This is not only important for their formal education but also when making career choices. Students also gain insights into organisational complexity, thus helping them recognise that the task of managing, including managing IS resources, is not simple. Site visits can also help to illustrate IS theory.

## The Unpredictable Nature of Site Visits

Compared with written case studies, the teacher has less control over the content of a site visit as it is difficult to predict what will be discussed and seen on a site visit, although it is possible to request some content. Occasionally it is possible to know a sufficient amount about the organisation's IS to be able to schedule a visit at an appropriate point in the course. For example, last year we scheduled a visit to a local manufacturer who had recently outsourced their IS operations; we made sure that the visit was just before we were to discuss the outsourcing chapter in the text.

Often we have to approach an organisation that we know little about. Despite this uncertainty, such visits can work well, or often better than expected. Memorable visits include a brewery, where they outlined their IS planning process just one week after we had been discussing IS planning in class[4]. A recent trip to our local city council

outlined management practices such as charging for IS services, planning, and cross functional teams. That visit occurred the day before the scheduled class meeting for many of the same issues.

Typically, the timing of site visits with respect to lecture topics is not an important issue as a visit usually raises a number of very different issues that span the course. By the end of the course we use the visits to identify links between theory and practice. This is very helpful as it encourages us to look at the whole course, make connections between topics, and revisit significant topics.

### Important Differences Between Site Visits and Written Case Studies

Site visits can be viewed as live case studies where you meet some of the participants and gain their view of their world. However, unlike many written case studies, a site visit can not guarantee that students will be presented with a problem situation that requires a decision. Thus a site visit is unlikely to offer a situation where a full case analysis is required, including a set of alternatives which are then evaluated. This is one reason why we include both written case studies and site visits in our course. One must bear in mind that a site visit presents only a partial view of an organisation as students hear from only a very small number of staff; a written case can present the views of many.

Another significant difference between site visits and written case studies is that site visits require very little prior preparation by students[5]. This can ease the burden for students who are not sufficiently motivated to fully prepare for a regular diet of case studies. We do not require attendance[6] at site visits and currently the course assessment is based directly on the site visits.

Another advantage that written case studies have over site visits is that cases can more easily support a virtual classroom. If a course is offered by distance education then it would be most difficult for everyone to gain the same experience from a site visit. Although students can be encouraged to collect organisational data as part of a project or an assignment, an IS educator can gain access to levels of management which could be more difficult for a student to obtain.

### How to Encourage Learning on Site Visits

Like any in-class situation, a site visit does not guarantee that student learning will take place; because of this we have used a range of approaches to encourage students to reflect on and analyse the organisation. Our current practice is aimed at encouraging students to make notes while on a visit and to analyse each firm soon after the visit. We then devote up to 20 minutes of the next formal class to discuss significant topics. This discussion is aimed at sharing insights and is centred around:

* major decisions or events. Students are encouraged to raise other topics, for example, attitudes, culture, and roles.

* how various theory applies to the organisation.

More formally and towards the end of the course we schedule 30/40 minutes per organisation for a group presentation and discussion. This encourages students to reflect on the organisation in relation to the whole course. We encourage students to focus on a significant topic where the site visit can add to our understanding. (For further details see Appendix 3.) This is a particularly appropriate end of course activity as the presentations tend to focus on a range of topics, and thus provide a unique overview of the course prior to the final examination.

In the past we have also sought individual and group reports to encourage student learning; such reports are no longer required. This change was not for pedagogical reasons but primarily to keep the total number of assessed items for the course to three. Additionally, it is unclear whether such forced reflection does in fact increase student learning (Boud & Walker, 1993).

### Student Feedback

Student feedback indicates that site visits are a highly valued part of the course. We have received encouraging student feedback about site visits for many years and we report below some of last year's feedback from the 27 students who attended the final session for the 1997 course and completed the course evaluation questionnaire.

The questionnaire included an open ended question, "what are the best aspects of this course"? A total of 16 students responded to this question. Of these, 10 students mentioned "site visits", often as part of their first comment, and for some it was their only comment. Responses included, "site visits", "site visits very valuable", "site visits gave real life examples".

Another part of the course evaluation questionnaire asks for a set of 11 statements to be rated on a five point Lickert scale, from strongly disagree to strongly agree. Among these are three statements that refer to some of the

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different teaching methods used on the course: site visits, case studies and the text/readings. The statements were:

- the site visits were a valuable aid to my learning.

- the case studies were helpful in clarifying the material presented in lectures.

- the text and/or required reading assisted my learning.

Although the questionnaire and its statements were not designed to test the relative effectiveness of the three different teaching methods, the data does provide some basis for comparison. The descriptive statistics for the student ratings of these three statements is given in the top part of Table 1. Site visits had the highest mean (3.93 v's 3.59 and 3.07), ie, students agreed that site visits were valuable. Using one way ANOVA, the scores can be considered different (Table 1). Paired t-tests show that the site visit scores were statistically higher at the 5% level compared with written case studies (Appendix 4) and with the text/readings (Appendix 5). This analysis supports the general conclusion that students view the site visits as a most important part of the course.

Students like site visits for many reasons. For example, students appreciate their exposure to the realities of organisational life. Past comments from students include: "the field visits were an excellent chance for us to see it as it is in the REAL world of IST and business"; "field

visits give a great practical view. I find these very interesting"; "field visits - practical experience of what happens in the 'real world' ".

Students also appreciate the role that site visits can play in their learning, as evidenced by these comments from past students: "practical site visits and/or illustrations balanced the theory quite well"; "the case studies & site visits help to reinforce the theory".

Comments like these indicate that site visits may suit students' learning preferences. Oliver & Morrison (1991) argue that many Commerce students prefer participatory learning; they want to discuss things and have opportunities to express their views. Site visits enable such opportunities as each student can form their own interpretation of events, which they can discuss at the time and in subsequent classes.

**Benefits: The Educator's View**

From a teacher's perspective the site visits are a valuable part of the course as they complement other teaching methods in many ways. For example, they add variety to the teaching methods, get us out of the classroom, and provide some very local content.

Most importantly, site visits are nearly always interesting and often memorable. They tend to provide examples that are still relevant long after the visit. This shared

TABLE 1
ANOVA COMPARING THE THREE SOURCES OF LEARNING

Single Factor Summary

| Groups | Count | Sum | Average | Variance |
|---|---|---|---|---|
| visits | 27 | 106 | 3.926 | 0.764 |
| cases | 27 | 97 | 3.593 | 0.558 |
| text | 27 | 83 | 3.074 | 0.609 |

| Source of Variation | SS | df | MS | F | P-value | F crit |
|---|---|---|---|---|---|---|
| Between Groups | 9.950617 | 2 | 4.975 | 7.727 | 0.000868 | 3.113797 |
| Within Groups | 50.22222 | 78 | 0.643 | | | |
| Total | 60.17284 | 80 | | | | |

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experience also helps build a good student/staff relationship. Although quite a few colleagues use occasional guest lecturers from industry, few use site visits so the visits are a unique feature of our course.

There are also some direct benefits for teaching staff. For example, site visits can contribute to personal development, by helping staff keep up to date with current practice and problems. Often, data gathered on a site visit can be used as an illustration in many different courses. In addition, a visit can help build relationships with the business community, including potential sites for research.

## CONCLUSIONS

Feedback from students over many years has encouraged us to continue to include site visits as part of our third year paper on the management of information systems and technology. Arranging visits is relatively easy and well worth the investment of time. We recommend this practice to other IS educators as a way of adding variety and reality to their courses. Although we have only included site visits within our undergraduate course titled "management of information systems and technology", we are sure visits could be used with other IS courses.

## ENDNOTES

1.  http://www.afis.canterbury.ac.nz/outlines/co30398.htm

2.  http://academics.smcvt.edu/mnelson/isworld/ACTIVE-L.HTM#implement

3.  Professor of education and director of the New England Research Center for Higher Education at the University of Massachusetts in Boston.

4.  the free beer was also a first for the course.

5.  However, Boud & Walker (1992) argue that "greater use can be made of learning events if learners prepare first" (p. 165).

6.  An important contextual factor is that many stage 3 courses at our University include three hours of class contact per week; typically two hours of lectures plus a tutorial or laboratory. Our course meets for two hours each week, plus the occasional site visit. Thus the course's total number of hours (25*2 plus 5*3) is less than for many other courses (25*3), so importantly, the site visits are part of the total, not an extra load.

## REFERENCES

Boud, D., Cohen, R. & Walker, D. (Eds.) (1993), Using Experience for Learning, Society for research into higher education and Open University Press.

Boud, D. & Walker, (1992), D. In the Midst of Experience: Developing a Model to Aid Learners and Facilitators, Ch. 16, of Mulligan, J. & Griffin, C. (Eds.) Empowerment through Experiential Learning, Kogan Page, 163-169.

Boud, D. & Walker, (1993), D. Barriers to Reflection on Experience, Ch. 5, of Boud, D., Cohen, R. & Walker, D. (Eds.) Using Experience for Learning, Society for research into higher education and Open University Press, 73-86.

Gold, J.R. & Haigh, M.J., (1992), Over the hills and far away: retaining field study experience despite larger classes, Ch. 8, Teaching Large Classes in Higher Education, Gibbs, G & Jenkins, A. (Eds.), Kogan Page, 117-129.

Huff, S.L., Jelassi, T., Cash, J. & Pifko, Teaching Information Systems Management with Cases, http://ashley.ivey.uwo.ca/~isworld/article.html

Nelson, M.R., (section Editor) Teaching Information Systems With Active Learning Techniques, http://alpha1 . albany. edu/~mn9612/isworld/active-l.htm

Oliver, P. & Morrison, T, (1991), Commerce Students' Preferences in Teaching and Learning, Higher Education Research and Development, 10:2, 151-164.

Silberman, M. (1996), Active Learning: 101 Strategies to Teach Any Subject, Allyn & Bacon.

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## APPENDIX 1
## A DRAFT EMAIL TO AN IS MANAGER
### (which would follow a phone contact)

Thanks for considering us for a visit.

some background info. most students are in the final year of a Commerce degree. many will soon seek employment as IST specialists, and others with IST as support, eg, as accountants.

the focus of the course is on organisational issues associated with information systems and technology. we are keen to understand how IT fits into the goals and values of the whole organisation. so we are not just interested in the IT department's perspective. thus it often helps if various parts of the organisation are involved in a site visit in some way. the objective of the site visit is to expose students to real world managerial problems and issues, and thus help students recognise the complexity of making IT work effectively for an organisation.

by September the course will have covered many topics relating to the management of IST, including IT and competitive advantage, IT planning, systems development, build v's buy, managing end user computing, and electronic commerce. thus by September the students should be well able to understand your experiences, practices and problems.

I would much appreciate you considering a site visit for the morning of 16 September, preferably from 10-12noon. and to involve not just IT staff but also at least one user manager. a demonstration of a particularly significant system can help, maybe combined with a short tour.

I look forward to hearing from you and thanks again for considering us for a visit.

best wishes

## APPENDIX 2
## EXTRACT 1 FROM THE COURSE OUTLINE

Format of Site Visits

*A.  Advance Information*

A Site Visit is preceded by the provision of a brief description of the organisation concerned, and its Information Systems & Technology (IST) environment. This may include:
- Background information from the annual report or equivalent.
- An organisation chart showing how the IST function fits into the organisation.
- Main applications at present
- Main projects currently proceeding
- Hardware and software being used.

Lastly, the advance information should include the programme for the Visit, address, a sketch showing how to get there, contact names and job titles. Ideally, one copy per student, handed out the week before the visit.

*B.  Programme*

The programme for a Site Visit ideally includes the following:
1. A talk by the IST Director on the challenges, achievements, and plans of the IST function. (About 30 mins).
2. A middle-management client view of information systems and their use within the organisation. (About 30 mins).
3. A senior management view of information systems, and plans for its future use. (About 30 minutes).
4. A Question & Answer session. (About 30 mins).
5. Demonstration of a business application or decision support system. (Time permitting).

*C.  Areas of Special Interest*

Examples of subjects that might be in the programme are:
- Overall planning for Information Systems and Technology,
- Use of the computer in the organisation's competitive environment,
- The process of selecting systems projects and investments,
- The human side of systems,
- The systems methodology/lifecycle,
- Project management,

- Productivity tools,
- Data security & integrity,
- Network management,
- High level systems such as executive/decision support,
- The use of systems in reducing cash and inventory needs, improving customer service, and enhancing competitive advantage.

### D. Analysis
Students are expected to ask questions during the Visit and take notes. The visits provide another opportunity for students to develop their organisational analysis skills.

### E. Companies Visited
Some of the companies Visited in recent years include Fletcher Steel, LWR Industries, AMI Insurance, Mount Cook Group, Foodstuffs S.I., Milburn NZ, PDL, Gough Gough and Hamer, Trust Bank, Tait Electronics, MM Cables, South Island Dairy Farmers, Canterbury Area Health Board, Telecom South, Lyttelton Port Company, Cardinal Network, Contec Systems, Fortex, Canterbury Regional Council, and Christchurch City Council.

## APPENDIX 3
## EXTRACT 2 FROM THE COURSE OUTLINE.

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Group Site Visit Presentation Guidelines

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1. The main purpose of the Group Presentation is to add value to the site visit by analysing the organisation in the light of the 303 course material. You are likely to need to gather additional data to do this. You should take a managerial perspective. Demonstrate that you understand IST theory by applying appropriate theory to the firm. Highlight problems, analyse major issues, justify recommendations. Focus on their IST managerial practices. How do they manage IST? Are these approaches appropriate? What do you recommend?
2. Each team or group should be of not less than three nor more than four people. Students are required to organise themselves into groups by the end of Lecture 03, and advise names in writing to the Course Supervisor at that time. Each group is encouraged to organise itself for optimum effectiveness.
3. Each group is assigned the responsibility of presenting and reporting upon one of the organisations visited in the Site Visits. These assignments are made by the Course Leader. All members of the group must attend that Site Visit.
4. The final presentation sessions are scheduled for Term 4, as per the Course Schedule. Each group presentation should last no longer than 40 minutes, including questions. A practice 'dry-run' beforehand is highly recommended.
5. Each group can play the role of a consulting team reporting back to a senior partner (the Course Supervisor) and consulting colleagues (other students at the presentation session) of a consulting firm. The presentation could be a dress rehearsal before making a client presentation. In the spirit of this role-playing, each team member could come to the presentation session in business attire. All members of a group are expected to participate 'up-front' in giving the group's presentation.
6. A good presentation is where the group: (a) is well-prepared, (b) has analysed the organisation and is now able to add value (possibly through extra evidence), to the site visit, (c) is knowledgeable about the organisation and its analysis based on course material, (d) speaks clearly, (e) explains well, (f) responds well to questions and (f) makes effective use of the overhead projector and/or other visual/graphical media. As with case studies, your presentation should emphasise key issues, relevant theory, and concentrate on analysis rather than description. Any student who simply reads word-for-word from written material risks being asked to sit down. Cue cards and visual aids may be used.
7. Those students not involved in a presentation at a particular session are not required to attend that session. However, they are encouraged to attend. Those students who are involved in one of the session presentations are required to attend the whole session.

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# APPENDIX 4

t-Test: Paired Two Sample for Means: site visits vs case studies

|  | visits | cases |
|---|---|---|
| Mean | 3.923 | 3.593 |
| Variance | 0.764 | 0.558 |
| Observations | 27 | 27 |
| Pearson Correlation | 0.247 | |
| Hypothesised Mean Difference | 0 | |
| df | 26 | |
| t Stat | 1.732 | |
| P(T<=t) one-tail | 0.048 | |
| t Critical one-tail | 1.706 | |

# APPENDIX 5

t-Test: Paired Two Sample for Means: site visits vs text/readings

|  | visits | text |
|---|---|---|
| Mean | 3.926 | 3.074 |
| Variance | 0.764 | 0.609 |
| Observations | 27 | 27 |
| Pearson Correlation | 0.234 | |
| Hypothesised Mean Difference | 0 | |
| df | 26 | |
| t Stat | 4.311 | |
| P(T<=t) one-tail | 0.000103 | |
| t Critical one-tail | 1.705616 | |

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