TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI
VICTORIA
UNIVERSITY OF WELLINGTON

School of Information Management

INFO 409: IT, INNOVATION, VALUE & PRODUCTIVITY

Trimester 1 2015

COURSE OUTLINE

Names and Contact Details

Course Coordinator	Name	Dr Jean-Grégoire Bernard
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	Office hours	By appointment

Trimester Dates

Teaching Period: Monday 2nd March – Thursday 4th June

Withdrawal from Course

1. Your fees will be refunded if you withdraw from this course on or before Friday 13 March 2015.

2. The standard last date for withdrawal from this course is 15 May 2014. After this date, students forced to withdraw by circumstances beyond their control must apply for permission on an '*Application for Associate Dean's Permission to Withdraw Late'* including supporting documentation. The application form is available from either of the Faculty's Student Customer Service Desks or online.

Class Times and Room Numbers

Classes will be from 9:30am – 12:20pm on Thursdays in RH MZ04

Course Prescription

An examination of the linkages between IT and innovation, value and productivity in organizations and society. Topics include research on IT value at the industry, organizational, and group levels of analysis; research on the diffusion of IT innovation; and research on the creation of new IT-driven business models.

Course Content

Over the past 40 years, Information Technology (IT) has brought about profound changes, affecting individuals, organizations, and society in general. The effect of IT is obvious in the acceleration of the globalization of markets, in the transformation of social and commercial relationships, as well as in the emergence of new sources of information and competitiveness. Our notions of time and space, as well as our understanding of what is physical and what is information, have changed.

IT is now ubiquitous. There is a convergence of telephony, computing, networks and applications that challenges the traditional industrial and firm boundaries. IT has had a major impact on all types of innovation, but they often require new perspectives on business models to take full advantage of their potential. This is why it is essential to understand how consumers, industries, firms, and governments shape the adoption of IT and ultimately the value that can be derived from its use.

The appropriate use of IT to generate economic prosperity and welfare is always difficult to determine. This course will explore current theories about the use of IT to generate innovation and value for industries, firms and groups. It will also provide frameworks to understand the diffusion of IT innovation across a population of firms over time and to distinguish faddish technologies from truly disruptive technologies. The course concludes by examining at three novel ways to generate value from IT: the long tail phenomenon, open innovation (crowdsourcing in particular), and the application of IT to environmental sustainability problems. This course adopts a holistic perspective on IT value and assumes that IT value is not strictly limited to financial outcomes.

Lecture	Date	Topic	Deliverable
1	5 March	Introduction: IT, Innovation, Value & Productivity	
2	12 March	IT Value at the Industry Level: Evolutionary Processes of IT Innovation	
3	19 March	IT Value at the Industry Level of Analysis: Disruptive Innovation	Ind. commentary #1
4	26 March	IT Value at the Industry Level of Analysis: Process Virtualization	
5	2 April	IT Value at the Industry Level of Analysis: Consumer Surplus	
6	9 April	IT Value at the Firm Level of Analysis: Business Models	Ind. commentary #2
	Break		
7	30 April	IT Value at the Firm Level of Analysis: Strategy & IT Investments	
8	7 May	IT Value at the Group Level of Analysis	Ind. assignment (essay)
9	14 May	The Diffusion of IT Innovation	
10	21 May	Special Topic: Analytics, AI, and the Internet of Things	
11	28 May	Innovation Reports Presentations	
12	4 June	End of term take-home test.	Take-home test.

Course Learning Objectives
By the end of this course, students should understand and be able to apply current and emerging research knowledge about:

1. The relationship between IT investments and productivity (all weeks – LG1 to 5)
2. The processes driving the evolution of IT and the emergence of disruptive IT (week 1, 2 & 5 – LG3)
3. The role of IT as a resource for industries, firms, and groups (weeks 3 to 7 – LG1, LG2)
4. The influence of IT on innovation outcomes and how to foster innovation (week 2 to 6 – LG1 to LG4)
5. The concept of strategic alignment (week 4 & 5 – LG2, LG3)
6. The processes by which a novel IT (does not) diffuse(s) across networks of firms over time (week 7 to 9 – LG1 to 3)
7. The long tail vs. superstar phenomenon (week 10 – LG3)
8. The role of IT in fostering open innovation and crowdsourcing platforms (week 10 – LG3)
9. The role of IT in enabling business models and organizational processes that are socially and environmentally sustainable (week 11 – LG3).

The course objectives include the Faculty learning objectives (FCom-LG) which are the development of literature research (LG1), research/analytical skills (LG2), discipline specific skills (LG3), communication skills (LG4), and leadership skills (LG5). Selected Faculty learning objectives will be assessed along with the following specific outcomes based on the statutory statement of course learning objectives above.

Expected Workload
Students are expected to work on average 150 hours for this course. The following breakdown reflects the course structure:

- Attending lectures: 33 hours
- Preparing for lectures (reading the material and preparing notes): 60 hours
- Writing individual assignments (5): 32 hours
- Writing team assignment: 15 hours
- Preparing presentation: 10 hours

Readings
Please note that changes might be made to this schedule as the trimester progress. Changes will be communicated in class if necessary – *Blackboard will contain the official, final reading list for this course*. There is no textbook for this course. I expect you to read the required readings before each class and to have done the informal exercises if any were assigned for the class. You are expected to download the readings by using the appropriate library databases that are listed on Blackboard. Supplementary readings will also be listed on 'Blackboard' for your own curiosity.

Class	*Topic*	*Required readings and preparation (***INDICATIVE* - final, official list is found on Blackboard**)*
Week 1 5/3	Introduction: IT, Innovation, Value & Productivity	– Brynjolfsson, E. (1993). The Productivity Paradox of Information Technology. *Communications of the ACM, 36*(12), 67-77. – Brynjolfsson, E. (2010). The Four Ways IT is Revolutionizing Innovation. *Sloan Management Review, 51*(3), 51-56. – Andreessen, M. (2011). Why software is eating the world. *Wall Street Journal*.
Week 2 12/3	IT Value at the Industry Level: Evolutionary Processes of IT Innovation	– Shane, S.A. (2009). Technology Evolution. In *Technology Strategy for Managers and Entrepreneurs*. Prentice Hall. – Sood, A., Tellis, G.J. (2005). Technological Evolution and Radical Innovation. *Journal of Marketing, 69*(3), 152-168. – Cases (on Blackboard)
Week 3 19/3	IT Value at the Industry Level of Analysis: Disruptive Innovation	– Christensen, C.M. (1997). Introduction. In *The Innovator's Dilemma*. Cambridge, MA: Harvard Business School Press, p.ix-xxiv. – Wessel, M., Christensen, C.M. (2012, December). Surviving Disruption. *Harvard Business Review,* 56-64. – Danneels, E. (2004). Disruptive Technology Reconsidered: A Critique and Research Agenda. *Journal of Product Innovation Management, 21*, 246-258. **Individual commentary #1 due.**
Week 4 26/3	IT Value at the Industry Level of Analysis: Process Virtualization	– Overby, E. (2008). Process virtualization theory and the impact of information technology. *Organization Science, 19*(2), 277-291. – Barley, S.R. (2015). Why the Internet makes buying a car less loathsome: How technologies change role relations. *Academy of Management Discoveries, 1(1), 31-60.* – Kantor, J. (2014). Working anything but 9 to 5. *New York Times,* August 13. URL: http://www.nytimes.com/interactive/2014/08/13/us/starbucks-workers-scheduling-hours.html

Week 5 2/4	IT Value at the Industry Level of Analysis: Consumer Surplus	– Grover, V., & Ramanlal, P. (1999). Six myths of information and markets: Information technology networks, electronic commerce, and the battle for consumer surplus. *MIS Quarterly, 23*(4), 465-495. – Grover, V., Lim, J., & Ayyagari, R. (2006). The dark side of information and market efficiency in e-markets. *Decision Sciences, 37*(3), 297-324. – Dedrick, J., Kraemer, K.L., Linden, G. (2009). Who profits from innovation in global value chains? A study of the iPod and notebook PCs. *Industrial and Corporate Change, 19*(1), 81-116.
Week 6 9/4	IT Value at the Firm Level of Analysis: Business Models	– Weill, P., Vitale, M. (2002). What IT Infrastructure Capabilities are Needed to Implement e-Business Models? *MIS Quarterly Executive, 1*(1), 17-34. – Weill, P., Woerner, S.L. (2013). Optimizing Your Digital Business Model. *MIT Sloan Management Review, 54*(3), 71-78. – Chatterjee, S. (2013). Simple Rules for Designing Business Models. *California Management Review, 55*(2), 97-124. **Individual commentary #2 due.**
Break		
Week 7 30/4	IT Value at the Firm Level of Analysis: Implications for Strategy & IT Investments	– Weill, P., Aral, S. (2006). Generating Premium Returns on Your IT Investments. *MIT Sloan Management Review, 47*(2), 39-47. – Seddon, P.B. et al. (2010). A multi-project model of key factors affecting organizational benefits from enterprise systems. *MIS Quarterly, 34*(2), 305-328. – Rivard, S., Pinsonneault, A., Croteau, A-M. (2011). Information Technology at Cirque du Soleil: Looking Back, Moving Forward. *Proceedings of the 32nd International Conference on Information Systems (ICIS)*. Shanghai, China.

Week 8 7/5	IT Value at the Group Level of Analysis	– Gray, P. H., Parise, S. and Iyer, B. (2011). Innovation impacts of using social bookmarking systems. *MIS Quarterly*, *35*(3), 629-643. – Kane, G.C. and Borgatti, S. (2011). Centrality–IS proficiency alignment and workgroup performance. *MIS Quarterly*, *35*(4), 1063-1078. – Leonardi, P. M. (2007). Activating the informational capabilities of information technology for organizational change. *Organization Science, 18*(5), 813-831. **Individual assignment (essay) due.**
Week 9 14/5	The Diffusion of IT Innovation	– Rogers, E. M. (1995). Elements of Diffusion. Chapter 1 of *Diffusion of Innovations* (4th ed.). New York, NY: Free Press. – Watts, D.J. (2003). Tresholds, cascades, and predictability. Chapter 8 of *Six Degrees: The Science of a Connected Age*. New York, NY: W.W. Norton & Company. – Swanson, E. B. (2012). The Manager's Guide to IT Innovation Waves. *MIT Sloan Management Review*, *53*(2), 75-83.
Week 10 21/5	Special Topic: Analytics, AI, and the Internet of Things	– Brynjolfsson, E., McAffee, A. (2012). Winning the Race with Ever-Smarter Machines. *MIT Sloan Management Review*, *53*(2), 53-60. – Porter, M.E., Heppelmann, J.E. (2014). How Smart Connected Products Are Transforming Competition. *Harvard Business Review*, *92*(11), 64-88. – Iansiti, M., Lakhani, K.R., (2014). Digital Ubiquity: How Connections, Sensors, and Data are Revolutionizing Business. *Harvard Business Review*, *92*(11), 91-99. – Redman, T.C. (2013). Data's Credibility Problem. *Harvard Business Review, 91*(12), 84-88.
Week 11 28/5	Innovation Reports Presentations	– No readings.
Week 12 4/6		**End of term take-home test.**

Course Delivery
A series of seminars where the weekly readings will act as the basis of discussions and collective analysis of managerial dilemmas will act as the foundation for the course. You will be actively involved in informal case studies, class exercises, and informal group presentations. These class exercises and presentations will not contribute to course grades (except from the one stated in the assessment requirements section below). These activities will foster deeper involvement and understanding of the themes and concepts addressed in the lectures.

Materials and Equipment
You will make extensive use of the University Library print and electronic resources to elaborate your vendor report (assignment #1) and request for proposal (assignment #2). As a starting point, among the relevant resources we find:

- Proquest
- LexisNexis
- Factiva
- Business Source Complete
- RDS Business Suite
- Index New Zealand
- NewztextPlus
- On the internet: CIO Magazine, ComputerWorld, InformationWeek, Baseline, and enterprise systems vendors' websites are good starters, but there are many others.

Assessment Requirements		**Due date**
Ind. assignment: Essay	30%	May 7th
Ind. assignment: Commentaries (2x)	20%	2 in trimester, Due on W3 & W6
Team Innovation Report	15%	May 28th
End of term test	35%	June 4th
Total	100%	

The Faculty learning goals for BCom(Hons) targeted by each assessment is indicated in parentheses for each assessment item.

The Assessment Handbook will apply to all VUW courses: see http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf.

Individual assignment: Theory-building essay (LG1 to LG3)
For this exercise, you will write an essay that explains a puzzling aspect of an IT innovation or an IT-enabled business model. Your essay should be of no more than 3000 words, but no less than 2000 words (excluding figures and tables). Detailed instructions on how to write your short essay will be communicated in class on April 2nd. An electronic copy of the essay is due on May 7th before the class, by email as a PDF attachment.

Individual commentaries (LG1 to LG4)
Each week specific topics will be discussed and articles will be provided to you. In your individual commentaries, you should make special efforts to apply these concepts to real organizations. The goal of the paper is to show your understanding of the theoretical concepts. This requires integration or application. 1000 words/paper. Note: only the first 1000 words will be considered. Examples:

- Find a case in real life, for example, in the newspaper or on a web site, and explain the situation using the concepts introduced in class
- Take two concepts introduced in class and integrate them to create a new theoretical model and explain what types of real-life situation this model would be able to explain
- Take two concepts introduced in class and contrast them to show under which circumstances each one would be suitable to explain real-life situations

These commentaries demand the production of original knowledge. Summarizing concepts covered in class is not acceptable and will be given a score of zero.

It is mandatory to validate the choice of topic (case/real-life situation and structure of the paper) for the assignment with the instructor. It is highly recommended to submit a full draft for comments before the due date.

Assignments are to be submitted by e-mail (.doc/.docx format) by 9:30:00am on the due date. No hard copy will be considered.

Team IT innovation report and presentation (LG1 to LG4)
You will select one novel and high-impact case from a company based in Wellington. You will conduct further research and analysis and develop an in-depth case study. You are encouraged to contact the organization in order to conduct and film a few interviews and visit the organization's offices so you can generate a "thick" description. You are encouraged to use this video footage as your oral presentation (or as a part of). You may write the report as teams of three students based on your shared interests (e.g. in the specific technologies, industries, or market spaces). A short proposal (not assessed) should be prepared at the beginning of the project (April 16 at the latest). Your final innovation report will be presented in class on week 11 and you will have to submit your presentation slides deck. Further instructions on how to elaborate the innovation report will be communicated in class.

End-Term Test (LG1 to LG4)
Further details regarding the test will be advised in class closer to the date.

Mandatory Course Requirements
An attendance register will be kept, however there will be no penalty for non-attendance. To pass the course, you must gain a weighted average of 50% across all assessments. Students are expected to attend all classes and to submit all assignments. In the case of absence due to illness, a medical certificate should be submitted to the Course Coordinator, immediately after return to university. Absence or non-submission of assignments for other reasons should be discussed with the Course Coordinator, preferably in advance. Failure to meet mandatory requirements does not prevent a student from completing other pieces of assessment.
If you cannot complete an assignment or sit a test or examination, refer to
www.victoria.ac.nz/home/study/exams-and-assessments/aegrotat

Group Work
The group work which will be marked as *Group Assessment* (in terms of paragraph 2.2.1 c, page 8, of the University Assessment Handbook as published on
http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf) consists of the following assessment item:

The innovation report presentation in week 11 (15%). All group members will obtain the same mark. If a group member is absent on the day of the presentation, he or she will obtain a mark of 0 for the presentation but with no penalty to the other group members.

It is anticipated that participation in group work will not add more than 2 hours per assignment to the average workload, but may be particularly concentrated in the second half of the trimester (weeks 7-12).

Grading Standards

Pass/fail	Grade	Normal range	Midpoint	Indicative characterisation
Pass	A+	90%–100%	95	Outstanding performance
	A	85%–89%	87	Excellent performance
	A-	80%–84%	82	Excellent performance in most respects
	B+	75%–79%	77	Very good performance
	B	70%–74%	72	Good performance
	B-	65%–69%	67	Good performance overall, but some weaknesses
	C+	60%–64%	62	Satisfactory to good performance
	C	55%–59%	57	Satisfactory performance
	C-	50%–54%	52	Adequate evidence of learning
Fail	D	40%–49%	45	Poor performance overall, some evidence of learning
	E	0–39%	20	Well below the standard required
	K	Fail due to not satisfying mandatory course requirements, even though the student's numerical course mark reached the level specified for a pass, usually 50%. A student whose course mark is below 50 should be given a D (40–49) or E (0–39), regardless of whether they met the mandatory course requirements.		
Pass	P	Overall pass (for a course classified as Pass/Fail)		
Fail	F	Fail (for a Pass/Fail course)		

It is recognised that the distribution in a particular course, particularly with small enrolment, may differ markedly from the long-term distribution. To obtain a fair distribution of marks relative to assignment difficulty, scaling of marks may be employed on some or all assessments.

The lecturer will develop a more complete or specific description of the meaning of the various levels of performance based upon the specific nature of the assessment in a course. For example, performance may be determined by the qualities of a written report, a classroom presentation, or an examination. The words used to describe these kinds of assessments will obviously vary.

Note
Your assessed work may also be used for quality assurance purposes, such as to assess the level of achievement of learning objectives as required for accreditation and audit purposes. The findings may be used to inform changes aimed at improving the quality of VBS programmes. All material used for such processes will be treated as confidential, and the outcome will not affect your grade for the course.

Examinations
There will be no examination for this course.

Penalties
In fairness to other students, assignment work submitted after the deadline will incur a 10% penalty for each actual day (prior to 9.30 am) late. In the event of bereavement or prolonged illness affecting your ability to meet the deadline, discuss your situation with the Course Co-ordinator. You must verify your claim, e.g., produce a medical certificate. In doing so, you consent to your supporting documentation being checked by the Course Co-ordinator. Extensions will only be granted under these conditions.

Important Notes:

- *No extension is possible based on a student's workload. You are expected to manage your workload to ensure there is sufficient time to complete assessments as required.*
- *You are expected to back up your work – From time to time files are lost, computers crash, etc., so it is critical that you get into the habit of backing up important files.*
- *Do not leave submitting your work to the last minute – Technology problems do occur (especially on the day an assessment is due). Be smart and submit it in plenty of time. Extensions will not be granted due to problems with submitting work.*
- *Working together – All assessments in this course are individual assessments, unless they are explicitly identified as group assessments. You are encouraged to discuss aspects of your individual assessments with others. However, when it is time to develop your solution, **the work must be ENTIRELY your own**. In this way, we will have your perspective on the topic - not someone else's!*

Communication of Additional Information
Additional information, or information on changes, will be announced in class or conveyed to students via Blackboard, email, phone.

Use of Turnitin
Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine http://www.turnitin.com Turnitin is an on-line plagiarism prevention tool which compares submitted work with a very large database of existing material. At the discretion of the Head of School, handwritten work may be copy-typed by the School and subject to checking by Turnitin. Turnitin will retain a copy of submitted materials on behalf of the University for detection of future plagiarism, but access to the full text of submissions will not be made available to any other party.

Student feedback
Improvements and changes based on previous student feedback will be communicated in class on week 1. Student feedback on University courses may be found at
www.cad.vuw.ac.nz/feedback/feedback_display.php

Link to general information
For general information about course-related matters, go to
http://www.victoria.ac.nz/vbs/studenthelp/general-course-information

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