Massachusetts Institute of Technology
Sloan School of Management

15.568 Spring 2007

IT Business Design, Project Management, and Strategy

Prof. Benjamin Grosof
TA Anya Gupta

Meets MW 2:30-4 in E51-361

Syllabus

****** (VERSION of 1/31/2007) ******

Course Goals and Intended Audience – the "Sales Pitch":

Note: This course **was revised last year to a major extent** from previous years in its material, organization, and mode. It continues to be an undergraduate course.

The course is motivated by two phenomena:

1. "Business is increasingly *digital* business." In the future, even more than today, most business will be either digital or depend critically on aspects that are digital. Business thus depends crucially on IT.
2. Increasingly, the skills and knowledge required to succeed in IT go beyond programming and technology to include managing organizational and people aspects including business design, project management, and strategy. This holds not only for organizations, but also for individuals – e.g., fresh college graduates like you hope to be soon. The global outsourcing trend underlines and accelerates this trend.

This course is for students who want a strategic edge: to acquire skills and knowledge in how to "ride the tiger" -- as the wave of continuing IT innovation rolls on, to best manage and exploit the personal and organizational business opportunities and challenges that wave creates.

MIT is the right place to learn about IT and innovation for business – it's the cutting edge not only in engineering but also in management of IT – ranked year after year #1 in the leading surveys of graduate programs in both these areas. 15.568 is the premier course offered at MIT designed to complement knowledge of programming or technology by covering the rest of IT knowledge. It focuses on crucial skills such as IT project management and systems

development, maximizing business value of IT investments and outsourcing, and strategy for business transformation.

Mechanics of registering: Note that Sloan courses have a prioritization process involving bidding; bidding starts Dec. 1 for Sloan students and starts approximately Dec. 22 for non-Sloan students. See http://sloanbid.mit.edu for details on the bidding process. After that, just come to the class and contact Prof. Grosof by email.

Course Description in the manner of MIT Subject Listings / Catalog entry:

(Undergraduate level, Spring)
Prerequisite: 1.00 or 6.001
Units: 3-0-6
Lecture: MW 2:30-4 in E51-361

Covers how the business value of individuals, as well as of organizational investments and innovation, is maximized in IT. Topics include IT-specific project-management, outsourcing, business-process design, alignment with organizational goals, operational efficiencies, change management, business transformation, agility, and associated strategy. Complements knowledge of programming or technology, with organizational and people aspects. Emphasizes effective pragmatic decision-making. Presents and uses analytical frameworks, concepts, guidelines, cases, field research, and extensive discussion.

Further Course Overview Description:

Class session format:

- Extensive discussion.
    - Some cases. Some lectures. Student project presentations too.
- There will be some Special Guests (TBA).

Assignments: 1-2 short assignments plus a term project done in teams; see later section of this syllabus (towards the end) for details.

Readings: A course reader (available from CopyTech in basement of E52). Various additional handouts, including articles, cases, web links, and discussion questions. Student-contributed material as additional optional readings, too.

Exam: In-class final exam on Wed. May 17, or a take-home final exam due Wed. May 17.

Grading: 30% class discussion (participation), 25% three short paper assignments, 30% term project team presentations and paper (approx. 12 pages), 15% final exam. Participation includes contributions to class discussions, attendance, and contributions to class readings.

Office Hours: TBA and by individual appointment. Regular scheduled weekly office hours will be held by the instructor (twice a week) and by the TA (twice a week). Prof. Grosof's office hours will be Mondays and Wednesdays at either 11:30-12:30 or 4-5. Anya Gupta's TA office hours will usually be on two other days of the week, probably Tuesdays and Thursdays at lunchtime or late afternoon in E51 2nd floor, announced week-by-week. Note Prof. Grosof teaches 15.564 in E51-057 MW 1-2:30, so is available only very briefly immediately before 15.568 class starts.

Being a recently redeveloped course that is still being refined and developed, this year's students will have the opportunity to help develop and shape it in its offering this year and especially for future years.

Course Staff:

Instructor: Prof. Benjamin Grosof

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- bgrosof@mit.edu, Room E53-317, (617) 253-8694

Teaching Assistant: Anya Gupta

- anyag@mit.edu, MBA 2008 student, (240) 447-0459 (home)

Course Assistant: Yubettys Baez

- ybaez@mit.edu, Room E53-316, (617) 253-2656

Class Sessions:

(Note: This is the current version. There will probably be a bit of shuffling and tweaking, later. The guests (lecturers/visitors) below are from 2006, as a representative indication; this year's guests will be announced during the course.)

* below means: to be distributed as a handout (in hard or soft copy)

Module I: IT Project Management: it's not just vanilla project management

1. W 2/7 Course Introduction and Overview; Intro to Managing Project Development

   Review of syllabus, lecture, and discussion.

2. M 2/12 Managing Software Engineering and Project Development I
   Lecture, in-class exercises, and discussion.
   Reading: Randolph, W.A. & Posner, B.Z., "What Every Manager Needs to Know About Project Management". SMR, Vol 29, No. 4, Summer 1988, pp 65-73

3. W 2/14 Managing Software Engineering and Project Development II
   Lecture, in-class exercises, and discussion.
   Reading: "Mythical Man-Month" by Frederick Brooks*, 1970's.

Reading: Keil, Mark & Montealegr, Ramiro "Cutting your losses: extricating your organization when a big project goes awry" MIT Sloan Management Review, Spring 2000 Vol 41 pp 55-68

(M 2/19 NO CLASS: President's Day – Holiday.
Monday classes will be held on Tuesday 2/20 instead.)

4. Tues. 2/20 Managing Software Engineering and Project Development III

Lecture, in-class exercises, and discussion.
Reading: De Meyer, A., Loch, C.H., & Pich, M.T., "Managing project uncertainty: from variation to chaos" SMR 43, 2, winter 2002, 60-67, reprint 4326
Reading: Cyrus F. Gibson, "IT-Enabled business change: an approach to understanding and managing risk" MIS Quarterly Executive Vol2 No.2 / September 2003

5. W 2/21 Case: Administrative Data Project (A) (HBS 9-803-051)
Case discussion.
Reading: "Preparing for Case Discussion"* (1 page).
(Reading: the case (above).)

6. M 2/26 Case: Administrative Data Project (B) (HBS 9-803-052),
and Case: Administrative Data Project (C) (HBS 9-803-053)
Case discussion.

7. W 2/28 IT Team Project Formation Overviews

Guest Steve Winig of MIT IS&T
Discussion of candidate topics for team projects. .

Module II: Business Process Design, Implementation, and Change

8. M 3/5 Introduction: Business Process Reengineering; Matrix of Change

Guided discussion, with review of readings.
Reading: Hammer, M. "Reengineering Work: Don't Automate, Obliterate," HBR, Jul-Aug 1990, pp 104-112, reprint #90406
Reading: Gibson, C.F., "IT-enabled Business Change: An Approach to Understanding and Managing Risk", MIS Quarterly Executive Vol. 2 No. 2, Sep 2003, pp 104-115
Reading: Brynjolfsson, R., Renshaw, A.A., & Van Alstyne, M., "The Matrix of Change", SMR Winter 1997, pp 37-54, reprint 3823

9. W 3/6 Case: Dow Corning (A)-(C) (MIT CISR)*

Case discussion.

10. M 3/12 Business Process Design Methodologies; UML; Process Handbook

Lecture and discussion.

Reading: Introduction to OMG's Unified Modeling Language™ (UML®) (http://www.omg.org/gettingstarted/what_is_uml.htm)*

Reading: Practical UML™: A Hands-On Introduction for Developers - by Randy Miller (http://bdn.borland.com/article/0,1410,31863,00.html)*

11. W 3/14 Intermediate Progress Reports on Team Projects

Steve Winig visitor. Discussion.

(M 3/19 and W 3/21 NO CLASS: Sloan Innovation Period held.)

(M 3/27 and W 3/29 NO CLASS: Spring Vacation Week)

12. M 4/3 Class discussion of student projects.

Module III: Business Value and Outsourcing

13. W 4/4 Introduction to Business Value of IT

Guest Lecture by Martin Curley of Intel Corp, including review of readings with discussion.

Reading: Curley, Martin. Managing Information Technology for Business Value. Chapters 4 & 5 "Measuring and Managing IT Business Value" & "IT Portfolios and Options"*.

14. M 4/9 IT Business Value II

Guided discussion, with review of readings.

Reading: Kaplan, R.S. & Norton, D.P., "The Balanced Scorecard – Measures That Drive Performance", HBR, Jan Feb 1992, reprint #92105

Reading: Weill, P. & Broadbent, M., "The Evidence for Business Value", Chap 3 in Leveraging the New Infrastructure: How Market Leaders Capitalize on Information Technology, HBS Press, 1998

Reading: "Make it simple: A survey of information technology" The Economist, October 30th, 2004

15. W 4/11 Case discussion: Lifeline (MIT CISR)*

Case discussion, with review of reading.

Reading: Broadbent, M. & Weill, P., "Management by Maxim: How Business and IT Managers can Create Infrastructures," *Sloan Management Review*, Spring 1997, pp 77–92

(M 4/16 NO CLASS: Patriot's Day -- Vacation)

16. W 4/18 Project Cost and Risk Estimation

Guest Lecture by Jerry Grochow of MIT IS&T, including review of reading and discussion.

Reading: Grochow, J. "Feel Like All Your Project Plans Are for Naught?"*. PC Week 11/22/1998, avail. on Zdnet http://cma.zdnet.com/texis/techinfobase/techinfobase/+awo_qtvs+69W/zdisplay.html

Reading: Grochow, J. "Chaos Theory and Project Estimation"*. Working paper.

Reading: Grochow, J. "The True Cost of Technology"* and "Risk: Since You Can't Avoid It, Manage It"*. Chapters 37 and 40 of the book by Grochow, J. Information Overload: Creating Value with the new Information Systems Technology. Yourdon Press / Prentice Hall 1996.

Reading: Wiederhold, G. "How Much is Your Software Worth?"* Communications of the ACM to appear (approx. late 2006). [this is about software valuation rather than cost/risk]

SHORT ASSIGNMENT OUT: 3-pager paper on agility and transformation, due 5/1

17. M 4/23 IT Outsourcing

Guided Discussion with review of readings..

Reading: Outsourcing IT: The Global Landscape in 2004 (HBS 9-304-104)

Reading: Barthelemy, Jerome. "The Hidden Costs of IT Outsourcing"*. MIT Sloan Management Review, Spring 2001 pp 60-69

Reading: Earl, Michael J. "The Risks of Outsourcing IT"*. MIT Sloan Management Review, Spring 1996 pp. 26-32.

[RECOMMENDATION: Also start reading ahead for sessions 18 & 19]

Module IV: Strategic Agility, Alignment, Business Transformation, and Governance

18. W 4/25 Strategic Agility and Alignment

Guided discussion, with review of reading.
Reading: Weill, Peter & Broadbent, M. & Subramani, M. "Building IT infrastructure for Strategic Agility"*, MIT Sloan Management Review Fall 2002 Vol 44 pp 57-65
Reading: Eisenhardt, K.M. & Sull, D.N., "Strategy as Simple Rules", HBR, Jan 2001, reprint **X**R0101G
Reading: Hagel, J. III, & Brown, J.S., "Your Next IT Strategy", HBR, Nov 2002, reprint R0109G
Reading: Ross, J. and Weill, P. "Stages of IT Architecture and Alignment", CISR Research Briefing, Jul. 2002 (4 pages)*
Reading: Semler, R., "How We Went Digital Without a Strategy", HBR, Sep-Oct 2000, pp 51-98, reprint R0051I

19. M 4/30 Business Transformation; Governance

SHORT ASSIGNMENT DUE (assigned 4/19)

Guided discussion, with review of readings.
Reading: ACE case, US Customs transformation (MIT CISR)*
Reading: Weill, P. and Broadbent, M. "Describing and Assessing IT Governance – the Governance Arrangements Matrix", CISR Research Briefing, Oct. 2002 (4 pages)*
Reading: Jeffery, Mark and Leliveld, Ingmar "Best Practices in Portfolio Management"*, MIT Sloan Management Review. Spring 2004 pp 4 -49
Reading: Venkatraman, N. & Henderson, J.C., "Real Strategies for Virtual Organizing", SMR, Fall 1998, pp 33-48, reprint 4013

20. W 5/2 E-Services: Google, Yahoo, Amazon, and eBay; Guidance on Preparing for the Exam

Guided discussion, with review of readings.
Reading TBD.*
[Foci: offering e-service; using them to connect with partners]

Module V: Term Projects and Course Wind-up

21. M 5/7 Term Project Presentations

Term Project Presentation DUE

22. W 5/9 Discussion/ Debate: "Does IT Matter?"

Reading: Carr, N.G., "IT Doesn't Matter", HBR, May 2003, pp 41-49, reprint #R0305B

FINAL WRITTEN PROJECT DELIVERABLES DUE

23. M 5/14 Course Wrap-up and Review
Reading: course review handout*.

24. W 5/16 In-class Final Exam (NB: this is the last class)
(Alternatively, the exam might be a take-home due this day. TBD.)

(NO EXAM during FINAL EXAM WEEK)

Additional Notes:

There may be some changes in the sequence and time allocation of the topics covered during the sessions as listed above.

Preparation and Class

The course is largely case- and discussion-oriented. A business case study will be assigned for several of the classes. Active participation in discussions, backed by having done the required reading/case-preparation in advance of class session, is expected – and makes the class most productive and fun. If you haven't taken a course before that uses cases, don't worry too much – you will learn how to discuss (and prepare) cases as part of this course.

Assignments and Teams

Each short paper will be based on the material and discussion in the class at the end of a module, and are to represent the student's extension of the topic. Papers will be in the form of a memorandum to a (hypothetical imaginary) executive or class visitor, and are to be 2-3 pages in length.

Student teams will be formed early in the course, and will have approximately 3 members per team. Teams are for the term team project, and also to meet weekly on their own schedule to discuss the assigned case and articles as part of their preparation for the upcoming class.

The term team project presentations will be based on projects assigned early in the course from opportunities generated by the professor and the TA. After the presentation the team will submit a written report, approximately 12 pages in length, based on the presentation and discussion of it.

Absences Policy

Students will be allowed three absences during the semester. Each absence must notify the TA in advance, unless an emergency. At the beginning of the class following the absence, a written analysis of the material assigned for the missed class is due. Absences beyond three will generally affect the grade in the course.

Academic and Professional Standards

The course will be taught in compliance with MIT Sloan's usual academic and professional standards, as described in the "Academic Standards" document of January 2005, available on Sloanspace (→ Control Panel → Program - All MBA → Documents → Professional Standards) and as a class handout. Students are expected to fulfill these standards.

