Project Management in IT

Lecture 1:
Introductions

Dr Steven Sommer

Agenda

- Introduction to the people and unit of study.
- Introduction to Project Management

Dr Steven Sommer (Steve) – Stream 1

- My background
  - University of Sydney – Computer Science BSc(Hons)
  - Proctor & Gamble – IT
  - Microsoft Research Institute & Macquarie University – PhD
  - Cisco – R&D, Support Management
  - AGSM – MBA
  - Oracle – Consulting Management
  - Clarity – VP R&D
  - University of Sydney, Macquarie University – Lecturing
- My contact info:
  - Email: steve@it.usyd.edu.au
  - Room: 4036, H70 - The new business school building
  - Consultations: Wed 4:30 to 5:30pm by appointment

Srinivas Varanasi - Stream 2

- My background
  - TDWI – Program Manager B. com(Hons), CA, CPA
  - Program Manager – Commonwealth Bank
  - Program Advisor - Credit Union Australia
  - Program Manager - Qantas
  - Project Manager – Fonterra New Zealand Dairy Board
  - Oracle – Consulting
  - University of Sydney, University of Technology Sydney – Lecturing
  - Industry publication: Calculating ROI for Big Data Analytics Projects
- My contact info:
  - Email: varanasi.srinivas@sydney.edu.au
  - Room 440, Building J12 | 1 Cleveland Street
  - Consultations: By appointment on Fridays 4.30 pm to 5.30 pm

Class Norms

- Casual and fun
- Participative and Interactive
  - You will be called on and expected to contribute *
  - Most of the 3 hours will be you doing things
  - Ask questions at (almost) any time
- Group driven – almost all exercises will be in groups **
- You will be prepared
  - Bring and read materials as required.
- You will guide your own study
  - You should read the readings.
- Start on time
- Mobiles silent
- …

*** You cannot hide**

Meeting each other

- About you
  - Studying: full-time or part-time
  - Working: full time, part-time, not working
  - Coder? Business Analyst?
  - Projected Managed?
  - People Managed?
  - Number of subjects completed?
  - Why are you doing this unit?

- Meeting each other

About the Unit - Agenda

- Objectives
- Assessments
- Structure & Workload
- Learning Resources
- Topic Schedule

Course Objectives

1. Understand each of the core project management areas.
2. Be able to use the basic project management tools and techniques
3. Develop and refine your own project management skills
4. Further develop team and management skills

Why do this unit?

(besides having fun)

- In 2013 (the most recent year of PMI's salary survey), the average salary in U.S. dollars for someone in the project management profession was $108,000 per year in the United States; $134,658 in Australia, (the highest-paid country); and $24,201 in Egypt (the lowest-paid country) [Schwalbe 2015]
- The top skills employers look for in new college graduates are all related to project management: team-work, decision-making, problem-solving, and verbal communications [Schwalbe 2015]
- The world as a whole spends about one-quarter of its gross domestic product on projects of all kinds [Schwalbe 2012b] – over USD$15 trillion
- Worldwide IT spending was $3.8 trillion in 2014, a 3.2 percent increase from 2013 spending [Schwalbe 2015]
- The need for IT projects keeps increasing - IT projects worldwide will exceed US$1 trillion [Baltzan]
- Project management skills are important and valuable for personal success.

Why you might want not want to do it

- If you have completed Info3402 (IT Project Management) previously then:
  - You cannot enrol in Info6007
  - But you can enrol in Info6010
    - (Must if Info6007 is mandatory for your degree)
- If you have completed a similar unit to Info6007 or Info3402 then:
  - Consider enrolling in Info6010 instead (Info6007 is usually a pre-req.)
- If you are also doing Info5990 (Professional Practice in IT) as part of your degree, do Info6007 concurrently or after Info5990 (so swap the two if you are doing it the other wrong way around)

Assessment

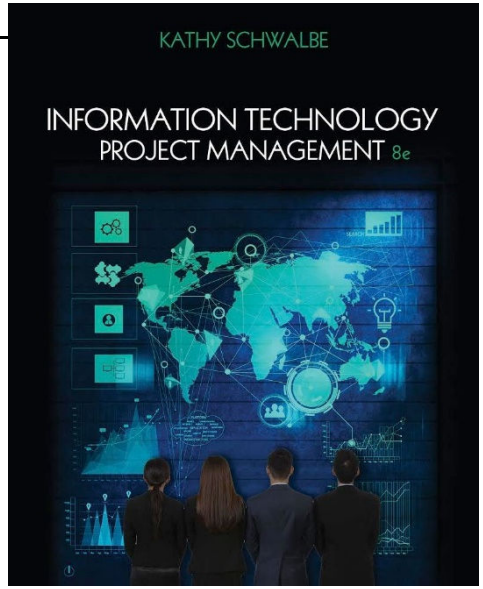
Assessment task	Weight	Due date
1. Mid Term Exam	20%	**Wednesday Week 6, 6-9pm**
2. Group Presentation / Report	30%	**Week 11, 12, 13**
3. Final Exam	50%	**Exam period**

- Group Presentation
  - Details to be determined. Predominately an Oral presentation applying the unit topics to a researched project. Both research and presentation may be difficult
- Exams
  - Semi-closed book.
  - Final is 2.5 hours, Mid-term is TBD
  - **Must get 40%** or higher in the final exam to pass until overall

Class Structure

- 3 hours of a lecture/tutorial
  - A combination of lecture, discussion, and class exercises (except weeks 1, 6, 13)
  - Week 6: Mid-term exam.
  - Mix of qualitative and quantitative topics
    - Neither are overly complex

Learning Resources



- **Required Text**: **(Read it!)**
  - **Information Technology Project Management** 8e, 2015, Schwalbe, K., Cengage Learning.
  - Available from Co-op, eBook, …
- **Additional Reading:**
  - **Project Management, Achieving Competitive Advantage Global Edition** (2012), Third Edition, Jeffrey K. Pinto, Pearson.
  - **An Introduction to Project Management** (2012) Fourth Edition, Schwalbe, K.
    - Non-IT, Organised by Process Group rather than knowledge area
- **Additional Cases, readings, and exercises**
  - Download from blackboard/eReserve.
  - Print and read cases before each lecture. You must bring a copy of the cases to class.
- **E-learning Site (Blackboard) –** https://elearning.sydney.edu.au
  - Check twice weekly
  - Lecture Slides and Weekly Materials. Slides may be printed and brought to class.
  - Unit Announcements – the main way I will communicate with you outside the lectures
  - Assessment Tasks
  - Submit assignments via Turn-It-In through the elearning site.
- **MS Project**
  - Full copy in labs, and through DreamSpark (as IT student).

Learning Centre

http://sydney.edu.au/lc

- Runs in August and September
- ** Oral Communication Skills
  - Special stream for Postgraduate non-English speaking background students.
  - You will need this for about 20% of your mark
- ** Academic Reading and Writing (lots)
  - E.g., Special stream for Clearer Writing for non English speaking background students.
  - You will need this for about 10% of your marks
- **Postgraduate Research Skills
  - Also needed for the assignment, if this is new to you
- Study Skills
  - Needed for the exams

- Good Workshops
- Fills up very fast; limited places
- Free for enrolled students
- Enrol fast – this week

What is expected of students

- Students attend scheduled classes, and devote an *extra* 6-9 hours per week
  - doing assessments
  - preparing and reviewing for classes
  - revising and integrating the ideas
  - practicing and self-assessing
  - reading the text and readings
- Students are responsible learners
  - Participate in classes, constructively
  - Respect for one another (criticize ideas, not people)
  - Notify academics whenever there are difficulties
  - Notify group partners honestly and promptly about difficulties
  - Develop additional capabilities required (presentation, writing, research, and study skills)
- 20% students failed last semester (typically about 10% do)
- Quiz
  - How much work will you be devoting to this unit, each week?
  - Do you need to buy a book?
  - Who should you see if difficulties arise?

Topics & Readings

Topic Map Coming near end of lecture

Week	Topic	Readings (Schwalbe Text, 8th and 7th Ed unless otherwise indicated)
Week 1	Introductions	8Ed: Ch 1 (p1-27), Ch 3(p80-86), Ch 4(155-161) 7Ed: p2-25, 83-88, 157-161
Week 2	Scope	Ch 5
Week 3	First Time	Ch 6
Week 4	People *Form Assignment Groups*	8Ed: Ch 9: p343-348, 359-379. 7Ed: Ch 9: p359-364, 373-394.
Week 5	Money	Ch 7
Week 6	*Mid-Term Exam*	
Week 7	Risk	Ch 11
Week 8	Change, Communication, and Reporting	8Ed: Chapter 4 (p165-171), and Ch 10 7Ed: Chapter 4 (p169-175), and Ch 10
Week 9	Quality and Procurement	Ch 8, Ch 12
** Break **		
Week 10	Initiation, Stakeholders, and Close	8Ed: Ch 4 (141-154, 172), Ch 13 7Ed: Ch 4 (148-157, 175), Ch 13
Week 11	Time again	Pinto 2012: Ch 10.3 (p342-349, 358-360), Ch 11 (p370-373,385-390,392-394)
Week 12	Agile and Managing	8Ed: Ch 2 (p57-62, 69-72), Ch 3 (p117-126), 7Ed: Ch 2 (p59-62, 69-72), Ch 3 (p120-129),
Week 13	Final	

Unit Caveat

- The best way to become a successful project manager is to:
  - Actively manage projects
- It is not enough to:
  - Apply the tools and techniques taught
  - Think about it
  - Read lots of books
  - Take courses on it
- Most of the concepts are straightforward

EMERGENCIES

Evacuation Procedures

ALARMS

BEEP... BEEP... Prepare to evacuate

1. Check for any signs of immediate danger.
2. Shut Down equipment / processes.
3. Collect any nearby personal items.

WHOOP... WHOOP... Evacuate the building

1. Follow the EXIT exit signs.
2. Escort visitors & those who require assistance.
3. DO NOT use lifts.
4. Proceed to the assembly area.

EMERGENCY RESPONSE

1. Warn anyone in immediate danger.
2. Fight the fire or contain the emergency, if safe & trained to do so.

If necessary...

3. Close the door, if safe to do so.
4. Activate the "Break Glass" Alarm  or 
5. Evacuate via your closest safe exit. EXIT 
6. Report the emergency to 0-000 & 9351-3333

Project Management in IT

Lecture 1 (Part 2)
Introduction to Project Management

Dr Steven Sommer

Learning Objectives

- Explain what a project is, provide examples of projects, list various attributes of projects, and describe project constraints
- Describe project management and discuss key elements of the project management frameworks
- Understand and explain the project life cycle, its stages, and the activities that typically occur at each stage in the project.
- Start to understand why effective project management is such a challenge.
- Describe the five project management process groups and the ten project management knowledge areas,
- Create a project charter to initiate a project

References and Readings

- Required Readings
  - Schwalbe 2015: Ch 1 (p1-27), Ch 3(p80-86), Ch 4(155-161)
- Practice Questions:
  - Schwalbe 2015:
    - Ch 1: Discussion Questions 2,3,4,5
    - Ch 3: Discussion Question 1
    - Ch 4: Discussion Questions 1
- References
  - Schwalbe, K. 2015, *Information Technology Project Management (8e)* Cengage Learning
  - Schwalbe, K. 2012, *An Introduction to Project Management (Fourth Edition)*
  - Pinto, J. 2012, *Project Management: Achieving Competitive Advantage (Third Edition) Global Edition,* Pearson Education

Part 2 Agenda – Introduction to PM

- Project
- Project Management
- Project Life Cycle
- Project Process Groups
- Project Charter
- Project Management Plan

Characteristics of a project

- A Project…
  - Has specific objectives and specific deliverables
  - Has a start and end date
  - Has allocated resources (e.g., financial, human, physical)
  - Usually complex and large
  - Usually unique
  - Involves uncertainty
  - Contains tasks that are managed and tracked
- Projects vary in size, complexity, and duration

Projects

- May be focused around
  - Products (eg., Harbour Bridge)
  - Processes
  - Reports
  - Events (e.g., wedding, conference, party)
- While the project is temporary the outcome may or may not be temporary

Quiz 1

- With your neighbour, make a list of some examples of projects
  - (not the ones on the previous slide!)
- Time: 3 mins

Quiz – which of these is a project?

a) Planning and running the company Christmas party
b) Installing Microsoft Office 2016 on your own computer
c) Running a state-of-the-art production line building a series of new Blu-ray players?
d) Getting a new e-mail system up and running for your company

Related terms

- A **program** is: "a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually" [PMBOK Guide, Fifth Edition (2012)]
- A **program manager** provides leadership and direction for the project managers heading the projects within the program
- A **sub-project** is a part or a project managed with a level of independence

Part 2 Agenda – Introduction to PM

- Project
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The “Triple Constraint”

- Every project is constrained in 3 different ways. It has:
  - Scope goals:
    - What will be done as part of the project? What are the deliverables?
  - Time goals:
    - How long should it take to complete? What is its schedule?
  - Cost goals:
    - What should it cost?
- A project manager balances these three competing goals

The Triple Constraint

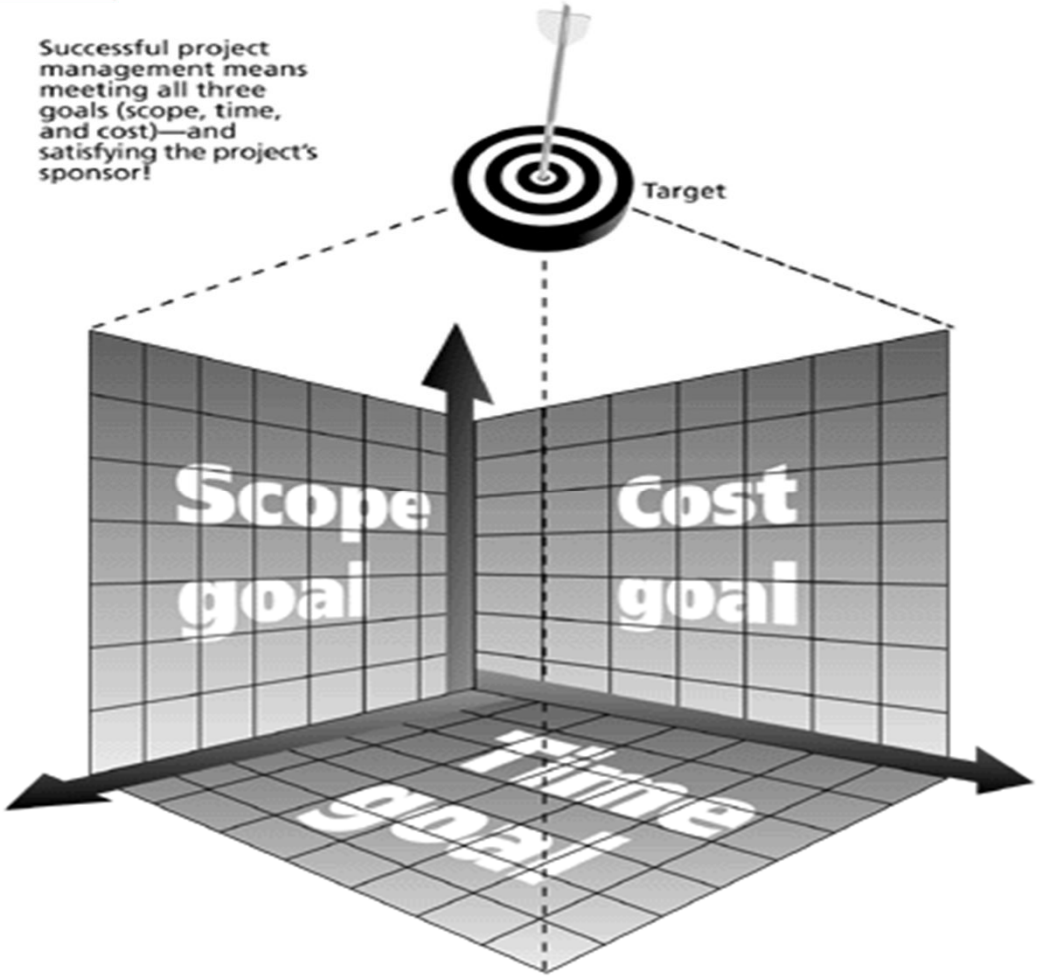
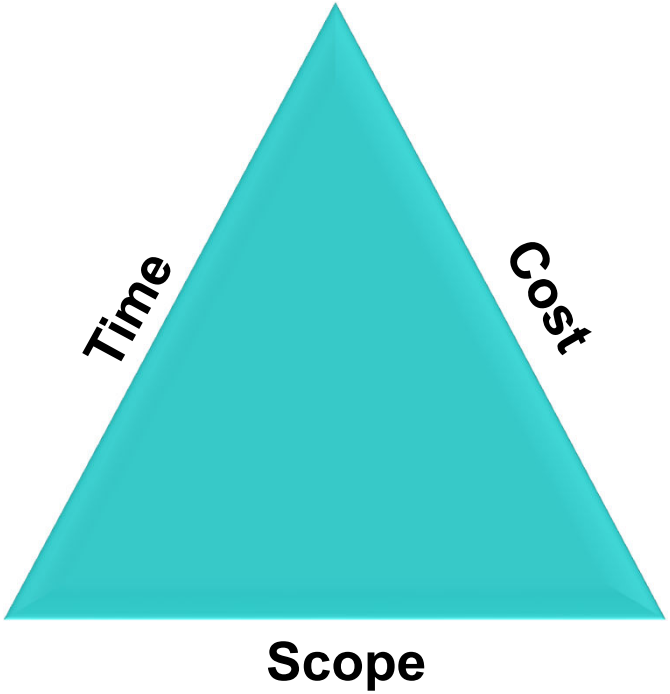


Fig 1-1, Schwalbe 2015

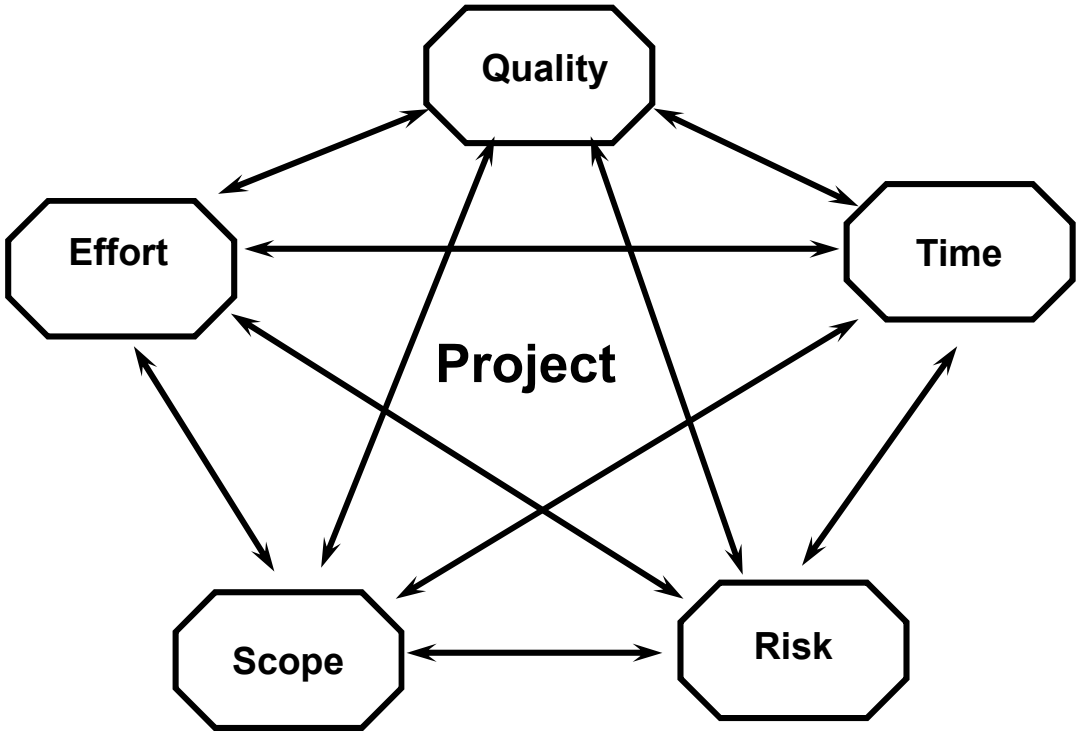
Text: "Iron Triangle"



Quiz ….

SQERT

- Two more factors



Project Management Institute (PMI)

- The Project Management Institute (PMI) develops procedures and concepts necessary to support the profession of project management (www.pmi.org) and has three areas of focus:
  - The distinguishing characteristics of a practicing professional (ethics)
  - The content and structure of the profession's body of knowledge (standards)
  - Recognition of professional attainment (accreditation)

PMBOK: Project Management Framework

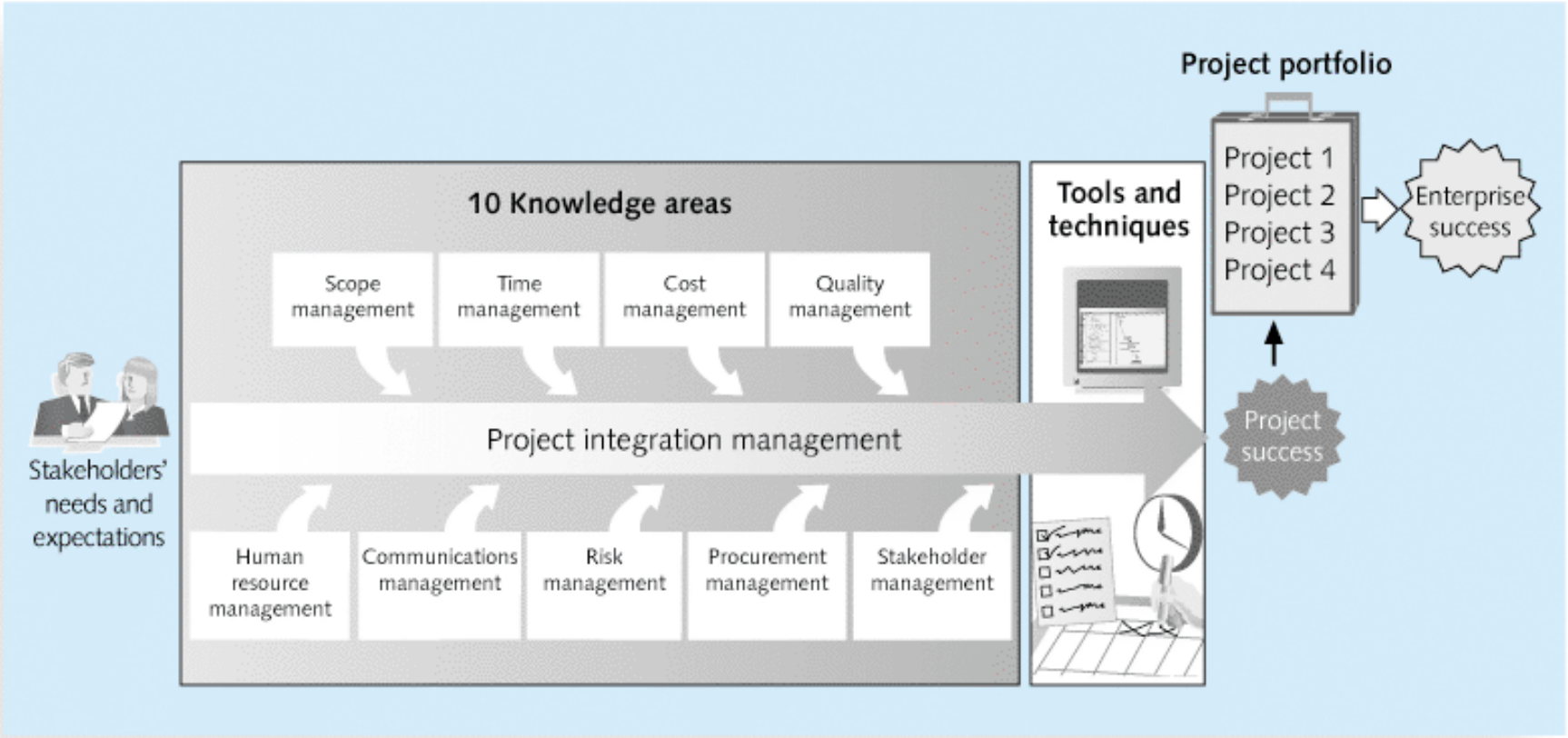


Fig. 1-2, Schwalbe 2015

What is Project Management?

- **Project management** is "the application of knowledge, skills, tools and techniques to project activities to meet project requirements." [PMBOK Guide, Fifth Edition (2012)]

It is hard to manage projects?

- 63% of IT projects complete significantly overtime, over-budget, or under-scope ("Challenged"), or do not complete at all - 2010
- Standish Group's CHAOS studies show some improvements in IT projects in the past two decades.
- Larger projects are more likely to be complete failures
  - A significant part of the success improvements comes from having smaller projects

	1994	2002	2010
Successful	16%	34%	37%
Cancelled (Complete Failure)	31%	15%	21%

Source: Standish Group CHAOS Reports cited in Schwalbe texts

Case

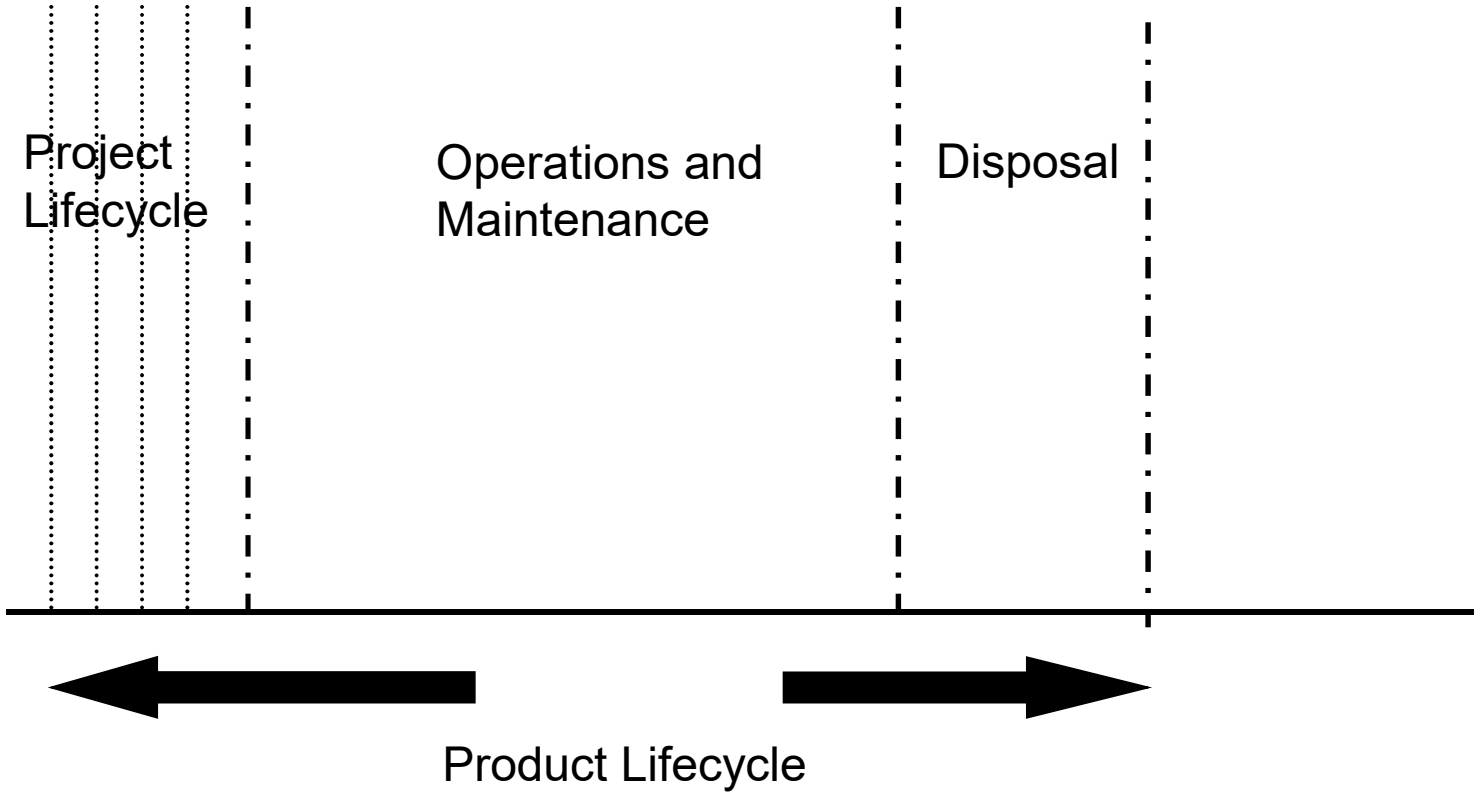
- **Sue Johnson Case**
  - Schwalbe, Kathy (2006), Information Technology Project Management, 4th Edition, Thomson Course Technology, pp 200, 201, 238, 239.
- ***Group Questions***
  - What went wrong?/What could Sue have done better?
  - Consider each of the PMBOK knowledge areas.
- Time: 30 mins

Project Life Cycle / Stages / Phases

Conception and Selection (Pre-initiating)	Project				
	Initiation		Implementation		
	Initiating	Planning	Executing, Monitoring and Control	Closing	**PMBOK Process Groups**

- The process groups / stages apply to the whole project as well as to phases of it.
  - A **phase** is a distinct stage in project development, and most projects have distinct phases
- The words "phase" and "stage" are overloaded. They are used interchangeably and refer to a whole section or to a sub-section of a project. For example "The execution phase of stage 2", "The planning stage of the final phase", "The Requirement, Design, and Build phases can each have their own planning phases"

Cf. Product Life cycle



Process Groups (PMBOK)

- **Initiating processes** include actions to begin projects and project phases
- **Planning processes** include devising and maintaining a workable scheme to ensure that the project meets its scope, time, and cost goals as well as organizational needs
- **Executing processes** include coordinating people and other resources to carry out the project plans and produce the deliverables of the project or phase.
- **Monitoring and controlling processes** measure progress toward achieving project goals, monitor deviation from plans, and take corrective action to match progress with plans and customer expectations
- **Closing processes** include formalizing acceptance of the project or phase and bringing it to an orderly end

Aside: Time for each Process Group

- The better project managers spend more time on every process group than their counterparts except for execution, as follows:
  - Initiating: 2% vs. 1%
  - Planning: 21% vs. 11%
  - Executing: 69% vs. 82%
  - Controlling: 5% vs. 4%
  - Closing: 3% vs. 2%

Source: Andy Crowe, *Alpha Project Managers: What the Top 2% Know That Everyone Else Does Not*, Velociteach Press(2006) cited in Schwalbe 2012.

Mapping Process Groups and Knowledge Areas

Knowledge area	Project management process groups (47) (PMBOK® Guide, Fifth Edition, 2012)				
	Initiating	Planning	Executing	Monitoring and Controlling	Closing
Project integration management	Develop project charter	Develop project management plan	Direct and manage project work	Monitor and control project work; Perform integrated change control	Close project or phase
Project scope management		Plan scope management; Collect requirements; Define scope; Create WBS		Validate scope; Control scope	
Project time management		Plan schedule management; Define activities; Sequence activities; Estimate activity resources; Estimate activity durations; Develop schedule		Control schedule	
Project cost management		Plan cost management; Estimate costs; Determine budget		Control costs	
Project quality management		Plan quality management	Perform quality assurance	Control quality	

Fig 3-1, Schwalbe 2012

Mapping (continued)

Knowledge area	Project management process groups (PMBOK® Guide, Fifth Edition, 2012)				
	Initiating	Planning	Executing	Monitoring and Controlling	Closing
Project human resource management		Plan human resource management	Acquire project team; Develop project team; Manage project team		
Project com-munications management		Plan communications management	Manage communications	Control communications	
Project risk management		Plan risk management; Identify risks; Perform qualitative risk analysis; Perform quantitative risk analysis; Plan risk responses		Control risks	
Project procurement management		Plan procurement management	Conduct procurements	Control procurements	Close procure-ments
Project stakeholder management	Identify stake-holders	Plan stakeholder management	Manage stakeholder engagement	Control stakeholder engagement	

Fig 3-1, Schwalbe 2012

Info6007 Topic Map

	Initiate	Plan	Execute	Monitor and Control	Closing
Integration	Week 1	(All?)	Week 8	Week 8	Week 10
Scope	Week 2				
Time	Week 3, 11				
Cost	Week 6				
Quality	Week 9				
HR	Week 4 (RM), 12 (Lead)				
Comm.	Week 8				
Risk	Week 7				
Procure.	Week 9				
Stakeholder	Week 10				

Exam: Week 6
Pre-initiation: Week 10

Agile: Week 12

Part 2 Agenda – Introduction to PM

- Project
- Project Management
- Project Life Cycle
- Project Process Groups
- **Project Charter**
- **Project Management Plan**

Initiating Process Summary

- Project managers lead efforts to:
  - Identify and understand project stakeholders (Stakeholder – Week 11)
  - Create the project charter (Now)
  - Hold a kick-off meeting

Project Charter

- The charter provides Project Manager with authority
  - A crucial part of the project charter is the sign-off section
  - Project manager uses it as the main negotiating tool
- Project Charter:
  - Describes business need, business benefits, product description
  - Contains High Level Objectives, Summary Schedule, Overall Budget, Success Criteria, Broad Approach, Key Assumptions and Constraints
  - Identifies Project Sponsor, Project Manager, Stakeholders, and Rolls and Responsibilities
  - May refer to other documents.
- The Project Charter is the core project document. It is a living Document – used throughout the lifecycle of the project.

Sample Project Charter

Project Title: Just-In-Time Training Project
Project Start Date: July 1 **Projected Finish Date: June 30 (one year later)**

Budget Information: The firm has allocated $1,000,000 for this project. Approximately half of these costs will be for internal labor, while the other half will be for outsourced labor and training programs.

Project Manager: Kristin Maur, (610) 752-4896, kmaur@globalconstruction.com

Project Objectives: Develop a new training program that provides just-in-time training to employees on key topics, including supplier management, negotiating skills, project management, and software applications (spreadsheets and Web development). Reduce the training cost per employee by 10%, or $100/employee/year. Develop an approach for measuring productivity improvements from this approach to training on an annual basis.

Success Criteria: This project will be successful if it reduces training cost per employee by 10% or $100/employee/year. It should also be completed on time, be run professionally, and meet all of the requirements. The project sponsor will fill out a customer acceptance/project completion form at the end of the project and give the project at least a 7 out of 10 overall rating.

Approach:

- **Terminate all internal training courses except the Six Sigma training once new courses are developed**
- **Communicate to all employees the plans to improve internal training and let them know that tuition reimbursement will continue as is.**
- **Work closely with internal managers and employees to determine the best approaches for providing training in supplier management, negotiating skills, project management, and software applications.**
- **Research existing training and work with outside experts to develop several alternatives for providing each training topic.**
- **Develop and implement new training.**
- **Take advantage of new training approaches and technologies and encourage employees to take some training during non-work hours.**
- **Encourage experts within the company to mentor other workers on current job duties.**
- **Determine a way to measure the effectiveness of the training and its impact on productivity on an annual basis.**

Schwalbe 2012, Fig 3-10

Sample Project Charter (continued)

Roles and Responsibilities:			
Name and Signature	Role	Position	**Contact Information**
Mike Sundby **Mike Sundby**	Project Champion	VP of HR	**msundby@ globalconstruction.com**
Lucy Camerena **Lucy Camerena**	Project Sponsor	Training Director	**lcamerena@ globalconstruction.com**
Kristin Maur **Kristin Maur**	Project Manager	Project Manager	**kmaur@ globalconstruction.com**
Julia Portman **Julia Portman**	Steering Committee Member	VP of IT	**jportman@ globalconstruction.com**
Tim Nelson **Tim Nelson**	Steering Committee Member	Supplier Management Director	**tnelson@ globalconstruction.com**
Mohamed Abdul **Mohamed Abdul**	Team Member	Senior programmer/ analyst	**mabdul@ globalconstruction.com**
Kim Johnson **Kim Johnson**	Team Member	Curriculum designer	**kjohnson@ globalconstruction.com**

Comments: (Handwritten or typed comments from above stakeholders, if applicable)

"I am concerned about people's reactions to cancelling most internal training and totally changing most training classes. I also hate to terminate some contracts with local training firms we've used for several years. We should try to get some of them involved in this project." Lucy

"I want to review all of the information related to providing the supplier management training. We need to make something available quickly." Tim

Schwalbe 2012, Fig 3-10

Project Management Plan

- A project management plan is a document used to coordinate all project planning documents and help guide a project's execution and control
- Plans created in the other knowledge areas are subsidiary parts of the overall project management plan
- Elements
  - Introduction or overview of the project
  - Description of how the project is organized
  - Management and technical processes used on the project
  - Scope, schedule, and budget information

Sample Contents for a Software Project Management Plan

MAJOR SECTION HEADINGS	SECTION TOPICS
Overview	Purpose, scope, and objectives; assumptions and constraints; project deliverables; schedule and budget summary; evolution of the plan
Project Organization	External interfaces; internal structure; roles and responsibilities
Managerial Process Plan	Start-up plans (estimation, staffing, resource acquisition, and project staff training plans); work plan (work activities, schedule, resource, and budget allocation); control plan; risk management plan; closeout plan
Technical Process Plans	Process model; methods, tools, and techniques; infrastructure plan; product acceptance plan
Supporting Process Plans	Configuration management plan; verification and validation plan; documentation plan; quality assurance plan; reviews and audits; problem resolution plan; subcontractor management plan; process improvement plan

IEEE Standard 1058-1998.

Fig 4-2, Schwalbe 2015

Review

- Introductions to the each other and the unit
- Project
- Project Management
  - Triple Constraint, SQERT, PMBOK Framework, Easy or Hard
- Project Life Cycle
- Project Process Groups
  - 5 groups …
- Project Charter
- Project Management Plan