SWEN90016

Software Processes & Project Management

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2021 – Semester 2

Lecture 1

Welcome to SWEN90016

Your Subject Support Staff

Lecturer: *Dr.* Marion Zalk
(Subject Coordinator)

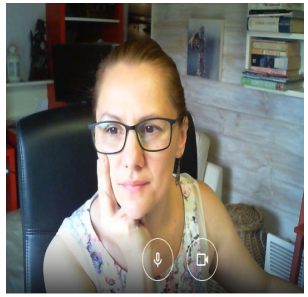
Tutors

Christina Liang

Rajesh Sundaram

Doc Wallace

Eileen O'Callaghan



Renata Romila

Who Am I?

Marion Zalk – Subject Coordinator

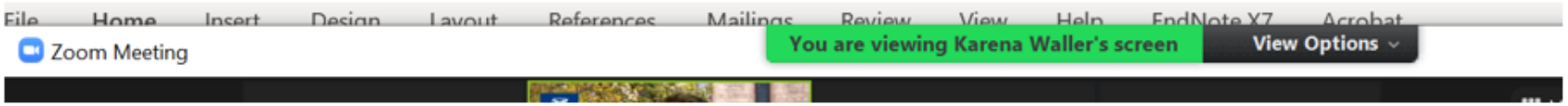
Academic – Melbourne lecturer

Professional Experience

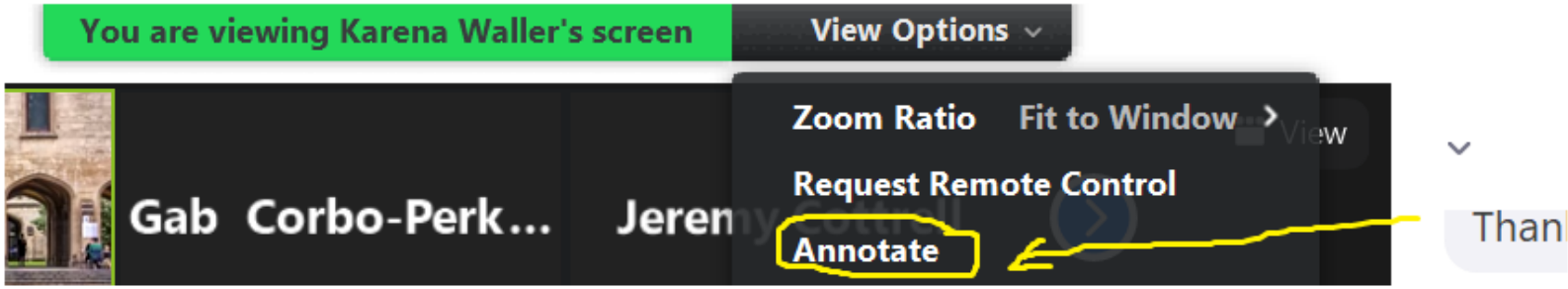
- Senior Programmer/Analyst
  - Financial and wealth management organizations (Citigroup in London, UBS & ComputerShare in Melbourne, MCubed); Consultant
- 8 Years experience
  - Waterfall, agile, hybrid
- PhD (University of Melbourne)

Annotate

Step 1:



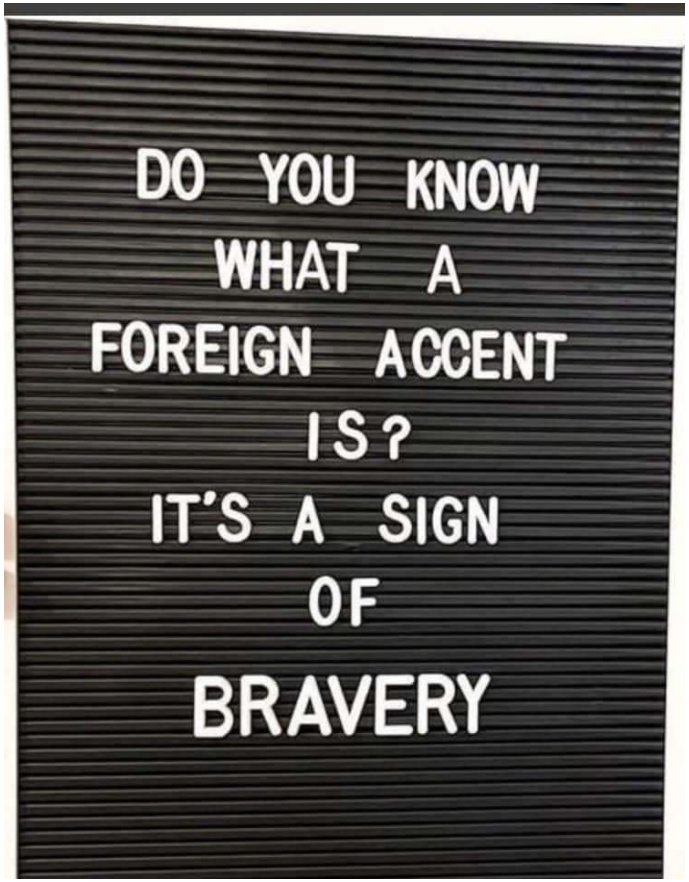
Step 2:



Step 3:

Who are You?


ARCTIC OCEAN
Greenland
Russia
Canada
United States
Kazakhstan
Mongolia
China
India
Brazil
Australia
ATLANTIC OCEAN
PACIFIC OCEAN
INDIAN OCEAN
SOUTHERN OCEAN


DO YOU KNOW
WHAT A
FOREIGN ACCENT
IS?
IT'S A SIGN
OF
BRAVERY

Learning Outcomes and Skills

AIM

The aim of this subject is to introduce students to the software engineering principles, processes, tools and techniques for analysing and managing complex software projects.

INTENDED LEARNING OUTCOMES

- Select appropriate software engineering processes and practices projects
- Manage team dynamics and professional communication
- Plan and manage projects
- Identify risks and modify project activities to mitigate these risks
- Manage software project activities to ensure a quality product
- Describe human and organisational implications of change and explain the organisational change process.

GENERIC SKILS

- In-depth knowledge project management areas of knowledge
- Reach a high level of achievement in writing, research or project activities problem-solving and communication through the writing of project analyses
- Ability to function effectively as an individual and in a multidisciplinary and multi-cultural team as a leader, manager or effective team-member
- Understand and respect ethics and intellectual integrity
- Writing and communication skills.

Lectures

Content/Theory

- Monday 6:15pm - 7:15pm (not scheduled, previously was pre-recorded, not every week; some pre-recorded)

Discussion/Application of theory/Case Study

- Thursday 5:15pm - 6:15pm
- Quiz (weeks 5, 9, 11)

Available via LMS - lecture capture

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General Expectations

Tutorials Start Monday Week 2

TUTORIALS / WORKSHOPS

- Student are expected to attend one one-hour workshop/tutorial each week.
- **Workshops are intended to take concepts and principles discussed in lectures and to apply them to realistic examples.**
- Students are expected to *actively* engage in workshops and show initiative, ask questions, conduct workshop exercises and in engage in the discussions

PLAGERISM AND COLLUSSION

- Submissions must be own independent work or group project work.
- Faculty policy: mechanisms for establishing contributions of individuals to group work
- University policy: see http://academichonesty.unimelb.edu.au/policy.html
- If plagiarism or collusion is detected, harsh penalties must and will be applied
- Module on LMS to complete

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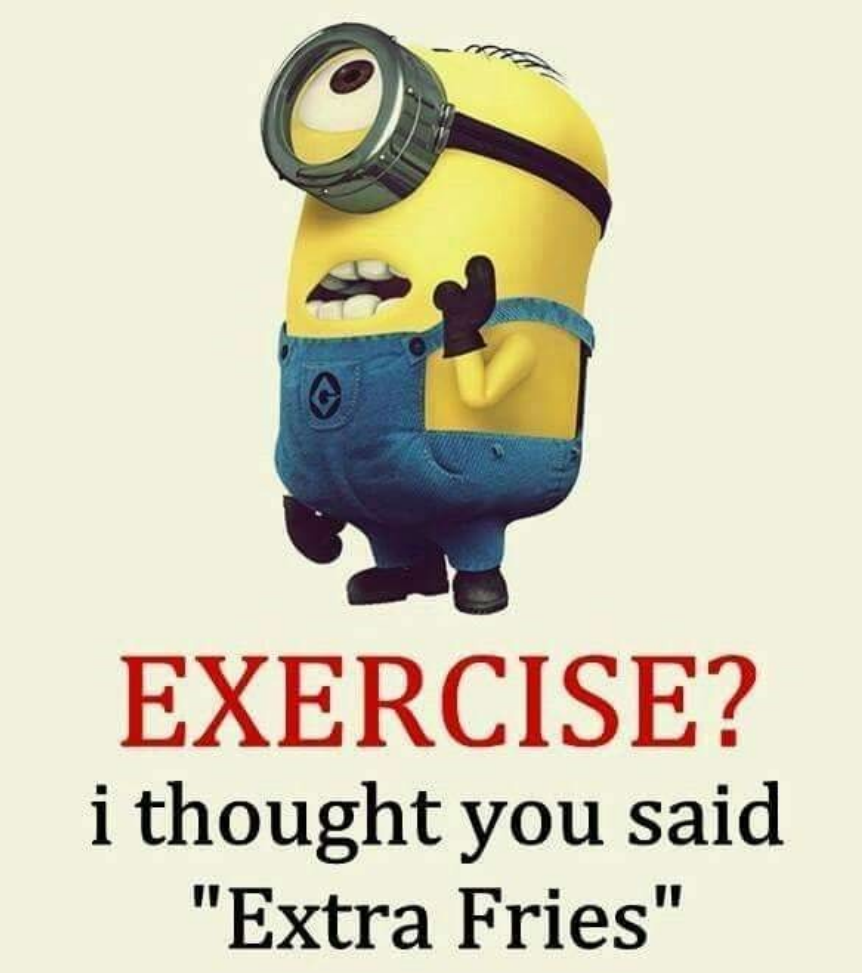
Communication



Communication

How do you get help?

General inquiries: Discussion forum on LMS

- We encourage all students to join in discussions – answering other students' questions is one of the best ways to improve your own understanding and is part of the learning process
- Discussion board- do not post sections of your assignments/solutions- if you must include these, private-message the instructors
- If you email us about a general inquiry, we may ask you to re-post your question in the forum

Personal/private concerns: Email the lecturer

Please include SWEN90016 in email subject

Email: swen90016@lists.unimelb.edu.au

PLEASE DO NOT EMAIL MY STUDENT ACCOUNT

LMS and Zoom

Due dates are available in LMS- Assignments, Quizzes (3 for marks, week 5, 9, 11) and other quizzes for review (not for marks)

Hurdle: 25/50 for assignments (overall) and 25/50 for quizzes and exam (overall).

I'll be discussing Assignments in more detail next

Zoom

Please update your computer to the latest version to make use of the features

Cameras- I am recording each live lecture for lecture capture; workshops are not recorded

This subject is interactive and requires active learning, this is dependent on students joining and engaging and talking, this is important for your learning (it is not passive subject).

2020 and 2021s1 Feedback

Feedback has been mostly positive, a few suggestions for improvement.

1. General

- Would like to thank all teaching staff in delivery of quality content in a tough period! The presenters both lecturing and tutoring were great.
- Make it an elective, not core.
- Having mid-term break on week 9 is really a bad idea
- I found my two units (SWEN90016 and xx) to be engaging and impactful - especially being my first semester in post-graduate study.
- The harder, more complex topics were given equal time as the more simple topics, an extra week or workshop reviewing them (project scheduling and cost estimation)
- High interaction based learning with integrated quizzes within the lectures and group discussion based learning in tutorials
- In industry they use hybrid models, so what we learn is irrelevant
- The material was laid out very well, and all of the teaching staff did their best to engage all of the students and make sure nobody was left behind conceptually
- X's mic makes it slightly hard to follow.
- Person's accent difficult to follow for international students.
- Practical learning

2020 and 2021s1 Feedback

Feedback has been mostly positive, a few suggestions for improvement.

2. Lectures

- For online learning I also prefer shorter 1 hour lectures. 2 hour zoom lectures are too long, especially in the evening it is vary easy to loose focus.
- The lectures are not engaging and interactive. Too much talking on concepts instead of how to apply them in real life.
- The lecturers and tutors are working hard for presenting a subject with good quality.
- The lecture slides are clear on knowledge of the topic.
- The lecturer reads the slides
- The online learning experience was just fabulous. Particularly the lecture recordings and the study materials provided by the teaching staff was highly effective and did me to a great extend.
- Staff represent project management in the slowest changing sectors, government, health and banking.
- I can see that the materials is constantly being updated and also the teaching team try to keep it relevant to the current working conditions.

3. Exam revision

2020 and 2021s1 Feedback

Feedback has been mostly positive, a few suggestions for improvement.

4. Assignments

- Assignments were interesting
- Create open sessions for us to discuss assignment and ask broad questions
- Clear assignment requirements
- The assignment's requirements should be clearer. And it would be really helpful for us to get some examples of the assignments. Since the students have various academic background, some may be familiar with what the assignment is talking about, others probably even have no idea to do a draft. Although we did researches, investigation and asked in discussion board, an example would be more useful. The example can give us a direction to do a correct thing.
- Learned more about how to plan and manage the development process.
- Teamwork in writing group project.

2020 and 2021s1 Feedback

Feedback has been mostly positive, a few suggestions for improvement.

5. Tutor and tutorials

- Tutor X doesn't seems enjoy to teaching and rush through everything ; Tutor Y is
- I felt the tutorials were run fairly interactively and there was a reasonable amount of practice and hands on learning that worked well with the subject material.

6. Discussion boards

- Thank you Marion for putting efforts into building such an efficient and helpful discussion board for students
- The subject coordinator would reply very soon and willing to answer our questions.

7. Quizzes

- I liked the quizzes during the semester, as they helped me to stay up to date with the content and make the current exam preparation much easier.
- Questions were subjective
- Intermittent tests were a great way of keeping up to date with the content. I wish more subjects had this

General Info

English

- Exam settings
- Documents and screenshots for assignments
- Please ask if I use an unfamiliar term- showstopper bug

Australia

- Working week is 5 days
- No work on weekends

All questions (assume working in Australia and would fit this context)

Quizzes

Weeks 5, 9, 11

- 15 minutes in a 25-minute window;
- Discuss the solutions
- During the lecture time (open 15 minutes before and then first 15 minutes of the lecture)
- Lecture (week 5, 9, 11)

Assignment One - Individual

Assignment 1 - Learning Outcomes:

Analysis of an IT project case study that will demonstrate the ability to:

- identify the goals of the project;
- identify the key characteristics for the project;
- identify the risks in the project as identified at the start of the project; and
- justify the choice of a suitable software development lifecycle (SDLC) model to manage the project.

Assignment One - Individual

Assignment 1:

- Assignment specification will be given out by the end of week 2 – due week 5
- You are expected to spend ~30 hours
- You will answer a set of questions related to a given case study
- Will be based on the material covered in weeks 1-4
- Ethics Q that will be due in week 12 (covered in week 9)

Assignment Two – Group

Assignment 2 - Learning Outcomes:

An IT system development project that will demonstrate the ability to:

- develop a Project Management Plan (PMP) for a given project brief;
- plan the activities involved in the chosen process using an SDLC of your choice;
- execute, monitor and control processes to achieve an outcome; and
- work effectively in a team.

Assignment Two – Group

Assignment 2

Teams:

- We will organise teams of 4-5 members during week 3
- Week 3 workshop attendance is mandatory as we will be selecting teams
- Each student is expected to spend 30-40 hours on the project
- If you have not done the foundation subjects in your degree (or have received credit for them) please consider doing this subject next semester, after you complete the foundation subjects

Assignment 2:

- Assignment specification will be given out by the end of week 5 – due week 7, 11 and a presentation in week 12
- You are expected to spend ~30 hours
- Will be based on all the material

Let me show you around LMS

LMS walk-through

Class rep

If you are interested in becoming class representative

Please email me

mzalk@unimelb.edu.au

References

Images downloaded from

Slide 5
Esha Solanki (6 July 2021). http://www.facebook.com/Women in IT

Slide 9
https://www.clipartkey.com/downpng/whRbT_question-mark-pictures-of-questions-marks-clipart-cliparting/

Slide 9
Minion Quotes (3 July 2021). http://www.facebook.com/Minion Quotes.

Lecture 1 – Intended Learning Objectives

Module 1: Subject Introduction

Module 2: Introduction to Projects

Module 3: Projects

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2021 – Semester 2

Lecture 1

Lecture 1 – Intended Learning Objectives

Module 1: Subject Introduction

1. ~~Get to know your teaching staff, subject learning objectives, subject content and semester structure.~~

Module 2: Introduction to Projects

1. Understand key elements of a Project and why organisations use them.
2. Understand the foundational components of Project Management.
3. Understand key skills and responsibilities / activities of a Project Manager.

Module 2.1 – What is a Project

A temporary endeavour to create a unique product, service or outcome.

Key characteristics:

- Introduce **CHANGE** to the organisation
- **TEMPORARY**, it has a defined beginning and end
- **CROSS-FUNCTIONAL**, cuts across organisational boundaries
- Deals with the **UNKNOWN**
- **UNIQUE**
- They all vary in **SIZE** – / , $'s and

Module 2.1 – Why do organisations use Projects

- Provides strategic alignment of key activities and visibility at the appropriate levels
- Mechanism to prioritise activities (Benefits, Regulatory, HW Refresh)
- Allows organisations to deliver change in a structured and formal manner outside of BAU
- Effective and efficient management of organisations limited resources (people & $'s)
- Establish ownership and accountability – Process and the Benefits
- Provide clarity, buy-in and agreement across what will be done, when, who, why and the outcomes

www.pmi.org/about/learn-about-pmi/what-is-project-management

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Module 2.2 – What is Project Management

Project Management is the planning, delegating, monitoring and controlling of all aspects of a project, and motivating those involved to achieve the project objectives within the expected targets for time, costs, quality, scope, benefits and risks.

Value lies in:

- Organising and structuring scarce resources
- Managing risk
- Identifying and clearing issues
- Managing and implementing change
- Retaining and re-using knowledge
- Organisational wide learning from past success and failures

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Module 2.3 – Project Manager Skills / Attributes

Project managers are highly skilled knowledge workers and change agents. They take accountability, make project goals their own and use their skills and expertise to inspire a sense of shared purpose across the project team. They enjoy the organised adrenaline of new challenges and the responsibility of driving business results.

Core Skills / Attributes:

- Work well under pressure
- Comfortable with change and complexity in changing environments
- Use / have the right people skills
- Adapt, resolve issues and deal with problems
- Effective communicators regardless of hierarchy
- Action orientated and leave nothing for tomorrow
- Command & Control
- ***Good ones are in demand, hard to find and get paid a lot***

www.pmi.org/about/learn-about-pmi/who-are-project-managers

Module 2.3 – Project Manager Key Activities (traditional)

Planning

- Define and clarify project scope
- Develop the project management plan
- Develop the project schedule
- Develop policies and procedures to support the achievement of the project objectives

Organising

- Determine the project team structure
- Identify roles and responsibilities
- Identify services to be provided by external companies
- Staff all project positions and on-going management

Leading

- Setting team direction
- Owning & coordinating activities across different organisational functions
- Motivating team members
- Assigning work

Controlling

- Defining project baselines
- Tracking project progress
- Project status reporting
- Determining and taking corrective actions

Module 2.3 – Agile Scrum Master Key Activities

"a *change is occurring*"

Agile is redefining the way we execute projects and the role of the PM.
In pure Agile:

- No defined PM role
- Key activities are spread / shared across team members
  - Key project activities are still undertaken formally with appropriate documentation
- Some alignment between a Scrum Master and a Project Manager
- Move from Command and Control to Servant Leadership
  - Coaches and facilitates teams to deliver
  - Emphasises objectives
  - Is invested in the program's overall performance
  - Asks the teams for answers
  - Allows the teams to self-organise and hit their stride
  - Assists others with fixing issues

www.pmi.org/learning/library/pm-role-lean-agile-world-9350
www.greenleaf.org/what-is-servant-leadership/
https://www.mountaingoatsoftware.com/agile/agile-project-management

Module 2.3 – Project Manager Key Activities – *The Market wants it all!*

Project Manager Job Ad - Skills and experience

- Minimum 8+ years of experience as a Project Manager managing large, complex projects with multi-functional teams
- Strong stakeholder and relationship management skills
- Experience in managing multi-vendor teams
- Experience and qualifications in Prince2
- Can deal with complexity with very solid Project Management technical skills such as ability to develop and manage schedules, financial workbooks
- Strong stakeholder partnership skills, ability to work with teams at varying levels of project experience
- Key requirement is knowledge of multiple models of technical project delivery such as agile and running sprints but equally able to build confidence with the steering committee with formal project management approaches such as setting and achieving deadlines on timing and scope

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Lecture 1

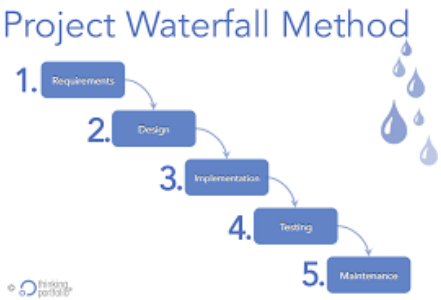
Lecture 1 – Intended Learning Objectives

Module 3: Projects

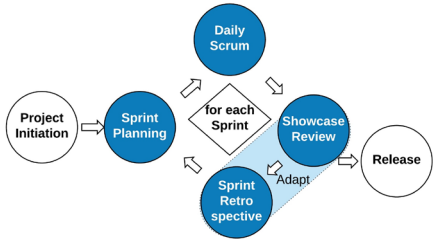
1. An initial look at (some) Project Management Methodologies / Standards.
2. Explore the key drivers of why projects fail / succeed.
3. Understand how organisations select the best / right projects (Project Screening).
4. Understand the Project Initialization process, Business Case structure and why organisations use them.
5. Explore various investment techniques and financial models.
6. Understand what a Project Charter is and how it is used.

Module 3.1 – PM Methodologies / Standards

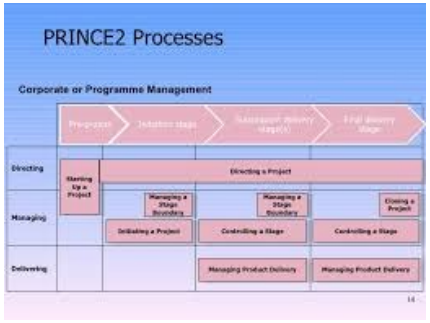
Waterfall



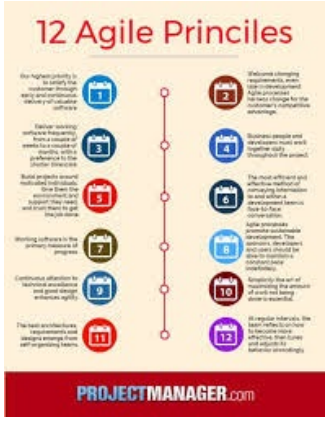
SCRUM



Prince2



Agile



Module 3.1 – Key Elements of Project Management Methodologies / Standards

Waterfall

- Traditional approach used for over 40 years
- Requirements must be defined at the start
- Little / no alternations
- Sequential - Complete 1 task and then the next
- Used in large scale SW development where thorough planning and predictability is required

Pros

- Extensive planning, this thoroughness often results in more accurate timelines and budgets

Cons

- Difficult to apply changes or modify / correct previous steps (water can't run backwards), need to be proactive in anticipating problems

Module 3.1 – Key Elements of Project Management Methodologies / Standards

Agile

- Focuses on adapting to changing situations
- Reliant on constant and regular feedback
- Focuses on iterative outcomes delivering value as quickly as possible & collaboratively
- Small manageable actions and activities
- Involvement & ownership across the team – Team members self select work
- Customer focus over formalised sign-offs

Pros

- Retains flexibility while continually producing outcomes – less rework
- Greater communication & engagement – increased buy in across the team of the end outcome

Cons

- Difficult to do without experience – especially an experienced Scrum Master
- Large projects co-location a problem
- Difficult to contract suppliers

Module 3.1 – Key Elements of Project Management Methodologies / Standards

Structured Project Management Methodologies e.g. PRINCE 2 etc

- Widely used and accepted - Consulting, Private and Government
- Process orientated approach
- Divides projects into multiple stages
- Detailed and thorough
- Must have a clear need, a target customer, realistic benefits, and a thorough cost analysis

Pros

- Extensive documentation is helpful with corporate planning & tracking

Cons

- Difficult and untimely to adapt changes and apply these to all documentation

Module 3.1 – Project Methodologies – Which on is the right one?

- They all have a place and all can be appropriate
- It is like selecting the best recipe – *it all depends on your ingredients*
- Items (ingredients) to consider include:
  - Clarity and stability of scope
  - Timelines
  - Tools to support / drive the process
  - People / knowledge
  - Organisational maturity
  - Stakeholder buy-in
  - Experience in the various approaches

Lecture 1 – Intended Learning Objectives

Module 3: Projects

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5. Explore various investment techniques and financial models.
6. Understand what a Project Charter is and how it is used.

Lecture 1- Failure or Success?

Module 3.2 – Project Success / Failure – You decide

Original estimate

- $1.2m
- 12 months

Final outcomes

- $2m (60% increase)
- 18 months (50% longer)

FAILURE----------SUCCESS

Lecture 1- Failure or Success?

Redefined the market in Tracking, Pricing, Staff Pay, Customer Flexibility and Transparency

Original estimate

- $1.2m
- 12 months

Final outcomes

- $2m (60% increase)
- 18 months (50% longer)

FAILURE----------SUCCESS

Module 3.2 – Project Success / Failure – You decide

Failure or Success?

- Original estimate
  - $5 million
- Final outcomes
  - $1.52 billion
  - > 5 years

FAILURE----------SUCCESS

Module 3.2 – Project Success / Failure – You decide

Failure or Success?

- Original estimate
  - $500million
- Final outcomes
  - $1.5billion
  - >5 years

FAILURE----------SUCCESS

Module 3.3 – Project Success / Failure – You decide

Failure or Success?

- Original estimate
  - $7m
  - 6 years
- Final outcomes
  - $102m (1,357% more)
  - 16 years (10 years longer)

FAILURE----------SUCCESS

Module 3.3 – Project Success / Failure – You decide

Failure or Success?

- Original estimate
  - $7m
  - 6 years
- Final outcomes
  - $102m (1,357% more)
  - 16 years (10 years longer)

Module 3.2 – Software Projects

History tells us we have failed.

ALL IT PROJECTS					
	2011	**2012**	**2013**	**2014**	**2015**
Successful	29%	27%	31%	28%	29%
Challenged	49%	56%	50%	55%	52%
Failed	22%	17%	19%	17%	19%

- ***Successful:*** project is completed on-time and on-budget, with all features and functions as initially specified.
- ***Challenged:*** completed and operational but over-budget, over the time estimate or offers fewer features and functions than planned.
- ***Failed:*** project is cancelled at some point during the development cycle.

Standish Group Chaos Reports: Source: Standish Group 2015 Chaos Report www.projectsmart.co.uk/white-papers/chaos-report.pdf

Module 3.2 – Software Projects - What determines success?

Success Factors	%
1. Executive Sponsorship	15%
2. Emotional Maturity	15%
3. User Involvement	15%
4. Optimisation – Statement of Requirements	15%
5. Skilled Resources	10%
6. Standard Architecture	8%
7. Agile Process	7%
8. Modest Execution	6%
9. Project Management Expertise	5%
10. Clear Business Objectives	4%

- Factors have remained relatively constant
- If we know the reasons why can't we fix / improve it?
- 60% (first 4) are non technical items and difficult to change
- Broader organisational context and system at play

Standish Group Chaos Reports: www.projectsmart.co.uk/white-papers/chaos-report.pdf
www.infoq.com/articles/standish-chaos-2015

Module 3.2 – Digital transformation projects - some stories about why projects failed

- GE created a new digital business unit but was focused on size instead of quality
- Ford started a new digital service that was separate from the rest of the company instead of integrating digital solutions
- Procter & Gamble didn't consider the competition or impending economic crash

Forbes: Companies That Failed At Digital Transformation And What We Can Learn From Them https://www.forbes.com/sites/blakemorgan/2019/09/30/companies-that-failed-at-digital-transformation-and-what-we-can-learn-from-them/?sh=7bfac7ec603c. Accessed 29 July 2021

Lecture 1

Financial Landscape as of May 2021						
		Market cap $ billion	5 year growth in stock price	Sector	Founded	000 employees
	S&P 500		+101%			
First generation 'digital giants': aka 'the Four'						
	Apple	2,080	+409%	multi-sector	1976	132
	Amazon	1,630	+384%	multi-sector	1996	1,300
	Facebook	884	+165%	social media	2004	59
	Google (Alphabet)	1,540	+215%	technology	1998	135
Second generation 'digital giants'						
	Microsoft	1,830	+380%	multi-sector	1975	166
	Tesla	542	+1,188%	automotive	2003	71
	Netflix	216	+437%	movies, video	1997	9
'Digital upstarts'						
	Shopify	152	+4185%	e-commerce	2006	7
	Doordash	45	-21%	food delivery	2013	4
	Spotify	42	[+49%]*	media streaming	2006	6
	Etsy	21	+1,874%	e-commerce	2005	1
	Zoom	91	+369%	video conference	2011	3
	BionTech	48	+1340%	pharmaceuticals	2008	1
	Moderna	63	+960%	pharmaceuticals	2010	2
Firms 'transitioning to digital'						
	John Deere	112	+361%	equipment	1837	74
	Target	109	+200%	retail	1962	368
	Haier Smart Home	42	236%	smart home	1984	100

https://www.forbes.com/sites/stevedenning/2021/05/23/why-digital-transformations-are-failing/?sh=319ac8437617 Accessed 29 July 2021

Lecture 1 – Intended Learning Objectives

Module 3: Projects

1. ~~An initial look at (some) Project Management Methodologies / Standards.~~
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5. Explore various investment techniques and financial models.
6. Understand what a Project Charter is and how it is used.

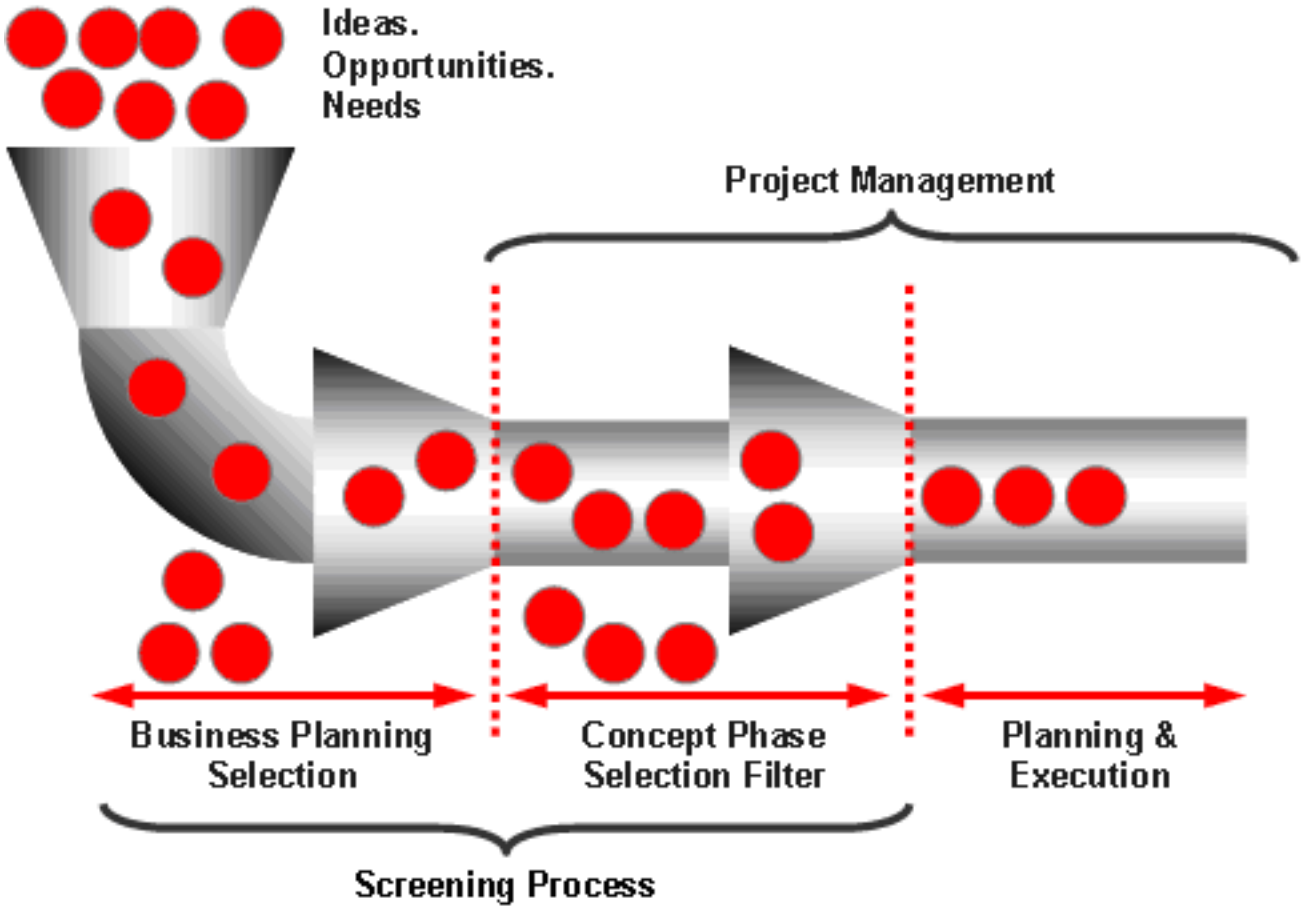
Module 3.3 – Project Screening and where to start

"*If you don't know where your going any road will take you there*". *Any Road by George Harrison – The Beatles*

- The place to start is at the beginning!
- Organisations need a formal, structured approach to:
  - Select;
  - Prioritise;
  - Have oversight; and
  - Drive accountability across all projects.

Module 3.3 – Project Screening and where to start

- Transformational
- Regulatory
- Risk
- Refresh
- BAU



Lecture 1 – Intended Learning Objectives

Module 3: Projects

1. ~~An initial look at (some) Project Management Methodologies / Standards.~~
2. ~~Explore the key drivers of why projects fail / succeed.~~
3. ~~Understand how organisations select the best / right projects (Project Screening).~~
4. Understand the Project Initialization process, Business Case structure and why organisations use them.
5. Explore various investment techniques and financial models.
6. Understand what a Project Charter is and how it is used.

Module 3.4 – Project Initialization

There are many approaches and methodologies that are widely used across industry with organisations favoring standard industry ones (PRINCE2, PMBOK, Agile etc) or usually a modified version of these they make their own.

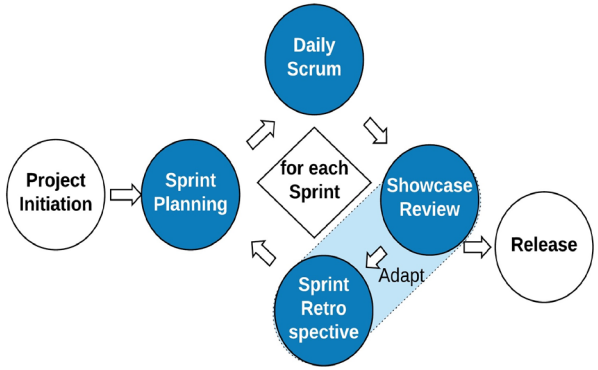
They all have Pro's & Con's.

Software PM Activities

http://blog.zilicus.com/software-project-management-activities-roles/

Prince2

AGILE



Module 3.4 – Setting up a project for success. A Business Case is the key.

The purpose of the Business Case is to establish mechanisms to judge whether the project is (and remains) desirable, viable and achievable as a means to support decision making in its initial and continued investment.

- Provides a factual base for key decisions makers to decide if the project should be undertaken
- Demonstrates how the project adds value to the organisation
- Has a set of pre-defined standard organisational characteristics (costs, benefits, risk, etc.)
- It is not all about size - size depends on the cost / benefit
- It is a living document throughout the project that should be reviewed and signed off at key stages

Module 3.4 – Setting up a project for success. The Business case is key

Business case contains:

- Executive summary
- Reasons / explanation of why it is required
- Business options
- Expected benefits
- Expected dis-benefits
- Timescale
- Costs
- Investment appraisal
- Major risks

Source: www.prince2.com

Module 3.4 - Business Case. Who's is responsible for what?

Role	Responsibilities
Corporate	1. Provides Mandate / The go ahead. 2. Holds Senior Users accountable for benefits realisation. 3. Responsible for conducting post projects benefits validation.
Executive / Sponsor	1. Owns the Business Case. 2. Responsible for reviewing the benefits throughout the project.
Senior Users	1. Responsible for accepting the benefits and delivering them. 2. Responsible for ensuring the delivered products are to the appropriate quality standard. 3. Provides on-going actual V forecasted benefit realisation.
Project Manager	1. Prepares the Business Case. 2. Conducts Risk assessment and impact analysis. 3. Assess and updates the Business Case at each defined stage.
Project Assurance / QA	1. Assists in developing the Business Case. 2. Ensure value for money and risks are continuously managed. 3. Monitors change to the Business Case and validates it.
Project Support	1. Responsible for capturing data and preparing management reports. 2. Key support point for all project stakeholders – schedules, cost analysis, minutes, actions, supplier liaison etc.

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Module 3.5 – It is all about the money!

- For non mandatory projects, the primary benefit is financial
- Multiple investment techniques are used to analyse the investment required / financial benefit
- Some (there are many more) techniques include:
  - Return On Investment
  - Net Present Value
  - Payback period
  - Rough Order of Magnitude
- However, it is not always about the best return – organisations need to invest in all parts of their business

Module 3.5 – Investment Techniques – Return On Investment (ROI)

- ROI is income divided by investment
  - ROI = (total discounted benefits – total discounted costs) / total discounted costs
- The higher the ROI % or higher the ratio of benefits to costs, the better it is
- Many organisations have a required rate of return or minimum acceptable rate of return on investment for projects (11% to 14%)

Module 3.5 – Investment Techniques – Net Present Value (NPV)

- NPV is one of the most often used quantitative/financial models for project selection
- NPV is a method of calculating the expected net monetary gain or loss from an investment (project) by discounting all future costs and benefits to the present time
- Projects with a positive NPV should be considered if financial value is a key criterion
- Generally, the higher the NPV, the more favourable a project is

Module 3.5 – Investment Techniques – Payback period

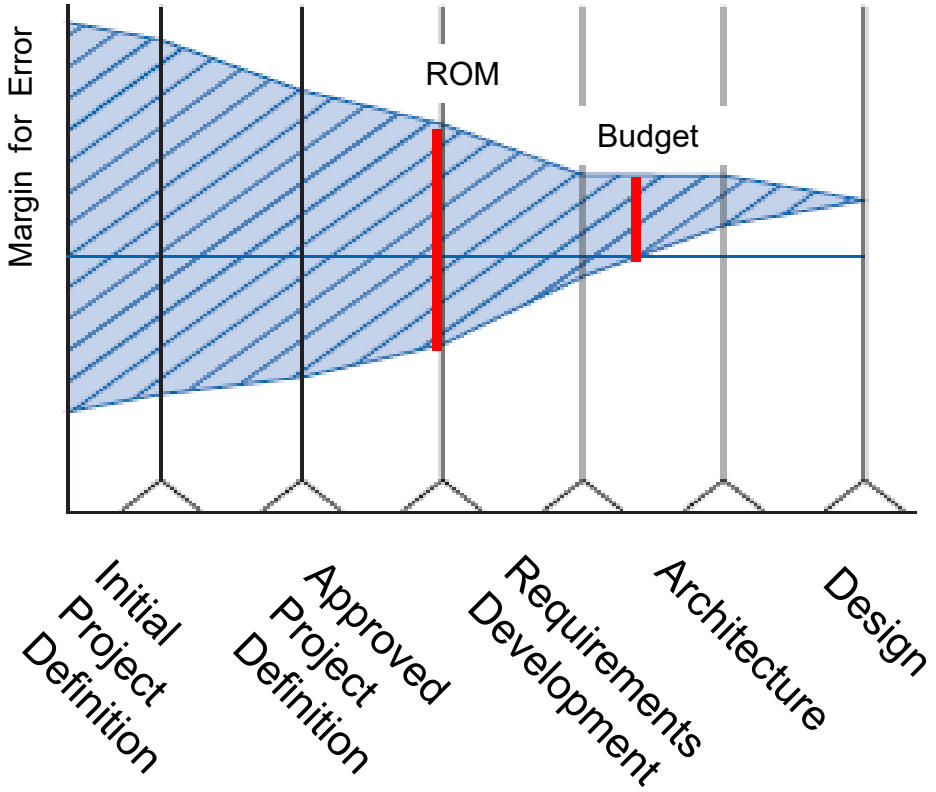
- The payback period is the amount of time it takes a project before the accrued benefits surpass accrued costs or how much time an investment takes to recover its *initial cost*
- Based on tracking the net cash flow across each year to determine the year that net benefits overtake net costs (not discounted cash flows)
- Many organizations want IT projects to have a fairly short payback period (< 1 year) due to the changing nature of technology

Module 3.5 – Investment Techniques – Project Estimation Rough Order of Magnitude (ROM)

The ***Cone of Uncertainty*** for cost estimates

Limited accuracy:

- ROM: -25% … +75%
- Budget: -10% … +25%



Reference: Kathy Schwalbe, Information Technology Project Management, pg 280

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Module 3.6 – It all begins with a Project Charter

http://blog.zilicus.com/software-project-management-activities-roles/

Lecture 1 - Simple Project Charter

Project Name

Target Date: [Date]

Project Description

Write out the project description here. Write out the project description here. Write out the project description here. Write out the project description here. Write out the project description here. Write out the project description here.

Costs

Item	Quantity	Rate	Total
Resources			
Equipment			
Budget			
Total			

Gains

Item	Quantity	Rate	Total
Cost Savings			
Time Savings			
Revenue Gain			
Net Total			

Project Team

- Person 1 – Project Manager
- Person 2 – Team Lead
- Person 3 – Analyst
- Person 4 – Developer
- Person 5 – Quality
- Person 6 – Trainer
- Person 7 – Other
- Person 8 – Other
- Person 9 – Other
- Person 10 – Other

Milestone 1

[Date]

[Description of what will be accomplished on this milestone]

Milestone 2

[Date]

[Description of what will be accomplished on this milestone]

Milestone 3

[Date]

[Description of what will be accomplished on this milestone]

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