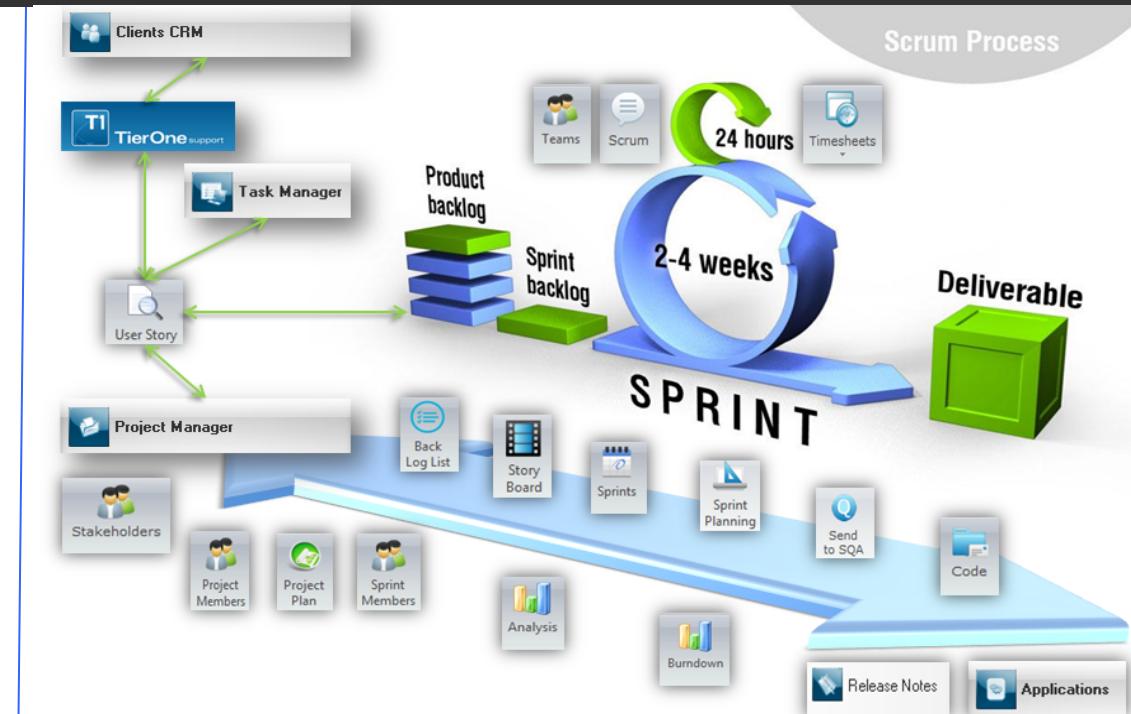
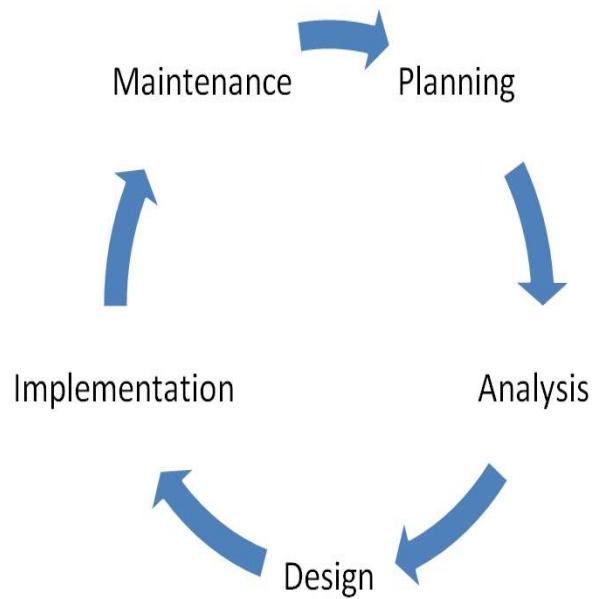




# FIT2001 – Systems Development

## Seminar 1: The nature of Systems Development

Chris Gonsalvez

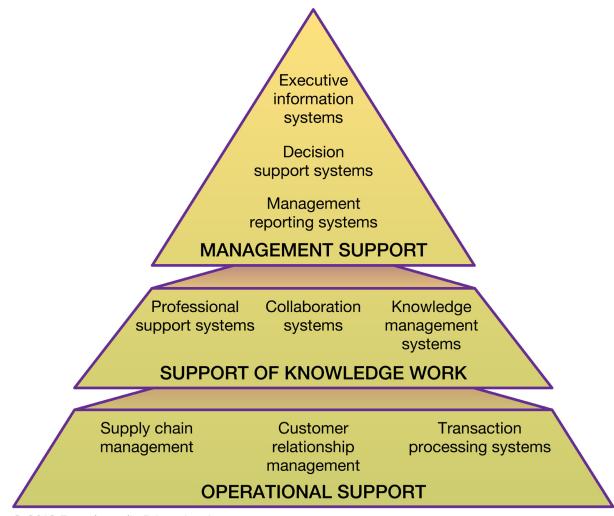


# At the end of this seminar you will:

- Understand what information systems are
- Understand the key phases of the Systems Development Life Cycle, and effort distribution
- Have knowledge of the key roles and skills required of system developers

# What are information systems?

- An integrated set of components for collecting, storing, and processing data and for delivering information
- Almost every organization relies on information systems to carry out and manage their operations, interact with their customers and suppliers, and compete in the marketplace.



- The main components of an information system are - people, procedures, hardware and software, databases, data warehouses, telecommunications



Think about an example  
of an Information  
System

Why is it an Information  
System?

Is it a good Information  
System?  
Why? Why not?

# Assessing an information systems

- Accuracy and reliability
- Accessibility
- Ease of use
- Flexibility
- Security
- Usefulness
- Timeliness
- Completeness

# Customer Relationship Management (CRM) system

## How CRM fits in with your Online Strategy



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# So how do you develop these Information Systems?

- Very simply ...

*using the process of SYSTEMS DEVELOPMENT*

*the process of creating and maintaining information systems*

What do you think the steps would be?



Spend a minute thinking about the steps you  
would need to follow to  
**BUILD A HOUSE**

# 1. Initiation: Feasibility - Can it be done?



Can you afford to build what you want?

Are there any time constraints? Is the expertise available?

Need to do a 'quick and dirty' analysis of the requirements



- Are you willing to compromise?

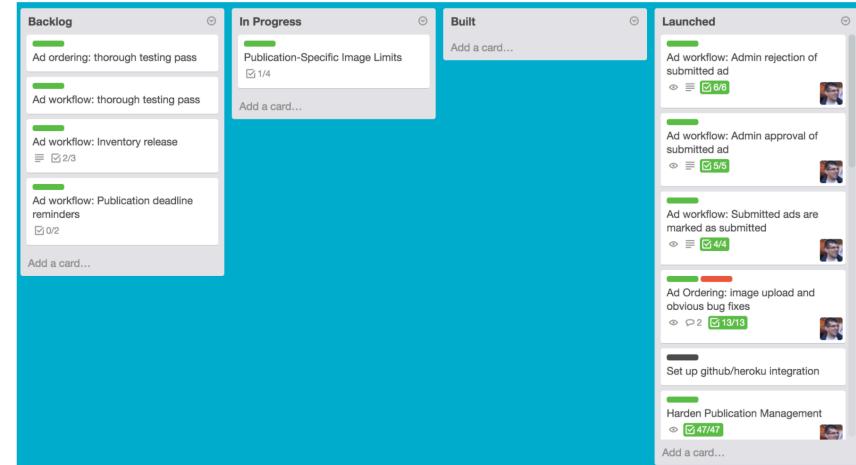
- What do you really want - mandatory vs. optional
- If there is a good chance that you can get what you want ON TIME and WITHIN BUDGET .... then you can go ahead

# Planning your development project

- You now have the SCOPE of your project .... Will it stay fixed ?
- How do you manage **scope creep** ?



Just popping out to buy a bottle of milk



- Project Planning – must be done throughout the project (FIT2002)

## 2. Analysis – What do you want?

- Does the client know what they want?
  - determines how you go about the process
  - it is vital that you demonstrate to the client that you understand their requirements

Client requirements: 4 bedroom house with 2 toilets and a garage

Which house does the client want?



These houses together with a 1000+ other houses would meet the brief?

# Build or Buy ?

- Do you have to build or can you buy a house that is exactly what you want ... you may just have to make a few modifications

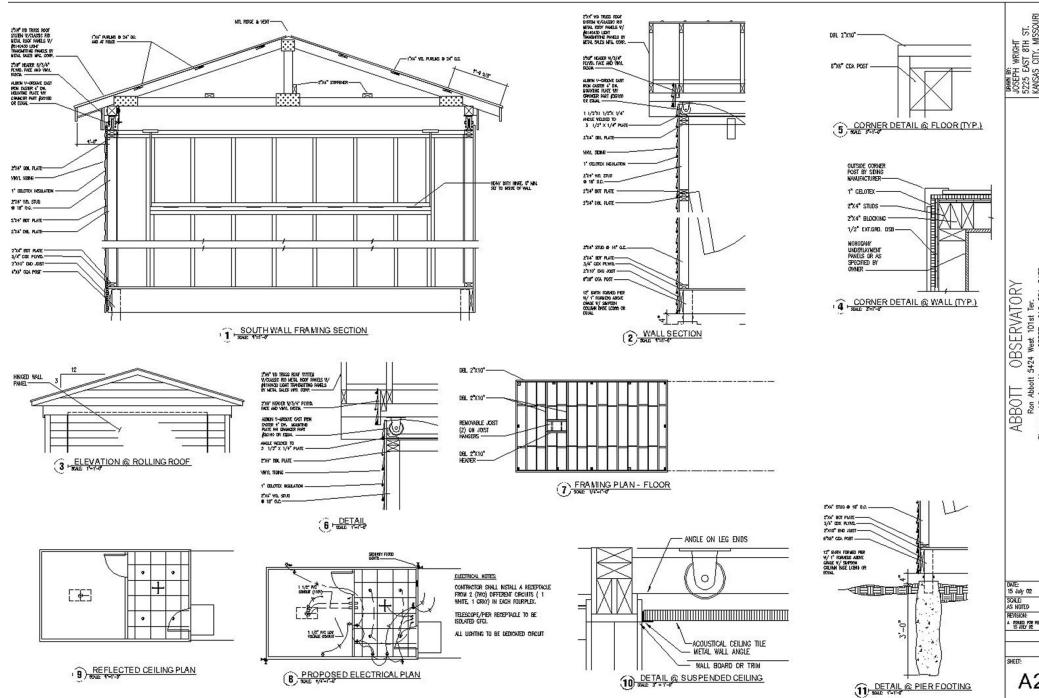


# Analysis – Build or Buy pros and cons

BUILD ?	BUY ?
Pros	Pros
Business processes unique / complex	May be cheaper
Security / Competition	Know what you are getting
Cons	May improve business processes
Build in current problems	Implement quickly
May be expensive to build / maintain	Regularly upgraded, documents provided
Time consuming	Cons
Is expertise available in-house	Customisation / Integration may be expensive and time consuming
Don't know what you will get finally	On-going maintenance can be costly
	Vendor may go out of business

# 3. Design - How are you going to do it?

- Detailed plans for the build – shows integration of various components
  - Plans for carpenters, electricians, plumbers, plasterers, etc.



# 4. Implement

## Build/Develop – Construct, Test that it is working

- Good analysis and design is essential for a good build
  - ..... together with building expertise and thorough testing



.... however, just building expertise is NOT enough

# Deploy - Is it ready? Can I move in now?

- Does it meet:
  - Government requirements
  - Sustainability requirements
  - CLIENT requirements



Are your clients happy ?



Very costly exercise if the requirements are not met



## 5. Support – Maintain it, Extend it

- Can it be easily maintained and fixed?
- Can it be added to it easily?



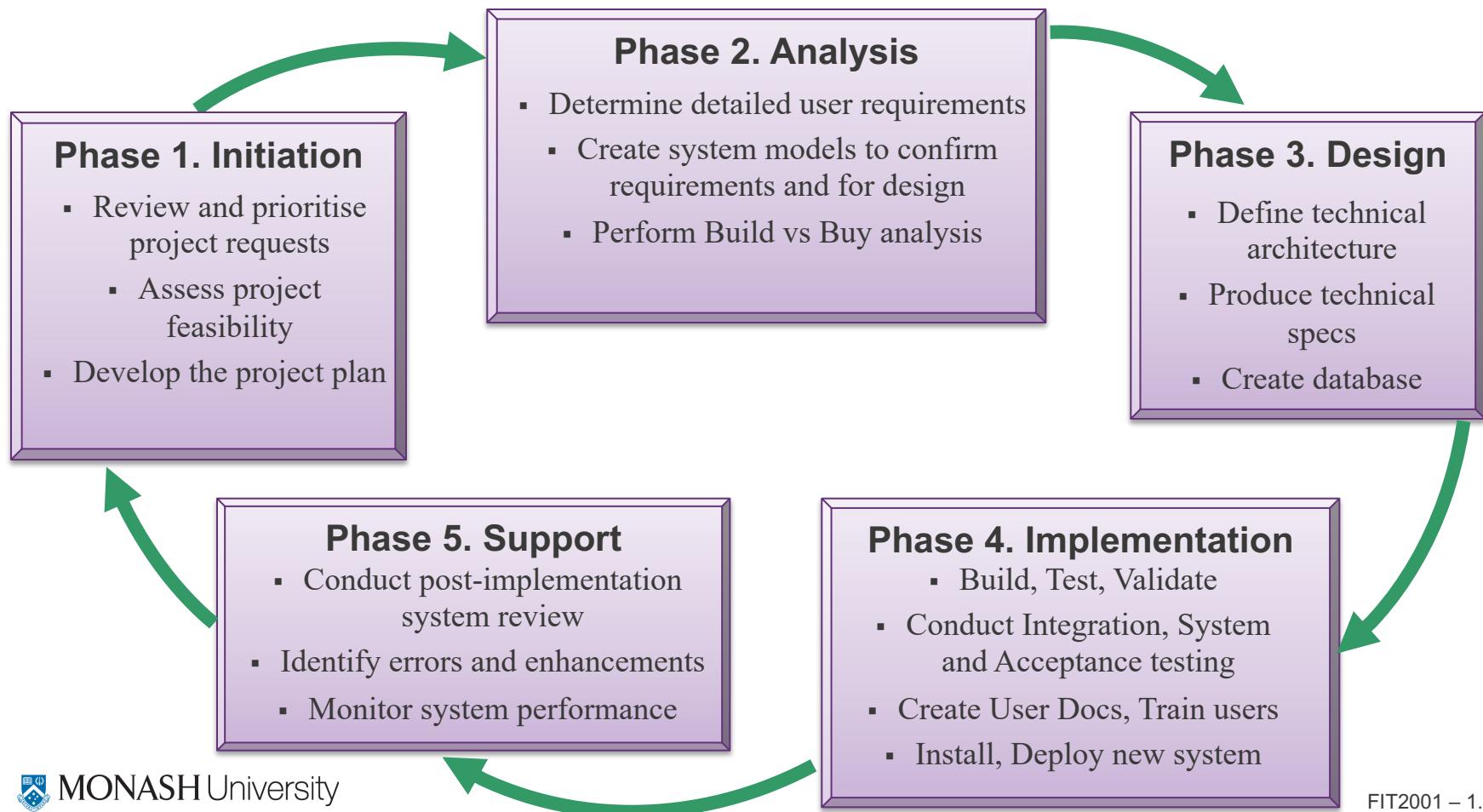
.... and finally it gets to the point where it is time to rebuild – new products, techniques, new rules, new expectations



new

# Systems Development Life Cycle

## SDLC - Phases



# SDLC Case Study

## ON THE SPOT COURIER SERVICES

### Bill Wiley – start up, same day courier service

Initially just received delivery requests via texts on his mobile, but then customers started asking if he had a website where they could place orders

As the business grew, Bill hired another person to help with the deliveries. He could no longer use his van as the ‘warehouse’, he now needed a central warehouse where he could organise and distribute packages for delivery, and if it grew further someone at the warehouse to co-ordinate the arrival and distribution of the packages

**What do we need to do to develop a system for Bill Wiley?**

# Effort distribution

- Distribution of efforts varies based on
  - Type of project
  - Size of project
  - ..... together with building expertise and thorough testing
- From research conducted in 2015 the approximate median effort for the different phases:

Phase	Effort
Planning and Analysis	15%
Design	15%
Coding	35%
Testing & Implementation	25%

# Can anyone do Systems development?

- Expertise and specialist knowledge required

Some of the wide range range of roles available:

**Managerial** – Project Manager, Team Leader

**Functional** – Systems Analyst, Business Analyst, Tester, Documenter, User Experience (UX) Designer

**Technical** – Systems Designer, Database Administrator, Solutions Architect, Developer /Programmer, Tester, User Interface (UI) Developer, Security

**Other roles** in Quality Assurance (QA), Documentation, Training and Deployment



# System developers – Critical skills for every role

- **Understanding business** - awareness and sensitivity to the business processes and needs that require technology in the first place
- **Broad and up-to-date understanding of technology** – can be invaluable in creating the ‘best’ solutions for the organisation
- **Multiple Perspectives** - The ability to understand that there are multiple perspectives to solving a problems is required to find the best solution
- **People/Soft Skills** - the ability to interact with other people and to be a part of a team
- **Continuous Learning** – essential in a high-change industry, like IT

# Job advertisement - 1

Some of your key accountabilities will also include:

Stakeholder Management and Communication: Identify stakeholders and see to the maintenance of collaborative working relations

Requirements Analysis and Lifecycle Management: Ensure the project meets the needs of the customer and business and is aligned to the overall strategy

Best practice and Delivery Methodology compliance: Understand and adhere to enterprise methodologies and processes such as the Westpac's Project Execution Framework (PEFm), Requirements Development Framework (RDF), Agile Execution Framework (AEF).

Risk Management: Ensure project related risk (both project and operations) is within desired levels and that risks are managed according to agreed Westpac's risk frameworks (Refer Operational Risk in Projects (ORiP))

Reporting: Regular status reporting as it relates to the project

Community of Practice - Business Analysis: Contribute to the Westpac Group's Community of Practice e.g. meeting attendance, knowledge up skilling/sharing

# Job advertisement - 2

Ideally, you'll have previous experience in business process improvement/re-engineering, data analysis, system functional and non-function analysis. You'll be a true people person with the ability to positively influence and negotiate with various stakeholders. Getting the job done is what you do best, and you'll be a key driver in ensuring that obligations are met by holding yourself and others accountable for behaviours and outcomes.

In addition, you will have:

A strong understanding of technology and business systems strategically and operationally

Relevant business and/or technology tertiary qualifications

The ability to analyse situations or issues, by considering all options prior to recommending and implementing a solution

Working with project managers and other business analysts, you will support the team across a broad range of daily operational activities.

# Job advertisement - 3

Document and analyse ‘as-is’ processes/procedures and collaborate with key stakeholders to develop appropriate ‘to-be’ processes/procedures

Assist technical teams (both internal and vendor based) to translate business requirements into functional and system requirements using a range of analysis models and tools such as workshops, workflow mapping, data modelling, document analysis and use cases.

Facilitate discussions and/or regular workshops to gather and confirm requirements as well as showcase solutions and potential options to ensure a common understanding.

Capture system requirements through analysis of business requirements, user stories and acceptance criteria.

Create user acceptance testing (UAT) documentation, and project documentation

Opportunity to act as Scrum master to ensure the solution team is on track for the planned sprints, by producing various reports for the PM.

Participate and contribute to continuous improvement ideas.

# Essential reading:

## Prescribed text:

- Satzinger, J. W., Jackson, R.B., and Burd, S.D.(2016)  
Systems Analysis and Design in a Changing World, 7th  
Edition, Cengage Learning, Chapter 1
- See additional resources on Moodle

# **Workshop Preparation**

**... forming a team – prepare your pitch –  
upto 30 seconds**

**Thanks for watching  
See you next week**