

INFO 5990 Final examination

Question1:

You have been asked to conduct an audit of the QA system in a client company, Outline and discuss the key elements of the audit you will conduct. Explain the QA precautionary actions you may take if some aspects of the audits are not to ISO9001 standards.

1, Outline and discuss the key elements of the audit you will conduct

According the definition of the QA system, Quality assurance systems emphasize catching defects before they get into the final product. Therefore, at first, we should understand the features of the system, like whether the system fit the definition of the system.

1, key elements of the audit

physical and environmental audit, I will audit the physical equipment, like the data warehouse, the servers, and the physical condition for the equipment, like whether the temperature is suitable.

system administration review, I will consult with the managers, and understand the process of the system management.

software application review, I will understand the condition of the software applied in the system. Like, whether the software is refreshed timely.

system security review, to understand whether the system has some errors might lead to the unexpected result.

business continuity review, to check whether the system is in line with company's business model.

data integrity review, to check whether the data is reliable, accurate and in real with.

Since the elements are covered in the project varying, we cannot contain all of above elements in an audit. However, we will try to cover all of elements in several different assignments. Then we decide choosing what kinds of key elements to audit.

In order to make it more specific, we assume the client company is Apple.

For example, according to Sayana theory (2002), we will audit the system in three aspects: availability, Confidentiality, integrity.

The first steps, availability:

The aim is to test that will systems be available for the business at all times when required. For Apple, like when there are many Apple engineers using the system, if the system could maintain the system and be available.

The second step, confidentiality:

If the information in the system be disclosed only to those related employees in the Apple?

I will implement the precaution steps in following steps.

1, Conduct an inventory for information system and categorize them.

2, we should understand the criteria of assessment about ISO9001, especially, for those have high rate of failing parts. In this way, we can where we need to put effort. In other words, we know what is the key point in order to pass the ISO9001.

3, Identify which aspects that not satisfy the requirement of ISO standards, and understand the failing reasons, such as technology problems, management problems or human issues.

4, Assigning the severity rating to them.

4, Then according to the rating, ranking each aspect of the system and re-decide the audit priority, schedule, and resources.

5, Evaluate the audit plan

based on many different plans, we choose the most suitable one.

6, Implement the plan and monitor the plan

During implementing the plan, we might encounter some problems those are not identified before. Therefore, we need to monitor the course of implementation all the time and timely adjust the plan.

2, Discuss an Information Technology (IT) in business. Explain the IT, its **benefits**, its **uses**, the **difference** it has made to the world, and the **impact**. What **negative impact** has this had if any to the users, discuss both **positives and negatives** (10 marks)

examples:

business:

1, IT

the virtual reality technology, the final goal of this technology is to build 5 sensors for human, so they can have immersive experience when they are in the virtual world.

2, benefits

It encourages more the youth to build their own startups, especially, Facebook bought the Oculus rift with 2 billion U.S dollar, which really give the youth the courage.

It explores a potentially huge markets for VR industry, for example, several months ago, one of the largest online shopping company, Alibaba, established the VR research department and planned to adopt VR technology to improve online

shopping experience.

It ignites the enthusiasm of researchers in VR technology.

3, uses

Now this technology is mainly applied in game industry in order to give the users more immersive experience. Besides, some low-end product, like Google Cardboard, Samsung VR headset are used to watch VR movies or some simple games.

Although this is an emerging technology, it has a widely possible application in near future, such as immersive experience for online shopping, simulate exercise for driving cars, and more real experience when you are watching a movie through virtual reality technology.

4, differences made to the world

New way to play the game.

New way to watch the movie, better experience, since when you are wearing the headset, you cannot see the real world.

5, impact

It has caught the eyes of the person, like venture capital, global experienced repeated entrepreneurs and encourage them to start up new businesses.

Besides, in game industry, virtual reality has become one of the most popular way to play the games.

In low-end markets, it also gives a more experience when you are watching movies with a VR headset.

However, it also leads to some possible negative effects.

Since when the person is using the VR headset, he/ she totally immerses in the virtual world. It might further enlarge the influence caused by the electronic product. That is, reducing the communication among people in the real world.

Besides, it might lead to more teenagers becoming network addiction since VR technology can provide more really immersive experience.

3, **NZ police case study**. Discuss what went wrong in this case study how would you have done things differently? **Does Whittakar (1999), "What went wrong? Unsuccessful information technology projects"** provide any insights into this particular disaster? (10 marks)

Case review and comment:

There are several main problems:

The NZ police case study is a long period up to 7 years, so the technologies are used in the project might be out of date. Actually, at that time, the new operating system, Microsoft NT was first introduced, and the manager did not refresh the system in time.

During the development of project, the new user requirements showed up and the IBM also pulled out in the half way.

Besides, the project cancelled with only 1/3 project was completed, and over time which is 12 months behind and over budget up to 4 times more than the estimated cost.

I will focus on several parts below according to these problems.

Since this is a long period project, I will pay more attention to new technology. This is because when the project takes a very long time, the initial technology might be out of data, we should keep updating the technology in order to ensure the technology will not hinder the development of the project.

Based on the case, the project is over budget and over time. If I do the project, I would combine the WBS, expert advices and other estimate tools together in order to make the estimated schedule and cost more reliable. Besides, I will use the network diagram to calculate and the planned time with slack is not empty. In this way, I can have extra time to deal with some accidents, like behind the schedule. Furthermore, once some risks happen, we will revise the budget, time in time and negotiate with the customers.

Traditional management approach, such as waterfall, is not compatible with project with high uncertainty, so I will use the agile to manage the project. In this way, we can maximum deal with uncertainties, such as new user requirements, new features, market changing and so on. Besides, I will encourage the business people to communicate with developers, testers daily, so the new features and requirements can be transferred to the project better.

In addition, I will focus on the change management which relates to people side of change. As many studies show, the human resistance is the biggest factor leading to the failure, and hence we want to minimize the influence from this factor by using change management. Besides, when implementing the change management successfully, it also can improve the efficiency and so on.

The article helps a lot on the project plan. It defined and analyzed three major reasons that lead to a failed IT project according to a case: (1) Poor project planning; (2) A weak business case; (3) Lack of top management involvement and support. In this cases, I think the poor project planning is one of the most important reasons leading to the over budget and behind schedule.

4, You have been asked by your manager at work to develop a proposal for a new IT project idea. Discuss the key elements that he will require for submission to the investment committee to ensure funding is made available, i.e. what resources, technology, timing, budgets, etc. will be required, does “IT projects: a basis for success” from Wateridge (1995) help in this exercise? (10 marks)

1, Determine work breakdown structure^[1]

Define the total scope of the project, like project goals and also mentioned in the reading, deliverables, tasks, costs and deadlines. Besides, when building the wbs structure, we should try to make it as detailed as possible. According to the reading, we should focus on the success criteria and have a thorough understanding on it. The success criteria need to be defined clearly, agreed by all parties at the beginning of project

2, Estimate amount of effort required

According to following 5 steps, estimating the efforts are needed.

size: analyze the size of the project.

Effort: like, the person hours, days, months

Resources: like, how many engineers or programmers are involved

Duration: effort/ resource

Cost: for example, 20 persons, at 70 Australian dollars per hour, = 1400.

3, Determine dependencies between activities

In order to translate a work breakdown structure into a work schedule we need to determine which activities must be completed before others may begin. Such activities are called predecessors. It is important to identify predecessors completely and accurately, because they determine the duration and flexibility of the whole project. The project manager must have a thorough understanding of the project, such

as the nature of each activity.

4, Devise project schedule

Based on above three steps, we can devise the schedule of the project. Besides, based on some criteria given in the reading, we should ensure the schedule stratifying the needs of both users and project team.

5, build a well-organized risk management system

we can handle the problems very well. Besides, it is likely to ensure the project on cost and on time like the criteria mentioned in the reading.

6, In the end, a reasonable return and investment analysis is needed.

Like the criteria in the reading, we should provide satisfactory benefits to stakeholders.

5, You are Senior Manager of Change in the “Best IT Company Pty Ltd”, you have been asked by your manager to implement a change program using the ADKAR model. Discuss the key aspects of this project and how you would go about it (10 marks).

Awareness

The first element in the ADKAR Model is *Awareness*. More specifically, this is the awareness of the **need for change** and **risk of not change**. If we do not understand why a change is needed then we do not have Awareness, and our natural reaction is to *resist the change*. In fact, **Prosci's benchmarking studies** show that a lack of Awareness is the greatest source of resistance for both employees and managers and supervisors.

The key points: be awareness of need for change; risk of not change.

Why important? the natural reaction is to resist the change, so understand the A first.

Evidence: Prosci's benchmarking studies: a lack of awareness is the greatest source of resistance for both employees and managers and supervisors

Example:

A large organization is implementing a new **document management system**. Employees will need to **learn new processes** around retrieving, editing and sharing documents within the organization. The change is needed in order to make the organization more efficient at tracking and maintaining up-to-date documents. The "why" behind the change comes from a **failure of the current system resulting in expensive mistakes and lost documents**. At the level

of an individual employee, the risks of not changing include the inability to access necessary documents and slower turnaround times on finishing tasks.

Example: according to the statement before.

Background: implement a new document management system

Why important: more efficient at tracking and maintaining up-to-date documents.

Expensive mistakes and lost documents

Inability to access necessary documents

Desire

In this phase, we should focus on the motivations for this change. In other words, what is the benefits for us or disadvantages for us if we do not implement the change.

Motivations: benefits and risks

Example:

From an individual employee's perspective, the consequences of not changing pose a risk to their performance at work, which could have other repercussions on their personal success at work. However, if an employee is not as computer savvy as other employees, he or she may be less motivated to learn a new system. On a more positive note, the new system is promised to work better than the old methods of managing documents, so, for many employees, this change may come as welcome relief.

example:

benefits, better methods to process the documents

risks, affect their performance at work

Knowledge

In order to implement change successfully, in this phase, we should know the skills and knowledge needed to support this change.

Support: skills and knowledge.

Example:

Employees are required to know how to **navigate** the new document management system and **understand** how to access files. **Training** was provided to all impacted employees. In addition, managers were trained and equipped to offer individual coaching and support to their employees to ensure the employees understand and know how to use the new tools and processes. In addition, a "practice" station was established so employees could become more familiar with the look and feel of the new document management system.

Training courses: to support the needs of employees in order to help them learn how to use the new document management system.

Practice station: employees could become more familiar with the look and feel of the new document management system.

Ability

Following knowledge, to ensure an employee have the *Ability* to **the new skills and behaviors**.

Ability: to the new skills and behaviors

Example:

For the majority of employees, adoption of the new system should be smooth, especially when allowed a few weeks to practice. There will be a select few employees who will be unable to learn the new technology, either due to personal limitations or prolonged time required to learn.

Special cases: most of people is already. But a few people are unable to learn the new technology since the personal limitations or prolonged time required to learn.

Reinforcement

The final element in the ADKAR Model is *Reinforcement*, a critical step to ensure the change is sustained. Reinforcement includes actions, recognition, mechanisms and rewards that increase the likelihood that the change will be continued.

Goal: Change is sustained

Approaches: actions, recognition, mechanisms and rewards that increase the likelihood that the change will be continued

Action Item:

List the reinforcements that will help you to sustain the change. What incentives are in place to help make the change stick? Are there any opposing incentives to the change?

Example:

The organization has tied the successful implementation of this change to employee **BONUSES**. The project sponsor is very active and visible in giving positive feedback to impacted groups who are demonstrating the change. Managers are closely working with struggling employees to ensure they can succeed at the change as well. In addition, managers are continuing to actively remove barriers and manage resistance to the change (to learn about Prosci's three avenues for managing resistance

Actions: the project sponsor give positive feedback to the group who are demonstrating the change.

Mechanisms: the manager are closely working with the employees to ensure they can succeed at change. Besides, managers are continuing to move barriers and manage resistance to the change.

Awards:

Link between the successful implementation of this change to employee bonuses.

Question 6. You have been given a **project scope for a new ERP system** and are required to **estimate a project costing**. Describe the approach you will take, what elements of the project you will need to cost the project, and possible resources required. Does Cook-Davies's (2002) article on "**The real success factors on projects**" help in this exercise – discuss. (10 marks)

Cost estimation:

According to the expert judgement and project analogy, then we get a general idea about effort, cost, and time are needed. After that, we implement following 5 steps to estimate the project.

Determine the SIZE of the project

The SIZE of the project is determined according to some metric, some commonly metrics like lines of code and function points. After understanding the size of the ERP system, it can be used to determine the effort required.

- Determine the EFFORT required.

The EFFORT is estimated in terms of person days, months or weeks required to complete

tasks. Like, before the ERP system completes, how long for each relevant person is involved in the project.

- Decide on RESOURCES needed.

RESOURCES refer to the number of personnel equipment allocated to the activity and how

many human resources are involved, like 5 programmers.

- Calculate the DURATION^[11]_{SEP}

Once effort and resources are determined, the duration can be calculated based on these two element. The formula is $DURATION = EFFORT / RESOURCES$.

- Calculate the COST^[11]_{SEP}

Based on the above three elements, COST can be calculated by considering the cost per unit of time of providing resources, including personnel, and equipment and the cost of supplies.

After getting the cost, we should compare the results with similar project and consult with experts who have similar experience, so we can know whether the cost estimation is correct and adjust the cost.

Elements of the project will be estimated:

Four elements of project estimation:^[11]_{SEP}

- Effort: amount of human resource consumed e.g. person-hours^[11]_{SEP} • Resources: human, materials, and equipment^[11]_{SEP} •

Duration: time take to complete a task $Duration = effort / resource$ • Cost: budget for completion for a task $Cost = resource * rate$

Question 7:^[11]_{SEP} You are a senior IT Project Manager at IBM and are working on a project for Telstra. Describe the possible risks and what you will do to ensure the project is on track and all risks are mitigated, describe what measures you would take to ensure timely delivery of the project. Does the work by Thomas & Fernandez (2008) "Success in IT projects: A matter of definition" help to ensure you can stay on track? (10 marks)

Possible Risks:

Staff illness: some accidents might happen, we cannot control this.

Technical "hitch": the invention is needed there.

Budget overrun

Time overrun on particular task, for example, as time goes on, some parts in the network diagram have become the critical paths.

Failure to meet requirements: the project cannot deliver the needed requirements.

Risk mitigated:

Risk based approach:

Conduct an inventory of the information system and categorise them

Identify which systems impact critical functions

Assign a severity rating to them

Rank systems and decide audit priority, resources and schedule

Avoiding risk: change the project to eliminate the risk or condition. For example, use older well-tried software or technology, rather than 'bleeding' edge.

Mitigating risk: reduce the likelihood an adverse event will occur. For example, ensure good staff condition. Build some slacks into the project schedule.

Transferring risk: pay a premium to pass the risk to another party. For example, take out insurance.

Sharing risk: allocating risk to different parties. For example, joint ventures.

Accepting risk: making a conscious decision to accept the risk and deal with the event if it happens.

Ensure timely delivery of the project:

Using the Network diagram to estimate the time needed for the project.

Using PERT to estimate the time, like some time indicator, most likely time, optimistic time and pessimistic time.

Using some indicators to monitor the project progress, for example, schedule performance index (SPI), estimated time to complete (ETC).


Once the risks are identified, we should also revise the schedule timely.

This reading is pretty useful,

In the readings,

It gives us three effective ways to success:

An agreed definition of success, consistent measurement, and use of results. It shows that once relevant definitions about success are determined, it will improve the success rate. Besides, the manager should update the measurement, requirements timely during the development. In addition, the relevant results are generated during the development, which are also used to update the project plan.

Question 8.  As an IT professional you may be interested in joining the Australian Computer Society, outline the benefits of joining the ACS, what factors will influence you joining this organisation (10 marks)

Benefits:

Opportunities to “network” with other professionals in the area. In this way, I can build a new social network with those professionals, it might also improve the opportunities for collaborative innovation. Besides, it can also let me some formal staff and learn from them to know the real IT world.

Careers services:

Some advices about job hunting, some expert guidance on resume writing, and interview exercise, those things will help me well-prepared for my later job hunting.

Achieving certified status

Bring and added competitive edge and professional readiness: It will give me an opportunity for receiving formal exercises with regard to professional, which will improve my competitive edge.

Strengthening of employment and marketability:

When I join this society, it also means that I will explore a new source for job hunting.

Greater job mobility: there will be more jobs offered in this network, I have more opportunities for changing my jobs.

What factors?

Question 9.

As an IT project engineer, ethics in your professional is of utmost importance. However, you know that in your company, many of the IT engineers are incorrectly using unauthorised software from a large supplier, would you ignore it this malpractice, or what steps would you and should take? (10 marks)

I will not ignore it. As the question said, the professional is very important in my professional. However, the unauthorized software might cause a loss of organization which will hurt the professional. Therefore, we should not use those unauthorized softwares.

I will remind him of this action first.

If he still ignores my warn, I would not mind becoming a whistle blower.

I will bring attention to those with appropriate authority.

If that fails, I will try other normal channels, like keeping formal records, seeking legal advice and check with my professional body.

Steps:

In order to deal with those ethical dilemmas

I will define the problem first, in this case, the employee uses unauthorized software.

Identify the stakeholders, it will involve this employee, the company benefits, other employees who have relation with this employee about work since his/ her work might affect others work.

Identify practical alternatives, like other authorized software.

Determine measurable impact of each alternative, like estimating the results brought by those alternatives.

Arrive at a tentative decision, like giving some possible solutions, estimating each one and choosing the preferred one.

Decide how to implement the decision, like determining the plan for implementation and monitoring the plan after the implementation.

Question 10. You are running a very successful IT software company. One day you receive a call from a client for help on a new project. What **decision support process** will you use, what **methods** and **information** will you call on to help you both understand and then provide this client with a **quote** to win the contract? (10 marks)

Decision support process:

Define requirements or problems from the client.

Gather intelligence from different sources, like the employees, collecting information from the system.

Consider possible solutions to the problem and evaluate them.

Choose the preferred solution and provide this for the client.

In addition, during the development of decision analysis:

Structuring and breaking problems down into more manageable parts.

Considering---information, alternatives, uncertainties, and relevant preferences

Combine these and produce a enough good decision.

Methods and information:

Using some analysis approaches.

Such as Modelling reality which is the representation for reality incorporating some essential aspects of an event or object. This approach can facilitate impression of time, is easy to manipulate, cheaper than scale model, no cost for making mistakes in the experiments, and also possible to build in risk and uncertainty.

Business intelligence:

Two descriptions about BI plus four components of BI. It is enough.

I will use Business intelligence system to help me. This is because when I make the business decisions, it can help me reach a balance between data and opinion. Besides, in this way, it can also provide a many-sided angle for understanding the problem, which will contribute to giving an ideal solution.

Decision support system,

This system can help me utilize data and models in order to identify, solve problems and make a decision.

Besides, I will use ETL tools, it will help me extract data into target data warehouse.

The data warehouse, it will allow me to perform extensive analysis more efficiently and have a consolidated view of corporate data.

OLAP

OLAP (online analytical processing) is computer processing that enables a user to easily and selectively extract and view data from different points of view. It can locate the intersection 交集 of dimensions and display them.

Question 11.

As the Senior IT project Manager you are required to provide the key performance measures and an update to your executive team and client before they provide further project funding. Explain what KPI's you will focus on to ensure client sign off for the next phase of the project. Does Nuaman et. al. (2005) "Information systems development failure: A case study" help in preparing for the sign off? (10 marks)

The right KPIs for you might not be suitable KPIs for another organization. Therefore, that determine which KPIs will help me further understand and meet my goals, and then integrate them throughout the project. Besides, KPIs should match strategy, not just industry.

According to the definition and features of key performance indicators (KPIs):

Background information

- tied to a target
- provide information on controllable factors appropriate for informed decision-making
- features
- KPIs should be
 - Relevant: important aspect of business
 - Indicative: success or failure of business
 - Measurable: can be expressed quantitatively
 - Predictive: able to predict the future of a particular trend
 - Understood: known relationship to performance

Therefore, the KPI that I will focus on including:

- cost or schedule performance index (CPI or SPI) money and time
- net profit before tax.

- [return on investment,](#)
- [value of new business,](#)
-
-
- [manufacturing capacity and operational efficiency](#)
- health and safety record,
-

However, there are also some difficulties during the development:

Difficulties encountered with KPIs

- [Not understood/ trust by stakeholders---stakeholders three parts](#)
- Lack of [agreement](#) among stakeholders
- [Team members believe that they are being spied on by management--spied](#)
- Can [affect team behavior—behavior](#)

Besides, I will [provide](#) dashboard [for](#) investors.

Dashboard

[is.](#)

[An easy to read, often single page,](#)
[real-time user interface](#)
[showing a graphical presentation of the current status](#)
[& historical trends of an organization's KPIs](#)
[to enable informed decisions to be made at a glance](#)

Benefits of dashboards

- Facilitate [recognition of problems](#) before they lead to other problems
- Offer [opportunity](#) for early [corrective action](#)
- Help avoid
 - escalating [costs](#)
 - deteriorating value of benefits
 - missed [deadlines](#)
 - More [intuitive](#) for customers to recognize the [current status](#) rather than

Articles Discuss: yes, this article indicates that Information System Development Project (ISDP) failure plays a key role in the long term success of any organization desirous of continuous improvement via evaluation and monitoring of its information systems (IS) development efforts.

Question 12. OLAP (Lecture12B+reading 6w-Chaudhuri2011_Business Intelligence)
 You are asked by your manager to source a [new Business Intelligence software](#) package, outline the [key elements](#) that you would look for when sourcing this

new package for your company? Suggest if the article from Chaudhuri (2011) on “Business Intelligence” can assist in this exercise and how. (10 marks)

Objective: source a new BI software package

Key elements:

data warehouse: it can create a central repository data which integrates data from one or more disparate sources.

Besides, it includes the historical and current data, which can be used for producing trending reports for senior management reporting.

End users, perform extensive analysis more efficiently

Data—a consolidated view of corporate data/ quality/ simplified data access

business analytic tools: manipulating, mining, and analyzing data. For example, OLAP (online analytical processing), which can enable users to easily and selectively extract and view data from different points of view.

business performance indicators: monitoring and analyzing performance. For example, KPIs (key performance indicators) which is a business metric used to evaluate factors that are crucial to the success of a business. Some other features.

user interface: is important part for interaction between human and machine or system.

A good interface: useful, usability.

According to the reading

Existing technical challenges and opportunities will still reshape BI landscape.

This is because,

- Data: Data acquisition is becoming easier, large data and relational data are becoming common.
- Cost: Decreasing cost of hardware, such as main memory, which will impact how the backend of large data-warehouses are architected.
- New technology: Cloud computing, leading to more changes in the BI are expected.
- New demand: Increasing demands of BI experiences in mobile device

You have been asked by your manager to conduct a **Business Intelligence exercise** for the new **CRM system** to be implemented. Describe what you would do to ensure your management has adequate information to **make a decision**. (5 marks)

How to get adequate information to make a decision? BI—for CRM system

ETL (new)

There are three steps within ETL:

Extract: extract data from different sources including those outside the organization. This one of the most important parts, since whether or not extract complete and reliable data will affect subsequent process.

Transform: transform data to fit operational needs, including quality. In this phase, it will involve many rules to transform the extracted data into suitable format for next step.

Load: load data into target database or data warehouse, which depends on the requirements of the organization, this process varies widely.

Decision analysis (like above)

Decision support system (like above)

Question 14. Week7

You are the **project manager** for the Mobile banking app. With “Your new Bank”. The project is failing with major **risks of technology not working**, and expected **time** to complete slipping. Describe the project to your senior executives, and explain your contingency plans need to be executed. (10 marks)

Problems:

Risks of technology

Expected time might slip.

What you need to do?

Describe the project to your senior executives & explain contingency plans

Report the senior executives the problems that we encounter: technology is not working and the project might be delayed.

What we need to do?

Identify the cause, what causes the technology is not working? We might implement component testing, integration testing and system testing to identify the possible reasons. And what cause the project delaying?

Besides, we also notify the management, so they can understand the problem that we face now and possible reasons. In this exercise, we notify the senior executives.

Then we can make the plan remedial strategy, for example, there is a bug in the software, the programmers can debug it.

Since it will take us some time and many resources, we need to revise the budget and project schedule. In this way, we can negotiate with customers related to the time and budge in advance.

Then we communicate the state of affairs.

What not to do in this situation?

Ignore it

Try to hide it

Try to play "catch up"

Blame someone

Contingency plan could be considered as how to deal with the risks?

For example,

Crashing the tasks on the critical paths

Use more reliable technology rather than bleeding one.

Put more effort on the project (time, and money)

Outsourcing IT talent

Question 15. Week9

You are the test manager for a large banking integration project. Describe the process of testing you would incorporate, explain your strategy. (10 marks)

Testing during development

Component testing:_____It finds the defects in the module and verifies the functioning of software. It is used to ensure that each component behaves correctly and uses white-box testing to check each program function fully.

Integration testing is the phase in [software testing](#) in which individual software modules are combined and **tested as a group**. It is used to test **interaction** between related components and focuses on **interfaces** between components.

System testing is testing conducted on a complete, integrated system to evaluate the system's compliance 依从性 with its specified [requirements](#). It is used to ensure that the user requirements have been met and focuses on usual business processes, and normal workflow.

Implementation Testing:

Performance testing
It is used to test system performance under maximum expected load and simulates **key processes** under maximum load.

Soak testing involves testing a system with a significant load extended over a significant period of time. It is used to ensure that system is stable over extended period.

Stress testing is used to determine the stability of a given system or entity. It is used to check effects of over-load.

Acceptance testing
It is used to compare system functionality against agreed-on user requirements and carried out by client using scenarios, supervised by developer.

Two cases review:

Nectar case:

Underestimate the number of expected customers which finally caused the system collapsed.

Functionality of system had been tested but not under load.

Had not anticipated the level of user load.

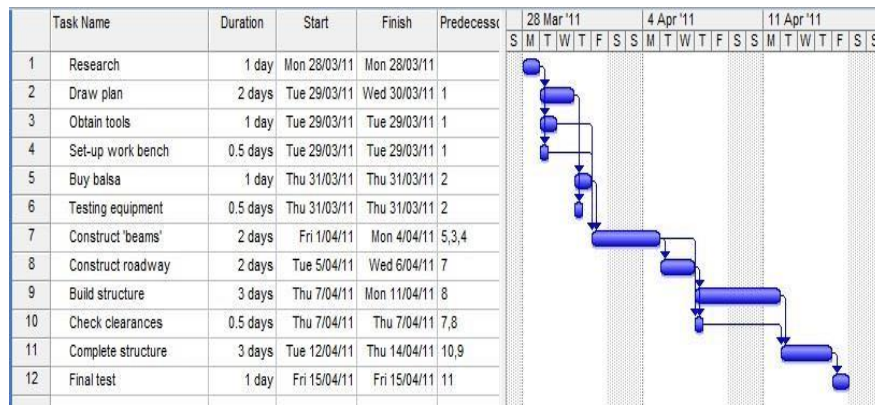
They did not do stress testing, because they do not think the system will fail completely under pressure.

Tesco case

Three parts did well.

Question 16.

You are facing a **critical path** in your IT implementation as outline below, particularly task number 8 is in jeopardy of being delayed. Describe what options you have to **bring the project back onto schedule**. (10 marks)



The critical path in this project is 1,2,5,7,8,9,11,12. The task number 8 is in the critical path, therefore, if the task number 8 is delayed, the entire project schedule will be delayed. Choose the duration is longer one as a part of the critical path. Besides, they should include zero slack.

The first option to bring the project back onto schedule is **crashing**. Crashing is a advantage---crashing is shortening the time it takes to finish a project. disadvantage---crashing is that it often increases total project costs.

The second option to bring the project back onto schedule is **fast tracking**. Fast tracking involves doing activities in parallel that you would normally do in sequence. The main advantage of fast tracking, like crashing, is that it can shorten the time it takes to finish a project.

The main disadvantage of fast tracking is that it can end up lengthening the project schedule since starting some tasks too soon often increases project risk and results in rework.

Question 17. Week4

Your manager has fallen sick and you are required to make a presentation to the Chief Information Officer and his senior management team on the progress of the new CRM system. You have 10 minutes to give them an update. What are the key elements of your talk? (10 marks)

Key elements:

1. draw formal suits. It might make me look like more professional and give a good first impression to listeners.
2. when I am talking, I will focus on these points below:

2. Opening: The opening should catch the interest and attention of the audience immediately. For example, I can give some interesting pictures related to our project attracting their attention.

3. Transitions: The link between successive elements of the talk should be planned carefully. I will make connection between different parts, so audiences can follow me easily. Besides, at the beginning of the presentation, I will give a brief summary about the presentation structure. In this way, the audiences can have a general idea about something I will talk later.

Rate: The optimal rate for a scientific talk is about 100 words per minute. So I will control my speed by using pauses and repeat critical information.

4. Conclusion: Summarize the main concepts you've discussed, and how your work relates to issues you've raised.

5. Length: Don't run over! Ever! Shorten your talk by removing details, concepts, and information, not by eliminating words. If it is important, you can just keep it. Make about 10% more handouts than you think you'll need. Always leave time for a few questions at the end of the talk.

6. Timing
practice presentation ensuring you will not over time.

Allow time to present key points
Leave time for conclusion

7. Physical factors

Making audience comfortable

8

Know your audience
Be confident

9. Visuals – PowerPoint

Support just one idea at a time
Uncluttered layout
Simple colours
Not overloaded with information

Besides, I should make sure the presentation will contains the most important

parts since limited time. For example, the feasibility of the project, the financial benefits, the project scope, budget, schedule and so on.

Question 18. (Lecture 9A+8B)

You are working for IBM and have been appointed to head the merger of Westpac and St. George bank's internet banking platform. What systems integration techniques would you use, and why. You may wish to use the V model for testing. (10 marks)

Integration techniques? Use? Why?

What is V-model?

Is a model for software development. Like the graph below

There are 3 important elements in the V-model:

1, verification

It can ensure that we are doing the right job.

- Checking for conformance and consistency with the specification
- Static testing, using reviews, inspections, walk-through carried out by programming team

2, validation

- Checking that the specification is what the user actually wanted
- Product oriented
- Dynamic testing using test scripts, scenarios
- Sponsor and end users involved in testing

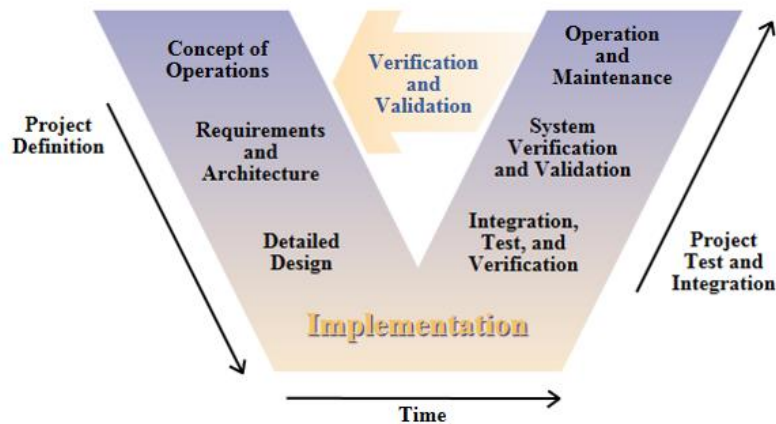
3, Implications of the V-model

- Means that testing is considered early in the development life cycle, well before coding
- Avoids chaos towards the end of the project
- System design is continuously checked
 - against specifications (verification) and
 - against user requirements (validation)
- Means that the probability that the final product will satisfy the user's needs is much improved

Why I will use it?

Because it will

The V-Model for software development



Advantages of V-model:

- Simple and easy to use.
- Testing activities like planning, test designing happens well before coding. This saves a lot of time. Hence higher chance of success over the waterfall model.
- Proactive defect 积极的缺陷 tracking – that is defects 缺陷 are found at early stage.
- Avoids the downward 向下的 flow of the defects.
- Works well for small projects where requirements are easily understood

Question 19.

You are a project director for a large **airline** responsible for ensuring the online checks in systems is delivered on time. One of your software engineers is bad at time management and has consistently delayed major tasks. What would you

do to ensure this software engineer delivers his piece of the project? (10 marks)

Director for a large airline

Problem: engineers is bad at time management and delayed major tasks.

Change management:

Let him understand the importance of his job, and he makes progress on meaningful job.

Identifying the reason why he is bad at time management, we can make a time schedule for him or something else in order to he can have an idea when he should finish his work.

We can use ADKAS model to help him.

Question 20. Week8

You have been asked to recruit an IT test engineer for your new project, how will you assess if this person is the most suitable, and what questions would you likely ask? (10 marks)

Recruit an IT test engineer for your new project.

How to assess if this person is the most suitable?

Through the resume and social websites, like Linked, have an initial impression about him and his past experience.

We can assess him in several parts.

1, Whether he or she meets the codes of ethics:

Like

I will ask him to give me an example in his past experience for showing his professional. Besides, I will give him some example in order to test his reaction on ethics.

2, if he has adequate ability?

If he is an experienced tester, I will ask him to give me some examples in his past experience can show his role and function in the test course. Besides, I will also give some specific examples to test his ability.

if he is not an experienced tester, I will focus on testing his professional skill, some questions might like, how to complete a test for a software?

3, if he can have ability to constantly learn?

Challenges when recruiting

Pace of change in the industry means skills can become out of date, Recruiter is not technically aware

Techos need to know how business works

Lower cost global options

Skill shortage (eg with emerging technologies)

Deloitte outlined the following steps to managing IT Talent in a Recovery:

- Communicate and show you care
- Managers to be accountable
- Clear Career Path
- Don't burn
- Try to avoid pay cuts
- Smarter ways to develop people
- Tell the truth
-

I will assess this person according to five aspects:

- Previous experience
- Capability to constantly learning
- Ability to handle problems
- Awareness of his responsibility
- Professional skills

2)

About professional questions:

What is white box and black box testing? What is the difference between them?

What model you will use when testing?

If you find out many mistakes of a system, what will you do?

Explain the V-model process.

About non-professional questions:

What will you do if your work time and life time have conflicts?

What will you do if colleagues ask you for help when you are busy?

