Professional Practices

CS 625

Week 1 Topic: The Profession

- Introduction
- Professionalism
- Traits of a Professional
- Applying Professionalism in Daily Life

Introduction

- **Profession**: A paid occupation, especially one that involves prolonged training and a formal qualification.

- **Professional**: A professional is a member of a profession or any person who earns their living from a specified professional activity. The term also describes the standards of education and training that prepare members of the profession with the particular knowledge and skills necessary to perform their specific role within that profession.

Professional Responsibilities

- With reference to Information Technology, Computer Science or Software Engineering, the responsibilities of working professionals in this area include network administration, software development and installation, and the planning and management of an organization's technology life cycle, by which hardware and software is maintained, upgraded and replaced.
- But these are not ENOUGH.

Engineering *Council states that other than professional Knowledge, an Engineer must know*

- Technical decision making and its commercial and economic implementation;…knowledge of government legislation affecting work, e.g. safety, health, environmental requirements; an understanding of the principles of management and industrial relations; some knowledge of trade unions and their organization; an understanding of the engineer's responsibility to the profession, to the community and to the environment

The Professionalism

- A profession isn't just what you do, it's who you are.

- Professionalism is a way of thinking and living rather than an accumulation of learning.

Traits of a Profession

Four Traits of Profession

1. Varied activities requiring special skills
2. Society-centric motivation
3. Personal standards of excellence
4. Giving back to society

A professional behaves ethically

- Ethics means something more than 'law' and 'morals'.
- It carries an additional connotation of 'rightness'.
  - Breaking the law: can earn a fine or jail time
  - Breaking a moral: can ruin your reputation
  - Breaking an ethic: can ruin your conscience

  It's possible to break all three, simultaneously!

Traits of a Professional

- Being a professional means that they are certain traits which are expected from you.

- We will go through Each of them

Trait # 1 of a professional: Seriousness

- Serious about job
- The job is only a job. A means to an end

Trait # 2 of a professional: Wanting to do better

- Exhibit a never-ending quest to improve their performance in every variable, every project, every relationship, and every detail.

Trait # 3 of a professional: Dealing with the Unexpected

- Stuff happens, things change, and the true professional rises to the occasion

Trait # 4 of a professional: Communication Skills

- Clear
- Concise
- Confident

Trait # 5 of a professional: Enthusiasm

- Attitude is everything. Those who exhibit enthusiasm for what they do and greet each day with a positive attitude inevitably become a leader

Trait # 6 of a professional: Helpfulness

- Understand that real success in the workplace requires teamwork
- Always ready to lend a hand
- Make a suggestion
- Offer a compliment when it's deserved

Trait # 7 of a professional: Taking the Initiative

- Takes the initiative to get things done

Trait # 8 of a professional: Cool under Pressure

- Level headed and calm
- Cheerful demeanor-even under stressful times

Trait # 9 of a professional: Remains Focused

- Stay focused on the task at hand and the goal ahead
- Navigate through obstacles or setbacks but never lose sight of where they headed

Trait # 10 of a professional: Don't Follow, Lead

- True Professionals aren't faint of heart
- Analyze the situation and willing to take new paths and try new solutions
- That's why they call it LEADERSHIP!

Applying Professionalism in Real Life

Scenario #1

- You are the owner of a software engineering company. Your employees (engineers) want you to pay for them to attend training.
- How would you respond in a way that is legal, moral, and ethical?

Scenario #2

- You are the owner of a software engineering company. Your employees (engineers) want you to let them do pro bono work for a local non-profit organization on company time.
- How would you respond in a way that is legal, moral, and ethical?

Scenario #3

- You are a software engineer at a company where management routinely encourages you and your colleagues to use pirated software.
- How would you respond in a way that is legal, moral, and ethical?

Thank you!

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Week 2 Topic: Professional Ethics & Code of Ethics

- Introduction
- IEEE Code of Ethics
- ACM Code of Ethics
- Different Scenarios
- Cyber Ethics

Introduction

- **Law:**

  Rules that mandate or prohibit certain behavior in society.

- **Moral Values :**

  The fixed moral attitudes or customs of a particular group

- **Ethics :**

  Define socially acceptable behaviors.

Code of Ethics

- Established by various professional organizations
  - Produce a positive effect on judgment.
  - Establishes responsibility of professionals to act ethically according to the policies and procedures of their employers, professional organizations, and laws of society.
  - Organizations assume responsibility to develop, disseminate, and enforce policies.

Code of Ethics' Goals

Provides an aid to individual decision making, presentation addresses nine different cases (with some overlap).

- Intellectual property
- Privacy
- Confidentiality
- Professional quality
- Fairness or discrimination
- Liability
- Software risks
- Conflicts of interest
- Unauthorized access to computer systems

IEEE Code of Ethics

- IEEE Code of Ethics: Actions

1. PUBLIC - Software engineers shall act consistently with the public interest.

2. CLIENT AND EMPLOYER - Software engineers shall act in a manner that is in the best interests of their client and employer consistent with the public interest.

- IEEE Code of Ethics: Products

3. PRODUCT - Software engineers shall ensure that their products and related modifications meet the highest

Continued…

- IEEE Code of Ethics: Hierarchy

4. JUDGMENT - Software engineers shall maintain integrity and independence in their professional judgment.

5. MANAGEMENT - Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance.

- IEEE Code of Ethics: Peers

6. PROFESSION - Software engineers shall advance the

Continued…

7. COLLEAGUES - Software engineers shall be fair to and supportive of their colleagues.

- IEEE Code of Ethics: Self

8. SELF - Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession.

Principles of IEEE Code of Ethics

- Act in public interest
- Act in interest of clients and employers
- Produce quality products
- Maintain independent judgment
- Manage ethically
- Protect integrity of profession
- Support colleagues
- Pursue lifelong learning

ACM Code of Ethics

General moral imperatives: "As an ACM member I will..."

- Contribute to society and human well-being.
- Avoid harm to others.
- Be honest and trustworthy.
- Be fair and take action not to discriminate.
- Honor property rights including copyrights and patents.
- Give proper credit for intellectual property.
- Respect the privacy of others.

Specific professional responsibilities: "As an ACM computing professional I will":

- Strive to achieve the highest quality, effectiveness and dignity in both the process and products of professional work.
- Acquire and maintain professional competence.
- Know and respect existing laws pertaining to professional work.
- Accept and provide appropriate professional review.
- Give comprehensive and thorough evaluations of computer system and their impacts, including analysis of possible risks.
- Honor contracts, agreements, and assigned responsibilities.
- Improve public understanding of computing and its consequences.
- Access computing and communication resources only when authorized to do so.

Organization leadership imperatives: "As an ACM member and an organizational leader, I will:"

- Articulate social responsibilities of members of an organizational unit and encourage full acceptance of those responsibilities.
- Manage personnel and resources to design and build information systems that enhance the quality of working life.
- Acknowledge and support proper and authorized uses of an organization's computing and communication resources.
- Ensure that users and those who will be affected by a design have their needs clearly articulated during the assessment and design of requirements; later the system must be validated to meet requirements.
- Articulate and support policies that protect the dignity of users and others affected by a computing system.
- Create opportunities for members of the organization to learn the principles and limitations of computer systems.

Compliance with the Code: "As an ACM member, I will:"

- Uphold and promote the principles of this Code.
- Treat violations of this code as inconsistent with membership in the ACM.

Ethical decision making: Case 1

- **Ali is a database programmer**

  Large statistical program needed by his company.

  Company programmers are encouraged to publicize their work

- **Ali has found himself stuck on a problem**

  He has persisted at this for several months.

  His manager does not recognize complexity of problem.

  She insists job be completed in the few days.

- **Ali remembers:**

  Co-worker had given him source listings of their current work.

  He also has an early version of commercial software developed at another company

- **Ali studies these programs**

Sees two areas of code which could be directly incorporated into his own program

He uses segments of code both from his coworker and from the commercial software

- He does not tell anyone or mention it in the documentation.
- He completes the project and turns it in a day ahead of time.
- How does the Code of Ethics help us understand this

Applying the code: Case 1

- **This case highlights issues involving intellectual property**
- **Ali violated professional ethics in two areas:**

  1. Failure to give credit for another's work

  2. Using code from a commercial package that was copyrighted

- **If Ali only "looked" at co-worker's source code:**

  Could he then write his own program and still have an obligation to give credit?

- **Yes:** He should have acknowledged credit in

Continued…

- **Use of commercial software code was also not appropriate:**

Ali should have checked to determine whether or not company was authorized to use source code before using it.

- **In general:**

Desirable to share and exchange intellectual materials

But using software is definitely a violation of code.

Ethical decision making: Case 2

- Aisha's company has been hired by a client to build a security system. Because of cost overruns, client has decided to opt for a less secure system.
- **Aisha believes information they will store is extremely sensitive.**
- **With weak security:**

Employees on workstations could figure out how to access this data.

Online intruders would also have access

- **Aisha feels strongly that system should be much more secure.**

Applying the Code: Case 2

- **This case highlights issues involving privacy.**
- **Company officials:**

  Have an obligation to protect privacy of their employees. Therefore they should not accept inadequate security.

- **Aisha's first obligation:**

  Attempt to educate company officials

  If that fails, she needs to consider her contractual obligations in honoring assigned responsibilities.

- **We don't have Aisha's contract, but she may have to choose between her contract and her obligation to honor privacy and security.**

Ethical decision making: Case 3

- A contractor is determining requirements for an employment agency.
- Client describes what is needed when displaying applications whose qualifications appear to match those for a particular job
- Client also further states that names of white applicants are to be displayed ahead of nonwhites
- Further states that names of male applicants are to be displayed ahead of female applicants

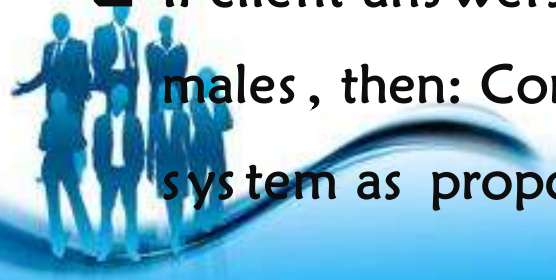
Applying the Code: Case 3

- **This case highlights issues involving fairness and discrimination.** In this case, system designer is asked to build a system that, it appears
- Will be used to favor white males and discriminate against non-whites and females
- **From this is would appear that:**

System designer should not do what he or she is told, plus

Should also point out the problematic nature of what is being requested and ask client why this is being done

- **If client answers that they plan to use information to favor white males, then: Computer professional should refuse to build the system as proposed.**



Ethical decision making: Case 4

- **A software development company has just produced a new software package.**
- It incorporates new tax laws and prepares both individual and small business tax returns
- **The president of the company knows that the program has a number of bugs**
- He also believes the first firm to put this kind of software on the market is likely to capture the largest market share.
- **The company widely advertises the package.**
- When the product is shipped, it includes a disclaimer of responsibility for errors resulting from the use of the program.

- The company expects it will receive a number of complaints, queries, and suggestions for modification. The company plans to use these to make changes and eventually issue updated, improved and debugged versions. The president argues that this is general industry policy:
- "Anyone who buys version 1.0 of a program knows this and will take proper precautions."
- Because of bugs, a number of users filed incorrect tax returns and were penalized by Rev Canada.

Applying the Code: Case 4

- This case highlights issues involving legal liability for unreliable code. Software Company (and president in particular) violated several principles in the ACM code of ethics. Since he was aware of bugs in the product, he did not strive to achieve the highest quality.
- By failing to inform consumers about bugs to system, principle 2.5 was violated. Here the risks to users are so great they have to pay penalties for mistakes which result from the program.
- By law companies can make disclaimers only when they are in "good conscience". (Disclaimer does not meet legal

Thank you!

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Week 3 Topic: The Structure of Organizations

- Introduction
- Legal form of organization
- Companies
- Types of Organizations
- Management of an organization

Organization

- Impossible to live in a civilized society without close contact with many large organizations
- Like schools, universities, public utilities, government and local government departments, the Health Service, commercial and industrial companies, and so on.
- In many ways, these organizations resemble each other.

Legal Form of An organization

- Law recognises individuals
  - Enter into contracts
  - Tried for crimes
  - Sued
  - Act of Parliament impose duties on the individual etc
- Incorporation
  - Making into a body (*Corpus*)
  - Organization should be given a legal existence, through a process known as *incorporation.*

Incorporated Organisations

- Incorporated
  - Royal Charters – IET, BCS , IMechE, RAeS
  - Acts of Parliament – Ceredigion County Council
  - Public or Private Companies (Companies Act 1985 and 1989)

Types of Commercial Organizations

1. Sole Trader

   Local Shop, Plumber

2. Partnership

   Doctors, Lawyers, Accountants

3. Limited Company

   Private or Public

Sole Trader

- Individual
  - Sole person responsible for all debts
  - All assets including "private" at risk
  - Does NOT have to be the only employee

Partnership

- Two or More People
- All at Risk. Similar to sole trader but >1 person
- Normally professionals
  - Doctors
  - Lawyers
  - Accountants
- Inflexible in Normal Commercial World
  - Movement of key Personnel
  - Too risky

Companies

- Public or Private Companies
  - Public – Public Limited Company (PLC)
    - Trades shares to public
  - Private – Company Limited (Co Ltd)
    - Cannot sell shares to Public
    - Can sell shares privately
    - Limited by Shares
      - Commercial Companies
    - Limited by Guarantee
      - Charities, Professional Bodies
    - (Unlimited Companies)

Companies (Contd)

- Independent Existence
- Divided
  - Shareholders
  - Or Members of the Company
- Normally > 1 shareholder
- 1992 Act allows single member

Company Constitution

1. Share Capital

2. Company Constitution

3. Directors responsibilities

1. Share Capital

- Shareholders (Subscribers) own Company
- At start of Company
  - Authorised share capital
    - Number & Nominal (par) Value
    - Say 100 shares @ £1
  - If debts > assets Shareholder lose shares

2. Company Constitution

a. Memorandum of Association

    a. Controls External Relations

b. Articles of Association

    a. Control Internal Relations

c. Shareholders Agreement

a. Memorandum of Association

- Company Name
  - Restrictions
- Country of Registration
  - England & Wales, Wales, Scotland
- Objects of Company
  - Companies Act 1989 allow general commercial company
- A Liability Clause
  - Liability of members is limited
- Authorised Share value
  - Nominal Share Value and Number

b. Articles of Association

- Rules of Share capital
- Transfer of Shares
- Meetings of Members
- Rules Governing Directors' Appointments
- Power of Directors
- Dividends and Reserves

c. Shareholders Agreements

- Protect interests of minor shareholders
- Article of Association
  - Changed at General Meeting
  - Needs 75% majority
- Agreement Between Shareholders
  - All must sign
  - Can govern way voting is done

3. Directors Responsibilities

- Directors Elected by Shareholders
  - Act In best Interest of Company
  - Honest
  - Declare Interests
  - Aware of Company's Trading Position
  - Executive & Non-Executive Directors
- Company Secretary
  - Could be Director

Functional Units of An Organization

Five groups of functions exist in almost any organization:

1. Production: Activities that directly contribute to creating the products or services that the company sells.

2. Quality management: Quality activities necessary to ensure that quality of the products and services produced is maintained at the agreed level.

3. Sales and Marketing: Sales is concerned directly with selling the product, while marketing is concerned with establishing the environment in which the product is sold (e.g. through advertising) and with deciding how the range of products sold by the company should develop.

4. Finance and Administration: To pay bills, to look after its funds.

5. Research and development:

How can the company do better the things that it already

Does and what other things might it profitably be doing?

Geographical organization:

An organization operates in more than one country.

The most obvious examples are in the field of food and drink.

Centralization v. decentralization

- In a centralized organization, the detailed operational decisions are taken at the centre.
- In a decentralized organization, as many details as possible are settled at local level.

Management

- Mangers of organization can project manager, production manager, general manager & Corporate manager.
- The goal of project managers is to produce systems which meet the users' needs, on time and within budget.
- Their main concerns are therefore planning, progress monitoring, acquisition and allocation of resources, and quality control.
- The tools of their trade are bar charts, activity networks,

- Production Manager: Production management is concerned with productivity, efficiency and maintenance of quality.
- General Manager: General or corporate management deals with the management of the organization as a whole.
- Corporate Manager:

Corporate managers are responsible for the long-term strategy of the organization.

Monitor the overall performance of the organization and be prepared to handle serious problems which arise anywhere

Thank you!

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Week 4 Topic: Anatomy of Software House

- Introduction
- The Company (Software House)
- Structure of Company
- Management of Staff
- Producing the budget
- Monitoring Financial Performance
- Long term Planning
- Conclusions

Introduction (The Company)

- A Hypothetical company
- Syniad Software Ltd was founded some ten years ago by four friends.
- All four are members of the Board of Directors, along with two others who were recruited later.
- The company specializes in the production of bespoke software for clients who demand work of high quality.
- Syniad's head office is in London. Other offices are in Man-chester, Delft, Netherland.

Company Structure

Operations Director

- The Operations Director is responsible for all the revenue earning operations of the company.
- It is his job to ensure that all projects are completed satisfactorily
- And resources are available to carry out the projects that the company wins;
- The personnel reports to him.

Technical Director

The Technical Director is responsible for:

- Quality management;
- Research and development;
- Marketing at a technical level (e.g. arranging for staff to give papers at conferences)
- Technical training (as opposed to training in, say, project management or presentational skills, which are the responsibility of the personnel function).

Syniad's Organizational Structure Type

- shows elements of all three of the types of organizational structure.

1. Functional division of responsibilities
2. Geographical element (represented by the director responsible for overseas operations)
3. Centralization and decentralization has little meaning (Centralized policies and procedures are widely used but they have usually been developed within one part of the company and have been adopted by general consent.

Centralized vs. Decentralized

- In theory, staff have a sense of belonging to a group and regard their group manager as the manager who is permanently responsible for their career in the company.
- In practice, because projects often require expertise from more than one group, staff often find themselves working on projects for groups other than the one to which they belong.
- In a company of the size of Syniad, the distinction between centralization and decentralization has little meaning. Centralized policies and procedures are widely used but they have usually been developed within one part of the company and have been adopted by general consent.

Management of staff

- New employees vs. Old employees …. OUTSIDER

Staff Appraisals:

- Employees' achievements and contributions to the company were properly recorded;
- Staff knew what was expected of them and what they needed to achieve in order to gain promotion;
- Proper plans for training and career development were made and regularly reviewed;
- Employees were aware of the company's opinion of their performance.

Producing the Budget

- Staff in the company are broadly divided into

1. Technical or **Revenue earning** staff and
2. **Nonrevenue earning** staff

- Both require different capital to work.

Monitoring Financial Performance

- Monitoring Syniad's performance against the budget should, in principle, be straightforward.
- Each month, the income and expenditure under the various heads are compared and, if significant deviations are observed, corrective action is taken.
- In practice, this simple procedure presents many difficulties.
- To monitor financial performance, company focuses on;

1. *Cost & Revenue*
2. *Project Costing*
3. *Sales*

1. Costs and revenue

- A major problem is caused by random fluctuations, themselves the product of many individual factors, for example:

1. *Annual Budget n Staff hiring*
2. *Large projects cause deviation in Budget*
3. *Fixed Price Project Estimation*

2. Project costing

- Because of these difficulties in monitoring the overall performance of the company, Syniad also tries to monitor the financial performance of individual projects, through a project costing system.
- The costs and revenue of each project are calculated each month and the cumulative gross margin (i.e. the difference between total costs and total revenue to date on the project) calculated as a percentage of the total revenue.
- In practice, this system does not work well.

3. Sales

- The budgeted increase in revenue derives partly from increased charge rates, partly from better staff utilization and partly from an increased number of staff.
- All these factors are influenced by the forward sales position, that is by the staff required and the rates earned on the work to which the company is committed in the coming months.
- Two reports are used for assessing and monitoring the sales position.

3. Sales (Continued…)

1. The ***confirmed sales report*** shows, for each grade, the number of staff in that grade who are committed to contracts in each of the following twelve months and the total expected revenue from that grade in each month.
2. The ***sales prospects report*** shows, for each sales prospect, the potential value of the sale, its likelihood and the likely start date.

Long Term Planning

- Strategic Planning for future
- The ability to plan strategically and to achieve strategic objectives is the hallmark of well run, successful companies.
- Strategic planning in Syniad has two related aspects.

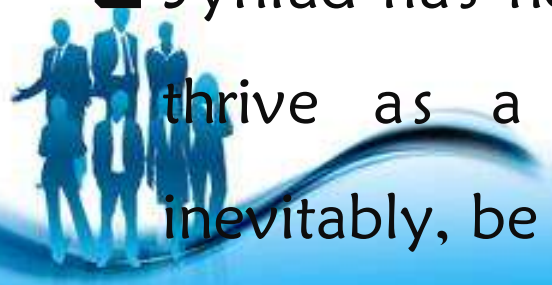
    1. The first is to identify appropriate long-term goals
    2. Second is to identify and formulate plans to overcome those problems which are inhibiting it from attaining these goals.

Long Term Planning involves

- Expansion Plans
- Company Image
- Product mix (Fee based revenue vs. Package Software)
- Finance (under-capitalization)

Conclusions

- Syniad, despite its problems, is a successful and well-managed company, however, they need to go multinational.
- Do directors have the expertise to manage this transition or to run the resulting company?(agreements for collaboration with comparable companies)
- Syniad has now reached a point where it can no longer thrive as a private company and its future must, inevitably, be very different from its past.



Thank you!

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Week 5 Topic: Organizational Financial Practices

- Introduction
- Need of Capital
- Sources of Funds
- Budgeting and Monitoring
- Working Capital & Cash Flow

Introduction

- However good the quality of its products or services, no organization can be successful for any length of time unless its finances are soundly managed.

- Many young software engineers are attracted by the idea of starting their own company.

Need of Capital

- A group of new or recent graduates in computing decide to set up their own company to provide software services and their intention is typically to offer contract hire services
- A client is unlikely to pay an invoice within less than one month of receiving it. Some large companies are notorious for not paying invoices for as much as six or even twelve months.
- There will be a need to have some money with which to start the venture.

Need of Capital (continued)

- The group needs enough cash in hand to be able to live for at least three months. Additional money will be needed for the expenses of starting the company
- For large projects or packages, a much larger sum of money is likely to be needed while they are being developed because there will be no revenue coming into the company.

Need of Capital (continued)

- For starting period cash will be needed for:
  - Salaries
  - rent rates, heating and lighting of the premises used
  - equipment and consumables
  - costs of advertising and marketing the products
  - miscellaneous expenses, ranging from company stationery to travelling expenses

Need of Capital (continued)

- How does one set about raising this money? The first step is to produce a ***business plan***.
- It typically contains:
  - a description of what the company will be doing, together with information to show that it is technically feasible and that founders of the company have the necessary expertise
  - an assessment of the size of the market and the competition
  - a prediction of the financial performance of the

Sources of funds

- They can be grouped into:
  - Grants
  - Loans
  - Sale of Equity

Grants

- A *grant* is a sum of money given to the company; while the company is obliged to demonstrate that it has been used for the purposes for which it was intended, it is not intended that the grant should ever be paid back to the organization which gave it
- The availability of grants and other help for new companies depends very much on where the company is located, how many people it expects to employ, and on government policy at the time.

Loans

- A loan is a sum of money lent to the company; interest is payable on it, at a rate that may be fixed or variable, and the loan is usually for a fixed period
- The company is liable to pay back the loan and, if the company goes into liquidation, the lender is entitled to recover the loan from the sale of the assets of the company.
- In most cases, security is required for the loan

Sale of Equity

- *Equity capital* is money paid to the company in exchange for a share in the ownership of the company
- Shareholders are at a much greater risk of getting a poor return on their capital or even losing it completely than are lenders but, in compensation for this, they stand to make a greater profit than lenders if all goes well

Budgeting & Monitoring

- A budget is a prediction of the future financial position of an organization covering , usually, the current or the next financial year
- The ordinary manager in a company is, however, much more concerned with budgeting for income and expenditure
- Budgeting is an iterative process

Budgeting & Monitoring

- The first version of the budget is likely to show expenditure exceeding income, since the operating managers will want to expand their operations while the sales and marketing department will not wish to give hostages to fortune by being over-optimistic about the volume of sales it can generate. Adjustments will have to be made repeatedly until a situation is reached in which budgeted sales exceed budgeted expenditure with a reasonable profit margin; the operational managers are happy that they can service the predicted volume of sales with the budgeted staff levels; and the salesmen are confident that they can produce the predicted

Working Capital & Cash Flow

- It is perfectly possible for a company to be consistently profitable and yet be unable to pay its bills
- Accounting normally operates on an *accrual* basis
- The value of *work in progress*
- It is usual to negotiate stage payments rather than leaving all payment until the work is completed.

Working Capital & Cash Flow (continued)

- Cash has therefore to be found to cover the gap between what a company has to pay out in cash and what it receives in cash—working capital
- A document "cash flow prediction" is the amount of cash expected to be received and disbursed in each of the next twelve months
- The bank specifies the maximum that can be borrowed on an overdraft but interest is only payable on the amount actually owed

Thank you!

Professional Practices

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Week 6 Topic: Human Resource Management

- Introduction
- A model of Human Resource Management
- Training and Human Resource Management
- Health and Safety at Work
- Health and Safety Act 1974

Introduction

- It is a function in organizations designed to maximize employee performance in service of an employer's strategic objectives

- Management of people, staff training and development with a strategic approach suggest that human resource management is particularly appropriate for software work

A model of human resource management

- A corresponding commitment to the organization is expected from employees. They are therefore autonomous in the sense of, to some degree, managing themselves.
- Human resource management is the responsibility of all managers
- Maximum utilization of human resources available to the enterprise.

1-Long-term, strategic and proactive in style

- The problems associated with personnel in an information technology environment require a disciplined approach to establishing numbers of staff; the utilization of personnel; the development and education of employees, together with the construction of comprehensive human resource management policies that are not only responsive to immediate needs but also are building blocks for the medium- and long-term corporate requirements

2-Commitment to the organization

- The real challenge is to shift employee attitudes from mere compliance with rules at work to commitment and self motivation
- This signifies a commitment to staff development as part of the "learning organization" and firm-specific skills that are less transferable between firms. Skills include attendance, flexibility, responsibility, discipline, identification with the company and, crucially, work-rate.

3-Self-management

- Team working is a vital element
- Direct and regular face-to-face contact between managers and workers is emphasized. This builds trust and helps maintain motivation
- The trick is to reconcile motivating individuals with team-building because it is teams, not individuals, who complete projects. Performance appraisal is central in HRM strategies

4-Unitary perspective

- The entire enterprise is regarded as analogous to a team with
  one focus of loyalty and one focus of authority
- A crucial part of keeping effective workers content is a system where they can be promoted without having to become managers
- At Microsoft a talented software developer can stay just that and yet rise to the top tier of elite "architects". These architects are not company directors despite their seniority

5-Maximum utilization of human resources

- It's a difficult task specially in information technology environment.
- It is the possibility of computer surveillance of work rate that allows decision makers to look more critically now than ever before at work output in offices
- Management gets the impression that the project is going well and has no idea what's actually happening at the grass roots level. By the time they find out, it's too late

Training and human resource management

- Despite universities establishing more IT and computing courses and applications rising strongly, the industry continues to generate more vacancies than capable recruits
- Computing companies find that IT graduates often lack transferable or "people-handling" skills, such as communications and a broader knowledge of how businesses work

Training and human resource management

- Dr Neil Barrett, senior fellow at Bull, reckoned that "from an industry point of view, we are often better placed to take people with good generalist degrees and turn them into engineers"
- Computer scientists are people who understand the finer details of software programming but cannot program. We have to start again and teach them the methods and tricks we work with.

Health and Safety at Work

- Health and safety at work usually only hits the headlines when there is a major disaster
- In many high risk areas, the safety systems themselves are often computer controlled
- Around 200 employees each year still die as a result of accidents at work

Health and Safety Act 1974

- *1. Premises*, i.e. factory, office etc.
- **1. *Employment* is the only necessary criterion.**
- 2. *Specific* requirements
- **2. *General* (and far-reaching) requirements**
- 3. No requirements on manufacturers or suppliers
- **3. Creates comprehensive new duties for manufacturers and suppliers of articles and substances for use at work**

Health and Safety Act 1974

- 4. Regulations for specific industries and processes: rigorous but difficult to keep up to date in the face of rapidly changing technology.
- **4. Specific regulations but couched in general terms and supplemented by approved codes of practice that are more easily updated.**

Thank you!

Professional Practices

CS 625

Week 7 Topic: Intellectual Property Rights

- Introduction
- Confidential Information
- Patents
- Copyright
- Acts permitted in relation to copyright
- Remedies for breach of Copyright
- Plagiarism

Introduction

- Intellectual property rights are often the most valuable assets owned, used and developed by a software house.
- Intellectual property rights include:
  - Confidential information
  - Patents
  - trade marks
  - Designs
  - Copyrights protecting computer programs

Introduction (continued)

- They protect information stored by electronic means and all of the paperwork which accompanies a program, such as the user manual, plus any multimedia packages and most items on the Web.
- Great care should be taken to protect, exploit and enforce intellectual property

Introduction (continued)

- The name under which a product is sold may be registered as a **trade mark**
- the hardware or a process used in its manufacture may be protected by a **patent**
- the look of the product may be registered in the **Designs Registry**
- software can be protected by **copyright**
- the know-how which goes into the development of the product may be protected as confidential information

Introduction (continued)

- Unauthorized use of intellectual property can be stopped by injunction and damages may be sought for infringement of these rights
- The law is constantly changing with technological advance
- General Agreement on Tariffs and Trade (GATT) concerned the protection of intellectual property rights in the face of widespread piracy of software products

Confidential Information

- Information "which is not public property and public knowledge"
- Any category of information, from personal confidences, to trade secrets and sensitive government information, any or all of which a computer scientist might handle in the course of his or her work, or all or any of which a firm may want to protect against unauthorized use or disclosure by others
- Information will be protected only if it is confidential. Non-confidential information, unless protected, e.g. by copyright or a patent is deemed to be in the public domain and can be used by anyone.

Confidential Information

- Three conditions must be satisfied before an action for breach of confidence can succeed:
  - the information must be confidential
  - the information must have been disclosed in circumstances which give rise to an obligation of confidence
  - there must be an actual or anticipated unauthorized use or disclosure of the information

Patents

- A government authority conferring a right or title for a set period, especially the sole right to exclude others from making, using, or selling an invention

- A patent gives to an inventor a monopoly in an invention. This means that the inventor is given the exclusive right to use or exploit the invention for a defined period

Patents

- The monopoly granted by patent law is so strong, that the owner of a patent may even exclude independent inventors from the market
- The better the patent and the more commercially desirable the breakthrough, the more likely it is to be challenged. For example, if competitors can produce a similar product or process, which is not covered by the patent, they will be free to market it and to erode the commercial advantage of the patentee. If they can prove that the subject matter of the patent has been used or disclosed before, they can invalidate the patent

Patents

- Patent Act merely sets out a number of criteria which must be satisfied before an invention can be patented
- a patent may only be granted if:
  - the invention is new
  - it involves an inventive step
  - it is capable of industrial application
  - the subject matter of the invention does not fall within an excluded class

Patents

- It is possible to patent something which is more than just a program—something which can be called, for simplicity, a "program plus"
- A computer program is not excluded from patentability if it produced, or is capable of producing, a further technical effect beyond the normal physical interaction between software and hardware, i.e. it is potentially patentable if it makes something else do something.

Copyright

- The exclusive legal right, given to an originator or an assignee to print, publish, perform material, and to authorize others to do the same
- Copyright protects more items generated by businesses or by individuals than any other aspect of intellectual property law
- It can protect business letters, manuals, diagrams, computer programs
- Copyright owners face the specter of unlimited piracy through uncontrolled copying with the advent of internet

Copyright

- What we will probably see over the next few years are stronger laws, more rights for copyright owners, widespread licensing schemes and greater use of technical anti-piracy or copy-monitoring devices and electronic rights management systems
- Copyright law gives six exclusive rights to the owner of copyright:
  - copy the work
  - issue copies to the public

Copyright

- rent or lend the work to the public
- perform, play or show the work in public
- broadcast the work or include it in a cable programmed service
- make an adaptation of the work or to do any of the above with an adaptation

❑The rights apply equally to published and to unpublished works

Acts permitted in relation to copyright

- Some acts are permitted under the 1988 Act, even though they would otherwise amount to breach of copyright.
  - Fair dealing
  - Making back-up copies of computer programs
  - Transfers of works in electronic form
  - De-compilation for the purpose of interoperability
  - Error correction
  - Databases

Remedies for breach of copyright

- A copyright owner has all the usual civil remedies of search, injunction, damages and an action for an account of profits made in breach of copyright
- If it is shown that at the time of the infringement of copyright the defendant did not know and had no reason to believe that
  copyright subsisted in the work, then the plaintiff is not entitled to damages against the defendant

Remedies for breach of copyright

- A copyright owner is also given an important power to enter premises without using force in order to seize infringing copies, or articles specifically designed or adapted for making copies

Plagiarism

- the practice of taking someone else's work or ideas and passing them off as one's own.
- All of the following are considered plagiarism:
  - turning in someone else's work as your own
  - copying words or ideas from someone else without giving credit
  - failing to put a quotation in quotation marks

Plagiarism (continued)

- giving incorrect information about the source of a quotation
- changing words but copying the sentence structure of a source without giving credit
- for a computer program changing variable names only, or not changing the structure or flow of a program

Thank you!

Professional Practices

CS 625

Week:8 Computer Contracts

- Introduction
- Computer Contracts for supply of Custom-built Software
- Other Types of Software Services Contract

Introduction

- An agreement between two or more parties for the doing or not doing of something specified
- Contracts serve the following purpose:
  - Set out the agreement between the parties
  - Set out the aims of the parties
  - Provide for matter arising while the contract is running
  - Ways of terminating the contract and the consequences

Introduction (continued)

- If the contracts are too harsh or unfair causing any issue between parties to be unresolved, it is the responsibility of contract laws to contemplate according to the rules

Introduction (continued)

- There are almost never disputes over contracts which run perfectly. Example marriage.
- Example of a ship carrying a cargo.
- In order to avoid disputes and future difficulties it is better to draft a document which sets out:
  - The terms on which both parties is to work
  - Methods of payments
  - Appropriate ways to terminate the contract-notice required

Introduction (continued)

- Contract should be clear, concise and consistent. There should be no ambiguity and the parties to the agreement should be left in no doubt as to their rights and duties. Ambiguity and doubts can lead to performance which is viewed as unsatisfactory. This can lead to disagreement and the expenditure of time, effort and therefore money, in resolving the matter.

Contracts for the supply of custom-built software at a fixed price

- Software suppliers try to use what are known as standard form contracts, which are used or intended to be used many times over.
- Such a contract might consist of:
  - a short introductory section
  - a set of standard terms and conditions
  - a set of appendices or annexes

Introductory Section

- It states that it is an agreement between the parties whose names and registered addresses are given.
- It is dated and signed by authorized representatives of the parties.
- It often begins with a set of definitions of terms used in the course of the agreement, set out either in alphabetical order, like a dictionary, or in the order in which they appear in the rest of the contract –The Company, The Client

Other parts

- Terms and conditions

- Annexes must include any document stated like SRS. This is to avoid, for example, the situation in which statements made by an over-enthusiastic salesman while trying to win the business are claimed by the client to constitute part of the contract

Issues dealt with Standard Terms & Conditions

- What is to be produced?
- What is to be delivered?
- Ownership of rights
- Payment terms
- Calculating payments for delays and changes
- Penalty clauses
- Obligations of the client

Issues dealt with Standard Terms & Conditions (continued)

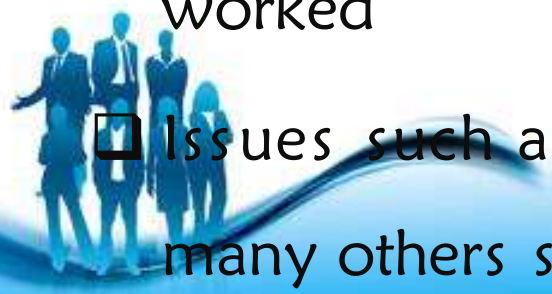
- Standards and methods of working
- Progress meetings
- Project Managers
- Acceptance procedure
- Warranty and maintenance
- Termination of the contract

Other types of software services contract

- There are four types of contractual arrangement which are widely used in connection with the provision of software services:
  - fixed price
  - contract hire
  - time and materials
  - consultancy

Contract Hire

- The supplier agrees to provide the services of one or more staff to work for the client
- The staff work under the direction of the client
- Supplier's responsibility is limited to provide suitable competent people and replacing them if they become unavailable or said unsuitable by the client
- Payment is on the basis of a fixed rate for each man day worked
- Issues such as delay payments, acceptance tests and many others simply do not arise



Time and Materials

- It is somewhere between a contract hire agreement and a fixed price contract.
- The supplier agrees to undertake the development of the software in much the same way as in a fixed price contract but payment is made on the basis of the costs incurred, with labor charged in the same way as for contract hire
- The supplier is not committed to completing the work for a fixed price, although a maximum payment may be fixed beyond which the project may be reviewed

Consultancy contracts

- Consultants are typically used to assess some aspect of an organization and to make proposals for improvements.
- The end product of a consultancy project is therefore usually a report or other document.
- Consultancy projects are usually undertaken for a fixed price but the form of contract is very much simpler

Thank you!

Professional Practices

CS 625

Introduction to Software Safety Liability & Practice

- We will explore areas of legal liability and mechanisms for regulating potentially hazardous activities as well as the factors which should be taken into account for safety related applications
- Nowadays, computer-controlled systems are to be found in a wide range of diverse applications such as:-
  - Industry: Manufacturing systems, robots etc
  - Medicine: Intensive care monitoring, radiotherapy etc
  - Transport: Railway signaling systems, aircraft, space shuttle etc
  - Military and defense applications

Regulatory Issues

Standards :

Use of appropriate standards is both a familiar and traditional technique for regulating hazardous activities and attempting to ensure the safety of a product

Certification and licensing:

Certification requires that either the product or the practitioner conforms to some specified standard whereas licensing means that the product cannot go on the market at all, or the practitioner operate, unless the product is licensed or the practitioner in possession of the requisite license

Regulatory Issues

Professional codes of practice:

Professional and trade associations should devise codes of practice to govern their members

Regulation by law:

The law may exert a regulatory effect either directly or by requiring compliance with other forms of regulation such as standards and licensing because of fears of litigation if safety standards are breached

Legal Liability

Introduction

System designers and software engineers may have legal responsibilities under statutes such as the Health and Safety

Product liability and the Consumer Protection Act 1987

Product liability is the area of law in which manufacturers, distributors, suppliers and retailers are held responsible for any injuries products cause.

Regardless of any contractual limitations of liability, if a product or any of its component parts are defective its manufacturer may be liable for damage under the Consumer Protection Act (CPA) or the common law of negligence

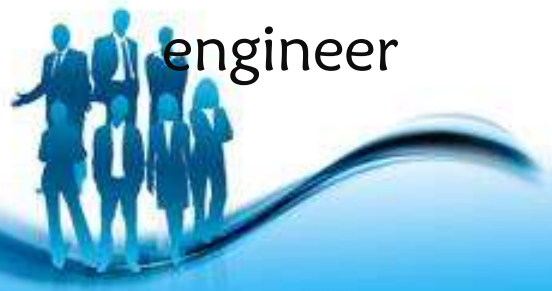
Legal Liability

Negligence

The manufacturer or system designer has failed to take due care in the construction or design of the system, and this lack of care has resulted in failure leading to the injury

Competence, training and experience

- Competence means “knowledge and the ability to apply that knowledge”
- There is an understood assumption that all those engaged in the design and development of safety system software are competent to perform the necessary tasks
- Factors such as training and relevant experience are also considered important traits for a competent software engineer



Factors affecting system safety

- Hazard analysis
- Requirements and specification
- System Reliability and safety
- Design
- Testing and debugging
- Safety integrity analysis and risk assessment
- Documentation

Thank you!

Professional Practices

CS 625

Computer Misuse & Criminal Law

Introduction:

The media and popular computing press abound with tales of multi-million pound computer frauds and of the dangers to commercial companies, governmental data banks, financial institutions and national security from the activities of computer hackers

Computing and criminal activity

- Modern business process is done through utilizing computer software and hardware, i.e. some form of computer system is used in it.
- There has been a sharp rise in the number of crimes involving computing; and the Internet has undoubtedly created new security risks

Categories of misuse

Under the study of the English criminal law, the Law Commission highlighted a number of categories of misuse of computers

- Computer fraud
- Unauthorized obtaining of information from a computer
  - Computer hacking
  - Eaves dropping on a computer
  - Making unauthorized use of computers for personal benefit
- Unauthorized alteration or destruction of information stored on a computer
- Denying access to an authorized user
- The unauthorized removal of information stored on a computer

Computer Fraud

- The Law Commission defined computer fraud as conduct which involves the manipulation of a computer or internet, by whatever method, in order dishonestly to obtain money, property, or some other advantage of value, or to cause loss
- Computer fraud is further divided into three categories
  - **Input frauds**

    e.g. intentionally entering false data or amending data into the computer
  - **Output frauds**

    Output fraud involves stealing or misusing system output
  - **Program frauds**

    Program fraud involves the dishonest alteration of a computer program

Obtaining unauthorized access to a computer

- The second form of misuse identified by the Law Commission was unauthorized obtaining of information from a computer. It is sub-divided as:
- **Computer hacking:**

  Accessing a computer without the authorization of the owner. In this case the person accesses the computer secretly for stealing information, data or manipulation of data for diverse purposes

Continued…

- **Eaves dropping**

  Literal meaning listening or spying secretly

- **Unauthorized use of a computer for personal benefit**

  Using computer's authorized information for personal benefits. In this case, the person misusing the computer is usually employee or authorized user of the company

Thank you!

Professional Practices

CS 625

Regulation and control of personal information: data protection, defamation and related issues

Introduction:

- We can not deny the dramatic impact which increasing computerization has had on the storage, processing, retention and release of information and data.

Introduction(Continued…)

- Computerization has revolutionized the handling and processing of information to such an extent that the data itself has now become a commodity which possesses commercial value and can be traded on the market in the same way as any other commodity
- The value to businesses is also enhanced by the fact that how easily and safely data can be transferred around the globe

Data Protection and Privacy

- Data protection refers to how your personal information is used by the organization or being an organization, how you would make sure to protect data of your customers, employees etc

- Privacy refers to the privilege provided to an individual by law or by the organizational policy where the individual can keep the information secret to or from a specific group

The impact of the Internet

- The original challenge of data protection law was to provide a suitable mechanism for dealing with the perceived threat to individual privacy of large centralized data banks
- The development of global information networks has changed and intensified the character of the privacy protection problem
- The question which is inevitably being asked is whether the original formulation of data protection law is capable of controlling the amorphous decentralized activities which occur through the medium of the Internet and World Wide Web

Factors affecting the regulation of data processing

- There is by no means a straightforward answer to this question, complicated as the issues are by rapidly advancing technology, the global nature of the activities to be regulated and the variety of possible regulatory approaches to be found in the various legal traditions within the world
- Formidable problems of policy and implementation are presented by the attempt to regulate systems and practices that are technologically advanced, widely professional issues in software engineering dispersed, rapidly changing and employed by powerful economic and government interests

Convergence of Data Protection Practices

- It is an observed fact that, at the level of international agreements and national legislation, the requirements imposed by this particular type of technology have resulted in a convergence of the rules made to ensure good data management
- An example in this respect is the emergence of data protection principles or fair use guidelines which have created a harmonizing effect on national legislation on data protection

Defamation and Protection of Reputation

- Even without the cover of anonymity, the various methods available for the dissemination of information on computer networks provide fertile ground for the propagation of information about others
- What redress is available for those who feel that untrue and unwarranted statements have been circulated about them

- Publication of such material might attract an action for defamation. Such actions are not uncommon against newspapers and other sections of the media
- Although there may be some differences of degree and substance, most jurisdictions provide some form of remedy for injury to a person's integrity or reputation

Thank you!

Professional Practices

CS 625

Introduction to hacking

The process of attempting to gain or successfully gaining, unauthorized access to computer resources is called hacking.

OR

The process of modifying the features of a system, in order to accomplish a goal outside of the creator's original purpose.

Who is hacker?

- A computer hacker is someone who develops, changes or attempts to circumvent computer security hardware or software.
- Intelligent, having advance knowledge of hardware and software.
- Can either happen for negative (criminal) or positive reasons.
- Criminal hackers develop computer malware or spyware to gain access to confidential information.

Types of hacking

- Website Hacking
- Net Hacking
- Password Hacking
- Software Hacking
- Ethical Hacking
- Email Hacking
- Computer Hacking

Website Hacking

- Hacking a website means taking control from the website owner to a person who hacks the website.

Net Hacking

- Gathering information about the domain
- IP address (Address of your computer in the internet)
- Port (It is logical port on your computer which hacker can use to enter in the system)

Password Hacking

- Password Hacking or Password cracking is the process of recovering secret passwords from data that has been stored in or transmitted by a computer system.
- **Brute force** (Hackers try out all the combination of all keyboard letters)
- **Dictionary based** (Hackers use predefine passwords. It is unsuccessful method)

Software Hacking

- In that hackers changes the look & execution way of that software. For example change the demo version into the full version of that software.
- Modifying existing features of the software.

Ethical Hacking

- The process in which a person hacks to find weakness in a system and then usually patches them.
- Can be used to recover lost information where the computer password has been lost.
- To test security of the system.
- Also called white hat computer hacking.

Email Hacking

- Email hacking is unauthorized access to an email account or email correspondence.

Computer Hacking

- Computer Hacking is when files on computer are viewed, created, edited or deleted without authorization.

What should do after hacked?

- Shut down /Turn off the system
- Separate the system from network
- Restore the system with backup Or reinstall all programs
- Connect the system to the network
- Good to call the police

Tools of Hacking

Scanners

A program that automatically detects security weakness in remote host

Telnet

It is terminal emulation program that allows us to connect to remote system

FTP

FTP is one type of protocol but some time it is used as hacking tool, port 21 for the ftp. For connecting ftp we need some ftp s/w known as ftp client. For connecting ftp server you have to hammer that server.

Computer Security Ethics

- Being ethical is not necessarily following one's feelings; "feelings frequently deviate from what is ethical".
- Ethics is not confined to religion nor is the same as religion. Also being ethical is not solely following the law
- Example: "If a person conceives of engineering activity as only making money, then one's definition of practical ethics, one's actions and values will, be guided by this basic philosophical position. "

Ethical Hackers

- Performs most of the same activities but with owner's permission such as penetration tests.

- Penetration test means Legal attempt to break into a company's network to find its weakest link Tester only reports findings

Penetration-Testing Methodologies

- White box model

Tester is told everything about the network topology and technology and is authorized to interview IT personnel as well. Makes the job easier for him

- Black box model

Company staff does not know about the test. Tester is not given detail about the network so the burden is on the tester to find out the details. The test determines if the security personnel are able to detect an attack.

- Gray box model

This mode of test is combination of both white and black box models. The company provides the tester with partial information about the network.

Hackers Code of Conduct

Hacker creed (Steven Levy's "Hackers : Heroes of Computer Revolution" - 1984):

- Access to computers should be unlimited and total.
- Always yield to the Hands-On Imperative
- All information should be free.
- Mistrust authority -- promote decentralization.
- Hackers should be judged by their hacking.
- You can create art and beauty on a computer.
- Computers can change your life for the better.

New Code of Ethics (90s) - Steven Mizrach :

- Above all else, do no harm"
- Protect Privacy
- "Waste not, want not."
- Exceed Limitations
- The Communicational Imperative
- Leave No Traces
- Share!
- Self Defense
- Hacking Helps Security
- Trust, but Test!

Certified Ethical Hackers

- Developed by the International Council of Electronic Commerce Consultants (EC-Council)
- Based on 21 domains (subject areas)
- Web site: www.eccouncil.org
- Red team: Composed of people with varied skills
- Conducts penetration tests

Thank you!

Information Security Practices

Lecture 13

Week 13 Topic: Information Security Practices

- Introduction
- The CIA: Information Security Principles
- Information Security Organizational Structure
- Information Classification

Introduction

- **Information security**, sometimes shortened to InfoSec, is the practice of defending **information** from unauthorized access, use, disclosure, disruption, modification, inspection, recording or destruction. It is a general term that can be used regardless of the form the data may take (e.g. electronic, physical)

The CIA: Information Security Principles

- The CIA principle
  - Confidentiality
  - Integrity
  - Availability

Information Security Organizational Structure

Board of Directors/Trustees

President

CIO

Security Director

Project Security Architect

Enterprise Security Architect

Security Analyst

System Auditor

Information Classification

- **Information Classification**
- Government classifications
- Private Sector classifications
  - Criteria

Thank you!

Risk Management

Lecture 14

Week 14 Topic: Risk Management

- Introduction
- Overview of Risk management
- Risk identification
- Risk assessment
- Risk control strategies

Overview of Risk Management

Risk is

The **likelihood** of the occurrence of a vulnerability

Multiplied by

The **value** of the information asset

Minus

The percentage of risk mitigated by **current controls**

Plus

The **uncertainty** of current knowledge of the vulnerability

Contn'd

- Risk Management is identifying, evaluating, and mitigating risk to an organization

a systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking

- It's a cyclical, continuous process
- Need to know what you have
- Need to know what threats are likely
- Need to know how and how well it is protected
- Need to know where the gaps are

Risk Identification

- Assets
- Threats
  - Threat-sources: man-made, natural
- Vulnerabilities
  - Weakness
- Controls
  - Safeguard

Risk Assesment

- Assessing Potential Loss
- Percentage of Risk Mitigated by Current Controls
  - Uncertainty
- Risk Determination
- Likelihood and Consequences

Risk Control Strategies

- **Identify Possible Controls**
  - For each threat and its associated vulnerabilities that have residual risk, create a preliminary list of control ideas. Three general categories of controls exist:
  - Policies
  - Programs
  - Technical controls

Examples

Level	Descriptor	Example of Description
1	Insignificant	No injuries, low financial loss
2	Minor	First aid treatment, onsite release immediately contained, medium financial loss
3	Moderate	Medical treatment required, onsite release contained with outside assistance, high financial loss
4	Major	Extensive injuries, loss of production capability, offsite release with no detrimental effects, major financial loss
5	Catastrophic	Death, toxic release offsite with detrimental effect, huge financial loss

Likelihood and Consequences 1

Level	Descriptor	Description
A	Almost certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Possible	Might occur at some time
D	Unlikely	Could occur at some time
E	Rare	May occur only in exceptional circumstances

Likelihood and Consequences 2

Thank you!

Social Networking & Ethics

Lecture 15

Week 15 Topic: Social Networking & Ethics

- Introduction
- The Good, the Bad and the Ugly
- How to Protect yourself
- How to protect your children

Introduction to Social Networking & Ethics

Def: When a computer network connects people or organizations, it is a social network. Just as a computer network is a set of machines connected by a set of cables, a social network is a set of people (or organizations or other social entities) connected by a set of social relationships, such as friendship, coworking or information exchange

National Cyber Alert System

- Web 2.0
  - Facebook & Myspace - Free-access social networking websites
  - Twitter – “micro” blog – 140 characters or less
  - Blog – shared on-line journal
  - Video Sharing Sites – YouTube, Flikr
  - Podcast – audio broadcast that can be downloaded

The Good, the Bad and the Ugly

- **Example**

The case of a person asking for emergency money while impersonating a Facebook user to her friends http://eliasbizannes.com/blog/2009/01/phishing-for-fraud-on-facebook/ Also the British MI6 chief that was exposed by his wife's Facebook pictures: http://www.dailymail.co.uk/news/article-1197562/MI6-chief-blows-cover-wifes-Facebook-account-reveals-family-holidays-showbiz-friends-links-David-Irving.html

How to Protect Your Self

- Keep private information private
- Do not post address, ssn, phone number, financial info, your schedule, full birth date
- Be careful not to display information used to answer security questions (e.g., favorite pet, mother's maiden name)
- Use caution when you click links
- Be careful about installing extras on your site

- Be wary of unknown friends (strangers)
- Google yourself
- Don’t blindly connect
- Trust your gut instinct
- Use and maintain anti-virus software
- Use strong passwords

- Don’t use the same password for a social networking site and for your email
- Remember - social networking sites are a public resource – like a billboard in cyberspace
- Evaluate sites privacy settings
- Lock down your profile information to people you accepts as a friend. That way no one can read your personal information unless they are an approved friend
- Be skeptical

How to Protect Your Children

- “It’s 10 p.m., do you know where your children are?”
  - “And who they are talking to online?”
  - Age limits on some social networking sites
  - Facebook and MySpace open to people 13 and older
  - Twitter open to all

Thank you!

Moral, Social And Ethical issues Assosiated with Internet

Lecture 16

Week 16 Topic: Moral, Social and Ethical issues associated with Internet

- Introduction
- Moral Issues
- Ethical Issues
- Advantages and Disadvantages of Internet
- Owner Ship of the internet

Introduction

Def: The Use of internet by individuals and organizations has raised a number of issues that need to be considered.

- Setting up websites containing incorrect information. People may rely on and use this information thinking it is correct
- Bullying via email, text message, chat
- Inappropriate websites with illicit material

Cont'd

- Using e-mail to give bad news when explaining face to face would have been better
- Spreading rumors using the Internet

Moral Issues

- Plagiarism
- Sending spam. People waste time deleting spam if the spam filter allows it through
- Companies monitoring staff use of the internet and e-mail
- Using someone's wireless internet connection without permission
- Using photo editing software to distort reality

Ethical Issues

The Internet has a lot of illicit materials. The availability of offensive, illegal or unethical material on the Internet

- Privacy issues
- Gambling addiction
- Obsity
- Addiction to computer games
- Widens the gaps between the haves and have nots (e.g. between rich and poor countries and individuals)

Contn'd

- Organizations moving call centers abroad. The same service can be provided cheaply using the internet and internet phone links
- Growth of e-commerce may mean shops have to close, leaving some city centers looking desolate Social Issues Many countries in the world that are not democratic; they do not allow the free passage of info to or from other countries. They control on what their people can and cannot view.

Contn’d

- Don’t use the same password for a social networking site and for your email

Advantages and Disadvantages of Internet

The internet has both positive and negative effects on the users.

Effects on communities

- Advantages:

  - Blogs & chats for communities to discuss local issues - Housebound members of the community are less isolated as people contact them to check everything is ok

  - Employment opportunities

Contn’d

- Local citizens advice websites can be set up to deal with the problems they have There are laws covering the production and distribution of this material BUT, the material is perfectly legal in other countries, so we can't really stop it.

  There is a special software that's able to filter out this material but we're not completely that sure.

  It doesn't have to be illicit content to be offensive; an image of a pack of hounds attacking a fox maybe offensive to animal lovers but not for the hunt

Cont'd

- Disadvantages:

  - Lack of social interaction - social networking, computer games etc.

  - Local shops shutting - more orders for goods are placed using the internet so local shops close FIN

Ownership and Control of the Internet

- Internet is for everybody and no one actually owns it
  - o Governments have started to control what can be seen on it
  - o The lack of policing of the internet means that information is not checked to make sure that it is accurate

Thank you!