

Professional Issues in IT



Introduction

Profession and Professional

Course Outline

- ❑ What is a profession and professional orgs
- ❑ Law and Government
- ❑ Organization and its structure
- ❑ Business finance and funding a startup
- ❑ Overview of accounting and HR issues
- ❑ Professional software development
- ❑ Ethics and Privacy
- ❑ Resume Writing / Mock Interviews etc.

Collaboration

- ❑ http://piazza.com/fast_lahore/spring2019/cs449
- ❑ All announcements and material will be published here
- ❑ Course outline is already published

Who is a Professional?

- ❑ Works in a specific area for a living
- ❑ Who puts the interest of organization above of their own convenience [within limits]
- ❑ Who can be relied on to carry out the work competently, thoroughly and responsibly

Characteristics of a Professional

- ❑ Specialized knowledge
 - Keep their knowledge up to date
- ❑ Competency
 - Reliable, get the job done, don't make excuses, look for solutions, manage expectations if they see they can't fulfil their promise
- ❑ Honesty and Integrity
 - Uphold their values, Admit whatever is beyond their skills

Characteristics of a Professional

□ Accountable

- Take full responsibility. When they are challenged they stay calm and businesslike

□ Self-regulation

- Stay professional under pressure, polite and respectful, high emotional intelligence, don't let the bad day impact how they behave

□ Look the part

- Don't appear sloppily, dress appropriately accordingly to the situation

Case of a system failure

- ❑ The 1992 London Ambulance Service Computer Aided Dispatch System Failure
- ❑ 1992, LAS provided ambulance service to
 - 6.8 million people
 - 318 emergency ambulances with an average of 212 were in service at any given time
 - 445 transport ambulances
 - A total of 70 ambulance stations, 2746 staff
 - 2000 to 2500 calls daily

<https://erichmusick.com/writings/technology/1992-london-ambulance-cad-failure.html>

The London Ambulance Service (LAS) Dispatch System Failure

- ❑ project to be completed in 11 months with minimum possible cost ($< 1M$)
- ❑ Cost was the most significant driver for selecting vendor
- ❑ Contract Signed:
- ❑ A HW deal with SW offered as a throw-in
- ❑ "System Options" developed SW with no prior experience of real-time, safety-critical, command and control systems

The failure

- ❑ Just a few hours later problems began to arise,
- ❑ stopped working altogether eight days later
- ❑ Multiple deaths caused during this time
- ❑ Immediately visible causes
 - Imperfect Data
 - Interface Issues
 - Memory Leak

Who is responsible?

- ▣ LAS – the customer organization
- OR-
- ▣ System Options – the SW vendor

Some details...

- ❑ LAS (customer) team prepared requirements without consulting key users
- ❑ The requirements were detailed and also specified “how” in addition to “what”
- ❑ No QA & Configuration Management (CM) was done

Profession and Professional

- ❑ Substantial education and training are required in order to practise the profession
- ❑ The profession is organised into one or more professional bodies.
- ❑ Members of the profession are expected to conduct their professional activities in accordance with codes of conduct laid down by the professional bodies and enforced by them.

Professional Bodies

- ❑ Group of people coming together because of a shared interest in a particular type of activity
 - Institute of Electrical and Electronic Engineers - IEEE
 - Association for Computing Machinery - ACM
 - College of Physicians and Surgeons Pakistan
 - Pakistan Bar Council
 - Pakistan Engineering Council – PEC
 - National Computing Education Accreditation Council - NCEAC

Professional Bodies: Scope of Activities

- ❑ establish a code of conduct
- ❑ promoting education in the field
- ❑ Certifications and accreditations
- ❑ to promote and support standards and codes of practice
- ❑ to advise government and regulatory bodies about matters within its area of expertise

Professional Conduct

□ The Public Interest

- work carried out for the nuclear industry – is it ok?
- Working on a project that is likely to impact environment?

□ Professional competence and integrity

- system failures, that of the London Ambulance Service's Computer Aided Despatch System, in 1994

Professional Conduct

- ❑ Duty to the Relevant Authority
 - Conflicts of interest
 - Disclosing confidential information without permission
 - Misrepresentation
 - ❑ claim their company is competent to do things that it cannot
- ❑ Duty to the Profession
 - what is expected of a professional to uphold the reputation and good standing the profession

Education

- ❑ Certifications / Diplomas
- ❑ Accreditations
- ❑ The advancement of knowledge
 - Publications for specialists and practitioners
- ❑ Continuing professional development
 - knowledge renewal

Reservation of title

□ Reservation of title

- the use of the name of the profession may be restricted to those people who are appropriately qualified
- In the UK, for example, the Architects Act 1997 makes it a criminal offence to call yourself an architect unless you are registered with the Architects Registration Board.

□ legal monopoly?

Reservation of function

□ Reservation of function

- the law may state that certain activities are restricted to people with appropriate qualifications or to members of particular specified professional bodies
- in England and Wales, only members of the Institute of Chartered Accountants in England and Wales and the Association of Certified Accountants are allowed to audit the accounts of public companies.

Reservation title/function for IT?

- ❑ It was a series of civil engineering disasters that led to the introduction of a licensing scheme for engineers in the USA in the 1920s and 1930s.
- ❑ A number of disasters can be traced directly to lack of professional competence on the part of the software engineers who developed the systems

Reference

- ▣ Frank Bott - Professional Issues in Information Technology – Chapter 2