CC5001

Support

IS Support and Maintenance

Help Desk

Support issues

- What do we need from system support?
- IS support service: the Help Desk
- Service Level Agreements
- Enhancement Requests

Support

- What do we mean by IS support?
  - Why do we need support
  - what kinds of support should the business/users get
- What support services do we need to provide?
  - How can we deliver effective IS support?
- What kinds of support issue are there?
  - What sorts of problems arise when using an IS?

What do we mean by IS support?

- Support of an IS is the process of
  - capturing
  - investigating
  - resolving problems identified by users…
- … and providing other forms of on-going maintenance

What do we mean by IS support?

- Reasons for IS maintenance
  - ***Bugs*** in system
  - Changes in ***processes***
  - ***New requests*** from organisational stakeholders
  - ***Technical problems*** with hardware and software
  - Changes in the ***environment***

(Beynon-Davies, 2009)

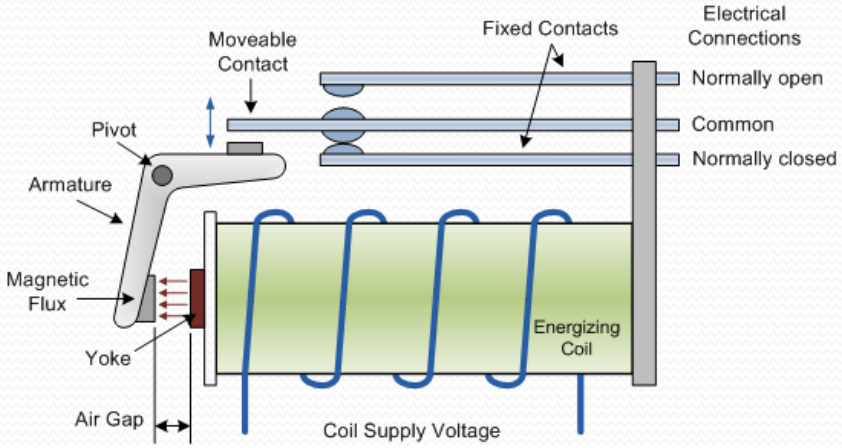
Remember the difference between ***bugs*** and ***viruses***

Difference between bugs and viruses

Early computers used electro-mechanical relays

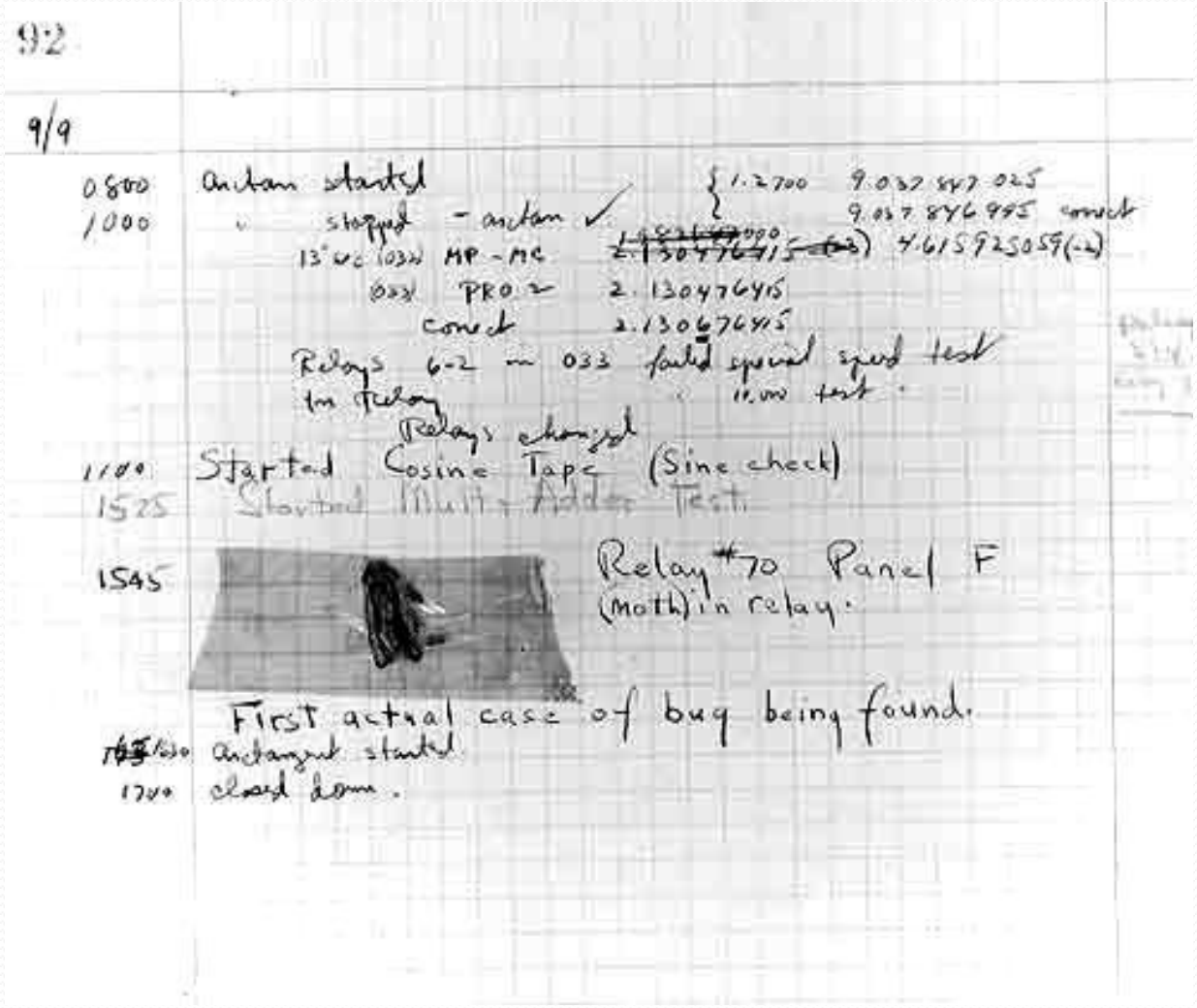
One computer failure was caused by a moth in a relay

...hence computer errors often called “bugs”



Moth found by Grace Hopper and recorded in log book

The first computer bug: moth in relay



source: http://www.anomalies-unlimited.com/Science/Grace%20Hooper.html

Difference between bugs and viruses

Computer virus - program with malicious intent

- Self-replicating
- Damage data
- Use up memory
- Use up disk space
- Changes to screen display - graphics or text

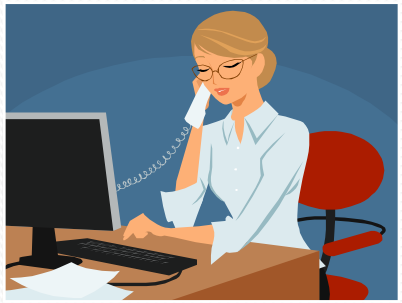
Types of IS maintenance activity

- Perfective maintenance
  - make ***improvements***, but not add new functions
- Adaptive maintenance
  - keep system ***usable*** in changed environment
- Corrective maintenance
  - put right any ***errors*** not previously known
- Preventative maintenance
  - keep system in good condition ***before*** something goes wrong

(Beynon-Davies, 2009)

Why do we need to support IS?

- Any IS application supports a ***business process***
- People who use the IS are ***not*** IS experts
- User having a IS application problem, needs an expert… the ***right*** expert
- Users don't necessarily know ***which*** expert
- Need to know ***root cause*** of the problem
- Need to route IS problems to a single point of contact: the **Help Desk**



What happens when a support issue arises?

- The user contacts the **help desk**...
  - telephone
  - e-mail
  - dedicated support call-logging system

- … support issue is logged

What happens when a support issue arises?

- User is given a ***unique reference number*** for each support call logged
  - Allows follow-up and tracking

- Help desk staff assess problem and decide
  - Type of problem
  - Priority
  - Who should deal with it

IS Support Services

Provide a help desk service:

...solve problems that users are having in using software

Involves troubleshooting to find source of problem – could be:

- the way the user is ***using*** the software
- a problem with the way the software has been ***installed***
- a ***bug*** in the software
- an ***underlying*** hardware or networking ***problem***

(Bocij et al, 2008; Chaffey, 2003)

IS Support Services

This service must be delivered as rapidly as possible…

... often difficult to achieve as help desk will have to juggle many requests, some quite time-consuming to resolve

(Bocij et al, 2008; Chaffey, 2003)

Types of support issue (root causes)

- Support issues may be concerned with:
  - Hardware
  - Application software
  - Operating system
  - Network
  - or… user error

user will not necessarily know ***which*** when reporting the issue

Example

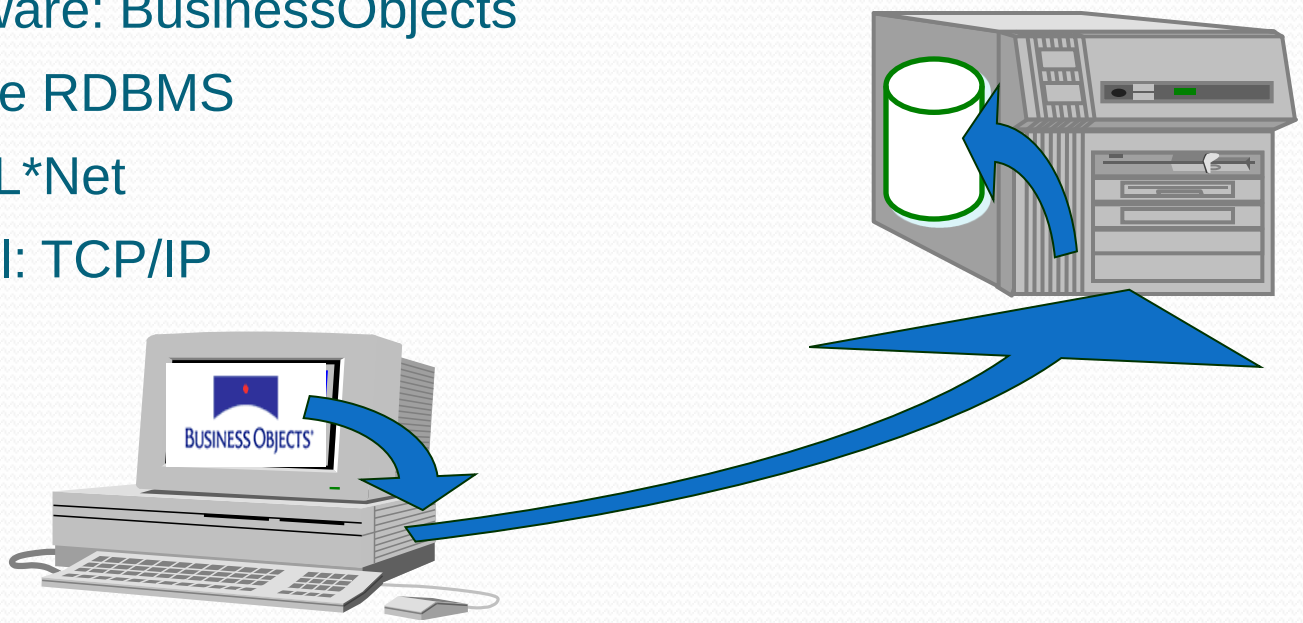
Client/server: PC (hardware+O/S) and server (hardware+O/S)

Application software: BusinessObjects

Database: Oracle RDBMS

Middleware: SQL*Net

Network protocol: TCP/IP



Which component ***has gone wrong***?

Which expert ***needs to be contacted***?

Types of support issue (types of resolution)

- Support issues may turn out to be:
  - Query
  - Bug
  - Data fix
  - Change
  - One-off request
  - Operational support

user will not necessarily know ***which*** when reporting the issue

Prioritising support issues

Fault taxonomy

1. **Mild** mis-spelt word
2. **Moderate** misleading or redundant information
3. **Annoying** truncated text

described in Jorgensen (2008)

Prioritising support issues

Fault taxonomy

4. **Disturbing** some transactions processed wrongly

5. **Serious** lost transactions

described in Jorgensen (2008)

Prioritising support issues

Fault taxonomy

6. **Very Serious**	crash occurs regularly in one module
7. **Extreme**	frequent, very serious errors
8. **Intolerable**	database corruption
9. **Catastrophic**	system crashes, cannot be restarted
10. **Infectious**	catastrophic problem also causes failure in other systems

described in Jorgensen (2008)

Prioritising support issues

- … more categories than required
- Many help desks use only 3 priorities:

  High (maps to: **6 - 10)**

  Key business process inoperable, major business deliverable impacted, general failure of system, many users affected, etc.

Prioritising support issues

Medium (maps to: **4 - 5)**

Business is significantly affected, but workaround exists and/or individual user or small group completely disrupted

Prioritising support issues

Low (maps to: **1 - 3)**

Business can operate, but resolution required

Prioritising support issues

Czegel (1999) bases priority on **Impact on business**:

Impact on business = **Importance of component** & **Severity of event**

Prioritising support issues: example

Priority	Issues	Target resolution time
1	Critical components down Business impacted	1 hr

Prioritising support issues: example

Priority	Issues	Target resolution time
2	Critical components degraded Business impacted	4 hrs

Prioritising support issues: example

Priority	Issues	Target resolution time
3	Multiple non-critical components down or degraded Business not impacted	1 day

Prioritising support issues: example

Priority	Issues	Target resolution time
4	Single non-critical component down or degraded Business not impacted	3 days

Prioritising support issues: example

Priority	Issues	Target resolution time
5	Little or no impact Problem could be cosmetic	10 days

What happens to the support issue?

- Help desk staff may ***resolve*** the problem
- Problem may need ***investigating***
- Problem may need ***escalating***
  - to an expert
- Need to ***track*** issues
  - whose responsibility?

Summary

- Role of support
  - deal with bugs, new requests, technical problems, etc.
  - maintenance
    - perfective, adaptive, corrective, preventative
- Help Desk
  - deal with issues logged
  - hardware, application software, operating system, network or user error
  - identify problem
  - prioritise issues
  - track issues
  - resolve issues
  - document solution

Further Reading

- Beynon-Davies, P., 2009, *Business Information Systems*, Palgrave
- Bocij P, Greasley A, Hickie S, (ed.) 2008, *Business Information Systems*, 4th edition, FT Prentice Hall (2nd edition edited by Chaffey)
- Jorgenson, P. 2008, *Software Testing: a Craftsman's Approach*, 3rd edition, CRC Press (previous edition cited in Chaffey 2nd edition 2003) New edition due August 2013
- Czegel, B. 1999, *Help Desk Practitioner's Handbook*, Wiley
- Help Desk World, 2002, *Help Desk Software World: What is a Help Desk?* Retrieved: 11 February 2013 from http://www.help-desk-world.com/help-desk.htm
- Microsoft, 1997, Microsoft Sourcebook for the Help Desk, 2nd edition, Microsoft Press International (see Amazon http://www.amazon.com/Microsoft-Sourcebook-Help-Desk-Organization/dp/1572315822)
- Mohr, J., nd, The Help Desk. Retrieved: 11 February 2013, from http://www.jimmo.com/modules.php?name=Content&pa=list_pages_categories&cid=11
- Tourniaire, F. & Farrell, R. 1997, *The Art of Software Support*, Prentice Hall
- Regression Testing. Retrieved: 11 February 2013 http://searchsoftwarequality.techtarget.com/definition/regression-testing