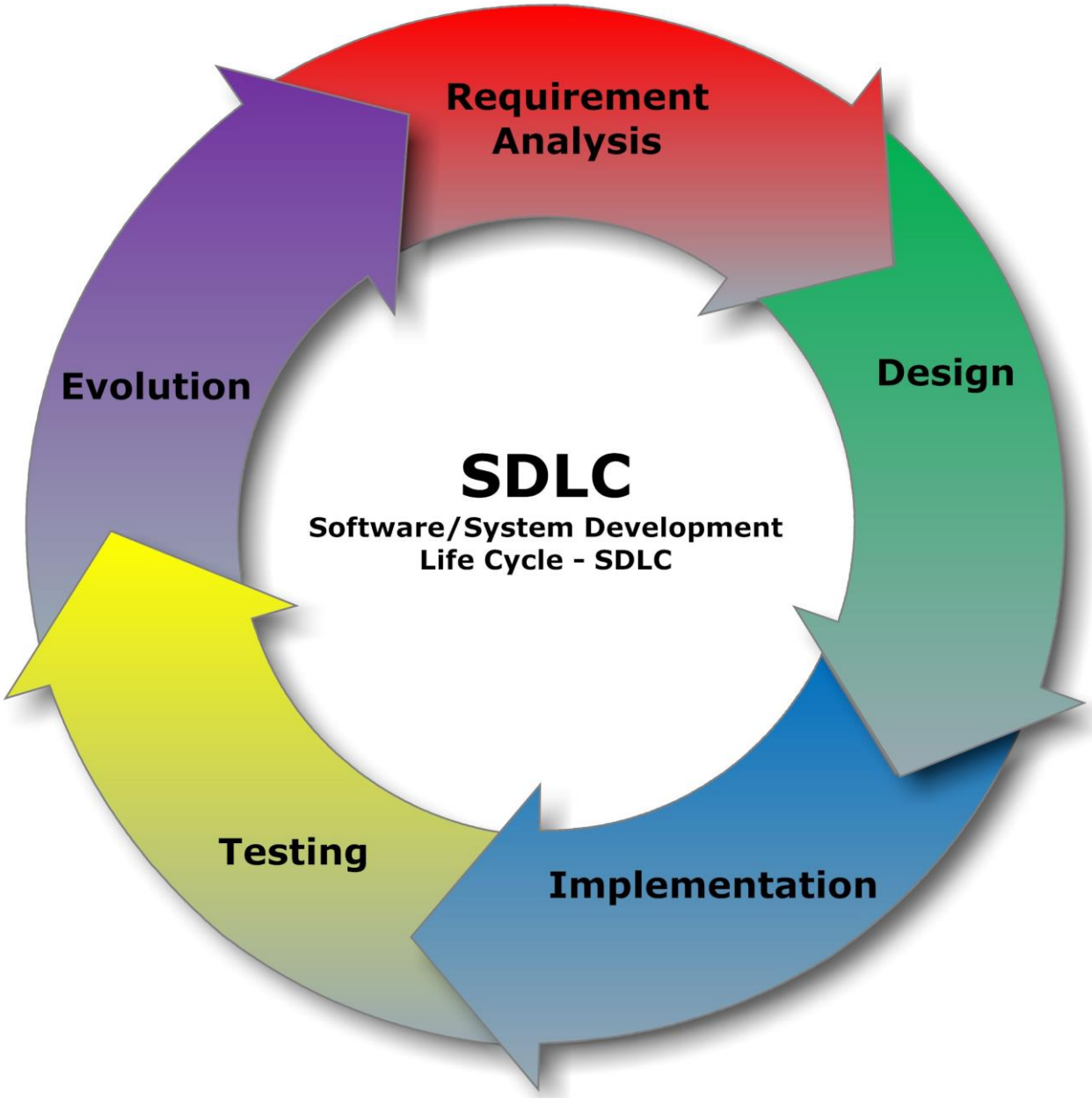
Introduction: Lecture 1


Requirement Analysis
Design
Implementation
Testing
Evolution
SDLC
Software/System Development Life Cycle - SDLC

Software Projects

What Client expected.

What was delivered.

Background to systems development

- Central criticism of information systems has been (and still is) that:

  many systems do not do what their users require and thus fall into disuse.

- In order for a system to be considered *successful* it needs to essentially do two things:
- Meet the users expectations (Quality target)
- Be delivered on time and to budget (Productivity target)

Quality targets

- The system meets the requirements specification (i.e. it serves the purpose for which it was originally intended)
- these targets relate to
  - an understanding of the business area
  - the user requirements
  - the organisational constraints
  - other environmental factors

Quality issues resulting in unsuccessful systems

- The wrong problem has been identified
- Neglect of wider organisational issues
- Incorrect analysis
- System developed for the wrong reasons

Productivity targets

- The system is delivered **on time** and **within budget.**
- These targets relate to:
  - successful management of the project, from inception to implementation

Productivity issues resulting in unsuccessful systems

- Users change their minds
- External events may occur that change the requirements
- Implementation may not be feasible

Another general cause for an unsuccessful system may be poor project control.

Systems failures

- Unsuccessful systems are not new.
- The complexity of a system does not necessarily relate to its chances of success or failure.
- Throughout the history of I.S development spectacular failures have been apparent

Systems failures

- DTI report (1983) showed that:

  in the UK of 15 organisations, only a half found job reductions after computer systems were introduced. In some cases, many jobs were created.

- DTI report (1985) found that:

  time-scale overruns occurred in 66% of projects. 55% were over budget.

Systems failures

- KPMG (1990) quoted:

  Runaway systems concerned over 30% of all major projects.

  Major effects of these systems were:

  - *Loss of time*
  - *reduction in staff morale*
  - *loss of money*
  - *customer satisfaction*
  - *a negative market image*

Systems failures

More recently:

- KPMG report for the 2005 survey:
  - 49% of participants experienced at least one project failure in the last year.
- KPMG report for the 2010 survey:
  - 70% of participants experienced at least one project failure in the last year.

Systems failures

- Many high-profile failures published in the 1990s.
  - Many of these systems in the public sector
  - Social security payments system (Pathway)
    - *blighted from the outset*
    - *cost £180 million (written off in the end)*
    - *Should have been delivered in 1997*
    - *Finally scrapped*

Systems failures

- More system failures thru the 1990s
  - London Ambulance system
    - Classic example of poor analysis and design
    - Complete misunderstanding of the environment and *Human Activity Systems*
  - Housing benefit systems
    - Millions wasted before realisation that integration of different procedures between different councils required understanding of the business processes

Systems failures

- New Millenium has seen just as many system failures ……
  - CSA system
    - Went live in March 2003
    - Was two years late and didn't work properly
    - Thousands of parents still waiting for files to be moved to new system
    - After awarding the system to EDS the CSA dept gave them over 2,500 changes to the system design

Systems failures

- Libra magistrates court system
  - Cost £390million
  - Supposed to deliver *a unified case management system to Magistrates courts in England & Wales*
  - Started in 1992. In September 2004 decided that *it is unfit for purpose*

System failures

- NHS NPfIT
  - 12.4 billion programme
  - Plagued with problems from outset
  - Systems didn't do what the users wanted it to do (little consultation)
  - Emphasis was placed infrastructure and not on users needs
  - Too many contractors (making money for themselves)
  - 22nd September 2011
    - The Cabinet Office's Major Projects Authority reported that " it has not and cannot deliver to its original intent".

Systems failures

- NOMIS (service by office for national statistics for UK labour market statistics)
  - Joint project by Home Office, the Ministry of Justice
  - Developed by EDS
  - Purpose to provide a single database of offenders, to help with their management, from court appearances to release, and sometimes beyond that

Cont…

- But the National Audit Office (2009) found:
  - there was so little control of C-Nomis that the government spent £161m on systems without anyone knowing how or exactly on what.
  - The system development was guilty of ‘basic’ project management failures

System failures

- FireControl
  - 20th September 2011: “The doomed attempt to streamline fire control services in England is one of the worst cases of project failure’ the Public Accounts Committee has seen” its chair said today.
  - A minimum of £469 million spent on it since 2004 and has now been wasted.

Cont ....

- Main reasons for failure:
  - the project was launched too quickly
  - decisions taken before a business case or procurement strategy had been developed and tested.
  - There was an over-reliance on external consultants
  - A high turnover of senior managers, none of whom have been held accountable for FireControl's failure.

So, why do systems still fail?

- We have highly educated development staff…..
- We have IT literate users
- We have many different methodologies to support the life cycle across a wide range of different applications
- We have tried and tested technologies and development platforms

So, why do systems still fail?

- Any development framework/method, can only be used as a guide.
- Each organisation is unique with its own needs and problems.
- Each set of end-users is unique with its own aspirations and concerns.
- Developers still often focus too much upon the software development and not upon the requirements analysis

Human factors in systems development

- Role of end-user is significant in successful development of an information system.
- Modern methodologies stress technological development, but ignore human factors.
- Role of analyst is not only to elicit information system requirements but also to analyse the human environment to be supported by the system

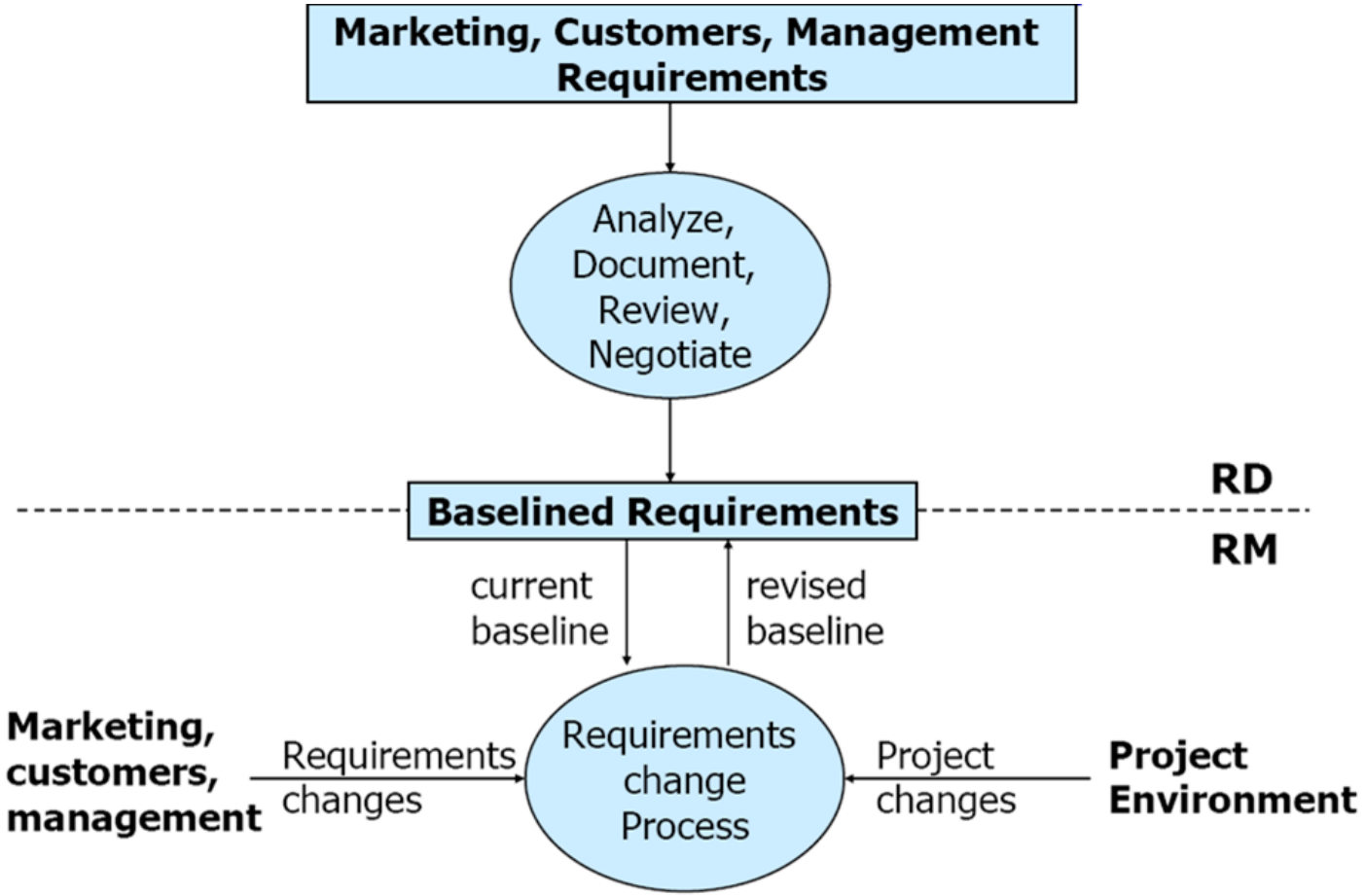
Organisational factors

- Situational factors
- Organisational objectives
- Development methods currently used
- Organisational issues
- Application type

Requirement management

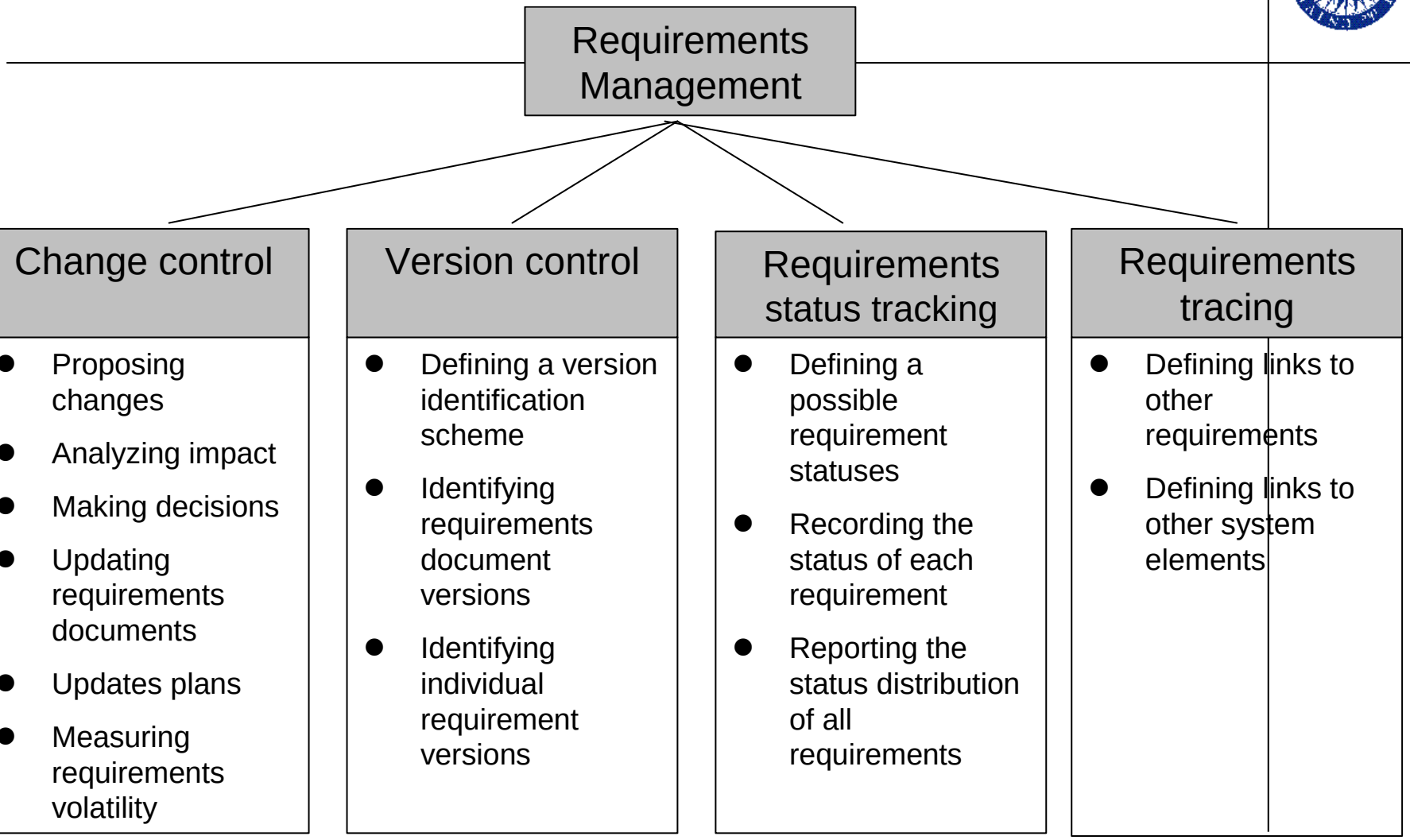
- A systematic approach to eliciting, organizing, and documenting the requirement of the system, and a process that establishes and maintains agreement between the customer and the project team on the changing requirements of the system.

Requirements Development (RD) and Management (RM)



Source: Wiegers, 1999

Requirements Management Activities



Source: Wiegers, 1999