Teams in systems development

- systems development is a team effort
- teams are organised on a project basis
- team membership can include various stakeholders
  - stakeholder: a person who has an interest in an existing or new information system

A team is a group where:
- Members are operating within a charter
- members see themselves as having specified roles
- Members see the team as accountable for achieving specified organisational goals
- The organisation provides the setting
- The team provides a forum where the members interact, relationships develop, a common approach emerges, goals are reached
  - (Dwyer 1997, chap 10)

Working in teams

- there is a team leader (or project manager) responsible for organising work on the project
- everyone else is nominally equal
- nature of the project determines the team skill set
- size: large enough for specialist skills, large teams are difficult to manage, teams within teams are common

Stages in team development

The five stages in the general pattern of team development are:
- Forming: interaction begins
- Storming: conflict emerges
- Norming: team rules of behaviour are established
- Performing: the tasks are accomplished
- Adjourning: the team breaks up as tasks are finalised
  - (Dwyer 1997 chap 10)
Working in teams

- team success depends on
  - the team’s skills - how the group is assembled
  - the efforts of the team: participation and productivity
  - the management of the team: the leader must be organised, informed, with good communication and human relations skills

Characteristics of good teams

- diversity
  - backgrounds, skills, goals
  - represents all stakeholders
  - increases likely acceptance of the system
  - exposes team members to a range of ideas and views

(Hoffer et al p 17, p 57)

Characteristics of good teams

- tolerance
  - of diversity, uncertainty, ambiguity
  - of new or different ideas: may help to generate better solutions

- communication
  - team members must communicate clearly and completely with each other

Characteristics of good teams

- trust
  - requires mutual respect
  - improves effectiveness of communication
  - put the team first
  - team members’ own views and goals should be secondary to the goals and views of the group
  - commitment to the team

Characteristics of good teams

- reward structure
  - should promote shared responsibility
  - should promote accountability
  - reward team members for effective contribution to the group
  - high performance teams also have
    - small team size (max 8-10 people)
    - high level of enjoyment
Factors operating in groups
- pressure for uniformity and conformity
- role diversity
  - task roles
  - group building roles
- self-centred roles
- status and power
- cohesiveness

Cohesiveness
- represents group solidarity
- stability through crisis
- sense of belonging to the group
- strongly associated with conformity
- negative effects as well as positive

Group decision making
- professional work involves many decisions
- with group work decisions impact others
- meetings allow group decision making
- democratic decisions
- agreed and equitable load sharing
- review of strategy
- formal authorisations

Group membership
- group membership presumes competence
- address your knowledge and skills shortfalls
  - in your specific, delegated tasks
  - in related areas
  - in your general ability and skill levels

Negotiation in teams
- Negotiation: two or more parties try to solve problems, reach agreement
- Effective negotiation: meet as many interests as possible in a durable agreement
- Be aware of personal styles: e.g. self-denying, self-protecting, self-exposing,
  Psychological barriers: e.g. fear of conflict, wanting to be liked, feeling intimidated, lack of self-confidence, need to be "nice", fear of losing face, guilt about being assertive etc.

Negotiation: the process
Five step approach:
- Plan: prepare objectives, gather information, sequence of issues, other parties' objectives etc.
- Discuss: establish trust, confirm facts, identify each party's objectives, views, areas of agreement
- Propose: define issues and what has to be resolved, deal with one at a time, avoid passing judgement, summarise content, views to confirm understanding
- Negotiate the issue: ask for what you want, accept compromise for satisfactory outcomes for all, generate many options etc.
- Check: the agreement made, confirm commitment
Negotiation: the process

Principled negotiation method:
- People - separate the people from the problem
- Interests - focus on interests, not positions
- Options - generate a variety of possibilities before choosing an option
- Criteria - ensure results are based on some objective standard

see Dwyer 1997 chap 6

Negotiating options

- Compromise: concessions by one or more parties
- Collaboration: parties cooperate to produce a solution acceptable to all
- Competition: one party gains the advantage over the other(s)
- Accommodation: one party willingly adapts to the other’s needs
- Withdrawal: one party retracts or backs away

Conflict resolution

Indicators of conflict:
- Discomfort: things do not feel “right”
- Incidents: e.g. a sharp exchange occurs
- Misunderstandings: motives, facts are confused
- Tension: relationships affected by negative attitudes, fixed opinions
- Crisis: normal functioning is affected, extreme reactions are contemplated

Why does Conflict Occur?

- differences in values, attitudes, traditions, prejudices
- different goals
- expectations not being fulfilled
- different work practices
- responses to incidents
- misunderstanding
- competition
- feelings of anger, of disappointment, of being offended

Types of Conflict

- Internal/within the self: when our own needs, emotions and experiences are unresolved or unsatisfied.
- External/outside of the self: occurs between two or more people, leads to discomfort, misunderstanding, tension and perhaps crisis.
- Realistic: resolvable conflict because both parties are amenable/willing to resolve the difference.
- Unrealistic: difficult to resolve because neither party is willing to change and negotiation becomes difficult.

Responses to Conflict

- Define the issues
- Determine the major concerns and needs of each party using: feedback skills, listening skills, assertive behaviour, non-verbal messages, empathy
- Generate solutions: brainstorm options, introduce an action plan to ensure that those options are implemented
Effective communication is essential: active listening

- Assertive behaviour is best
- Assertive behaviour is constructive because you state and uphold your views whilst respecting those of others
- Aggressive behaviour is not constructive as it involves dominating and winning at all costs
- Submissive behaviour is not constructive as it involves an inability to promote a point of view and one’s own needs and goals

Negotiation is a process in which two or more people attempt to resolve differences, discuss problems and arrive at an agreement

- Style: personal style will affect the way in which an individual negotiates and can be classified according to ways in which the individual uses/experiences power and psychological barriers
- Strategies: win-win, win-lose - each strategy has a different outcome and relies on different styles of communication

Negotiation: Styles and Strategies

Plan - establish clear objectives before engaging the other parties
Select appropriate time and setting
Set the Context - establish trust and confidence via listening skills, establish the areas of common ground, ensure all parties feel equal and safe
Define needs - establish the needs of each party by listening
Discuss - deal with one issue at a time, clarify and summarise the content, feelings and ideas which are, and have been, communicated
Negotiate - brainstorm possible solutions, evaluate those options, select those that everyone can agree to, implement the solutions

Stages in the Negotiation Process

- Compromise – (win-win) will it last?
- Collaboration – (win-win) will it continue?
- Competition – (win-lose) revenge?
- Accommodation – (lose-win) “thin end of the wedge”?
- Avoidance – (no resolution) repeat?

Conflict resolution options

People and Tasks in the SDLC

Remember......

- use “I” messages
- try to separate the people from the problem
- focus on interests rather than positions
- discuss a variety of possibilities for resolution before determining an option
- establish clear and concise criteria to ensure results of the process are based on an objective standard

Building a house:
- who is involved?
- Client
- Architect finds out what client wants and prepares a design to satisfy them
- Builder oversees the construction process
- Building specialists carry out various part of the construction (bricklaying, plumbing, electrical work, tiling, etc)
Computing People in the SDLC

- Project manager - manages the project
- Analysts/designers - the architects who decide how the system will look and work
- Programmers/database/network designers - the builders who make and put together the system components
- Operations/systems administration/data communications - the operational people who look after the technology infrastructure to make the system run

Business People in the SDLC

- Senior managers - who decide what the organisation’s needs and priorities are and allocate resources accordingly
- Middle managers - who decide how their part of the organisation runs, allocate resources accordingly and advise or seek support from senior management when necessary
- End users (operational staff) - who do the work

Managers in the SDLC

- Project managers
  - co-ordinate the work of the people and resources required to build the system
  - plan the project
  - ensure that everything/everyone is available when needed
  - see that everything runs according to plan and change the plan if necessary
- Change managers
  - co-ordinate the implementation of the system in the workplace

External People in the SDLC

- Consultants
  - specialists in particular areas of business, computing or process management who provide services which are not available within the organisation
- Vendors
  - provide the computing resources and support services which are not available within the organisation

Co-ordination and integration of people in the SDLC

- building an information system involves lots of specialised input to each phase from people with special expertise
- this expert knowledge cannot be applied effectively in isolation from everyone and everything else
- the effective co-ordination and integration of the work of everyone involved in building the system is critical for successful projects

Computing Resources in the SDLC

- Hardware - CPUs, storage devices, input/output devices
- Communications/networking - distributed systems, local area networks, file servers, client/server,
- Software - programming languages, packaged software, existing systems
- Interfaces – bridge between human users and the computer system
Computing Resources: Hardware

- Existing equipment
  - suitability/compatibility issues
  - constraints on what can be done
- New equipment
  - understanding its capabilities/limitations
  - compatibility with existing equipment
  - flexibility - scope of what is possible with the system

Computing Resources: Software

- The system developer has three main choices concerning software:
  - writing a new, tailor made system
  - buying a package
  - modifying or enhancing an existing system
- The design and subsequent phases of the SDLC will be different depending on which of these approaches is followed

The Role of the Systems Analyst in the SDLC

- Systems analysts work principally in the analysis and design phases of the SDLC
- Work ranges from the more technical (analyst/programmer) to the business-oriented and non-technical (business systems analyst)
- Many different specialisations possible depending on the nature of the systems involved

Analysis and Design in the SDLC

- Compare with the role of an architect in building a house
- Analysis - finding out WHAT the client needs
- Design - deciding HOW to meet these needs
- Distinction between the two is not always as clear in practice as it sounds in theory as they tend to merge in practice (compare architect’s role)

What Do Systems Analysts Do? Collecting Information

- Collect information from clients about their problems and needs for the system, their design preferences, and their reaction to possible design options
- Collect information from technical people about the capabilities and constraints of the technology available to help solve the problem
- Collect information from project managers about project resources and the development process

What Do Systems Analysts Do? Modelling the System

- Identify and model the key aspects of the system as it exists and/or as the client wants it to be
- Identify and model the connections and relationships between the system components and between the system and the outside world, as they are now and as they are proposed to become
- Model the system in a form which is understandable and conveys necessary information about it to all relevant audiences
What do Systems Analysts Do?

**Describing the System Needs and Solutions**

- Describe it to other analysts - to ensure that your understanding of the problem and its solution is clear and complete
- Describe it to the client - to get agreement that this is how things work/this is what is wrong/this is how they would like things to work
- Describe it to other technical staff - to ensure they know what is needed in order that they can do their part
- Describe it to project management - to get approval to proceed with development

What Does the SystemsAnalyst Need To Know?

A systems analyst needs to be able to relate well to a wide range of different sorts of people:

- business management
- system users
- technical people (programmers/database programmers/systems administrators and operations staff/data communications and network specialists)
- consultants

What Does the Systems Analyst Need To Know?

- all the people involved in the SDLC will have different perspectives of a system and the systems building process
- the analyst must be able to understand their perspective and be able to 'talk their language'
- an analyst often has to be like an interpreter

The systems analyst’s skills

- Several categories of skills
  - Interpersonal communication
  - Analytical
  - Creative
  - Technical
  - Business and organisational

References

