

**The University of Western Australia
School of Computer Science and Software Engineering**

CITS5502 Software Processes

Lecture 6

**An Example of a Special (Meta) Process –
The Post Implementation Review**

Key concepts

- Feedback as a central concept of Process Improvement
- Key elements of an effective PIR
 - Gap analysis
- Six part PIR process:
 - Setting up; checklist-scripts; four interviews; analysis of problem areas; recommendations; management action with feedback.
- Need for an interview script
 - Open and closed questions
 - Listening as a key skill
- Eight tools – five for remedial action; three for new ideas
 - Checklist driven inspections; Risk management; Formal procedure (with audits); Key planning; Metrics benchmarking; Quality action teams; Controlled experiments

The pre-requisites for a PIR

(extracted from the paper by Woodings and Everett)

- Every project should have a PIR included in its project-quality plan
- The PIR should be conducted at several specified intervals after implementation of the system.
- Adequate time and resources should be set aside for a reviewer to carry out the work.
- The reviewer should be experienced in review techniques and should be independent of the project team.
- The assessment should emphasize on the system rather than evaluating the people involved.

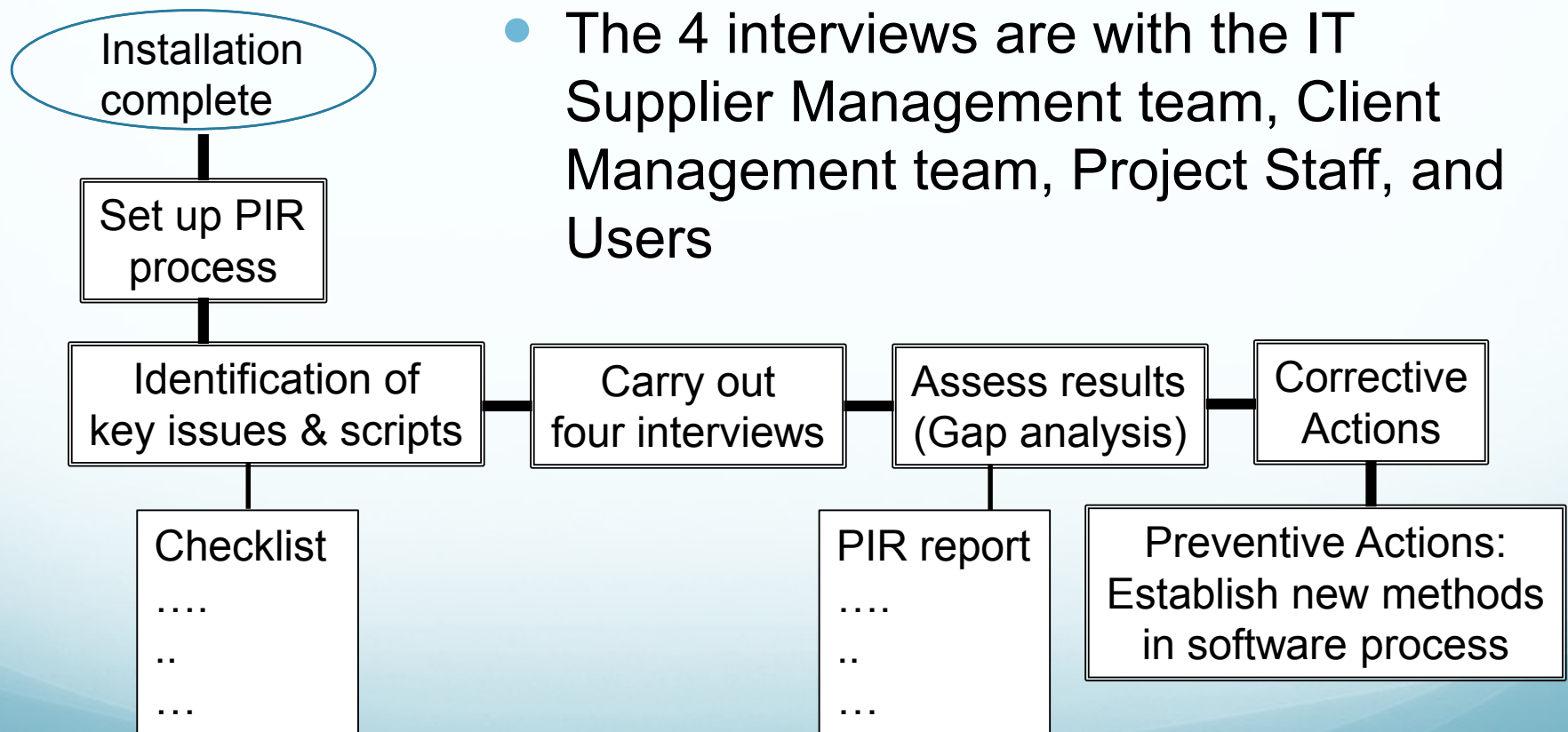
The pre-requisites for a PIR (cont.)

(extracted from the paper by Woodings and Everett)

- The PIR should be done as a series of scripted interviews.
- A written report should be produced.
- Project management should take immediate action on issues raised.
- Within a short period, IT management should produce and carry out a plan for improving process effectiveness in any areas identified in the PIR.

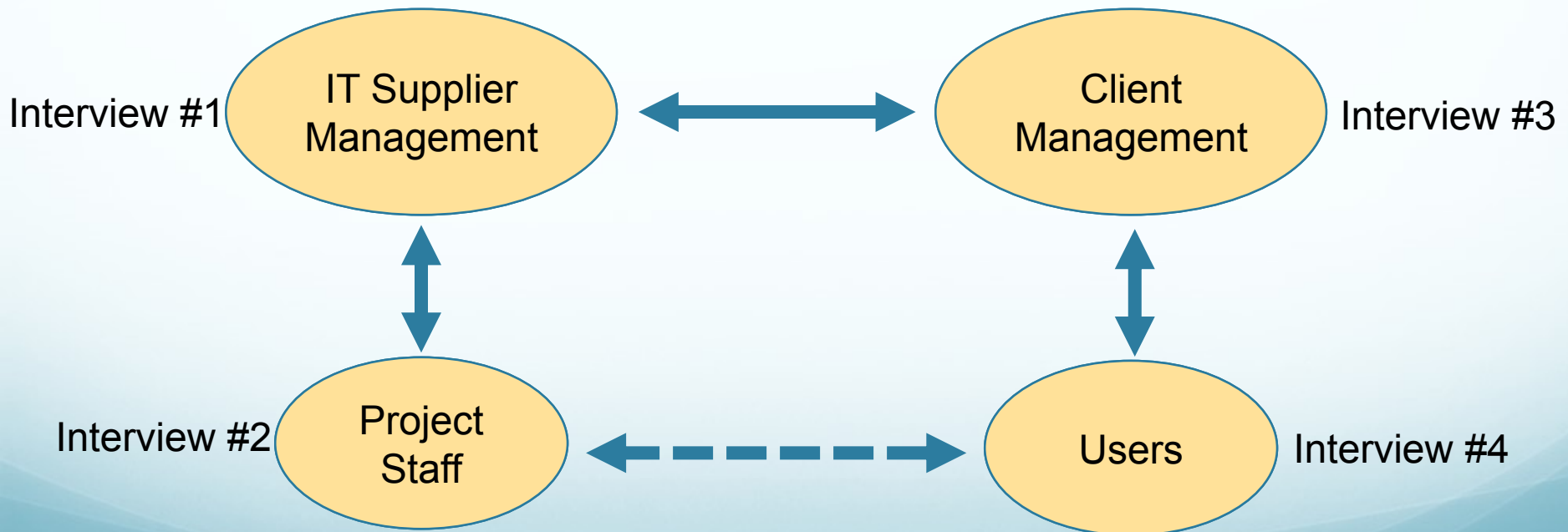
The PIR Process

- The checklist should contain the open and closed questions of concern.
- The 4 interviews are with the IT Supplier Management team, Client Management team, Project Staff, and Users



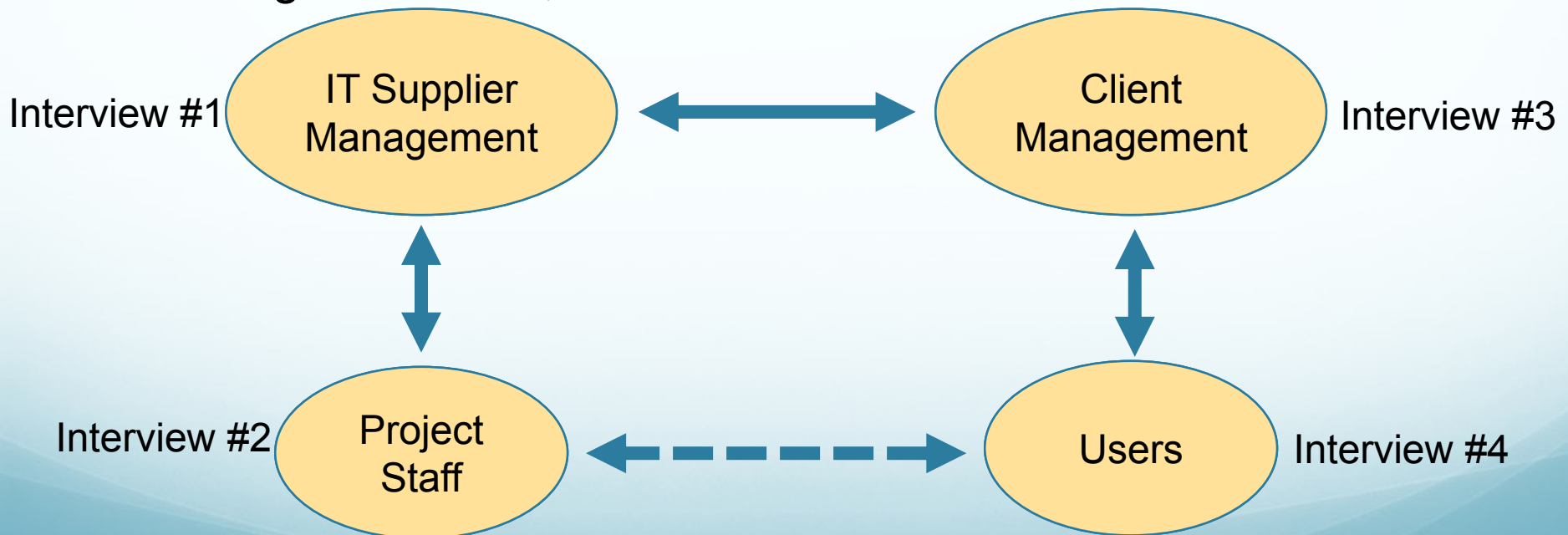
Communication channels of the four parties and the interviews

- Communication channels between the 4 party pairs are error-prone.
- The four interviews should be conducted in the following order as marked in the diagram.



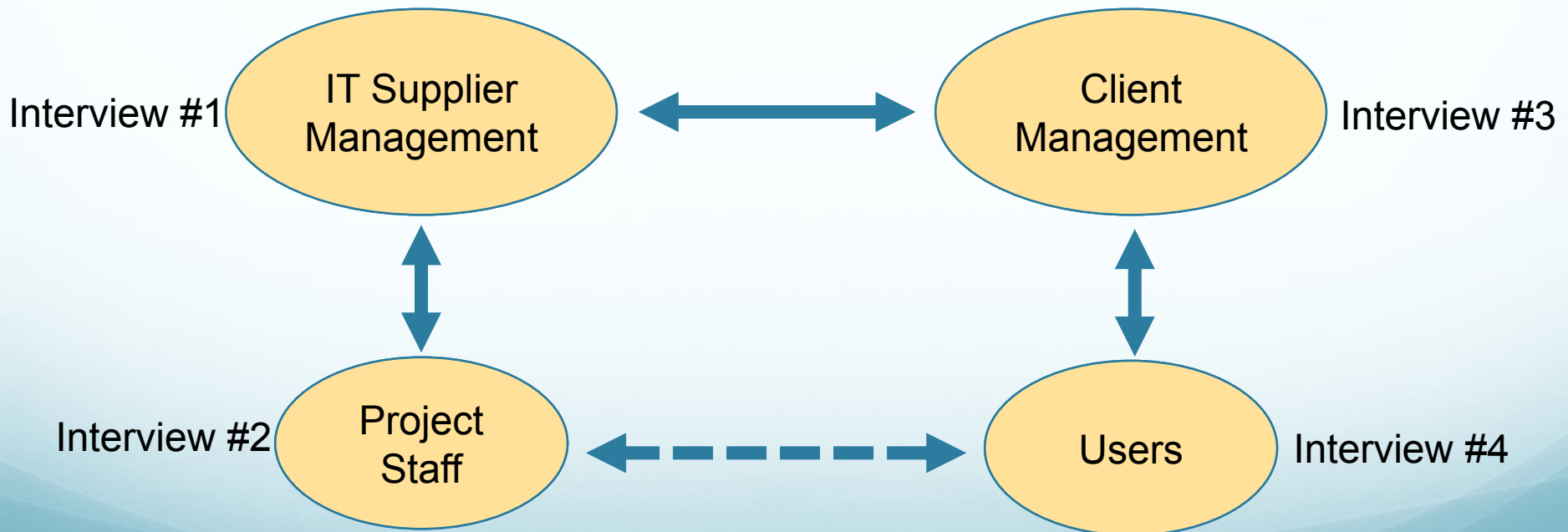
Communication channels of the four parties and the interviews

1. The IT supplier Management people are generally most concerned with the profitability of the project, customer satisfaction, and enhancement of organization's reputation.
2. The interview with Project staff should cover items such as where the project ran well or poorly, staff resource, training, constraints on budget and time, etc.



Communication channels of the four parties and the interviews

3. The interview with Client Management should cover how well the project team met schedules and kept the clients informed on progress.
4. The interview with Users should cover topics on installation, maintenance, and support.



Gap analysis

- The analysis (after the interviews) should consider potential problems under the following 5 categories:
 1. Deficiency in ability to validate the 'needs' of the customer
 2. Inadequacies in the project estimation and planning process
 3. Poor management support (team size, organization, skills, training, etc)
 4. Non compliance to standards and plans
 5. Lack of general communication with customers at all stages of the process

The PIR report

The PIR report should identify:

- Areas of the project done well
- Any specific current problems of customers
- Any deliberate variations to the standard process
- Metrics of the product and process (eg. System size, defect rates, software performance)
- Any deficiencies found in the gap analysis
- Recommendations on improvements or experiments to be tried in the next project

Corrective and preventive actions

IT management should, within an agreed period, provide:

- Feedback to customers, including a plan and timetable for action to rectify the identified problems
- An annotated copy of the report to the project management and staff
- A list of identified actions to remedy the process deficiencies

Self-reading

For the eight tools

- Five for remedial actions
- Three for new ideas

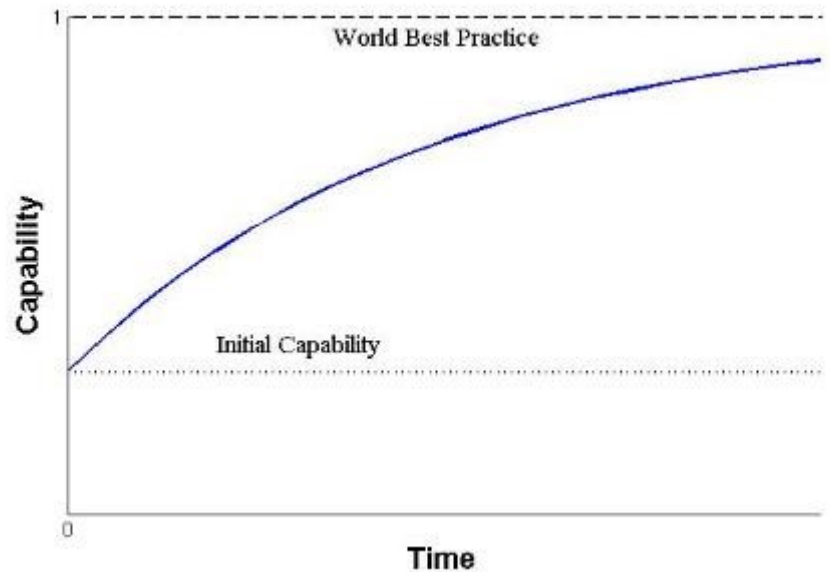
students should refer to the paper by Woodings and Everett.

Cost-effectiveness of the PIR

- An asymptotic increase in capability is shown, given the model (Woodings and Everett):

$$C_t = 1 - (1 - C_0)(1 - g)^t$$

where $0 < C_0 < 1$ denotes the initial capability of an organization; $0 < g < 1$ denotes the “gain rate” per year introduced by conducting PIR; C_t denotes the capability of the organization at time t .



In this plot, $C_0 = 0.5$, $g = 0.1$

Recommended Reading

- Pressman: Sections 26.4.3 on “Review Guidelines”
- Woodings, T. and Everett, J. “A Methodology with Quality Tools to support Post Implementation Reviews” Proc. of 7th Australasian Conference on Information Systems, Wellington, 1999 (available for download on CITS5502 Lecture Note website).