**Contract review**

- Contract review process and stages
- Contract review objectives
- Implementation of contract review
- Contract review subjects
- Contract review for internal projects

**Common contract situations**

- Participation in a tender
- Proposal submission according to customer’s RFP
- Receipt of an order from a company’s customer
- Internal request from another department in the organization

**Contract review stages**

- Proposal draft review
- Contract draft review

**Proposal draft review - Objectives**

To make sure that the following activities have been satisfactorily carried out:

1. Customer requirements clarified and documented
2. Alternative approaches for carrying out the project examined
3. Formal aspects of the relationship between the customer and the software firm specified
4. Development risks identified
5. Project resources and timetable adequately estimated
6. The firm’s capacity with respect to the project examined
7. The customer’s capacity to fulfill his commitments examined
8. Partner and subcontractor’s participation conditions defined
9. Protection of proprietary rights defined

**Contract draft review - Objectives**

To make sure that the following activities have been satisfactorily carried out:

1. No unclarified issues remain in the contract draft
2. All understandings reached subsequent to the proposal are correctly documented
3. No “new” changes, additions, or omissions have entered the contract draft

**Types of Internal projects**

1. Administrative or operative software to be applied internally
2. Software packages originally intended to be sold to the public as “off-the-shelf” packages
3. Firmware to be embedded in the company’s products
"Loose relationship" Internal projects – Disadvantages to Internal customers

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<tr>
<th>Subject</th>
<th>Disadvantages to the internal customer</th>
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| (1) Inadequate definition of project requirements | * Implementation deviates from the needed applications  
* Low satisfaction |
| (2) Poor estimate of the required resources | * Unrealistic expectations about project feasibility |
| (3) Poor timetable | * Missing scheduled dates for beginning the distribution of new products |
| (4) Inadequate awareness of development risks | * Customer unprepared for project risks and their consequences |

Missing scheduled dates for beginning the distribution of new products

Poor estimate of the required resources

Inadequate awareness of development risks

Customer unprepared for project risks and their consequences

Development and quality plans

- Development plan and quality plan objectives
- The elements of the development plan
- Elements of the quality plan
- Development and quality plans for small and for internal projects
- Software development risks and software risk management

Development and quality plans - Objectives

Planning is meant to prepare adequate foundations for successful and timely completion of the project. The planning process includes:

1. Scheduling development activities and estimating the required manpower resources and budget
2. Recruiting team members and allocating development resources
3. Resolving development risks
4. Implementing required SQA activities
5. Providing management with data needed for project control

The elements of a software quality plan

1. List of quality goals
2. Review activities
3. Software tests
4. Acceptance tests for software externally developed
5. Configuration management plans: tools, procedures and data for version releases
### Classes of software development risks

1. Scheduling and timing risks  
2. System functionality risks  
3. Subcontracting risks  
4. Requirement management risks  
5. Resource usage and performance risks  
6. Personnel management risks

### Boehm and Ross's Top 10 software risk items

1. Developing wrong software functions  
2. Unrealistic schedules and budgets  
3. Developing wrong user interface  
4. Gold plating  
5. Continuing stream of requirement changes  
6. Shortfalls in externally furnished components  
7. Shortfalls in externally performed tasks  
8. Personnel shortfalls  
9. Real-time performance shortfalls  
10. Straining computer science capabilities

### The software risk management process

- **Pre-project**  
  - Risk identification and assessment  
  - Planning risk management activities  

- **New project**  
  - Scheduling and timing risks  
  - System functionality risks  
  - Subcontracting risks  
  - Requirement management risks  
  - Resource usage and performance risks  
  - Personnel management risks

- **Ongoing projects**  
  - Identifying and assessing new software risks  
  - Monitoring software risk management activities  
  - Disputing risk management issues (risk resolution)

- **Planning and updating risk management activities**

- **Implementing risk management actions**  
  - Risk resolution  

- **Monitoring software risk management activities**

- **Identifying and assessing new software risks**

- **Evaluate monitoring results**

- **Unsatisfactory results**

- **Required results achieved**

- **Evaluate monitoring results**

- **Supervising software risk management activities**