

## List of TD effects and their categories identified in InsighTD BR

### The categories identified were:

- **Maintenance:** refers to effects related to software maintenance activities. Three effects were associated to this category: *increase in the amount of maintenance*, *low maintainability* and *interrupt development activities for debt payment*;
- **Organizational:** groups effects related to the software development organization. This category groups five items like *lack of training* and *impaired company image*;
- **People:** groups effects related to development team members. This category associated 16 items such as *high turnover* and *demotivation of the team*;
- **Planning and management:** refers to TD effects related to project planning and management. 11 effects were associated with this category, including items like *imprecise time estimation* and *planning changes*;
- **Quality issues:** groups effects related to the quality of artifacts elaborated during the software development. This category groups items like *bad code* and *inadequate requirements*, totaling 17 effects;
- **Development issues:** groups TD effects related to the project development activities. This category has 15 items as, for example: *loss of traceability* and *constant need for retest*.

### List of effects:

#### Development Issues

Low code reuse  
Difficulty in implementing the system  
Difficulty in project development  
Difficulty conducting tests  
Inadequate / non-existent / out-of-date documentation  
Lack of security  
Design changes  
Requirements changes  
Non-implementation of functionality  
Constant need for retest  
Need of refactoring  
Loss of traceability  
Complex system  
Infrastructure overload  
Inappropriate tests

#### Maintenance

Increase in the amount of maintenance activities  
Low maintainability  
Stop development activities for debt repayment

#### Organizational

Lack of training  
Impaired company image  
Slow processes

Financial loss

Legal issues due to non-compliance with contracts

## People

High turnover of the team

Activities that no one wants to take responsibility for

Developer dependency

Team demotivation

Doubt about team capability

Stress with stakeholders

Lack of commitment of users

Lack of knowledge

Lack of domain knowledge

Lack of understanding

Dissatisfaction of the parties involved

Need for skilled professionals to solve problems

Need of training

Problem of communication

Fall in productivity

Team overload

## Planning and Management

Planning changes

Delivery delay

Increased effort

Increase in risks

Inaccurate time estimate

Lack of planning

Poor allocation of resources

Inappropriate planning

Pressure

Rework

## Quality

Adoption of contour solutions

Low Reliability

Low quality

Low performance

Bad code

Wrong decisions in the architecture

Lack of credibility of the product

Poorly defined scope

Lack of standard

Impact on production environment

Design problems

Project does not serve customer

Project not completed

Inadequate requirements

Return of previously corrected defects

Non-scalable software

Inappropriate usability

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