

Types of requirements

There are many ways to organize requirements. The following is one scheme.

Table 1

Types and subtypes of software requirements	Primary Sources	Understanding Risk
Quality goals		
Internal qualities e.g., readability	Quality specialists	Low
External qualities e.g., reliability	Customers & Developers	Medium
Mixed qualities e.g., security	Customers & Developers	High
Functions		
Domain functions		
interactive		
happy paths	Customers	Medium
unhappy paths	Developers	Medium
batch	Developers	Medium
autonomous	Developers	Low
Quality support functions		
internal quality supports e.g., self-checks	Developers	Medium
external quality supports e.g., internationalization functions	Developers	Medium
mixed quality supports e.g., safeguards	Developers	High
System functions e.g., backup	Developers	Low
Constraints		
Technical		
design e.g., no single point of failure, platforms, external interfaces and protocols	Developers	Medium
implementation e.g., coding standards, data restrictions	Quality specialists	Low
verification e.g., test coverage	Verifiers	Low
deployment e.g., secure packaging	Developers	Low
Societal e.g., regulations	Quality specialists	Low
Project e.g., deadlines	Project leads	Low
Supplier attributes	Quality specialists	Low

Note the diversity of types and sources. Effective requirements development requires a clear understanding of this diversity. Terminology such as “functional and non-functional requirements” suggests a lack of understanding.

Defective requirements can cause defects in designs, data structures, code, tests, and documentation. Because of these effects, it is important to identify types of major requirements defects, their human causes, and their mitigations. One obvious mitigation is to identify these defects early.