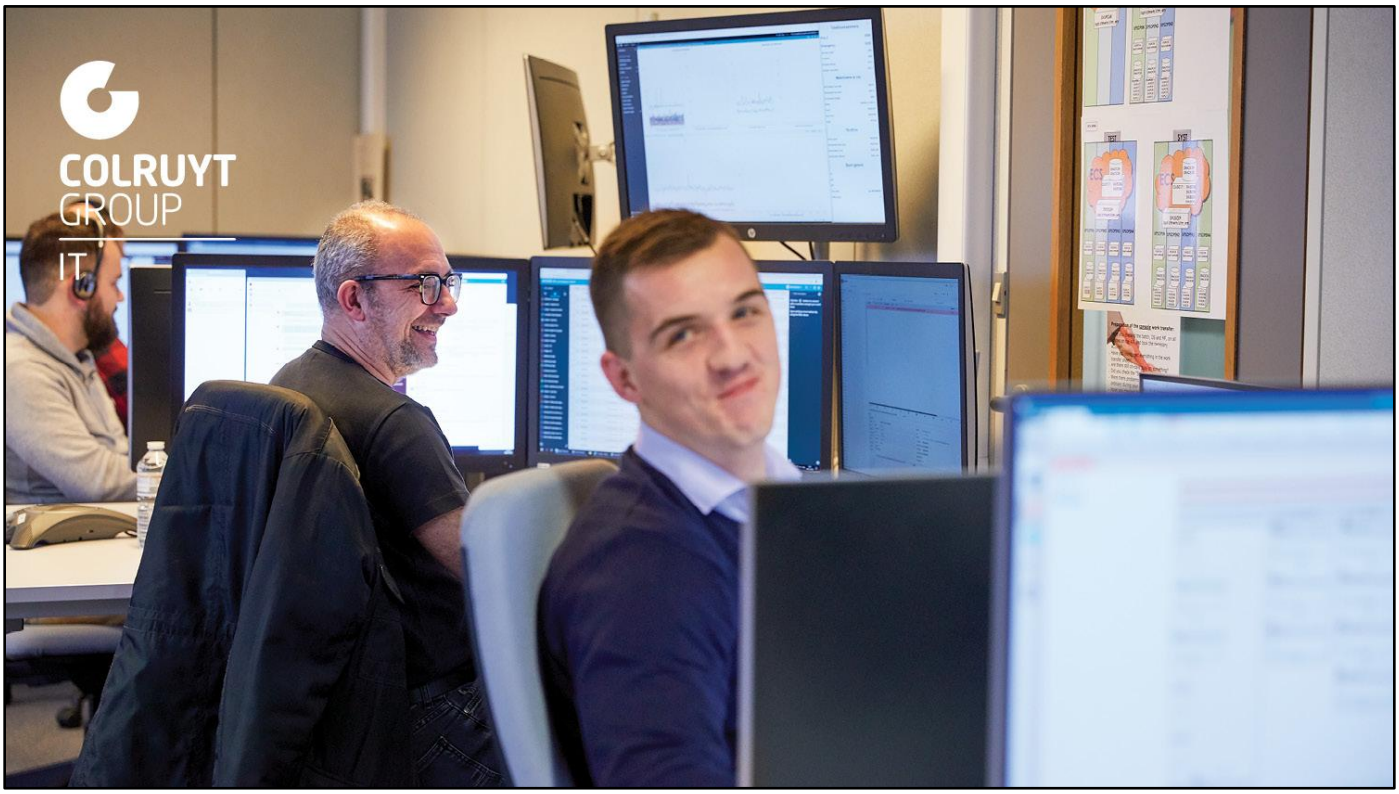

COLRUYT
GROUP
IT

How Quality relates to Testing

Patrick Ruyskensveld
VAKresponsible Quality Assurance & Testing
VAK: Vaardigheden, Attitudes en Kennis
(*Competences, Attitudes And Knowledge)*

19th May 2025 at University Antwerp
Professor Serge Demeyer

COLRUYT GROUP IT

Agenda

1. Patrick (2’)
2. Colruyt (5’)
3. Quality & Testing (30’)
4. Q&A (8’)

COLRUYT GROUP IT

1 Patrick

VAK Responsible QA & Testing

COLRUYT GROUP IT

Patrick Ruyskensveld
VAK Responsible QA & Testing
Colruyt Group Services

Career

2022 Colruyt Group Services
CoE Lead
2020 Eurofins Digital Testing
QA Principal
2018 Capgemini
Principal
2011 Coralius
Test Consultant
2008 Crelan
Test Manager
2004 ps_testware
Test Consultant
2000 BASE (Telenet)
Senior Test Analyst

Profile

Patrick now works 25 years in Software Testing, Project Management and Service Management. He has managed major projects in a variety of sectors: Telco, Public, Finance, Insurances, Retail and Utilities, over a wide range of technologies, being involved as early as possible in the SDLC. This variety of roles, environments and challenges has formed him into a solid manager, bringing business value with high quality to many organizations.

Next to conducting projects, his passion goes into coaching, training, auditing, presenting, setting up improvement tracks, recruiting, pre-sales, guiding testers in their career development and following the latest IT evolutions.

He is results-oriented, applies a customer centric approach, is striving for the best possible product quality. He likes to combine listening, learning, organizing, influencing, motivating, having fun and reaching objectives.

Over the weekends you can find Patrick at a pub-quiz, at a concert or at the side of a purple-white football pitch in Brussels.

Certificates

Professional Scrum Master 1
Scrum.org
Afgegeven op okt. 2019

ISTQB Accredited Tutor – Advanced Level Test Manager
ISTQB® - International Software Testing Qualifications Board
Afgegeven op mrt. 2016
Referentienummer Coralius_CTFLAE_201603004

ISTQB Certified Agile Tester - Foundation Level Extension
ISTQB® - International Software Testing Qualifications Board
Afgegeven op jan. 2016

ISQI Certified TMMi Professional
ISQI Group
Afgegeven op jan. 2014

IREB Certified Professional for Requirements Engineering
IREB
Afgegeven op jan. 2013

ISTQB Certified Test Manager Advanced Level
ISTQB® - International Software Testing Qualifications Board
Afgegeven op jan. 2009

APM Group Certified Prince2 Foundation Level
APM Group
Afgegeven op jan. 2007

ISEB Certified ITIL Foundation Level
ISEB Ltd
Afgegeven op jan. 2007

ISEB Certified Testing Foundation Level
ISEB Ltd
Afgegeven op jan. 2006

ISQI Certified Mobile App Tester Foundation Level
ISQI Group
Toegekend: dec. 2014 · Verloopt: dec. 2017

https://be.linkedin.com/in/patrick-ruyskensveld

2 Colruyt Group

A family of businesses

COLRUYT GROUP IT

Belgian family business with long-standing tradition

Colruyt Group has a very diverse brand portfolio in different but complementary domains.

8

Colruyt Group has a very diverse brand portfolio in different but complementary domains. We are active in:

- Food – non-food – fashion – health
- Retail – wholesale – foodservice
- Renewable energy

Geographic spread

- brick stores in Belgium, France and Luxembourg
- an IT division in Hyderabad, India
- an export office in Hong Kong
- export to several countries, mainly in Sub-Saharan Africa

<u>Our store formulas in Belgium</u>

Food

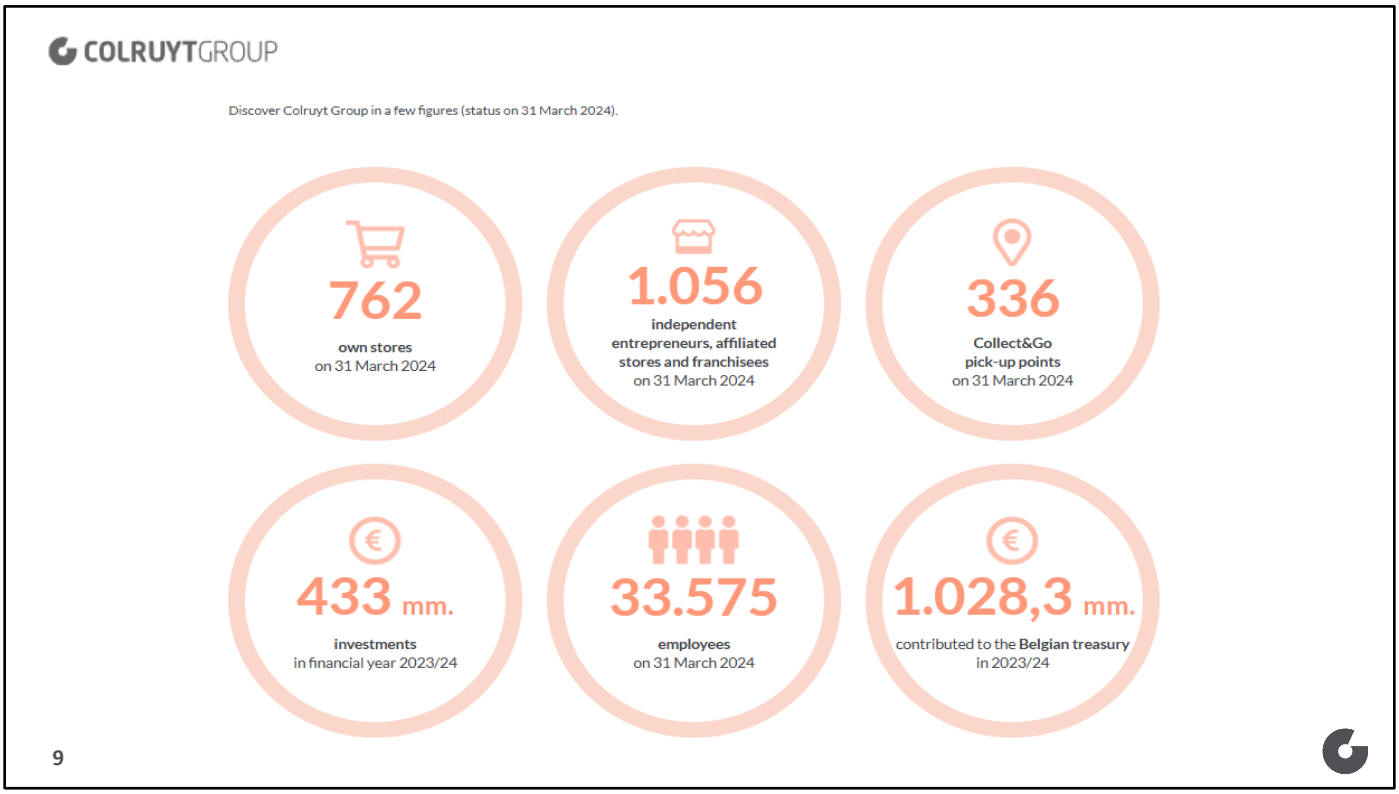
Colruyt Lowest Prices: largest retailer in Belgium
OKay
Bio-Planet: market leader in organic products
Collect&Go: more than 20 years Belgian market leader in online food retail
Spar Colruyt Group
Cru

Non-food
Bike Republic
The Fashion Society: includes fashion retail chains ZEB, PointCarré and The Fashion Store

Services
DATS 24: energy at home, on the road and at work
Colruyt Group Academy
SmartWithFood: the online coach for personalised nutrition and health advice
Xtra
JIMS: fitness chain

Private Labels
Boni Selection: the biggest food brand in Belgium
Everyday
Graindor: coffee
Kangourou: school supplies, stationery, etc.
Cara Pils

France
Colruyt Prix-Qualité
Collect&Go
DATS 24



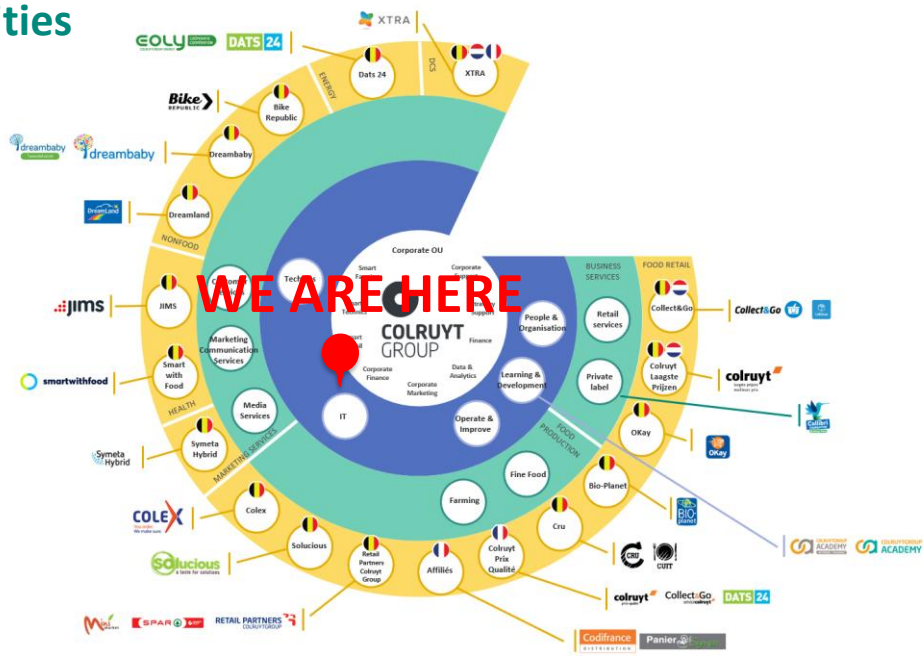
Discover Colruyt Group in a few figures (status on 31 March 2024).

2a Colruyt Group IT

Supporting our Operating Units

COLRUYT GROUP IT

Colruyt Group's activities are supported by a number of (service) operation units



Today we have grown into a diverse organization of more or less 2,000 coll
Spread all over the country and even the world, with **various kinds of indiv**
We have strong **teams** with a healthy curiosity and open mind (for each c
And one thing unites us, that is that together we make a difference, day a

What we do: in a nutshell

We build. We integrate. We create. We innovate.
With 2.000 colleagues. And an enormous diversity of technologies.
For over 720 stores. And so much more.

https://jobs.colruytgroup.com/nl/campagne/it-talent/
OF
https://www.youtube.com/watch?v=wkn-lew2ZEM

A wide range of profiles work at IT

500
software
engineers

https://jobs.colruytgroup.com/nl/campagne/it-talent/

Intern+extern
BE+CI

3 Quality and Testing

COLRUYT GROUP IT

1. Quality

- What is quality?
- QA vs Testing
- Frameworks/Guides

What is quality?

- Quality refers to the degree of **excellence** or merit of something, typically measured against set standards or **expectations**.
- It can refer to various aspects such as the design, construction, performance, reliability, or usability of a product or service.
- The term "quality" is **subjective** and can vary based on the **individual's** needs and preferences.

(Source: https://chat.openai.com/chat) – is this a qualitative source? Does it fulfill our needs? What are our needs? Does it float?)

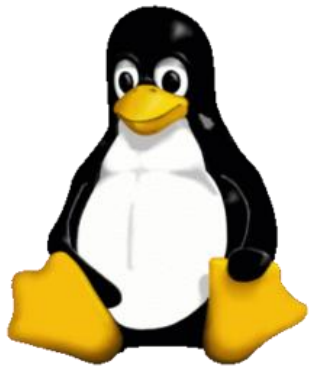
What is quality?

Excellence
Expectations
Subjective
Individual

Who is the fastest?
Who is the healtiest?
Who runs the longest distance?
Who is still running?
Who is the best?
Who is putting the most effort?
Who do you like most?
Who do you want to be?

- Usain Bolt: fastest man ever over 100 meters
- Chen: finished a marathon at age 50 while smoking, in just 3hrs 28mins and placed 574th out of more than 1,500 competitors
- Mike Fremon: 100-Year-Old Runner Holds 4 World Records: for the fastest marathon time at age 80 and again at age 90; the fastest half-marathon time at age 90 and 91; and the U.S. record for the fastest mile by a 96-year-old.
- Patrick Ruyskensveld: watching runners on tv

What is quality?



How is Quality related to budget?
Why are customers buying our product?

What do you feel when looking at the logo's?
Which holds the most quality?
Which specific quality?
What do you appreciate in the product?
How does your budget influences your expectations when it comes to quality?

What is quality?

newpharma

How is Quality related to budget?
Why are customers buying our product?

Quality is often defined by the promise we make to our customers, but also by our customers who implicitly expect specific and sometimes very personal quality attributes, and customers tend to change their minds. But they key lies in : what is it that our clients want to pay for? Where is the business value?
Are they attracted by the lowest price or the exotic offer of rare vegetables? And how does our testing ensures, assures these quality expectations? In very practical terms: at Colruyt Lowest Prices we will not use an expensive test automation tool. At Cru the performance at the checkout is much less important then at CLP. At Newpharma, next to a risk based approach we must comply with regulations, that often overrule the Risk Based Test Approach.

QA & Testing

- Testing and quality are **closely related**, as testing is an essential part of ensuring the quality of a product.
- Testing helps to identify any **defects, bugs, or issues** in a product, which can then be **fixed** to **improve the overall quality.**
- Testing is an important part of the software development process and helps to **validate** that a product meets the specified requirements and is fit for its intended purpose.
- Testing **ensures delivery** of scope, timing, budget & risks
- Ultimately, the goal of testing is to deliver a high-quality product that meets **customer expectations**.

This is the point where we explain that testing supports the delivery of the scope (nothing less and nothing more), within time and budget, risk and with the (sometimes implicit) quality attributes. In that ideal world User Acceptance Testing becomes a walk in the park, a pony camp, where users get excited about the product. Where they recognise what they asked for some time ago. And, sometimes there is a wow-factor, something that goes beyond their expectations. But, in our world, it is often a time for users to get dissapointed by the solution. Missing or wrong functionality, slowness, inaccuracy, high learning curve, integration issues and delays are to be expected. Testing should always strive for the best possible quality, with the testing ethics in mind. (See ISTQB foundation level Code Of Ethics: What we do (istqb.org))

Code of Ethics

ISTQB®, like other professional bodies including the ACM and IEEE, advocates for a code of ethics as part of our commitment to the profession.
The ISTQB® defines the following code of ethics:
•PUBLIC - Certified software testers shall act consistently in the public interest.
•CLIENT AND EMPLOYER - Certified software testers shall act in a manner that is in the best interests of their client and employer, consistent with the public interest.
•PRODUCT - Certified software testers shall ensure that the deliverables they provide (on the products and systems they test) meet the highest professional standards possible.
•JUDGMENT - Certified software testers shall maintain integrity and independence in their professional judgment.
•MANAGEMENT - Certified software test managers and leaders shall subscribe to and promote an ethical approach to the management of software testing.

•PROFESSION - Certified software testers shall advance the integrity and reputation of the profession consistent with the public interest.
•COLLEAGUES - Certified software testers shall be fair to and supportive of their colleagues, and promote cooperation with software developers.
•SELF - Certified software testers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession.

Frameworks/Guides

Six Sigma: A data-driven approach that aims to minimize defects and improve process efficiency through a series of defined steps and tools.

Total Quality Management (TQM):

A management philosophy that focuses on continuous improvement and customer satisfaction through the involvement of all employees in the quality improvement process.

ISO 9001: An international standard that provides a set of requirements for a quality management system (QMS) to ensure that an organization consistently delivers quality products and services.

Lean Six Sigma:

A combination of the Six Sigma and Lean methodologies, aimed at reducing waste and improving efficiency in the production process.

Capability Maturity Model Integration (CMMI):

A framework used to assess and improve the maturity of an organization's processes in software development and other areas.

Examples of Frameworks/Guides. Choose the one that fits your organisation.
ISTQB.org uses ISO25010. (Superseeds ISO 9126).

Frameworks/Guides

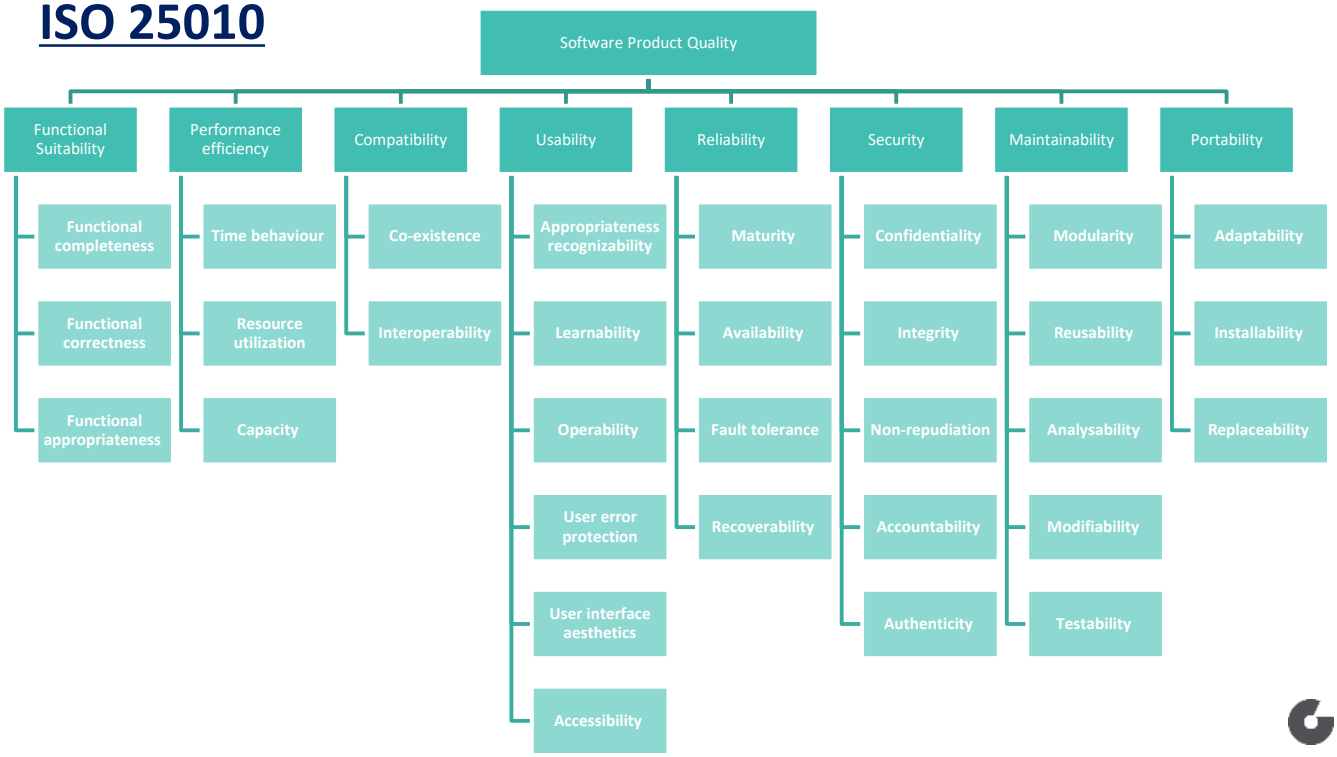
ISO25000: SQuaRE (System and Software Quality Requirements and Evaluation), has the goal of creating a framework for the evaluation of software product quality.

ISO25010: System and software quality models: Describes the model, consisting of characteristics and subcharacteristics, for software product quality, and software quality in use.

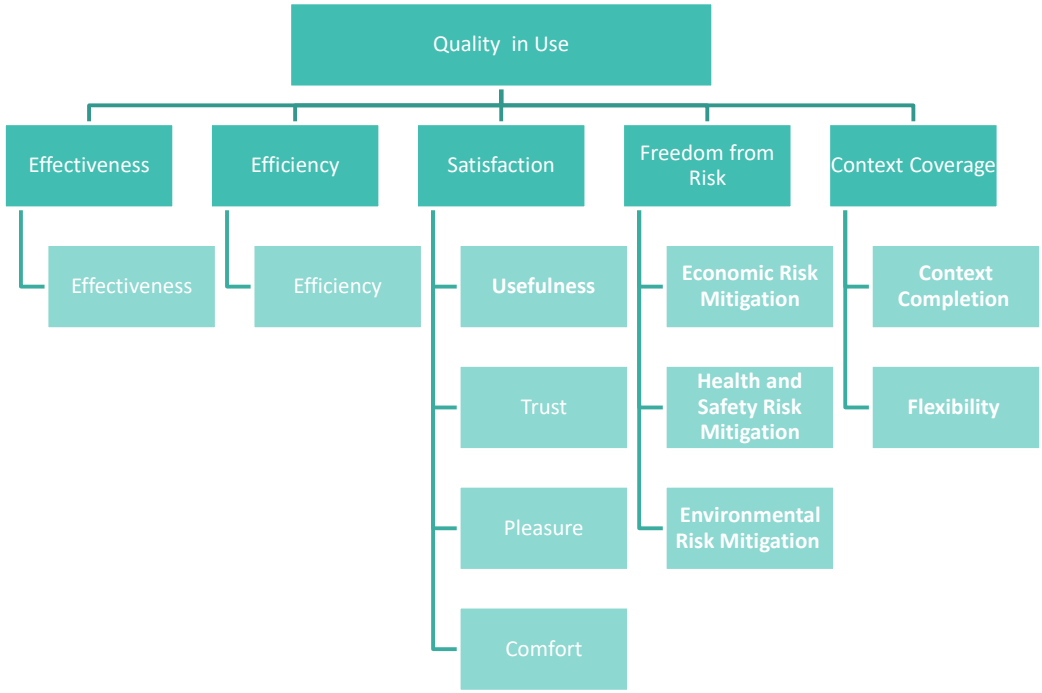
2. ISO25010

- Structure
- Elements

ISO 25010


Software Product Quality
Functional Suitability
Performance efficiency
Compatibility
Usability
Reliability
Security
Maintainability
Portability
Functional completeness
Functional correctness
Functional appropriateness
Time behaviour
Resource utilization
Capacity
Co-existence
Interoperability
Appropriateness recognizability
Learnability
Operability
User error protection
User interface aesthetics
Accessibility
Maturity
Availability
Fault tolerance
Recoverability
Confidentiality
Integrity
Non-repudiation
Accountability
Authenticity
Modularity
Reusability
Analysability
Modifiability
Testability
Adaptability
Installability
Replaceability

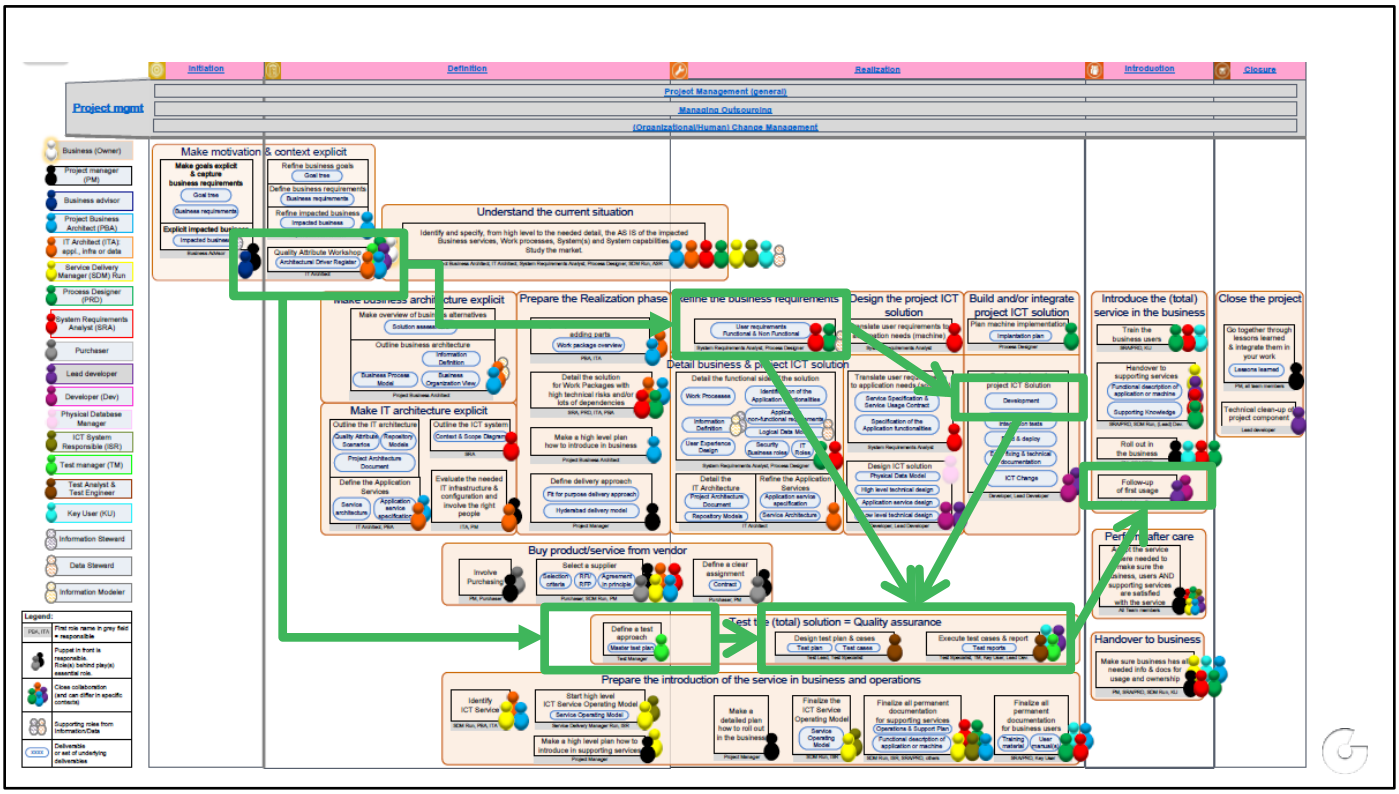
ISO 25010


Quality in Use
Effectiveness
Efficiency
Satisfaction
Freedom from Risk
Context Coverage
Effectiveness
Efficiency
Usefulness
Trust
Pleasure
Comfort
Economic Risk Mitigation
Health and Safety Risk Mitigation
Environmental Risk Mitigation
Context Completion
Flexibility

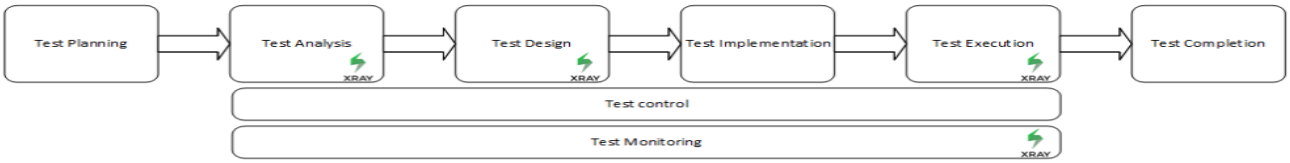
ISO 25010: Template

3. Process

- Quality Attribute Workshop (QAW)
- Test Process impact
- Test Levels & Test Types
- Test Intensity
- Quality Report
- Incidents

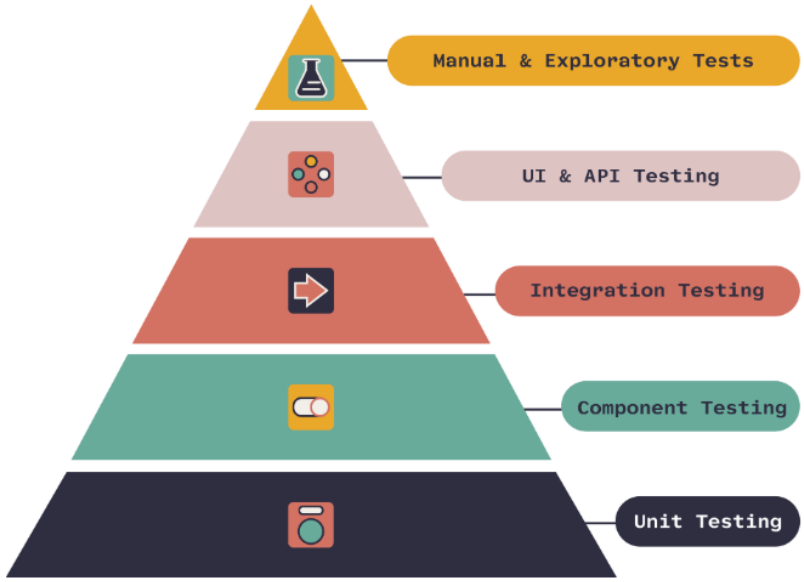

Initiation
Definition
Realization
Introduction
Closure
Project mgmt
Project Management (general)
Managing Outsourcing
(Organizational/Human) Change Management
Make motivation & context explicit
Understand the current situation
Make business architecture explicit
Prepare the Realization phase
Refine the business requirements
Design the project ICT solution
Build and/or integrate project ICT solution
Introduce the (total) service in the business
Close the project
Make IT architecture explicit
Detail business & project ICT solution
Buy product/service from vendor
Test the (total) solution = Quality assurance
Prepare the introduction of the service in business and operations
Handover to business

Test Process impact



- **Planning**
  - Output of the QAW is the input to the Master Test Plan (MTP)
  - Quality Attribute Workshop (QAW) defines why we are testing
  - The MTP defines what and how
  - And what testing can cost
  - And how to distribute efforts over test levels and test types
- **Analysis and Design**
  - Priorities in test case creation
  - Depth and breadth of test cases
- **Implementation and Execution**
  - Environment & data to support testing
  - Priorities in test case execution
  - Defect severity identification
- **Monitoring and Control**
  - Being able to report on QA level
  - Taking corrective action based on QA severity level
- **Test Completion**
  - Select Regression set

Testing Pyramid



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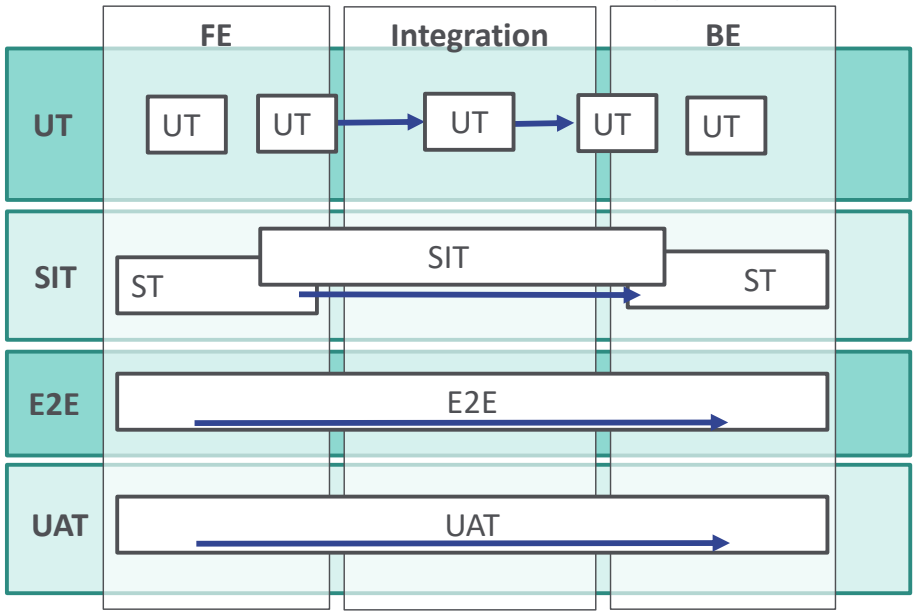
https://www.onpathtesting.com/blog/qa-testers-what-is-the-agile-testing-pyramid

Distribution of testing and test automation over the test levels. This image shows that early (exhaustive) testing is the cheapest way of building a solution. Impact of changes is clear (regression) and quality remains at the same (high) level, even when extending/changing the product.
Test Driven Development is one of the ways to assure quality in development.

Define Test Levels & test types



Test types in test levels:

- Functional Testing
- Integration Testing
- Migration/Data Testing
- Mainframe Testing
- Performance Testing
- Security Testing
- Regression Testing
- …

Legend:
FE: Front End
BE: Back End
UT: Unit Test
ST: System Test
SIT: System Integration Test
E2E: End to End
UAT: User Acceptance Test

FE: Front End
BE: Back End
UT: Unit Test
ST: System Test
SIT: System Integration Test
E2E: End to End
UAT: User Acceptance Test

Same test type can be executed in many test levels, eg functional testing
All test levels & types together cover the quality attributes
Test levels have specific goals & objectives and find the defects that belong to that level.
UAT should not be concerned with field definition nor interface specification issues.

See this image as a train going from one station to another. Are there rails? Are they of the same size/width/material/… ? Is there a station on the other end? Same height?
Would you drive that train at production speed (120km/hour) if above questions have not been answered?

UAT is not a debugging activity! And besides, UAT is not able to find all integration defects. But, without proper integration tests, your customer could be ordering

products without paying. And you would not even know.

Test intensity by levels & types

Test Types

Test Levels	Functionality	Security	Performance	Regression
UT	**	*	*	*
SIT	**	*	*	***
ST	***	*	***	***
UAT	**	*	*	**

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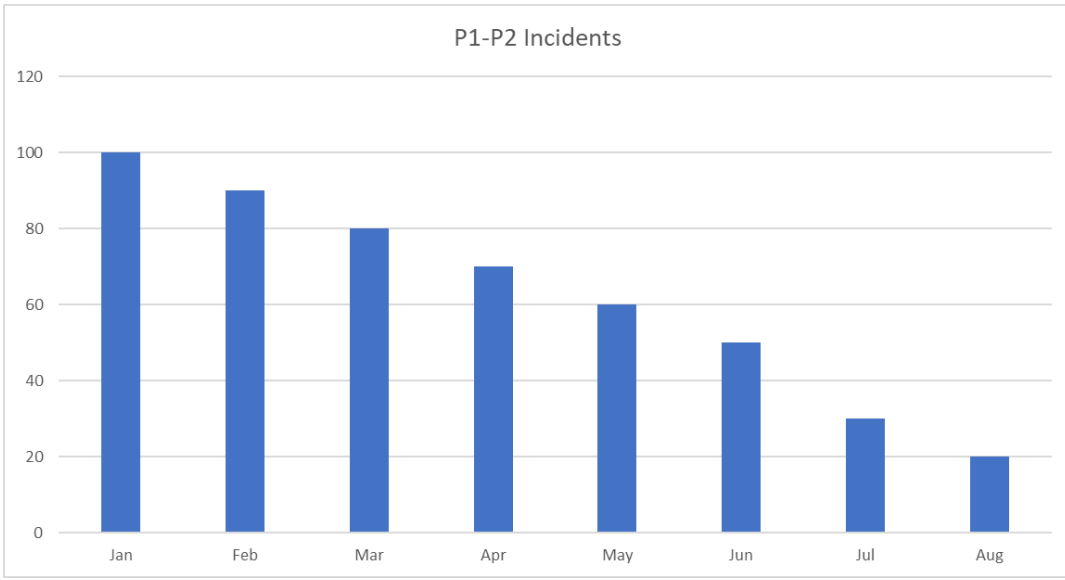
Often a percentage of total cost is being allocated to testing. How would you distribute the budget over the test levels? It should be allocated proportionally related to the risk.

Quality Report

Why not have reports showing product quality?

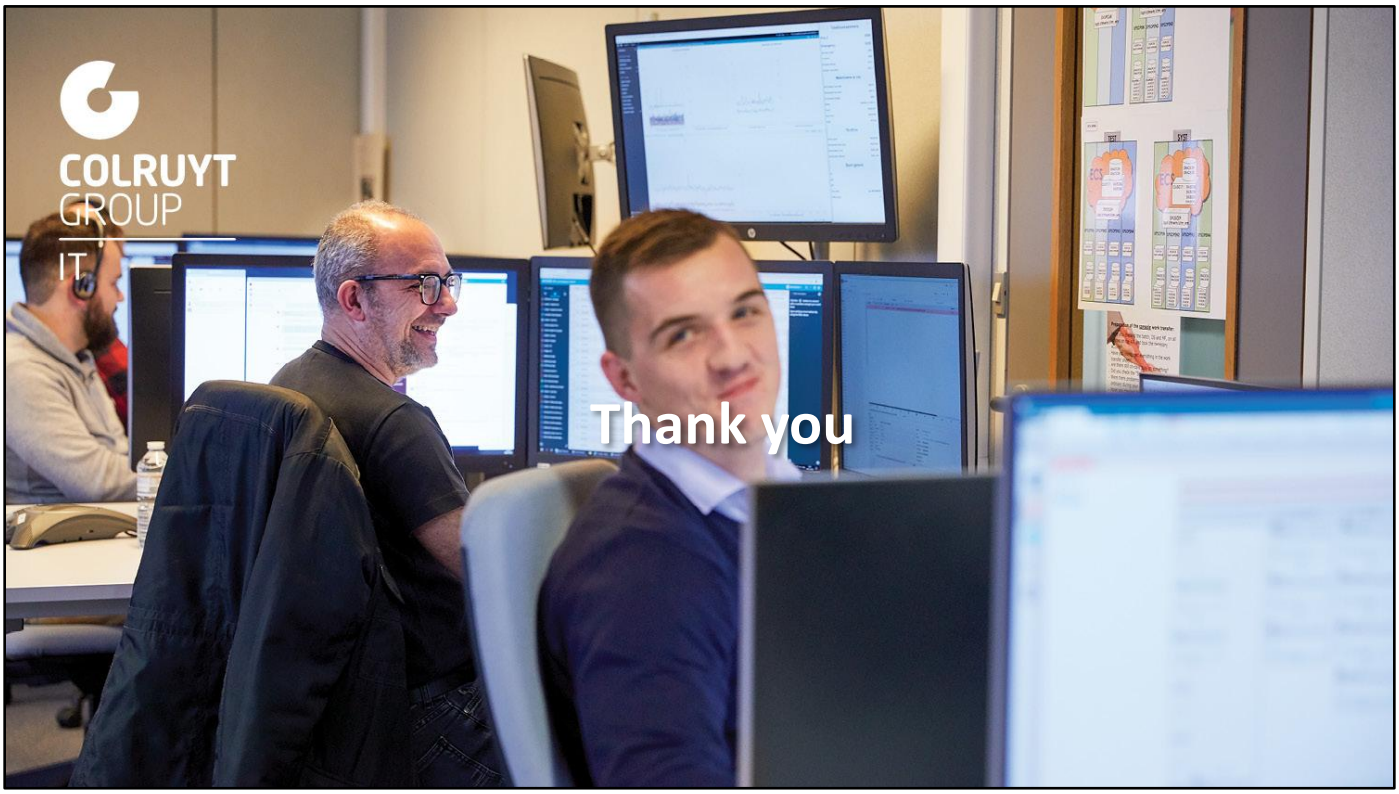
Incidents



Testing should reduce the number of incidents in production.

4 Q&A

COLRUYT GROUP IT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GROUP
IT
Thank you