## Vision and Mission

<table>
<thead>
<tr>
<th>Vision</th>
<th>The world's leading association for Business Analysis professionals</th>
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<tbody>
<tr>
<td>Mission</td>
<td>Develop and maintain standards for the practice of business analysis and for the certification of its practitioners</td>
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IIBA® is an international not-for-profit professional association for business analysts.
Tom Karasmanis

IIBA Product Manager

- Tom Karasmanis is a Senior Consultant with 25 years' experience in Information Technology, including roles as a Business Architect, Business/Systems Analyst, Project Leader, Technical Architect, and Software Engineer. He has worked in financial services, publishing, healthcare, public sector and telecommunications.

- Tom served as Chief Architect of the IIBA from 2009 to 2011. He is currently IIBA Product Manager of Being a BA: Technical Excellence and Vendor Showcase. Tom is a management consultant in business architecture and business analysis, assisting organizations to build or improve their BA practices. He speaks regularly at international conferences.

- Tom holds a Bachelor of Applied Science in Chemical Engineering from the University of Toronto and is active in the business analysis and business architecture communities.
## Outline

- Introductions and Housekeeping 12:00
- Vendor Presentations 12:05
  - TopTeam Analyst 12:05
  - Blueprint 12:25
- Questions and Answers 12:42
- Close 12:59
Question and Answer

How to Ask Questions

- Use the Question box to ask questions. Selected questions will be answered at the end, but you can ask at any time.
- Include the vendor’s name if you want a specific vendor to respond.
- Short, specific questions, please!

IIBA Host
Tom Karasmanis

Ashu Potnis
TopTeam Analyst

Tony Higgins
blueprint
The Requirements Company
So ... it’s not working?

(From BABOK® Guide v2.0, section 9.17)

NON-FUNCTIONAL REQUIREMENTS ANALYSIS
What Are Non-Functional Requirements?

Requirements structure
—(From BABOK® Guide v2.0)

- Business Requirements
- Stakeholder Requirements
- Solution Requirements
  - Functional Requirements
  - *Non-functional Requirements***
- Transition Requirements
What Are Non-Functional Requirements?

- Capture conditions that do not directly relate to the behavior or functionality of the solution
- Instead, they describe environmental conditions under which the solution must remain effective or qualities that the systems must have
- Quality or supplementary requirements
What Are Non-Functional Requirements?

- Can include requirements related to:
  - Capacity
  - Speed (Response time, Throughput)
  - Security
  - Availability
  - Scalability
  - ... and more
What Is Requirements Analysis?

- Describes how business analysts prioritize and progressively elaborate stakeholder and solution requirements in order to enable the project team to implement a solution that will meet the needs of the sponsoring organization and stakeholders
- Includes non-functional requirements
What Is Requirements Analysis?

- Involves analyzing stakeholder needs to define solutions that meet those needs, assessing the current state of the business to identify and recommend improvements, and the verification and validation of the resulting requirements
  - Includes non-functional requirements
What Is Non-functional Requirements Analysis?

—BABOK® Guide v2.0, section 9.17

- The purpose of non-functional requirements is to describe the required qualities of a system, such as its usability and performance characteristics. These supplement the documentation of functional requirements, which describe the behavior of the system.
What Is Non-functional Requirements Analysis?

–BABOK® Guide v2.0, section 9.17

- Categories *(ISO 9126)*
  - Reliability
  - Performance Efficiency
  - Operability
  - Security
  - Compatibility
  - Maintainability
  - Transferability
What Is Non-functional Requirements Analysis?

—BABOK® Guide v2.0, section 9.17

- **Measurement**
  - Include one or more measures of success
  - How do we know we met the requirement
  - Requires to adequately test requirement

- **Documentation**
  - The system shall ...

- **SMART**
Importance – Why Bother?

- Essentially describe the target quality of the system, so ...
  - Missing non-functional requirements (missing quality) impacts every functional requirement
  - Could affect adoption
  - Could be compliance issues
  - Careful! Too much could impact time and cost

- Often require technical expertise
  - Could be done by System Analysts
Question and Answer

How to Ask Questions

- Use the Question box to ask questions. Selected questions will be answered at the end, but you can ask at any time.
- Include the vendor’s name if you want a specific vendor to respond.
- Short, specific questions, please!

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blueprint
The Requirements Company
Non-Functional Requirements

- Security
- Reliability
- Performance
- Scalability
- Accessibility
Requirements

Functional

Non-Functional

Business Rules
Functional + Non-Functional = Complete Requirements

Functional Requirements
What the system should do

Non-Functional Requirements
Under what constraints it should do

Constrain
TopTeam Analyst
Functional Requirements Artifacts

Functional Requirements

What the system should do

Textual

User Stories

Use Cases

Application Prototypes

...custom Req. Types
TopTeam Analyst
Non-Functional Requirements Artifacts

Non-Functional Requirements
The parameters/constraints under which it should perform its functions

- Performance
- Security
- Usability
- Scalability
- ...custom Req. Types
The system shall use 256 bit RSA encryption for authentication handshake.

The system shall perform authentication within 3 seconds.

The system shall not allow login from mobile web browsers.

The system shall authenticate users before allowing access to customer data.

**Requirements for a Business Application**

- **Functional**
  - Authentication
- **Non Functional**
  - Constrain
Authoring Requirements in TopTeam Analyst with Word processor-like Editor

1. Business Requirements [BREQ-2322] 0
   1.1. The system shall authenticate users before allowing access to customer data [BREQ-602] 3

2. Security Requirements [SRREQ-2324] 0
   2.1. The system shall use 256 bit RSA encryption for authentication handshake [SRREQ-604] 1
   2.2. The system shall not allow login from mobile web browsers [SRREQ-605] 0

3. Performance Requirements [PREQ-2323] 0
   3.1. The system shall perform authentication within 3 seconds [PREQ-603] 1

Non Functional

Unique Requirements Identifiers and Trace Indicators
Trace links between Functional and Non-Functional Requirements

Graphical Trace Editor

Trace Report

Business Requirements
- The system shall authenticate users before allowing access to customer data [BREQ-602]
  - Traces into
    - Performance Requirements
      - The system shall perform authentication within 3 seconds [PREQ-603]
    - Security Requirements
      - The system shall use 256 bit RSA encryption for authentication handshake [SRREQ-604]
      - The system shall not allow login from mobile web browsers [SRREQ-605]
Non-Functional Requirements can be linked with (traced to) Use Case Scenarios

Main Flow-of-Events
1. Customer navigates to login screen
2. System displays login WM Sign in [SMK-3099] The system shall use 256 bit encryption for all authentication with RSA encryption. [REQ-3079]
3. Customer enters username and password
4. System verifies credentials
5. System logs the user in and displays the welcome screen
6. System displays Customer First Name, Customer Last Name
7. Use Case ends with Success.

Alternate Flows
3a. Customer forgot their credentials
1. Customer chooses forgot password link
2. System displays reminder question WM Password Recover
3. Customer enters answer
4. If (the answers match) then
4.1. System emails password

Activity Diagram is automatically generated from text

Linked/Traced Non-Functional Requirements
Requirements for a Device/System

Functional

- The device shall reduce background noise by 24 decibels
- The device battery shall last 12 hours of continuous use
- The device shall be powered by ordinarily available AAA batteries
- The device shall weigh less than 10 oz/284 grams

Non Functional

Constrain

Noise Cancelling Headphone
Microsoft Word-like Full-Rich-Text editor for Requirements

Embed images, tables, bullets, etc.

Embed Excel Spreadsheet / Visio Diagrams etc. (OLE Embedding)
Requirements Versioning, Baselines and “diff” comparison

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<th>Field</th>
<th>Comparison of version 1.03 with 1.05</th>
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<tr>
<td>Title</td>
<td>The device battery shall last 12-14 hours of continuous use</td>
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<tr>
<td>Id</td>
<td>[PRDREQ-607]</td>
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<tr>
<td>Upd by</td>
<td>Steve Project Mgr</td>
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<td>Description</td>
<td>AAA Battery</td>
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**Peukert Formula - Battery Run Time to Depletion**

<table>
<thead>
<tr>
<th>Discharge Rate in Amps</th>
<th>Total Amp Hours</th>
<th>Depth of Discharge</th>
<th>Ah used</th>
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<tr>
<td>24.0</td>
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<td>15%</td>
<td>90 Ah</td>
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<td>36.0</td>
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<tr>
<td>80.0</td>
<td>3.98</td>
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</table>
The system shall generate a billing history report every quarter for each account.

The report shall be formatted to fit a “Letter” size paper in a portrait orientation.

The system shall produce the report in Adobe Reader (PDF) format.

The system shall produce the report in less than 30 seconds for each account.

Requirements for a Business Application

**Billing History Report**

**Functional**

- The system shall produce a billing history report every quarter for each account.

**Non-Functional**

- The system shall generate the report in Adobe Reader (PDF) format.
- The report shall be formatted to fit a “Letter” size paper in a portrait orientation.
- The system shall produce the report in less than 30 seconds for each account.

**Constraint**

- Functional
- Non-Functional

**TopTeam Analyst**
Non-Functional Requirement Types also called “ilities”

<table>
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<td>Scalability</td>
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<tr>
<td>Supportability</td>
</tr>
<tr>
<td>Accessibility</td>
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</table>
Adapt TopTeam Analyst by configuring Non-Functional Requirements types that you need.

Create Non-Functional Requirement Types as per your needs.
Non-Function Requirements vs User Stories
Trace Configuration

Define Trace Schema/Rules
Link Non-Functional Requirements with User Stories
Trace links between User Story and Non-Functional Requirements

Graphical Trace Editor

Trace Report

Multi-Level Traceability Report

User Stories

- Login to System [STORY-421]

Performance Requirements

- The system shall perform authentication within 3 seconds [PREQ-603]

Security Requirements

- The system shall use 256 bit RSA encryption for authentication handshake [SRREQ-604]
- The system shall not allow login from mobile web browsers [SRREQ-605]

FDA CFR 21 Requirements

- Signature Manifestations [CFR21-455]
Conduct Visual Application Walkthroughs with stakeholders

Non-Functional Requirements can be reviewed in the context of system behavior
Author and Manage Test Coverage for Non-Functional Requirements
Users Conduct Online Reviews & Approvals of Requirements via their Web Browsers

Get rapid iterative Requirements refinement
• A No-Compromise, end-to-end Solution for Visual Requirements Definition and Requirements Management

• Mature - launched 2005, now in seventh major release

• Used by more than 500 organizations in 55 countries
TopTeam Analyst integrations

- Quality Center
- Team System (TFS)
- Microsoft Word
- Microsoft Excel
- TopTeam Open API (Integrate anything)
- Rally
- JIRA
"I am enjoying using TopTeam. It allows me more creative time, instead of document formatting time, so my analysis is better and more detailed."

Carl Knowlan
Senior Analyst & Product Manager
Houston, Texas
IIBA Vendor Showcase
Non-Functional Requirements
December 12, 2013

Tony Higgins – VP Product Marketing
Blueprint develops requirements definition and management (RDM) software purpose-built to solve the many errors and inefficiencies encountered in RDM today.

Using Blueprint results in better requirements and reduced rework, leading to successful projects and better applications.
Types

- Absorbability
- Access Control
- Accessibility
- Accountability
- Accuracy
- Adaptability
- Additivity
- Adjustability
- Affordability
- Agility
- Appealability
- Attractiveness
- Audibility
- Augmentability
- Authenticity
- Autonomy
- Availability
- Buffer Space Performance
- Capability
- Capacity
- Changeability
- Clarity
- Cleanability
- Cleanliness
- Code Space Performance
- Cohesion
- Commonality
- Communication Cost
- Communication Time
- Communicativeness
- Comparability
- Compatibility
- Completeness
- Component Integration Cost
- Component Integration Time
- Composability
- Comprehensibility
- Computability
- Conceptuality
- Conciseness

- Confidentiality
- Configurability
- Connectivity
- Consistency
- Controllability
- Coordination Cost
- Coordination Time
- Correctness
- Coupling
- Customer Evaluation Time
- Customer Loyalty
- Customizability
- Data Space Performance
- Decomposability
- Degradation of Service
- Deliverability
- Dependability
- Development Cost
- Development Time
- Disposability
- Distributivity
- Diversity
- Domain Analysis Cost
- Domain Analysis Time
- Duplicatability
- Ease of use
- Efficiency
- Elasticity
- Enhanceability
- Evolvability
- Execution Cost
- Expandability
- Expandability
- Extendability
- Extensibility
- External Consistency
- Fault-Tolerance
- Feasibility
- Flexibility
- Foolproof-ability
- Formality
- Generality

- Guidance
- Human Engineering
- Impact Analyzability
- Implementability
- Independence
- Informativeness
- Inspection Cost
- Inspection Time
- Instability
- Integrity
- Interchangeability
- Internal Consistency
- Interoperability
- Intuitiveness
- Iterativeness
- Learnability
- Legibility
- Leveragability
- Likeability
- Main Memory Performance
- Maintainability
- Maintenance Cost
- Maintenance Time
- Manageability
- Maneuverability
- Maturity
- Mean Performance
- Measurability
- Migratability
- Mobility
- Modifiability
- Modularity
- Moundness
- Naturalness
- Nomadity
- Observability
- Off-Peak-Period Performance
- Operability
- Operating Cost
- Peak Period Performance
- Performability

- Planning Cost
- Planning Time
- Placticity
- Portability
- Precision
- Predictability
- Process Management Time
- Productivity
- Project Stability
- Project Tracking Cost
- Promptness
- Prototyping Cost
- Prototyping Time
- Quality
- Quantitiveness
- Readability
- Readiness
- Reconfigurability
- Recoverability
- Recovery
- Reusability
- Reengineering Cost
- Reliability
- Repeatability
- Replaceability
- Replicability
- Response Time
- Responsiveness
- Retiremet Cost
- Reusability
- Risk Analysis Cost
- Risk Analysis Time
- Robustness
- Safety
- Scalability
- Security
- Self-containedness
- Self-descriptiveness
- Sensitivity
- Similarity
- Simplicity
- Software Cost

- Space Boundedness
- Space Performance
- Specifiicty
- Stability
- Standardizability
- Storability
- Structuredness
- Subjectivity
- Supportability
- Surety
- Survivability
- Susceptibility
- Sustainability
- Tankness
- Testability
- Testing Time
- Throughput
- Timeliness
- Tolerance
- Traceability
- Trainability
- Transferability
- Transitionability
- Transparency
- Understandability
- Uniform Performance
- Uniformity
- Unreliability
- Usability
- User-friendliness
- Validity
- Variability
- Verifiability
- Versatility
- Versionability
- Visibility
- Volatility
- Wrappability
- Workability
- Zero-defectness

The Quest for Software Requirements, Roxanne Miller
Classification Schemes / Taxonomy

**The FURPS+ System for Classifying Requirements**

- Functionality
- Usability
- Reliability
- Performance
- Supportability

The *in FURPS+ also helps us to remember concerns such as:

- Design requirements
- Implementation requirements
- Interface requirements
- Physical requirements

Unified Process

ISO 9126

Sommerville, 1992

Van Vliet, 2000

Unified Process

ISO 9126
## Classification Schemes / Taxonomy

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</table>

The Quest for Software Requirements, Roxanne Miller
Requirements Taxonomy

Blueprint for Enterprise Agile

Provides Context or Elaboration
At any level

1. Business Process
2. Information Model

- **Problem analysis**
- **Solution analysis/specification**

Blueprint for Enterprise Agile

- **Theme**
- **Epic**
- **Feature**
- **User Story**
- **Tasks**

Non-Functional Requirement

- **Use Case**
- **UI Mockups**
- **Simulation**
- **Other Forms**

- **Storyboards**

Constrain

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Page 47
Define Whatever Types you Need

<table>
<thead>
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<th>Prefix</th>
<th>Name</th>
<th>Base Type</th>
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**Artifact Type Details**

- **Group:** Non-Functional
- **Description:** This type of requirement specifies requirements performance levels of the application given available resources.
Define Whatever Properties you Need

Properties Details

- **Name**: Risk
- **Type**: Choice

**Settings**
- Required
- Allow Custom Value
- Allow Multiple Choices

**Applies To Artifact Types**
- Use Case
- Screen
- Generic Diagram
- Document
- Storyboard
- Domain Diagram
... and Share Them!
Project Template – Standard. Consistent.
## Consolidated View

### PR9403: Vendor Showcase - Non Functional

<table>
<thead>
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<th>Name</th>
<th>ID</th>
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<th>Indicators</th>
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Successfully published 1 artifact.
Relationships with Traceability View
Fine-Grained Traceability

Main Flow:

Pre Condition: Customer navigates to BP Air Online

1. System displays Quick Pick area and allows user to choose round trip or one way
2. Customer uses Quick Pick area and selects round trip
3. System inquires for valid round trip destinations from Airport Database
4. Airport Database provides list of valid round trip destinations
5. System populates list of airports in drop-down and makes it available for selection
6. Customer enters complete departure and arrival info, and submits
7. System updates return date based on business rule
8. Customer chooses flights
9. Customer enters complete departure and arrival info, and submits
10. Customer confirms itinerary and pricing
11. System displays payment options page
12. Customer submits payment info
13. System displays thank you page.

Post Condition:

Alternate Flows:

2a. Customer uses Quick Pick area and selects one way
   2a1. System displays Quick Pick area and selects one way

6a. Customer enters incomplete departure and arrival info, and submits
   6a1. System displays Quick Pick area and selects one way

3a: System displays Quick Pick area and selects round trip
4: Airport Database provides list of valid round trip destinations
5: System populates list of airports in drop-down and makes
Available in Simulations ...

UC0413: Book a Flight

Step 1. System displays Quick Pick area and allows user to choose round trip or one way

UI Mockup: Book a Flight
And in Reviews ...

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### Test Generation Results:

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### Pre-Condition (for all tests): Customer navigates to BP Air Online

### Post-Condition (for all tests):

### Execution path: UC0415

### # of Tests: 3

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<td>UC0476: Confirm Itinerary and Pricing</td>
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#### REFERENCES
- MNT10004: Use of standard architecture patterns
  - ACTOR0045: Airpport Database
  - TFRI0045: Installed in secure environment
  - BUS-LR440: Default Return Date
  - PRF10026: Transactions complete within two
  - SEC10046: Two factor authentication
- MNT10004: Use of standard architecture patterns
  - ACTOR0045: Airpport Database
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- MNT10004: Use of standard architecture patterns
  - ACTOR0045: Airpport Database
  - TFRI0045: Installed in secure environment
  - BUS-LR440: Default Return Date
  - PRF10026: Transactions complete within two
  - SEC10046: Two factor authentication
## Contents

**Non Functional Requirements** .................................................. 3
- CMP10030: X4201-23 subsection 5 [Compatibility] .......................... 3
- CMP10028: NIS4 Interface · data exchange [Compatibility] ............... 4
- CMP10031: NIS4 Interface · control infrastructure [Compatibility] ...... 5
- MNT10034: Use of standard architecture patterns [Maintainability] ..... 5
- MNT10033: Maintainable by Lowel-Faburn staff [Maintainability] ...... 6
- OP10032: Operable by customer support personnel [Operability] ... 6
- OP10038: Operable by partner contractors [Operability] ............... 7
- OP10039: Adhere to X49-12 Operability standard [Operability] ........ 7
- PRF10026: Transactions complete within two minutes [Performance] .. 8
- PRF10035: Discrete action response less than 2 seconds [Performance] 9
- PRF10027: System synchronization within 500ms [Performance] ....... 9
- PRF10036: Message transfer less than 4 seconds [Performance] ....... 10
- PRF10037: Round-trip purchase acknowledge within 20 seconds [Performance] 10
- RL10041: Available 24-7-365 will .999 reliability [Reliability] ......... 11
- SEC10046: Two factor authentication [Security] ............................ 11
- SEC10042: Users and Groups [Security] ..................................... 12
- TFR10047: Installed in X47 class III environment [Transferability] ... 15
- TFR10045: Installed in secure environment [Transferability] .......... 15
- TFR10048: Installed in staging environment [Transferability] .......... 16

### Business Processes: ....................................................... 16
- BP-DG9+33: Traveler Booking [] ............................................. 16

### Use Cases: ................................................................. 19
- UC9415: Book a Flight [Use Case] ......................................... 19

### Storyboards: ............................................................... 21
Exchanged with other products (e.g. HP-QC)
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