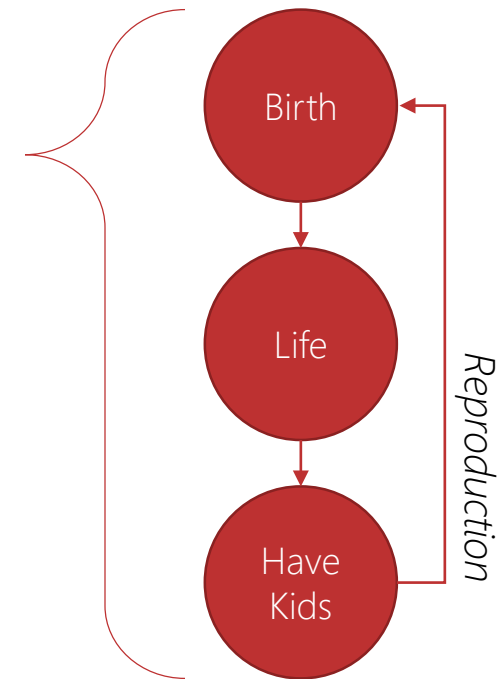Fundamentals of Business Analysis

Introduction to Life Cycles

Coming Up

This section is all about life cycles.

Biological life cycle: Birth to birth, via reproduction

Life cycles are models that describe
the lifespan of an entity *and*
how new entities are "born" from the original (if applicable)

Birth

Life

Have
Kids

Reproduction

Beware! (not really)

We're going to look at a lot of diagrams and stuff in this section.

Each one will be explained.

You'll see they're simpler than they first seem.

Please ask questions.

I'm here to help.

And, yes, this is really important stuff ☺

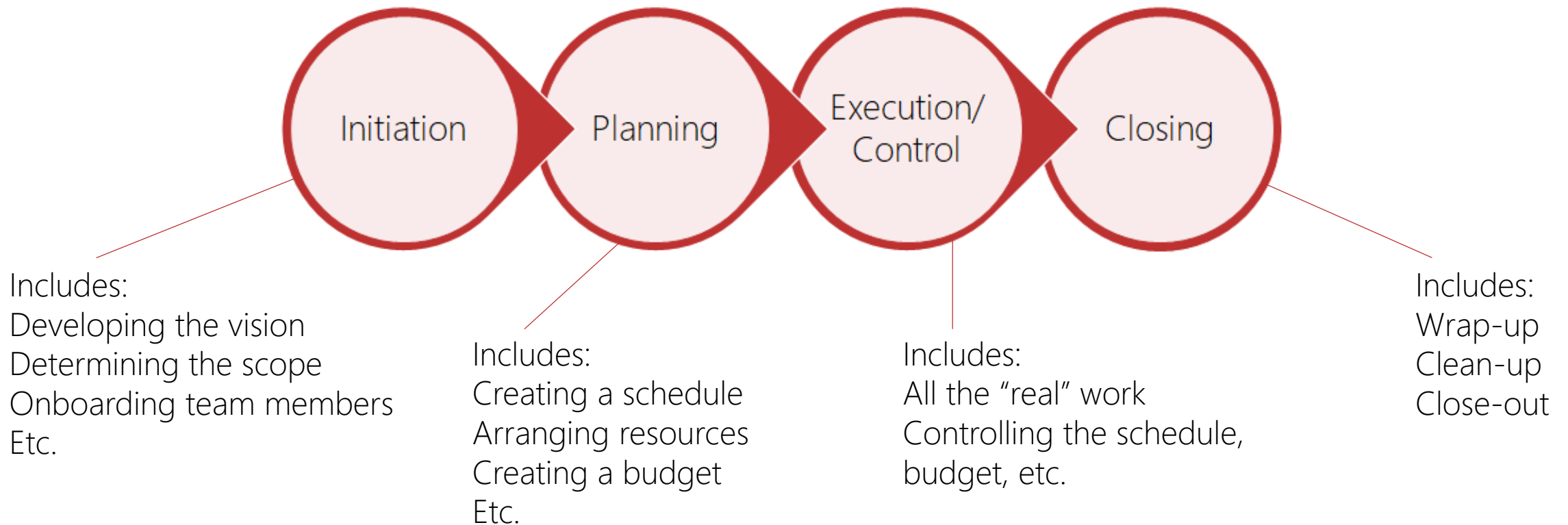Fundamentals of Business Analysis
The PLC and SDLC

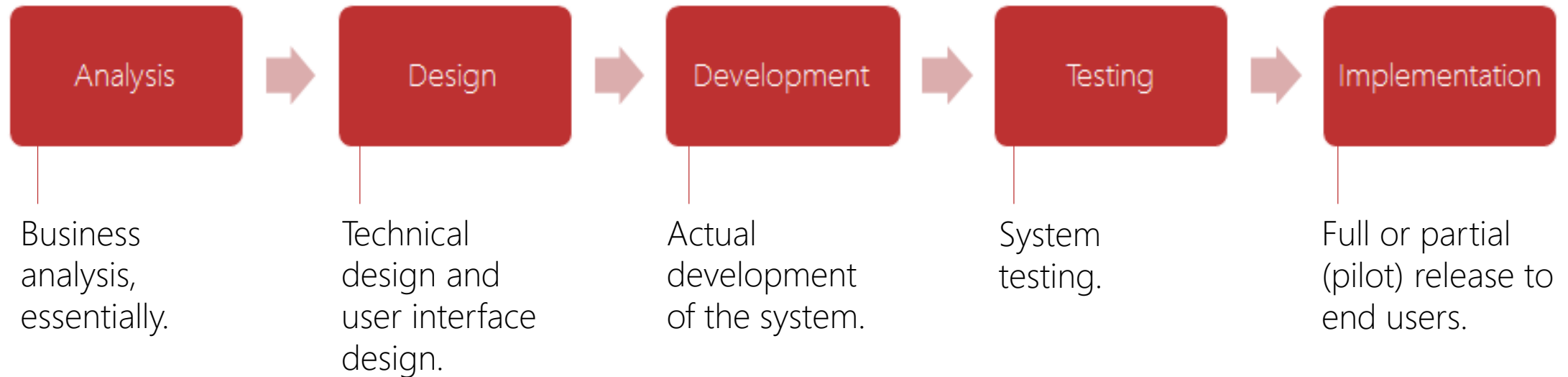Our first two life cycles:

The PLC (Project Life Cycle)...

And the SDLC (System Development Life Cycle)...

(and how they fit together).

The Project Life Cycle

The process by which a project is begun, executed and completed.

| Initiation | Planning | Execution/Control | Closing |

Includes:
Developing the vision
Determining the scope
Onboarding team members
Etc.

Includes:
Creating a schedule
Arranging resources
Creating a budget
Etc.

Includes:
All the "real" work
Controlling the schedule, budget, etc.

Includes:
Wrap-up
Clean-up
Close-out

The Systems Development Life Cycle

The process by which you develop and release systems.

Analysis	→	Design	→	Development	→	Testing	→	Implementation
Business analysis, essentially.		Technical design and user interface design.		Actual development of the system.		System testing.		Full or partial (pilot) release to end users.

The SDLC is the Execution/Control phase in the (technology) PLC.
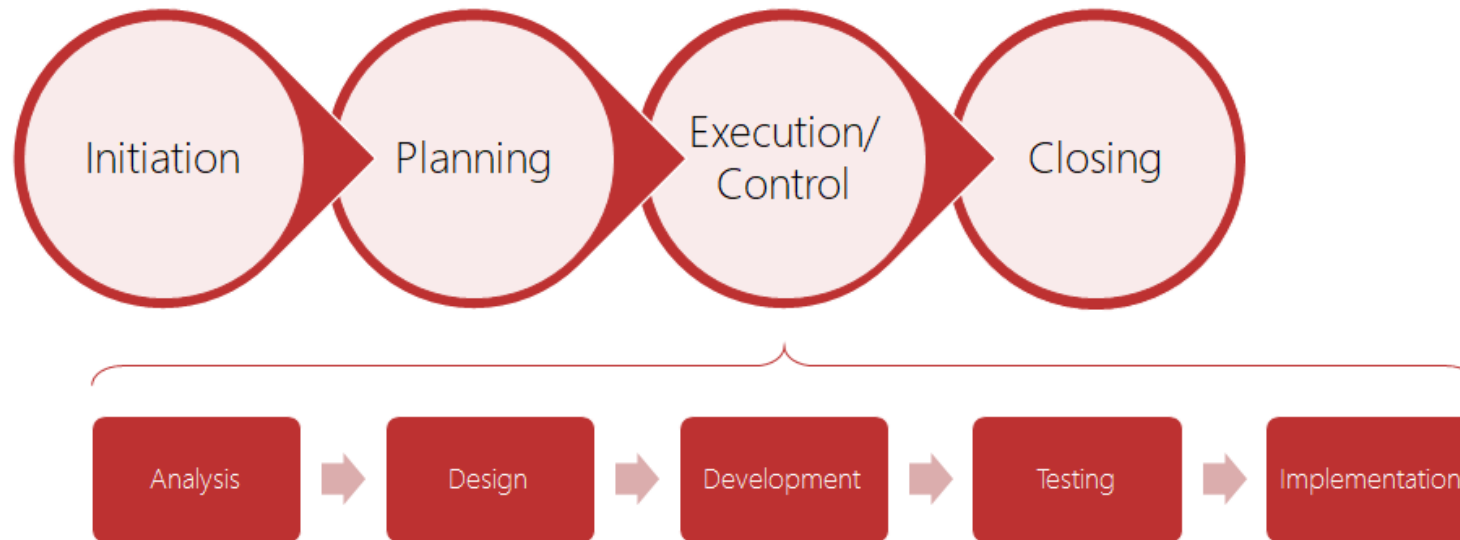
Extra Credit: The SDLC is a "sub-process" of the PLC.
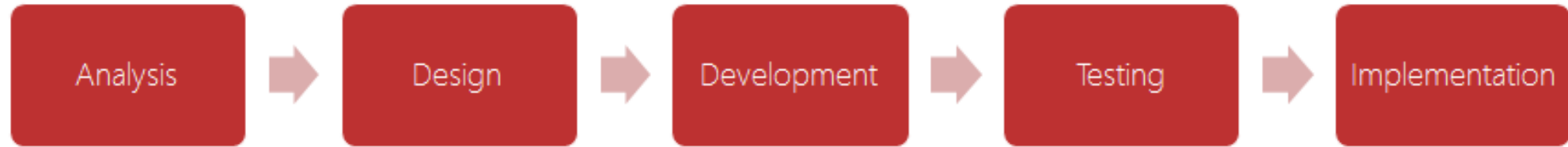
Fundamentals of Business Analysis
Waterfall and Iterative SDLCs

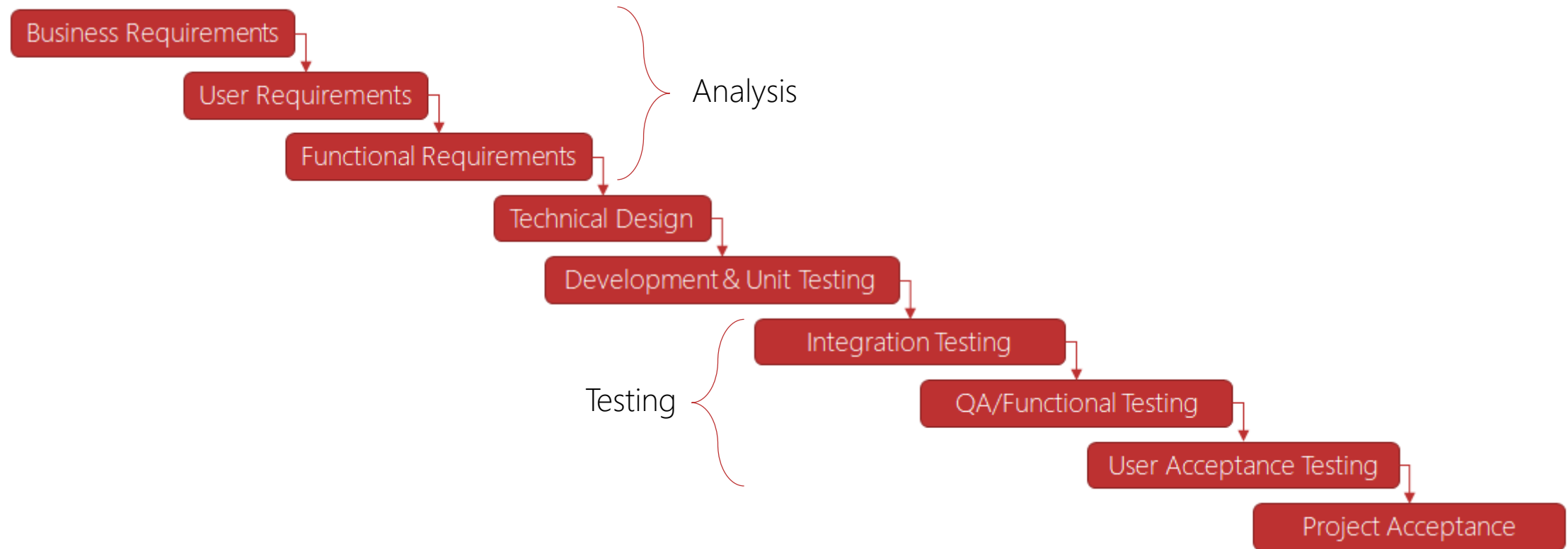This lecture will be tedious, yet important.

Really important.

We'll discuss the waterfall and iterative SDLC categories.

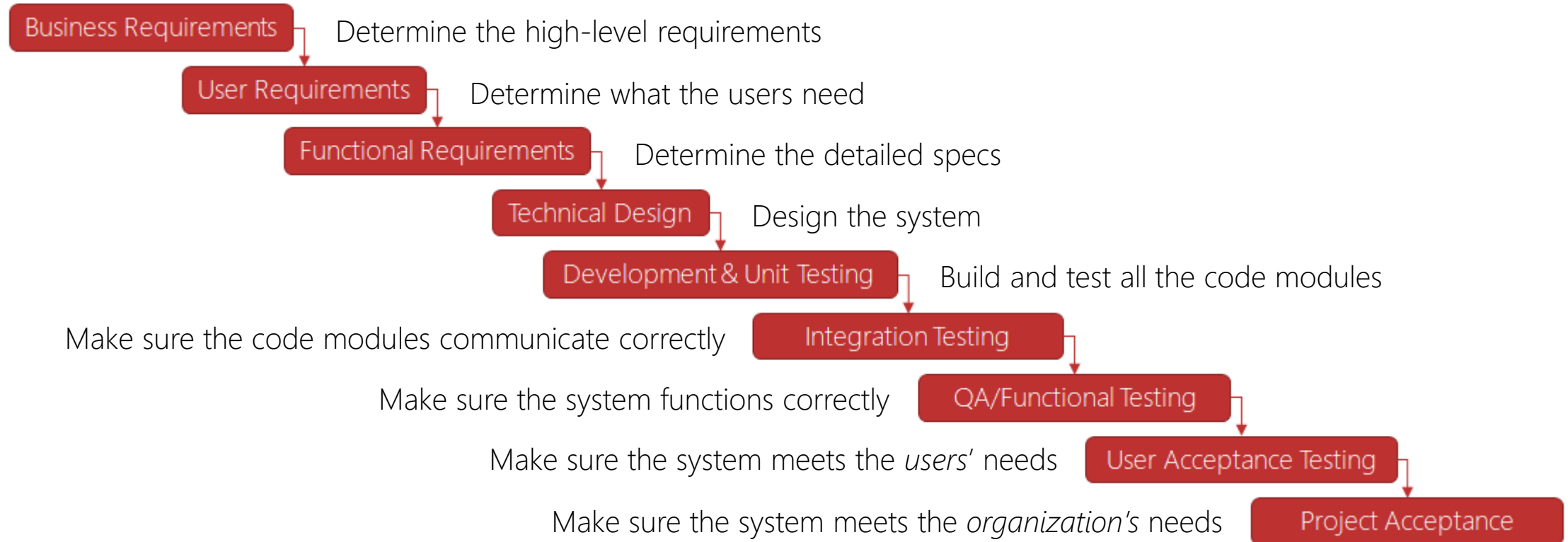And we'll cover models that help you understand how SDLCs work.

Waterfall

Analysis → Design → Development → Testing → Implementation

Waterfall models have these characteristics:

1 Sequences of phases

2 Completion of one phase before the next begins (no overlap)

Waterfall

Business Requirements

User Requirements

Functional Requirements

Analysis

Technical Design

Development & Unit Testing

Integration Testing

Testing

QA/Functional Testing

User Acceptance Testing

Project Acceptance

Waterfall

Business Requirements — Determine the high-level requirements

User Requirements — Determine what the users need

Functional Requirements — Determine the detailed specs

Technical Design — Design the system

Development & Unit Testing — Build and test all the code modules

Make sure the code modules communicate correctly — **Integration Testing**

Make sure the system functions correctly — **QA/Functional Testing**

Make sure the system meets the *users'* needs — **User Acceptance Testing**

Make sure the system meets the *organization's* needs — **Project Acceptance**

Waterfall: The V Model

Business Requirements → User Requirements → Functional Requirements → Technical Design → Development → Unit Testing → Integration Testing → QA/Functional Testing → User Acceptance Testing → Project Acceptance

Business Requirements — Tested by → Project Acceptance

User Requirements — Tested by → User Acceptance Testing

Functional Requirements — Tested by → QA/Functional Testing

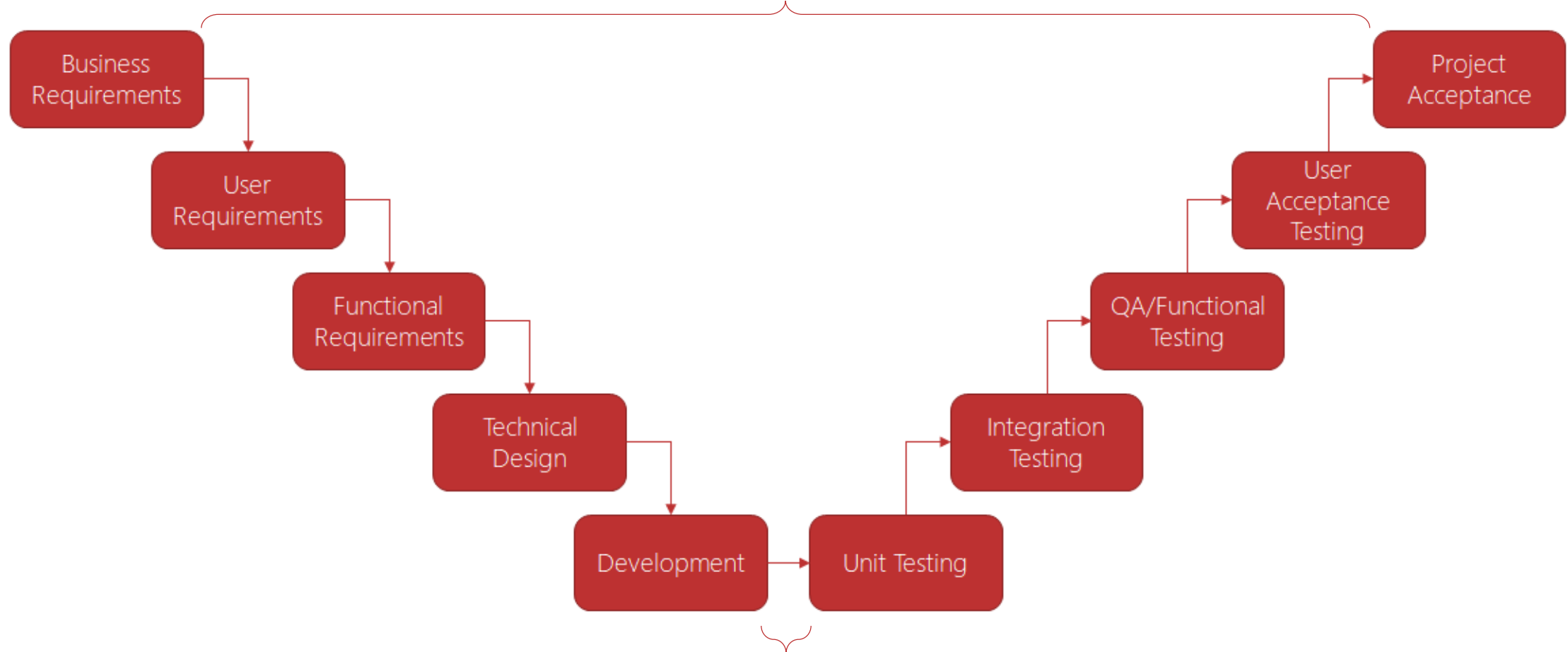Technical Design — Tested by → Integration Testing

Development — Tested by → Unit Testing

Waterfall: The V Model

Takes a **long** time to make sure the business requirements meet the organization's needs (1, 2, 3 years?) ☹

Business Requirements
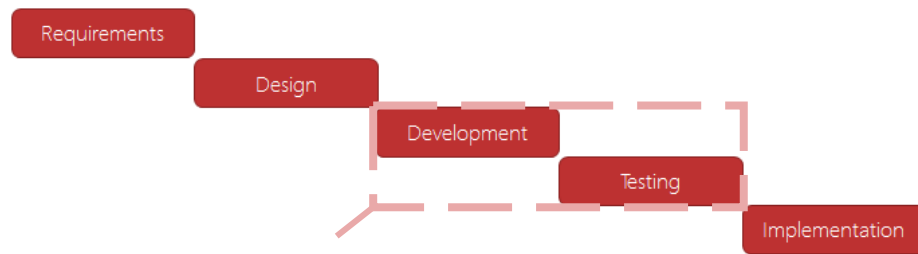
User Requirements

Functional Requirements

Technical Design

Development

Unit Testing

Integration Testing

QA/Functional Testing

User Acceptance Testing

Project Acceptance

Same-day verification that code modules work ☺

Waterfall Problems

There are many. Here are two:
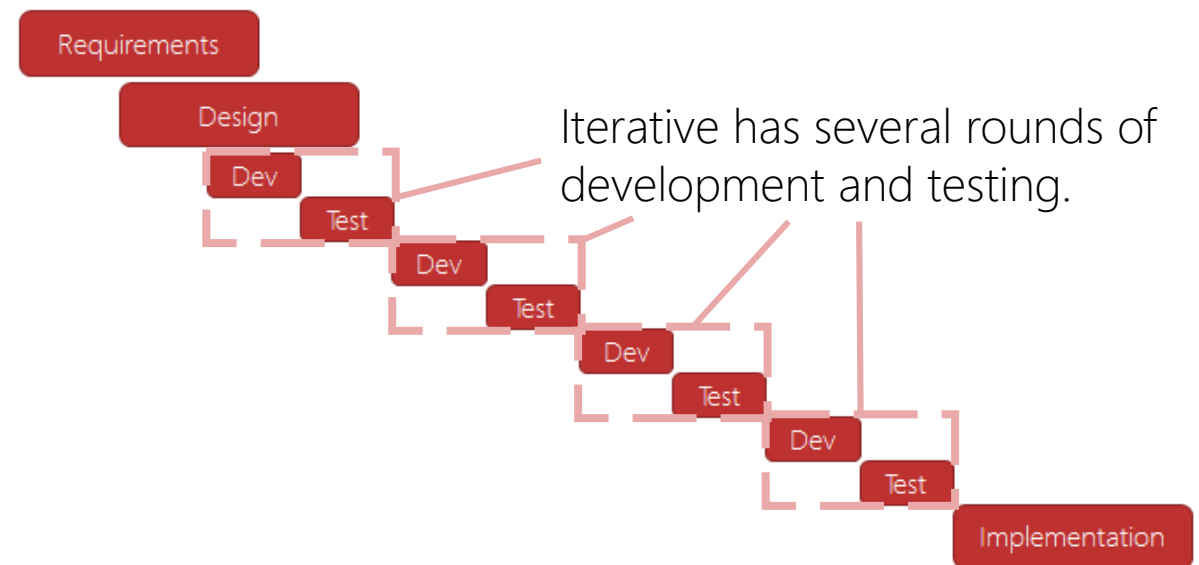
1   The biggest requirements are tested very late in the project.

2   Changes in scope can have massive impact on the project.

Iterative SDLCs have multiple *iterations* of development and testing.

Requirements

Design

Development

Testing

Implementation

Waterfall has one round of development and testing.

Requirements

Design

Dev

Test

Dev

Test

Dev

Test

Dev

Test

Implementation

Iterative has several rounds of development and testing.

Iterative solves *some* of waterfall's problems.

Biggest improvement:

Users and business people see early versions of the product and provide feedback on them.

Doesn't handle:

Impact of scope changes

Heaviness of planning

Assumption that requirements will be static

Etc, etc, etc

Fundamentals of Business Analysis
Agile SDLCs

Agile

Agile: A flexible, customer-aligned approach to developing products

Agile Manifesto (agilemanifesto.org)

Individuals and interactions over processes and tools
Working software over comprehensive documentation
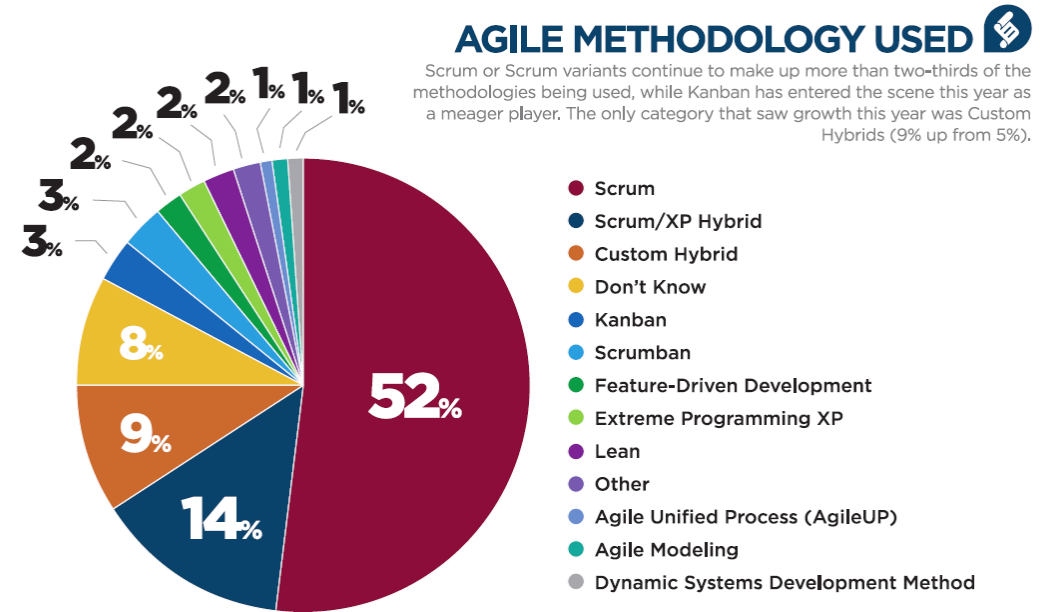Customer collaboration over contract negotiation
Responding to change over following a plan
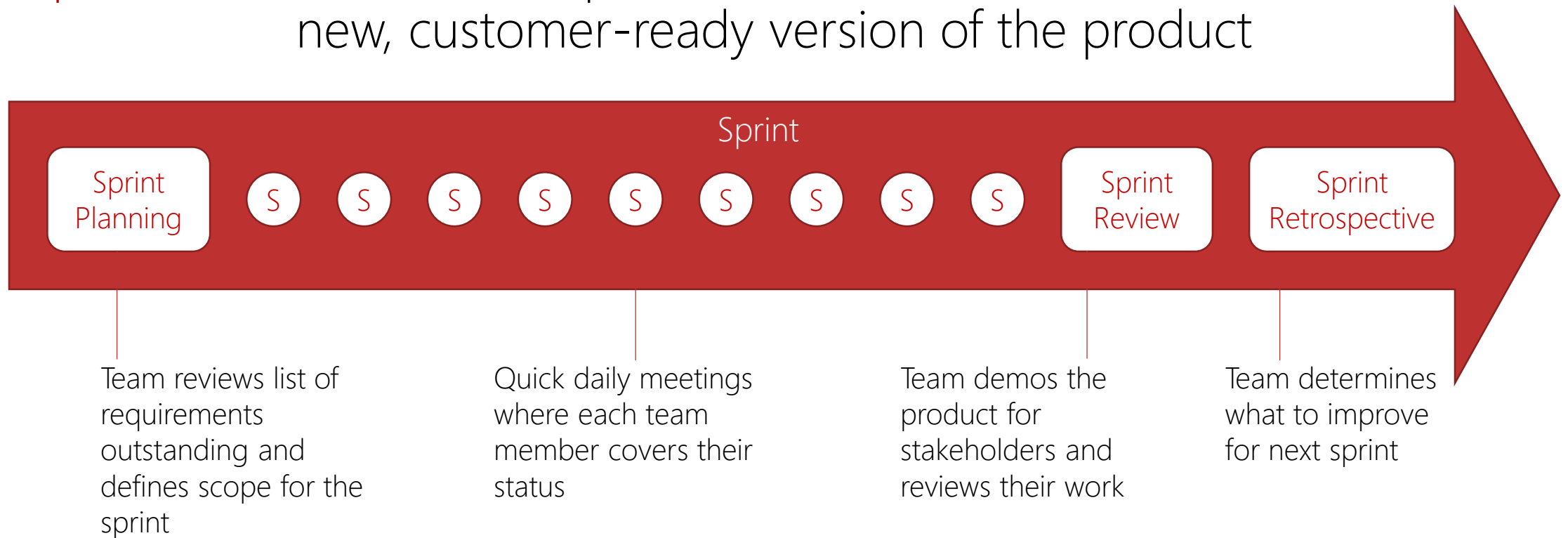
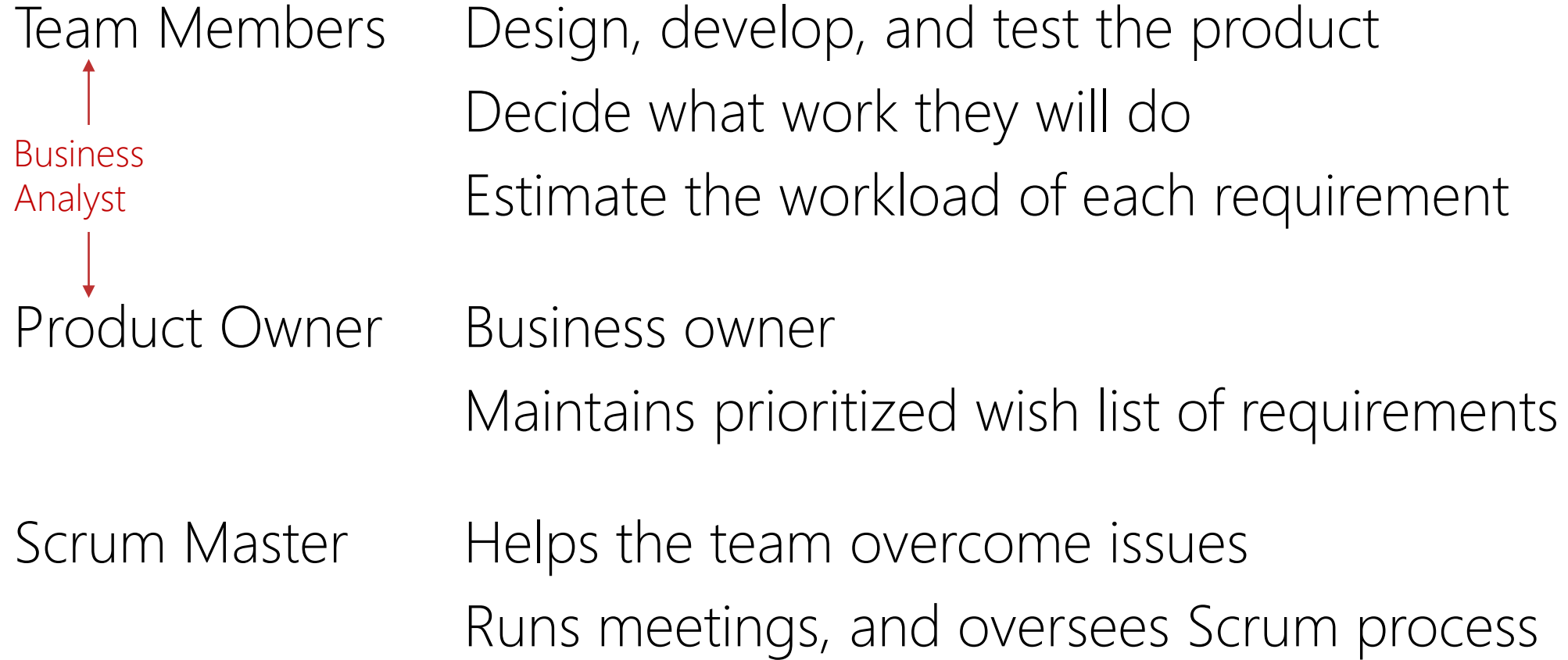There are many methodologies to choose from.

Most popular: Scrum

Business analysis largely stays the same, regardless of methodology.

AGILE METHODOLOGY USED
Scrum or Scrum variants continue to make up more than two-thirds of the methodologies being used, while Kanban has entered the scene this year as a meager player. The only category that saw growth this year was Custom Hybrids (9% up from 5%).

52%
14%
9%
8%
3%
3%
2%
2%
2%
2%
1%
1%
1%

- Scrum
- Scrum/XP Hybrid
- Custom Hybrid
- Don't Know
- Kanban
- Scrumban
- Feature-Driven Development
- Extreme Programming XP
- Lean
- Other
- Agile Unified Process (AgileUP)
- Agile Modeling
- Dynamic Systems Development Method

Scrum: The Process

Sprint — 1- to 4-week period of time in which the team creates a new, customer-ready version of the product

Sprint

Sprint Planning

S S S S S S S S S

Sprint Review

Sprint Retrospective

Team reviews list of requirements outstanding and defines scope for the sprint

Quick daily meetings where each team member covers their status

Team demos the product for stakeholders and reviews their work

Team determines what to improve for next sprint

Team Members   Design, develop, and test the product

Decide what work they will do

Business
Analyst

Estimate the workload of each requirement

Product Owner   Business owner

Maintains prioritized wish list of requirements

Scrum Master   Helps the team overcome issues

Runs meetings, and oversees Scrum process

Two recommendations:

1 Download the slides and other materials for this section

2 Download our *Guide to Agile Business Analysis*
(It's available at www.agileba.info)

Fundamentals of Business Analysis
The Product Life Cycle

The Product Life Cycle

The process by which a product is conceived, is developed, matures, and is eventually retired and replaced.

All (successful) products go through this cycle.

Unsuccessful products are typically retired before they mature.

- Identification of market needs
- Concept development
- Supporting research
- Market testing

Ideation

- Requirements/design
- Development
- Testing
- Initial/wide release

Development

Replacement

Maturation

- Retirement of old product
- Cycle-through to new product

- Marketing/sales
- Enhancement
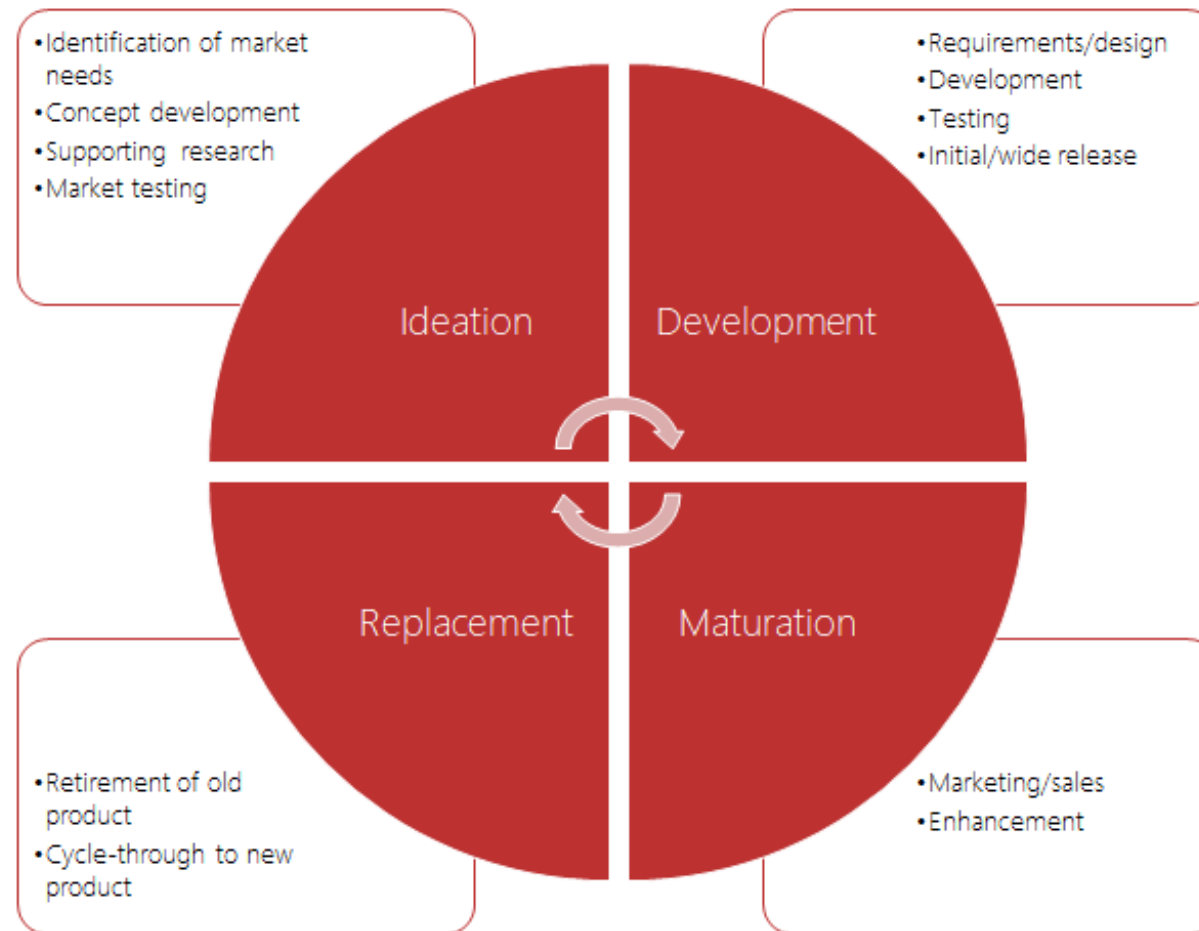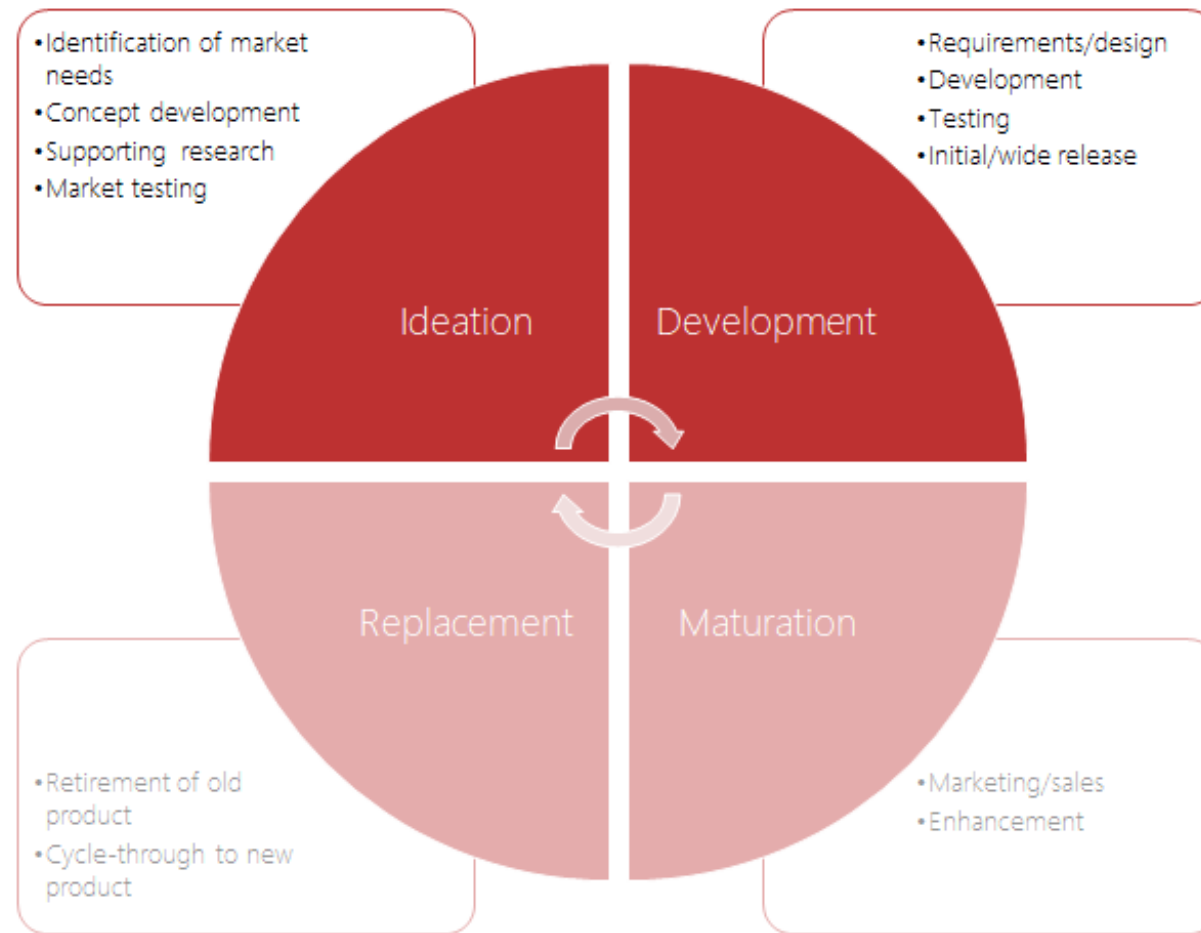
The vast majority (>95%) of business analysis work is performed in these two stages.

So far, we've looked at:

The Project Life Cycle
The Systems Development Life Cycle
The Product Life Cycle

Next up:

The *Requirement* Life Cycle

Fundamentals of Business Analysis

The Requirements Life Cycle

Requirement (ruh-kwai-er-mint)

"A requirement is a usable representation of a need. Requirements focus on understanding what kind of value could be delivered if a requirement is fulfilled. The nature of the representation may be a document (or set of documents), but can vary widely depending on the circumstances."

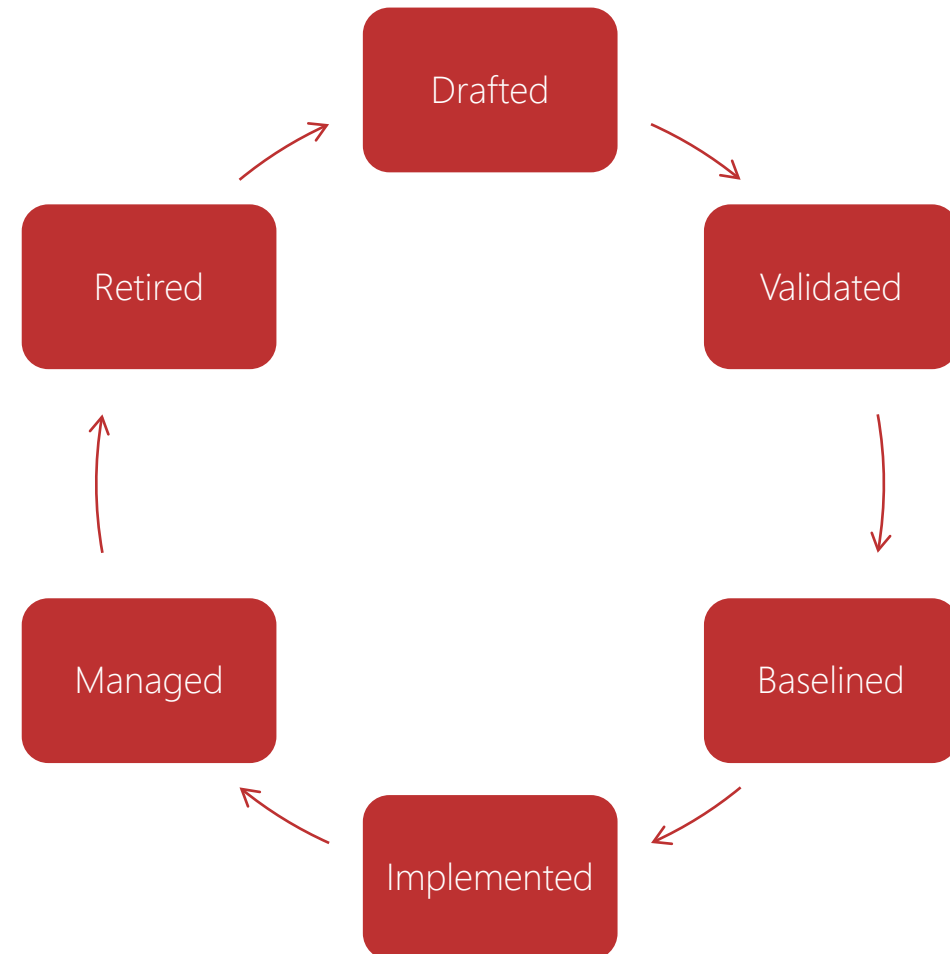*Guide to the Business Analysis Body of Knowledge* (BABOK), Version 3
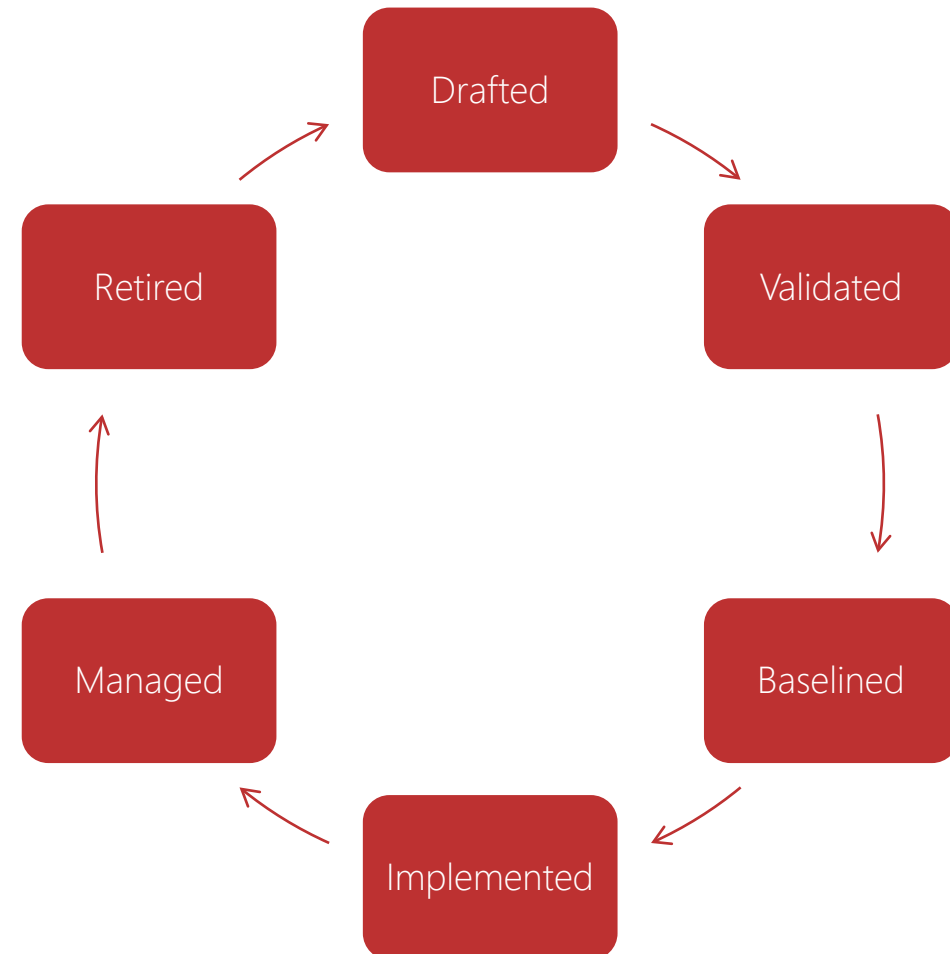
You should create and maintain requirements in an excellent way, because...

Your requirements will be around long after you are gone.

Fundamentals of Business Analysis

NorwalkAberdeen's Requirements Definition Model

Old IIBA Model (bad)

Thanks to BABOK version 3, you don't have to worry about it.

Stated (Unconfirmed)	Requirement is stated by a stakeholder…
Confirmed	Then confirmed by the Business Analyst…
Communicated	Then communicated to other stakeholders…
Traced	Then traced to other requirements…
Approved	Then approved by all the stakeholders…
Maintained and Reusable	Then is maintained for reuse…

Prioritized	Then is prioritized by the sponsor…
Analyzed	Then is analyzed by the Business Analyst…
Verified	Then is verified for completeness…
Validated	Then is validated against goals and objectives…
Allocated	Then is allocated to a particular implementation…

Form

Requirement information is gathered and documented.

Goal: Create a first draft of your requirements.

Transform

Messy first draft is verified, analyzed, and modeled.

Goal: Turn the first draft into a solid set of requirements.

Finalize

Prioritize, solidify, and (well) finalize the requirements.

Goal: A fully complete and fully approved requirements doc.

Form

Transform

Finalize
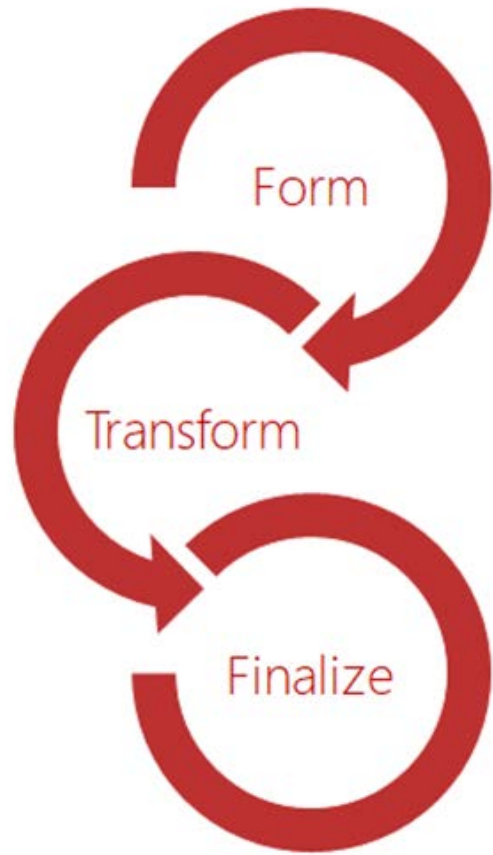
Side benefit:

Each one of these phases takes roughly the same amount of time.

This is helpful when planning your work.