Software Engineering
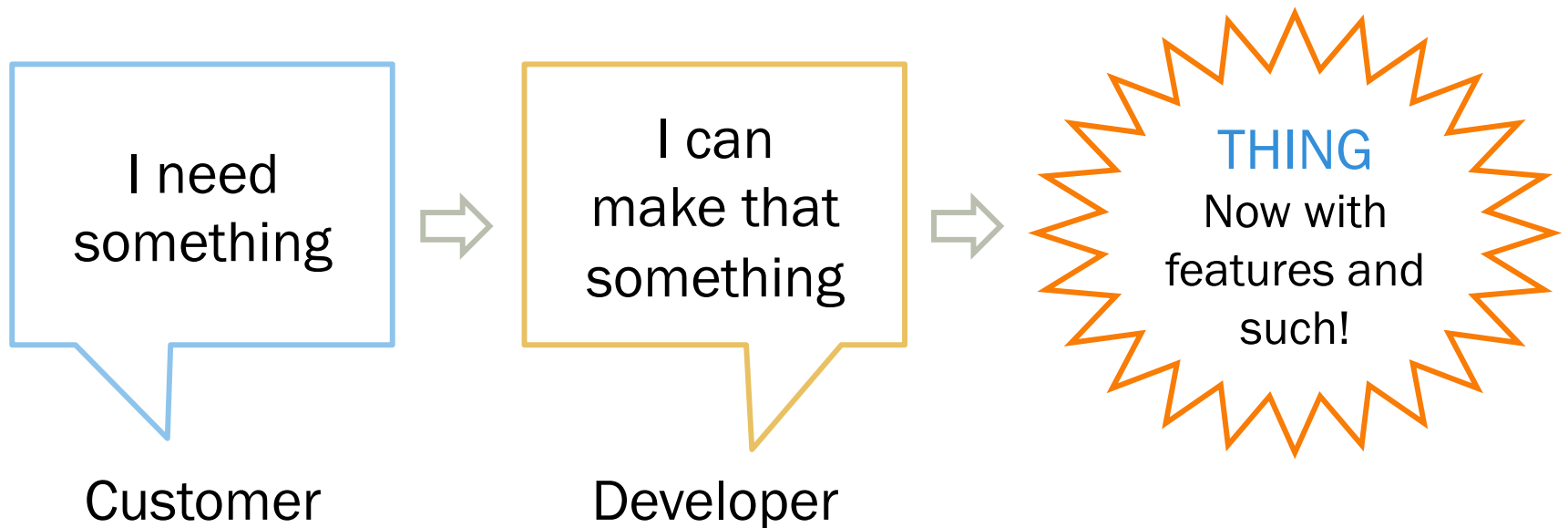
How does Software Engineering fit with other computing disciplines?
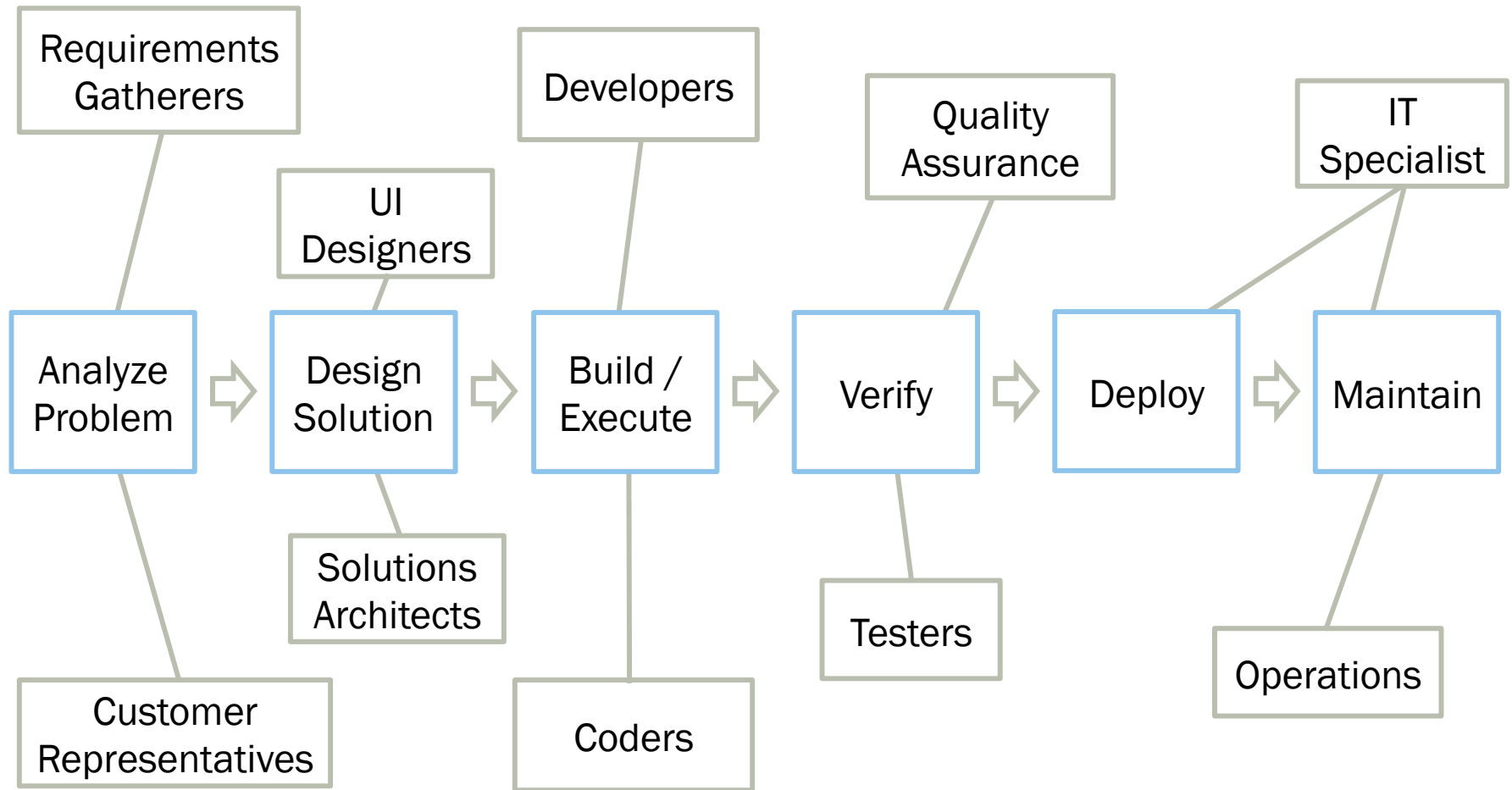
How Is Software Made?
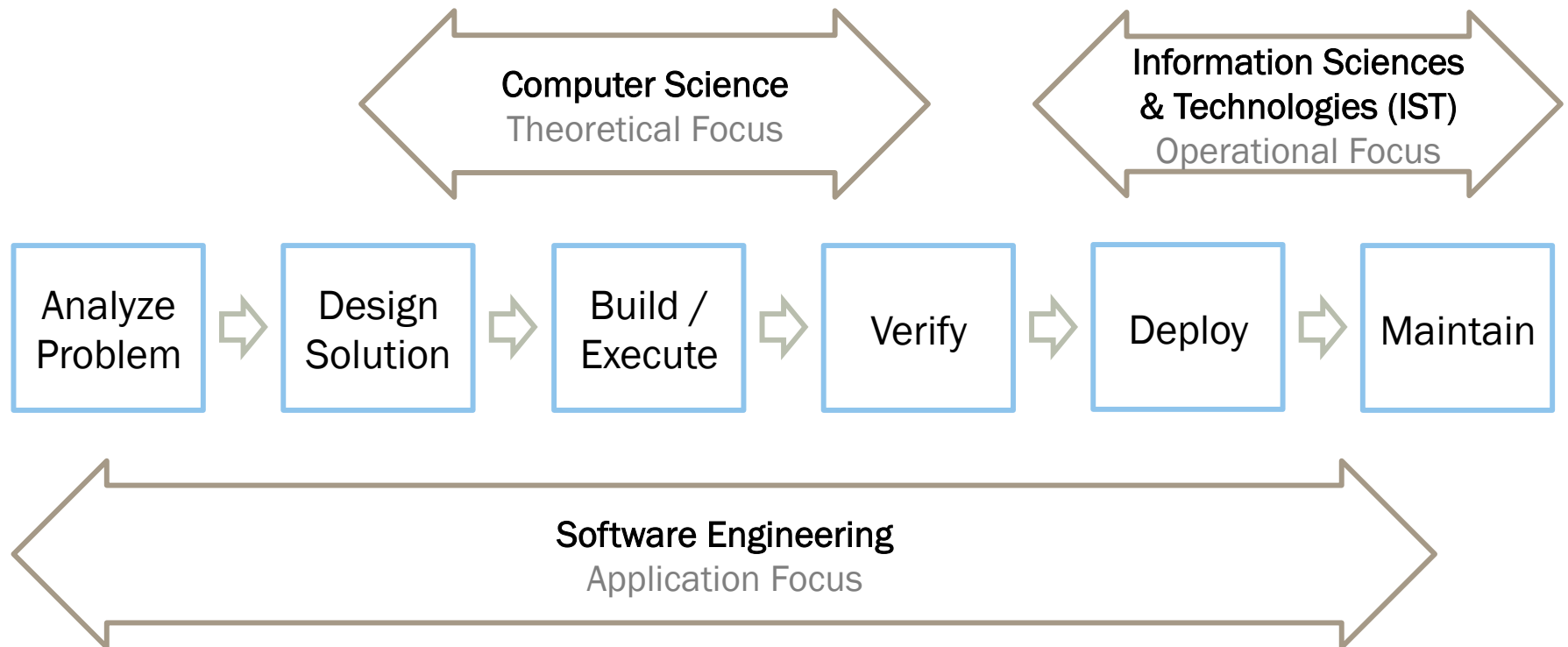
I need something

Customer

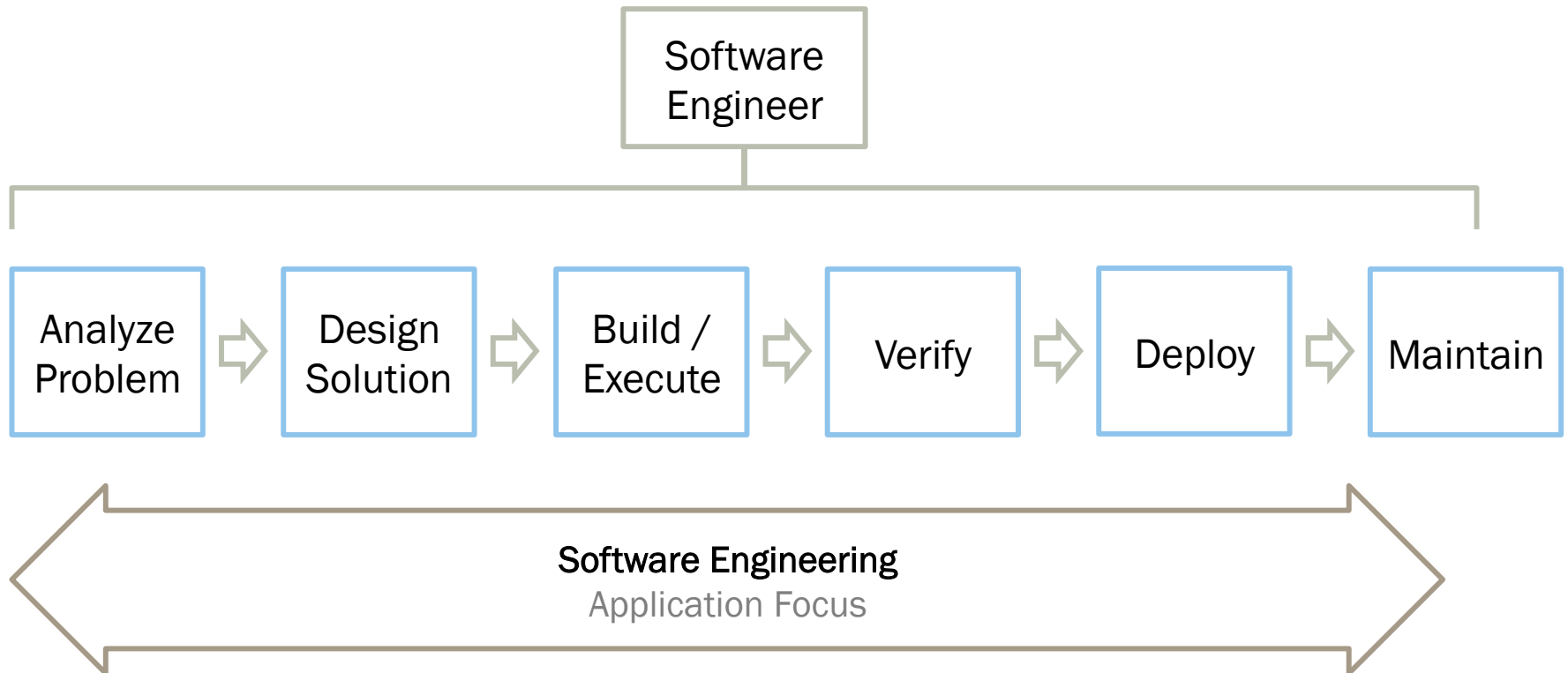I can make that something

Developer

THING
Now with features and such!

The Engineering Process

Analyze Problem → Design Solution → Build / Execute → Verify → Deploy → Maintain

Job Titles

Requirements Gatherers

Developers

Quality Assurance

IT Specialist

UI Designers

Analyze Problem → Design Solution → Build / Execute → Verify → Deploy → Maintain

Solutions Architects

Customer Representatives

Coders

Testers

Operations

Focus of Different Disciplines

Software Engineering

Software Engineer

Analyze Problem → Design Solution → Build / Execute → Verify → Deploy → Maintain
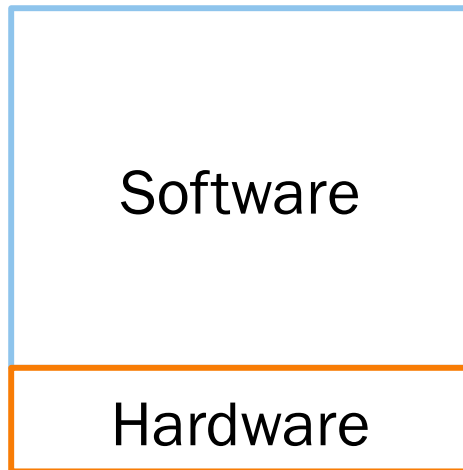
Software Engineering
Application Focus

Differing Views of Failure

- Pure Computer Science is interested in the theory, so failure of a concept to apply to a particular problem **isn't as important as the science**

- IT/IS/IST avoids failure at all costs, because operational **failure equates to a complete breakdown** of their duties and objectives

- Software Engineering views **failure as a learning opportunity,** because their process has many steps and can be improved incrementally
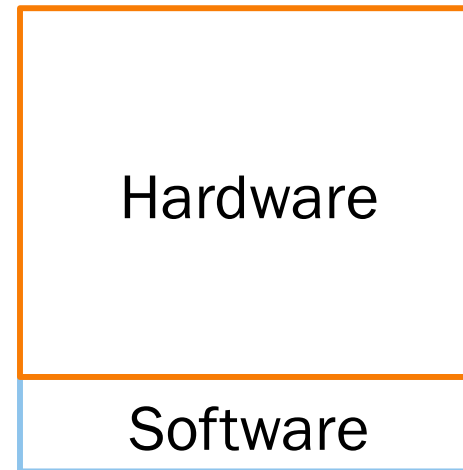
Computer Engineering: A Matter of Focus

Software Engineering

Software

Hardware

Word Processor
- Software provides functionality
- Hardware supports the software

Computer Engineering

Hardware

Software

Manufacturing Robot
- Hardware provides functionality
- Software supports the hardware