Why Architecture ?

Interconnection with business and other IT Organizations
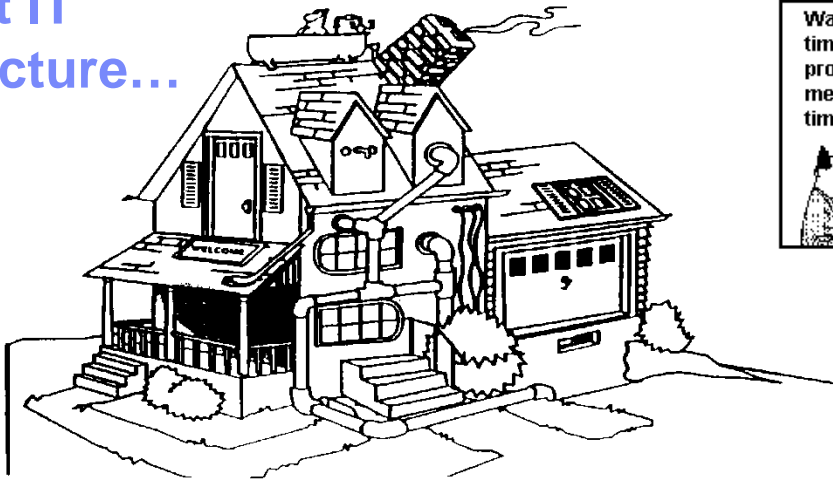
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IT Architecture ensures the business's requirements for an IT system are satisfied in a coherent and well structured way
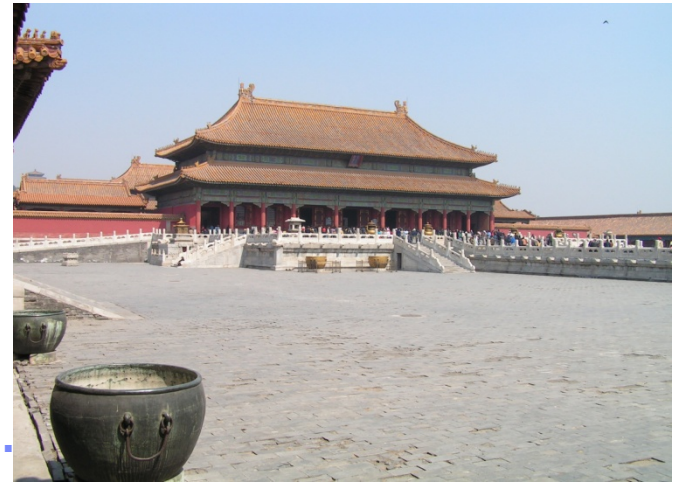
Without IT Architecture…

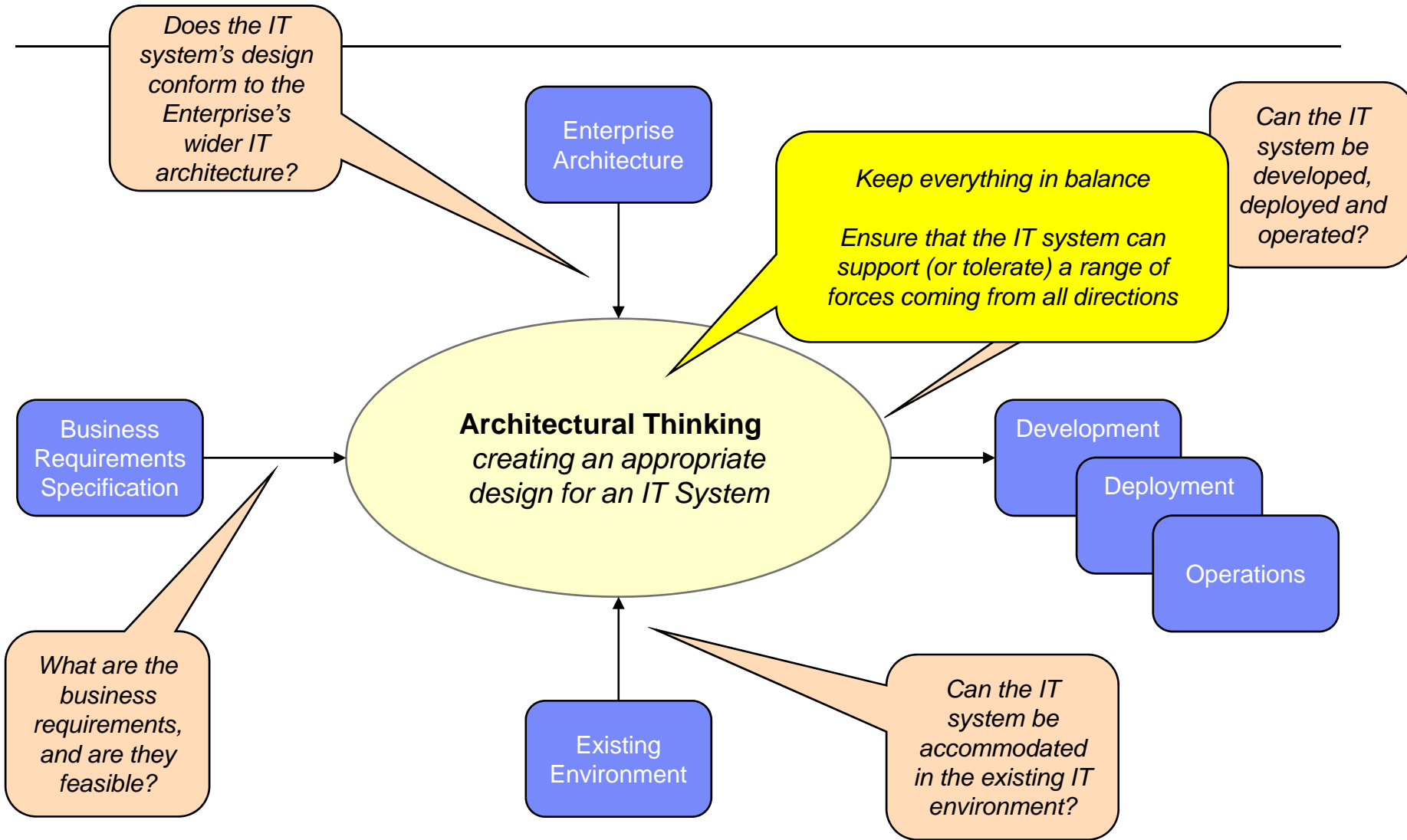*… and even if an individual house is well designed, if each house is different (e.g. different electricity voltage, water pressure) then the city will not work…*

With IT Architecture…

IBM

An IT Architect achieves this goal by balancing many forces, helping to ensure the IT solution to a business requirement recognises "the art of the possible & affordable"

Does the IT system's design conform to the Enterprise's wider IT architecture?

Enterprise Architecture

Keep everything in balance

Ensure that the IT system can support (or tolerate) a range of forces coming from all directions

Can the IT system be developed, deployed and operated?

Business Requirements Specification

Architectural Thinking
creating an appropriate design for an IT System

Development

Deployment

Operations

What are the business requirements, and are they feasible?

Existing Environment

Can the IT system be accommodated in the existing IT environment?

The IT Architect therefore focuses on three things

Requirements Analysis…
In which the IT Architect interprets and transforms the business's requirements into a form that directly supports the design activity

IT Solution Design…
through which the IT Architect ensures the IT solution is buildable and can deployed to meet the requirements expected of the IT part of the business solution.

Enterprise Architecture

Business Requirements Specification

IT Solution Requirements Analysis

IT Solution Design

IT Constraints

Development

Deployment

Operations

IT constraints…
to which the IT Architect must conform while creating a workable design: such as IT standards, principles, technology roadmaps and reference architectures, as well as the use of existing IT infrastructure and other resources

Existing Environment

Note: _This does NOT imply "waterfall development" – and the arrows are two way too!_
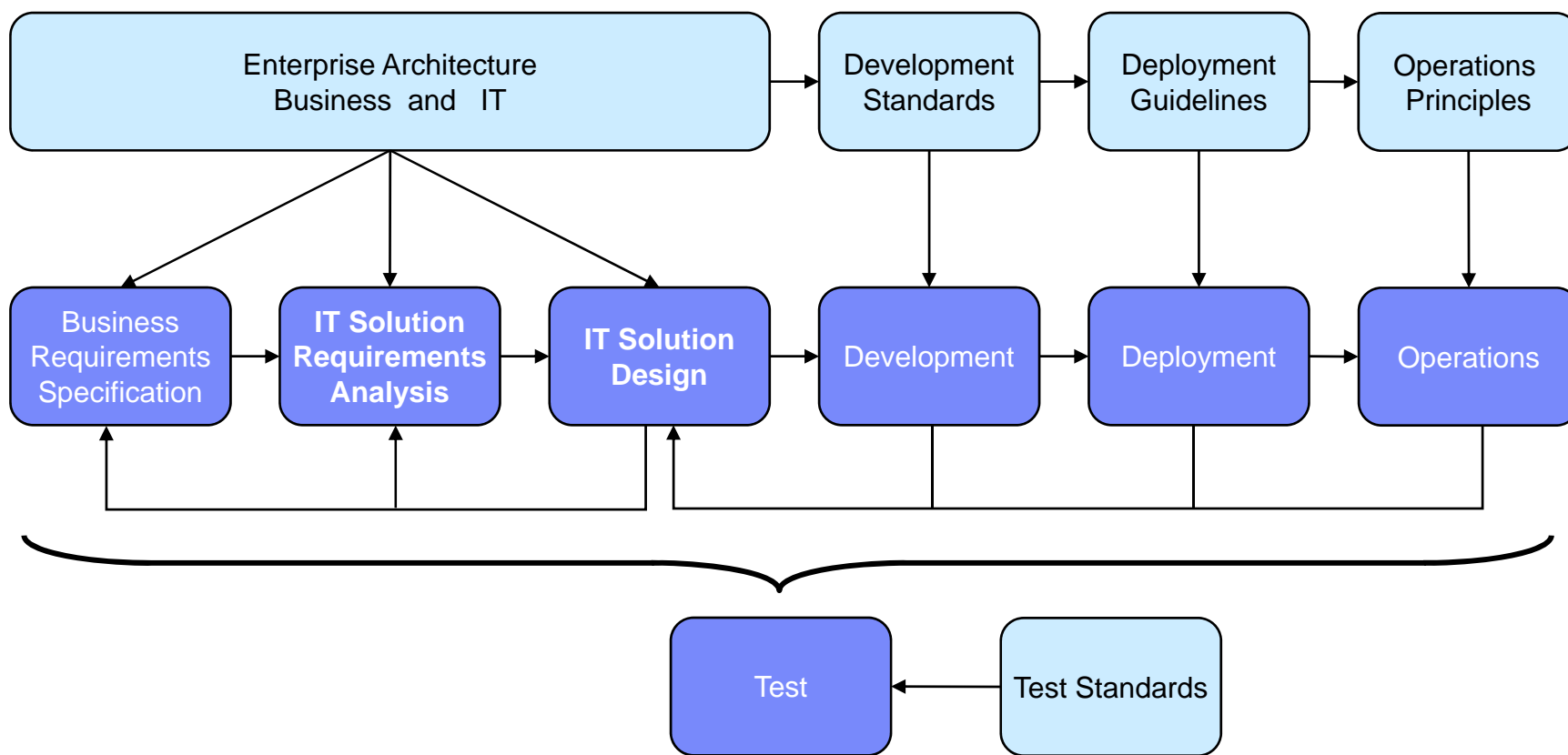
An IT Architect does not work alone – their work is intimately interconnected with that of others in both the business & IT organisations…

"food chain" in which the IT Architect sits is not "link to link", and not "waterfall"
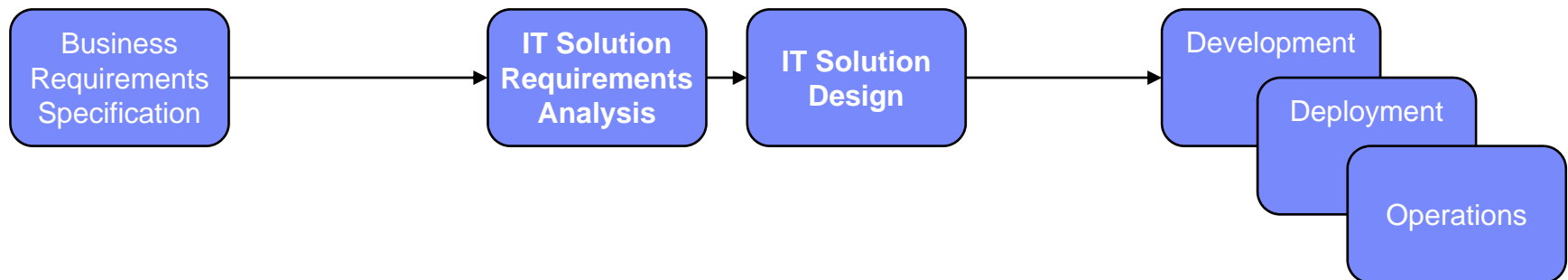
Business Requirements Specification → **IT Solution Requirements Analysis** → **IT Solution Design** → Development
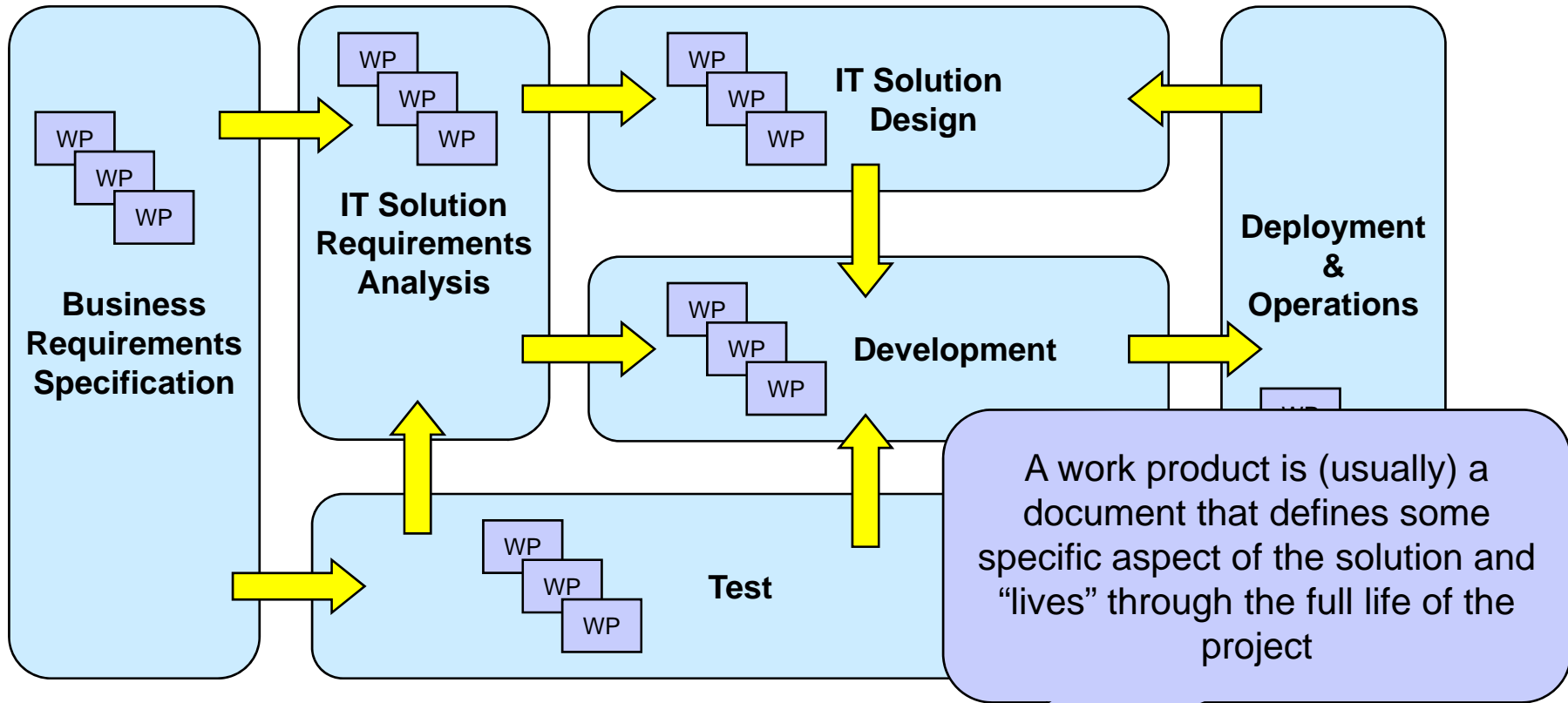
Deployment

Operations

An IT Architect does not work alone – their work is intimately interconnected with that of others in both the business & IT organisations…

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┌─────────────────────────────────────┐  ┌──────────────┐  ┌──────────────┐  ┌──────────────┐
│   Enterprise Architecture           │  │ Development  │→ │ Deployment   │→ │ Operations   │
│   Business  and   IT                │  │ Standards    │  │ Guidelines   │  │ Principles   │
└─────────────────────────────────────┘  └──────────────┘  └──────────────┘  └──────────────┘
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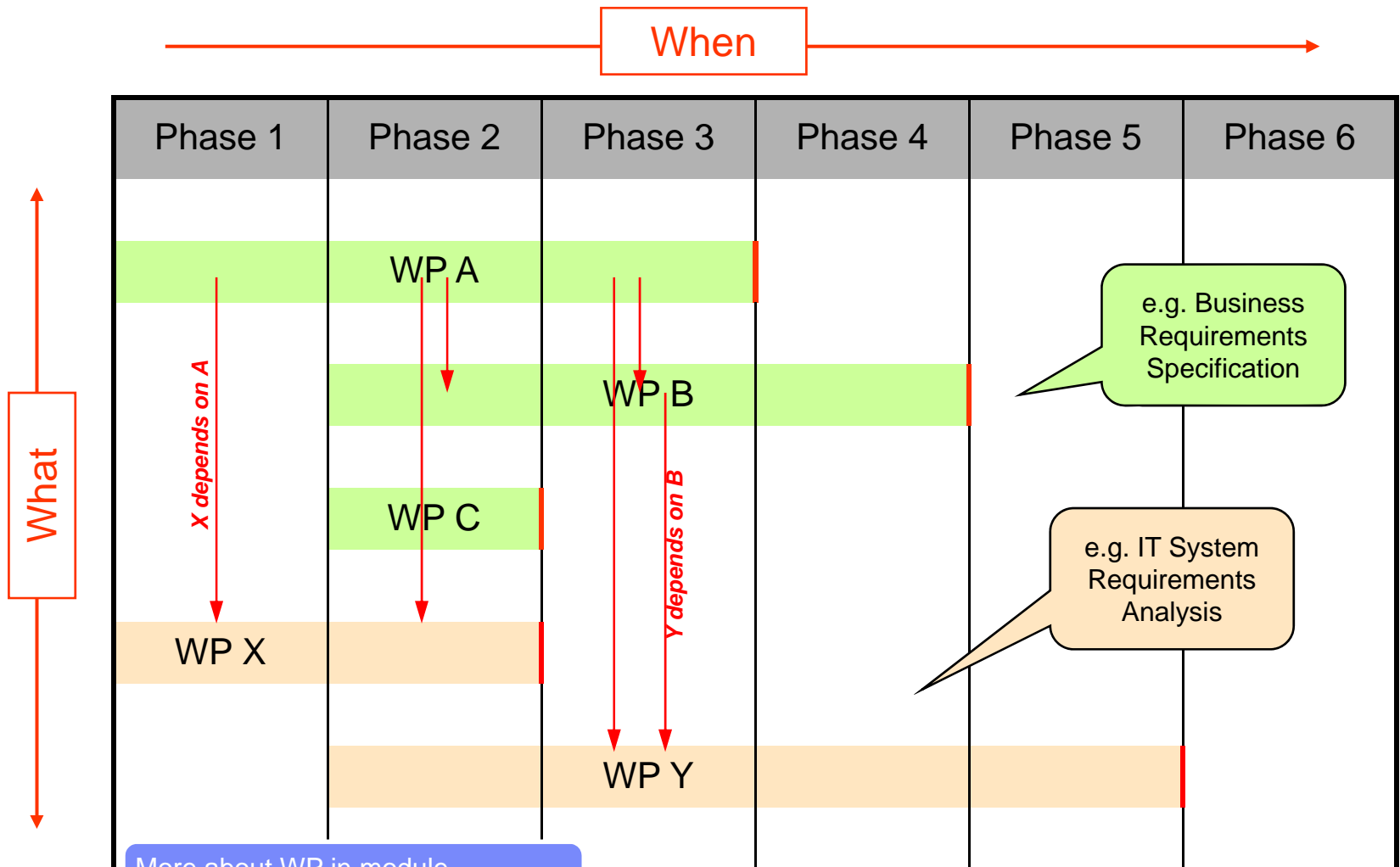| Business Requirements Specification | **IT Solution Requirements Analysis** | **IT Solution Design** | Development | Deployment | Operations |

Test ← Test Standards

…with a strong set of inter-dependencies between all areas

Illustrative dependencies only! Most arrows are two way!

Business Requirements Specification

IT Solution Requirements Analysis

IT Solution Design

Development

Test

Deployment & Operations

A work product is (usually) a document that defines some specific aspect of the solution and "lives" through the full life of the project

How do we manage this division of responsibilities ... accommodating interdependencies across the life-cycle of a project, without adopting "waterfall development"? Work Products!

Work products (WPs) are a powerful way of separating concerns, such as business requirements specification from IT requirements analysis. WPs also "elaborate" through the phases of a project - which means they can be incomplete at the end of a phase

Work products are the basis of a project's deliverables – the formal documents (and other items) published at the end of a project's phase: deliverables can be thought of as "snapshots" of one or more work products

When →

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6

WP A

WP B

WP C

Snapshot 1!
Part a of WP A

Snapshot 3!
Completed WP A
Parts a & b of WP B
Completed WP C

Deliverable 1

Deliverable 2

Deliverable 3

Snapshot 2!
Parts a & b of WP A
Part a of WP B
Completed WP C