

# ***Agile Enterprise Architecture***

Enterprise Architecture  
Practitioners Conference 2009

San Diego, CA

Armstrong Process Group, Inc.  
[www.aprocessgroup.com](http://www.aprocessgroup.com)

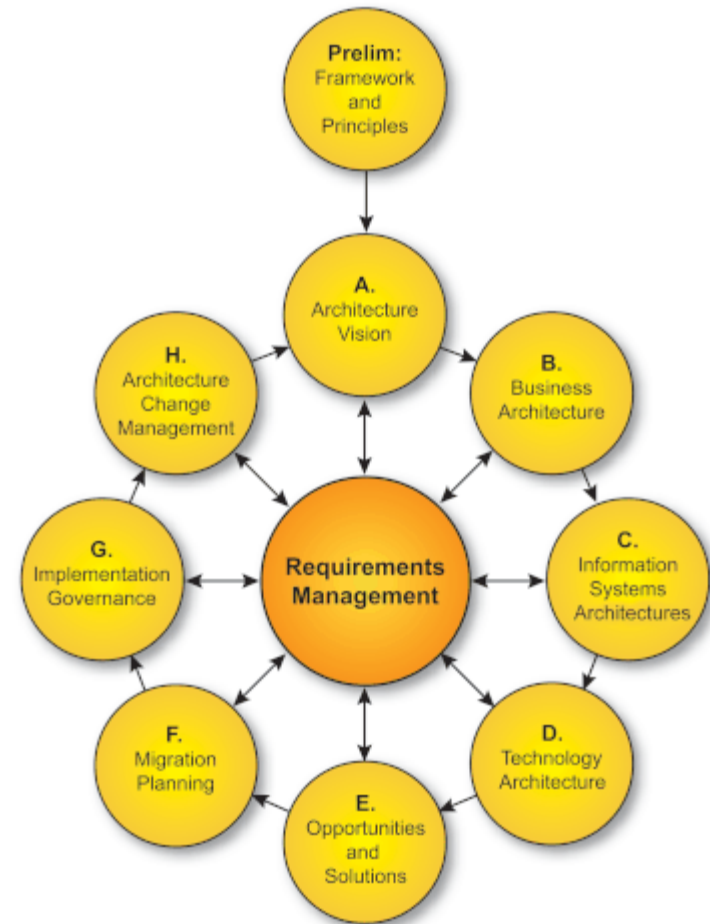
# Objectives

---

- Review TOGAF ADM lifecycle
- Typical EA pitfalls and challenges
- Review Agile Manifesto for software development
- Agile EA principles
- Alignment of EA program with business strategy
- Introduce agile planning concepts
- Agile EA modeling – when enough's enough
- Validate target architectures through continual solution delivery engagement
- Support with traceability and tools

# TOGAF Architecture Development Method (ADM)

- The ADM is iterative, over the whole process, between phases, and within phases.
- For each iteration of the ADM, a fresh decision must be taken as to
  - Breadth of coverage
  - Architecture domains
  - Level of detail
  - Extent of the time horizon
  - Architectural assets to be leveraged



# Typical EA Pitfalls

---

- Perception of EA an academic exercise
  - The “Ivory Tower” syndrome
  - Building abstract models that are not actionable
- Unclear relationship of EA to other business and IT lifecycles
  - Duplicative, potentially conflicting, activities in different places in the IT landscape
  - Missed handoffs and lack of process integration
- Practicing EA as a linear or serial set of activities
  - Must completely finish business architecture before starting on application architecture
- Getting lost in the past
  - Unbounded “archeological excavations” of the current state
- Delivering value later versus sooner

# Estimation and Sizing Paradox

---

- Q: Has anyone ever asked you, “Could you please tell me how many people, how much money, and how much time it will take to build this thing that we don’t really know much about?”
- A: “How much money do you want to spend and how long do you want us to take?”
- A development effort will consume all of the people, time, and money resources that are committed to it
  - In fact, according to the CHAOS Report, usually about twice as much!
- Agile, iterative development is about optimizing the use of constrained resources to get the biggest return on investment to the business

# Just-In-Time Development

---

- Agile, iterative development is like just-in-time (JIT) manufacturing
- Principle is to have less overhead
  - Reduce likelihood of significant rework
  - The right number of work products produced at just the right time using the right amount of resources
- Do as little as possible to reach milestones
  - Which does not mean not doing anything
- Delay critical decisions and actions to last possible moment
  - Stop performing activities when they are “done enough”
- Doing too much work too early, increases the likelihood that you will have to do most of it over again
  - Want to avoid accidentally creating any more rework than necessary

# Manifesto for Agile Software Development

*We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:*

| <b>Agile Principle</b>       | <b>“Traditional” Principle</b> |
|------------------------------|--------------------------------|
| Individuals and interactions | Processes and tools            |
| Working software             | Comprehensive documentation    |
| Customer collaboration       | Contract negotiation           |
| Responding to change         | Following a plan               |

*That is, while there is value in the items on the right, we value the items on the left more.*

<http://www.agilemanifesto.org>

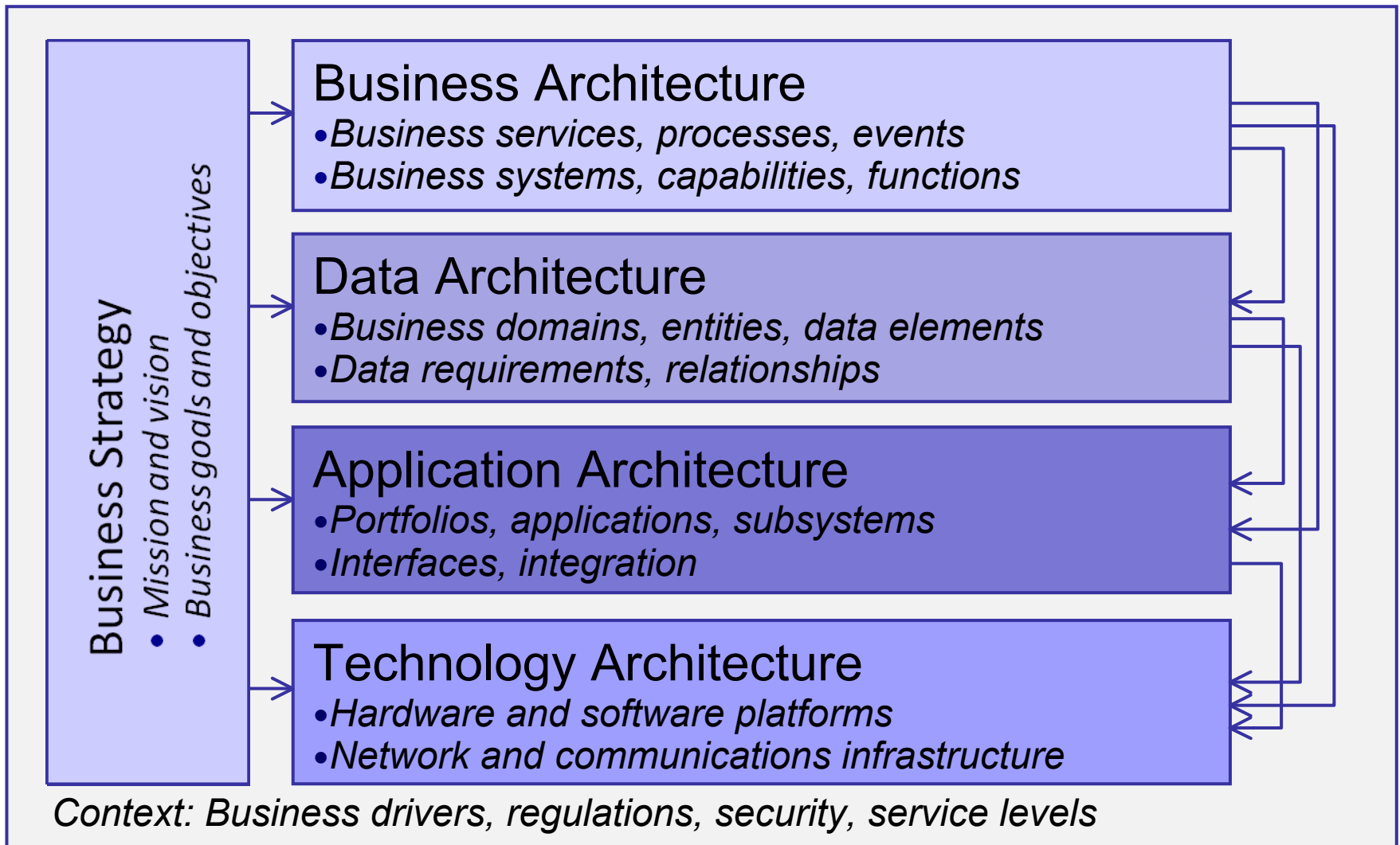
# Agile Enterprise Architecture Principles

---

- Sustain ***continual*** stakeholder interaction
- Build ***useful*** plans based on ***sufficient*** and ***relevant*** models
- Prove ***suitability*** of target architectures and migration plans
- ***Anticipate*** continual change

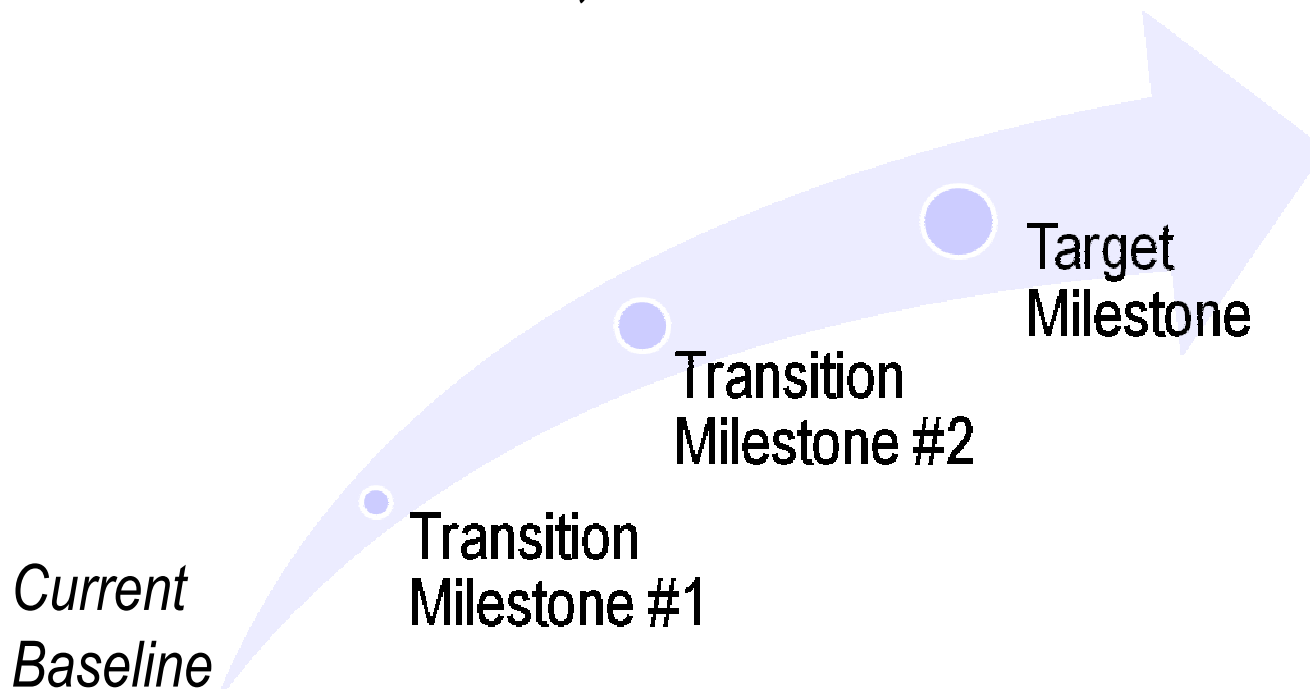


# EA Alignment with Business Strategy

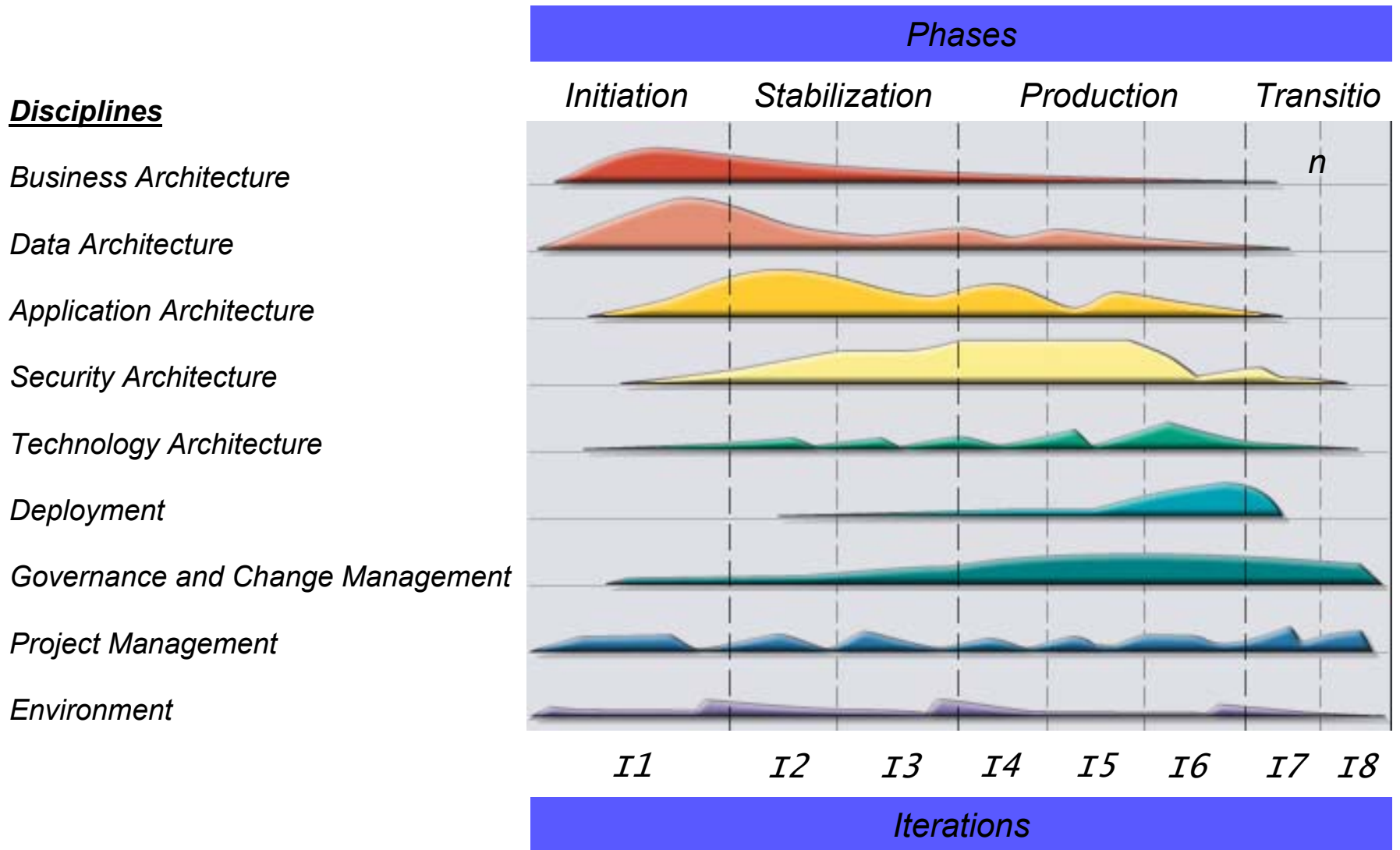


# Deliver Increasing Business Agility

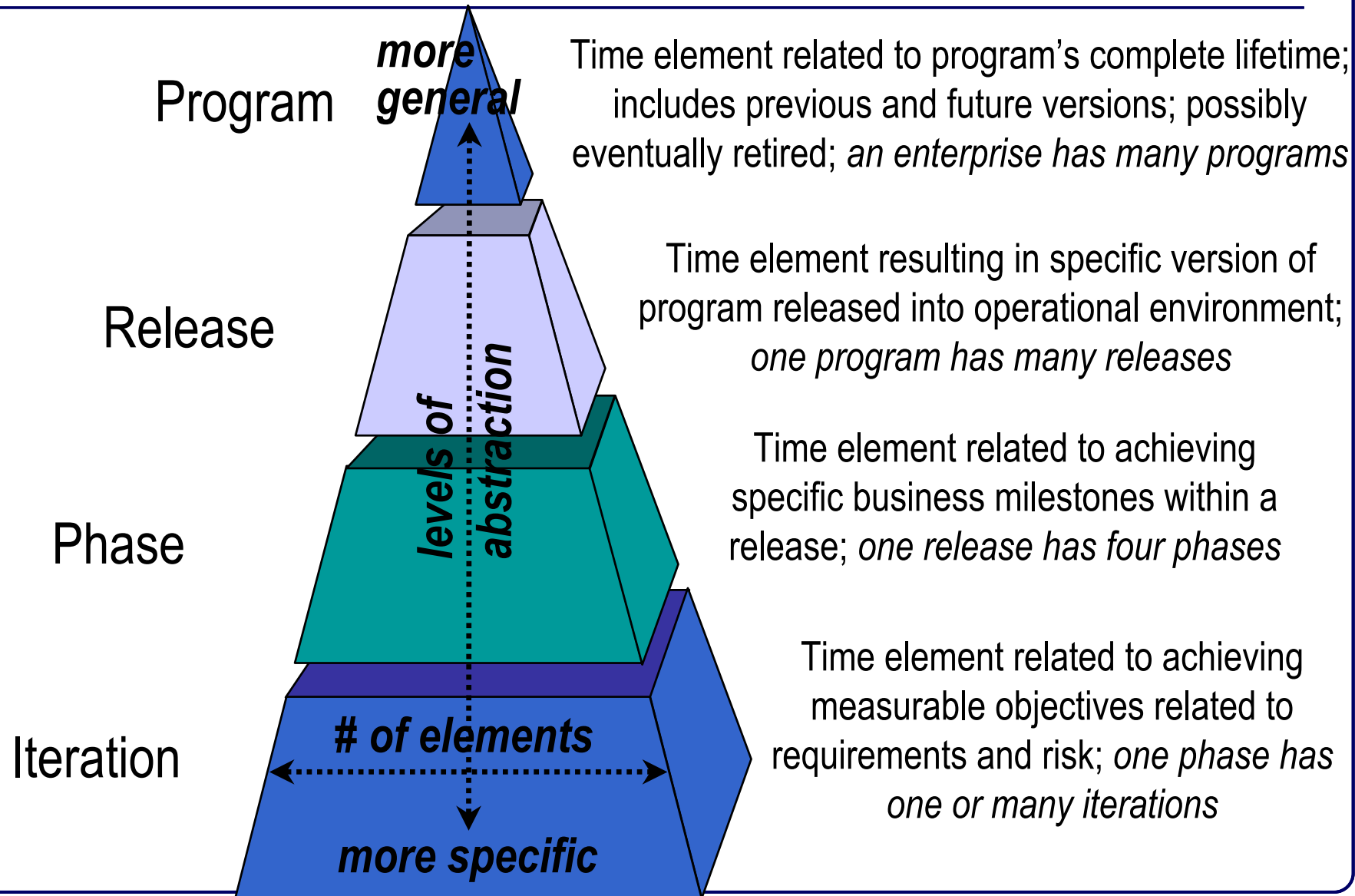
- Need to move from current state (less effective) to future state (more agile)
- Need strategic plan for transforming organization
- Establish stable, transition milestones



# ATPL Plus – Agile EA Lifecycle



# Project Time Elements



# Sample Releases

| Release     | Start Date | # of Weeks | End Date   |
|-------------|------------|------------|------------|
| Release 1.0 | 8/1/2003   | 39         | 4/29/2004  |
| Release 1.1 | 4/1/2004   | 12         | 6/23/2004  |
| Release 2.0 | 6/1/2004   | 26         | 11/29/2004 |
| Release 3.0 | 1/1/2005   | 33         | 8/19/2005  |

I S P T Release 1.0

I S P T Release 1.1

I S P T Release 2.0

Release 3.0 I S P T

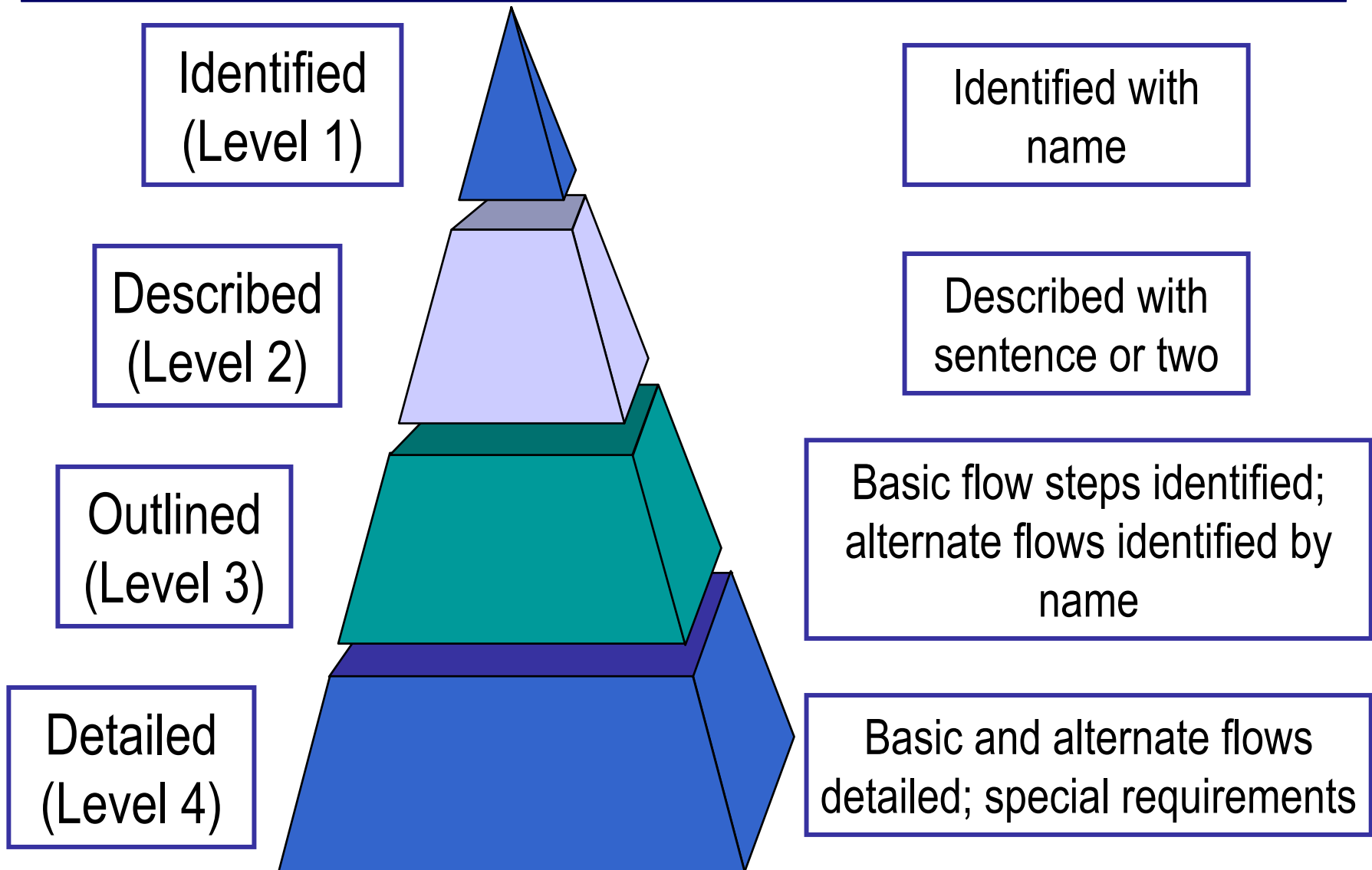
# Four Phases of Iterative Lifecycle

---

| <u>Phase</u>  | <u>Milestone</u>  |
|---------------|---|
| Initiation    | Lifecycle Objectives (LCO)<br><i>Understand the problem</i>       |
| Stabilization | Lifecycle Architecture (LCA)<br><i>Understand the solution</i>    |
| Production    | Initial Operational Capability (IOC)<br><i>Build the solution</i> |
| Transition    | Operational Release<br><i>Deliver the solution</i>                |

*“Anchoring the Software Process”, 1995, Barry Boehm*

# “How Done Is It?” – Work Product States



# Sample Work Product Selection

| Work Product                 | Level / Phase |           |           |           | Review        | Specification      | Tool               |
|------------------------------|---------------|-----------|-----------|-----------|---------------|--------------------|--------------------|
|                              | I             | S         | P         | T         |               |                    |                    |
| <b>Business Architecture</b> | <b>5</b>      | <b>10</b> | <b>14</b> | <b>14</b> | <b>High</b>   |                    |                    |
| Business driver              | 1             | 1         | 1         | 1         | High          | BMM::Assessment    | RM tool w/profile  |
| Business goal                | 1             | 1         | 1         | 1         | High          | BMM::Goal          | RM tool w/profile  |
| Business objective           | 1             | 2         | 2         | 2         | High          | BMM::Objective     | RM tool w/profile  |
| Business service             | 1             | 3         | 4         | 4         | High          | UML::Use Case      | UML tool w/profile |
| Business process             | 1             | 2         | 4         | 4         | Medium        | BPMN::Process      | BPMN tool          |
| Business function            | 0             | 1         | 2         | 2         | Medium        | BPMN::Process      | BPMN tool          |
| Business worker              | –             | –         | –         | –         | None          | n/a                | n/a                |
| <b>Data Architecture</b>     | <b>2</b>      | <b>4</b>  | <b>7</b>  | <b>10</b> | <b>Medium</b> |                    |                    |
| Business domain              | 1             | 1         | 1         | 1         | Low           | UML::Package       | UML tool w/profile |
| Business entity              | 0             | 1         | 3         | 3         | Medium        | UML::Class         | UML tool w/profile |
| Data security requirement    | 1             | 2         | 3         | 4         | High          | SysML::Requirement | RM tool w/profile  |



# Business Service Gap Analysis

Microsoft Excel - BUC Attribute Matrix (summary).xls

File Edit View Insert Format Tools Data Window Help

Type a question for help

100%

Arial 10

B U

Request Statistics And Reports

|    | A     | B  | C               | D    | E                     | F                             | G                      | H                  | I                 |
|----|-------|--|-----------------|------|-----------------------|-------------------------------|------------------------|--------------------|-------------------|
| 1  | ID    | Business Service Name  | Functional Area | Rank | Definition Difficulty | Required Completeness         | External Collaboration | Current Automation | Future Automation |
| 2  | BUC1  | Apply for Benefits   | Claims          | 13   | Low                   | 8 - Design Subsystem          | Low                    | Partially (50%)    | Mostly (75%)      |
| 3  | BUC2  | Claim Weekly Benefits  | Claims          | 12   | Low                   | 8 - Design Subsystem          | Low                    | Mostly (75%)       | Completely (100)  |
| 4  | BUC3  | Participate In Hearing   | Appeals         | 7    | Low                   | 8 - Design Subsystem          | Medium                 | Not At All (0%)    | Barely (25%)      |
| 5  | BUC4  | Provide Check Information  | Updates         | 16   | Low                   | 6 - Model Workflow            | Low                    | Completely (100)   | Completely (100)  |
| 6  | BUC5  | Provide Child Support Intercepts                                   | Updates         | 17   | Low                   | 6 - Model Workflow            | Low                    | Completely (100)   | Completely (100)  |
| 7  | BUC6  | Provide Duplicate Claim Information                                | Updates         | 19   | Low                   | 6 - Model Workflow            | Low                    | Mostly (75%)       | Mostly (75%)      |
| 8  | BUC7  | Provide Claim Information  | Adjudication    | 1    | Medium                | 8 - Design Subsystem          | Medium                 | Barely (25%)       | Mostly (75%)      |
| 9  | BUC8  | Provide Claimant Employment Information                            | Adjudication    | 2    | Medium                | 8 - Design Subsystem          | Medium                 | Barely (25%)       | Mostly (75%)      |
| 10 | BUC9  | Manage Claimant Personal Profile                                   | Updates         | 14   | Medium                | 8 - Design Subsystem          | Medium                 | Barely (25%)       | Mostly (75%)      |
| 11 | BUC10 | Manage Employer Benefit Profile                                    | Updates         | 15   | Medium                | 8 - Design Subsystem          | Medium                 | Barely (25%)       | Mostly (75%)      |
| 12 | BUC11 | Provide Information  |                 |      | Medium                | 1 - Identified                |                        |                    |                   |
| 13 | BUC12 | Provide Notice of Mass Layoff                                      | Updates         | 18   | Low                   | 7 - Identify Subsystem        | Low                    | Barely (25%)       | Mostly (75%)      |
| 14 | BUC13 | Question Eligibility   | Adjudication    | 4    | Medium                | 6 - Model Workflow            | Medium                 | Not At All (0%)    | Partially (50%)   |
| 15 | BUC14 | Request Claimant Information                                       | Inquiries       | 8    | Medium                | 8 - Design Subsystem          | High                   | Barely (25%)       | Mostly (75%)      |
| 16 | BUC15 | Request Employer Claim Information                                 | Inquiries       | 9    | Medium                | 8 - Design Subsystem          | High                   | Not At All (0%)    | Mostly (75%)      |
| 17 | BUC16 | Request Hearing  | Appeals         | 5    | Medium                | 8 - Design Subsystem          | Medium                 | Not At All (0%)    | Partially (50%)   |
| 18 | BUC17 | Request Information  |                 |      | Medium                | 1 - Identified                |                        |                    |                   |
| 19 | BUC18 | Request Presentation   | Inquiries       | 20   | Medium                | 5 - Identify Workers/Entities | Medium                 | Not At All (0%)    | Barely (25%)      |
| 20 | BUC19 | Request Confidential Claim Information                             | Inquiries       | 11   | Medium                | 6 - Model Workflow            | Low                    | Barely (25%)       | Barely (25%)      |
| 21 | BUC20 | Request Review   |                 |      | Medium                | 1 - Identified                |                        |                    |                   |
| 22 | BUC21 | Request Review of Hearing Record                                   | Appeals         | 6    | Medium                | 8 - Design Subsystem          | Medium                 | Not At All (0%)    | Partially (50%)   |
| 23 | BUC23 | Request UI Program Information                                     | Inquiries       | 10   | Low                   | 8 - Design Subsystem          | Low                    | Barely (25%)       | Partially (50%)   |
| 24 | BUC24 | Request Review of Notices  | Adjudication    | 3    | Medium                | 8 - Design Subsystem          | Medium                 | Not At All (0%)    | Partially (50%)   |
| 25 | BUC29 | Implement UI Policy and Procedures                                 |                 |      | Medium                | 8 - Design Subsystem          |                        |                    |                   |
| 26 | BUC32 | Implement System Requirements for UI Policies and Procedures Busin |                 |      | Medium                | 8 - Design Subsystem          |                        |                    |                   |
| 27 | BUC38 | Request Monetary Computation                                       |                 |      | Medium                | 8 - Design Subsystem          |                        |                    |                   |
| 28 | BUC44 | Request Audit And Quality Control Review                           |                 |      | Medium                | 8 - Design Subsystem          |                        |                    |                   |

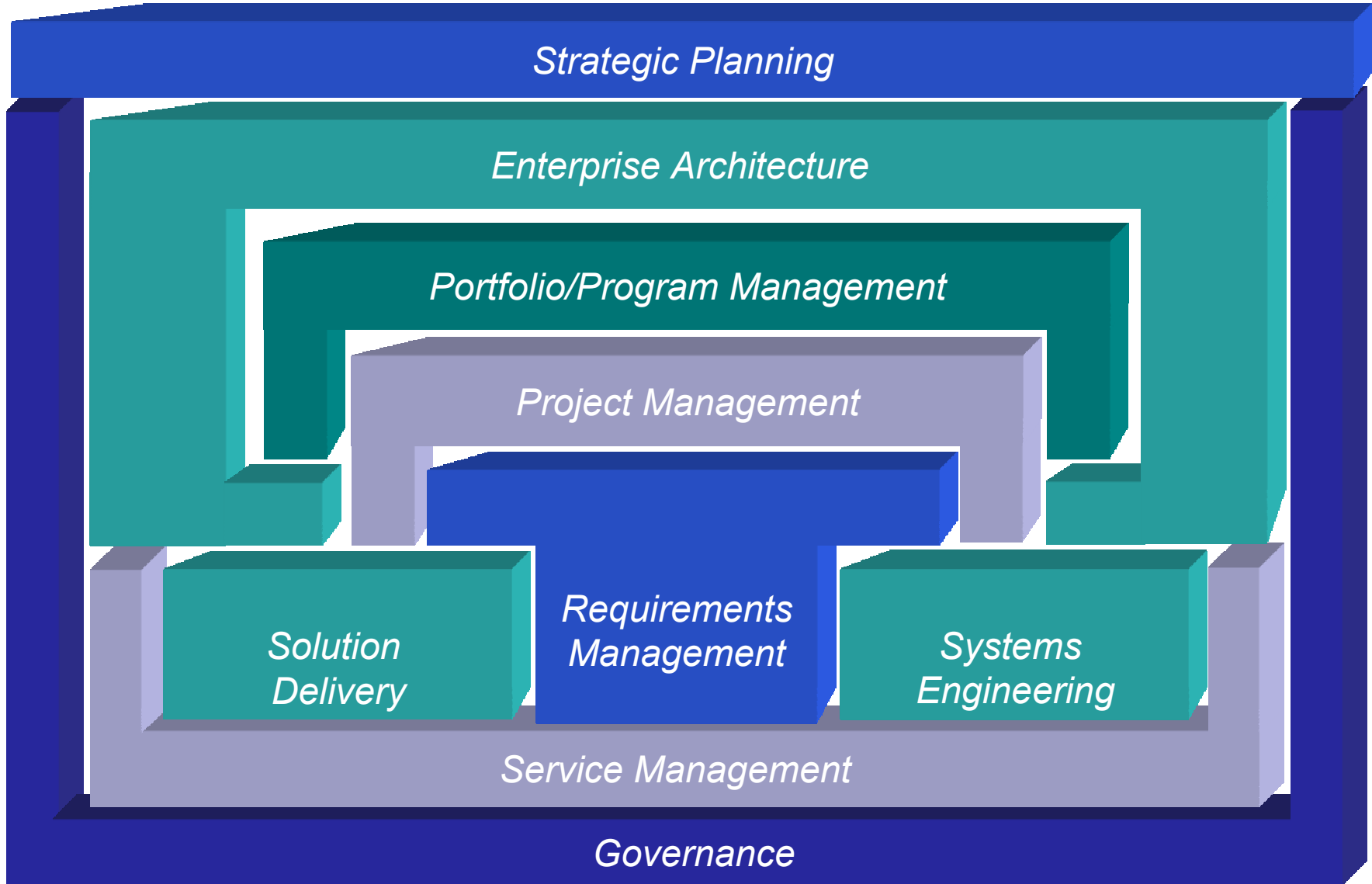
Ready

# Trimming Frivolous IT Projects

---

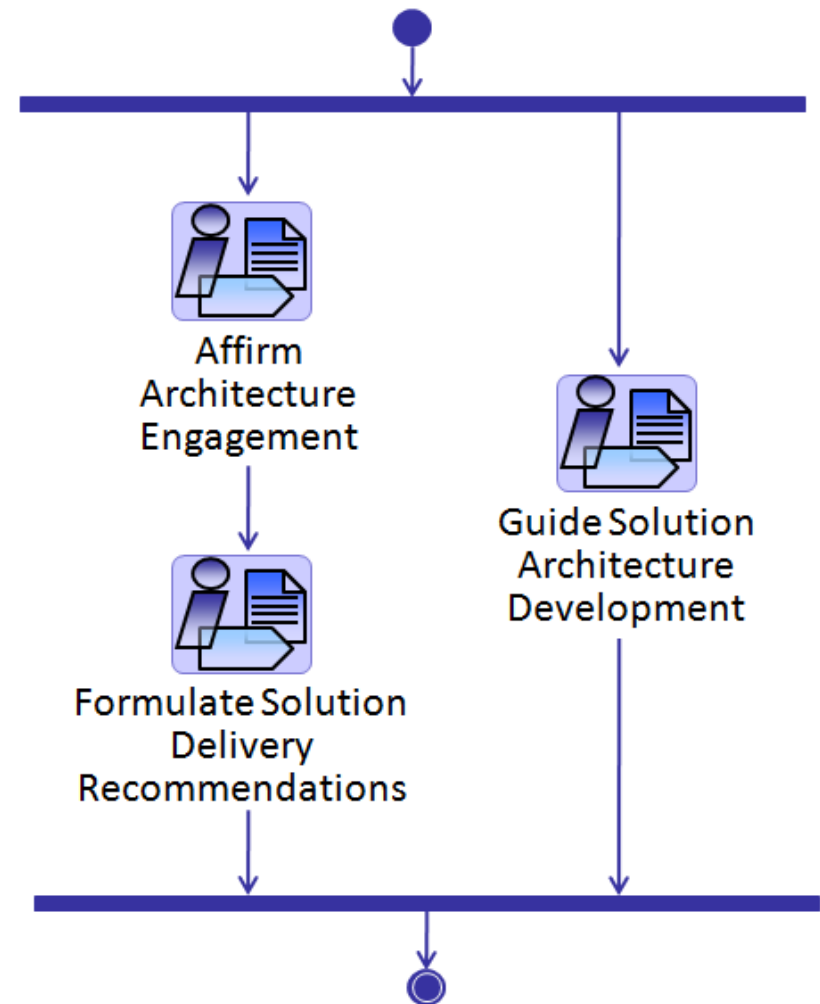
- Ideally, an organization would like the enterprise architecture enterprise architecture function to engage all projects
  - However, this is initially often not very realistic feasible for most many organizations due to overloaded portfolios and limited EA resource allocation bandwidth
- In today's world, many organizations need to seriously examine the risks of continuing to execute projects without EA support
  - Often some sort of risk analysis or triage process is required to identify those projects that demand architecture engagement
- It is also important crucial to make sure that projects that are perceived as being “simple” with “limited scope” do not become “architecturally-significant” because of poor decision making due to lack of appropriate architecture guidance

# Business-IT Integration – Enterprise Lifecycles



# ATPL+ Govern Solution Architectures (GSA) Plugin

- APG refinements of Phase G: Implementation Governance of TOGAF ADM
- Major deliverables
  - Solution Delivery Recommendations
  - Solution Architecture Contract
  - Architecture Review Report
- New roles
  - Solution Architect
  - Architecture Review Lead



# Enterprise Architecture Tool Situation

---

- Sustaining an agile enterprise architecture program without some tooling very difficult
- Manually maintaining “less rigorous” assets in Word, Excel, and PowerPoint is not very scalable
- No single tool implements all requirements for capturing enterprise architecture assets
- Usually requires an integrated tool set (not usually all from the same vendor)
- Understand difference between what organizations
  - Want to do
  - Should do
  - Can do

# EA Tool Requirements

---

- Support industry frameworks (such as TOGAF) and specifications (such as MDA)
- Customizable to organizations' business and technical processes and environments
- Ability to integrate tools in a useful way
  - Effort to maintain integration must have ROI that is meaningful to users
- Easy accessibility
  - Effort to get to relevant content needs to be easy and quick
- Integration with repositories and configuration management systems

***Thanks for your attention  
and participation!***