

TOGAF in a nutshell

The rationale of TOGAF™

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TOGAF™ in a nutshell – the intention

“The purpose of enterprise architecture is

- ▶ **to optimize across the enterprise**
- ▶ the often **fragmented legacy of processes** (both manual and automated)
- ▶ **into an integrated environment...**”

“TOGAF is intended to be a framework for

- “conducting enterprise architecture.”
- “managing the spectrum of change required to transform an enterprise towards **a target operating model**”
- [defined by] the necessary level of
- business process integration and
- business process standardization.”

An idea TOGAF takes from “EA as Strategy” by MIT authors

“Operating model” for core business processes

High integration	Coordinated	Unified
Low integration	Diversified	Replicated
	Low standardisation	High standardisation

- ▶ To improve business systems,
 - improve business data quality, relevance and use.

- ▶ To optimise business systems and increase agility
 - tidy up the mess of duplicated and overlapping systems by standardisation and integration.

- ▶ To help understanding and change impact analysis
 - maintain an abstract description of business roles and processes and the systems they use

- ▶ To minimise business risks and maximise opportunities
 - keep an eye on information system & technology evolution, and produce road maps where needed

"Operating model"		
Integrated	Coordinated	Unified
	Diversified	Replicated
		Standardised

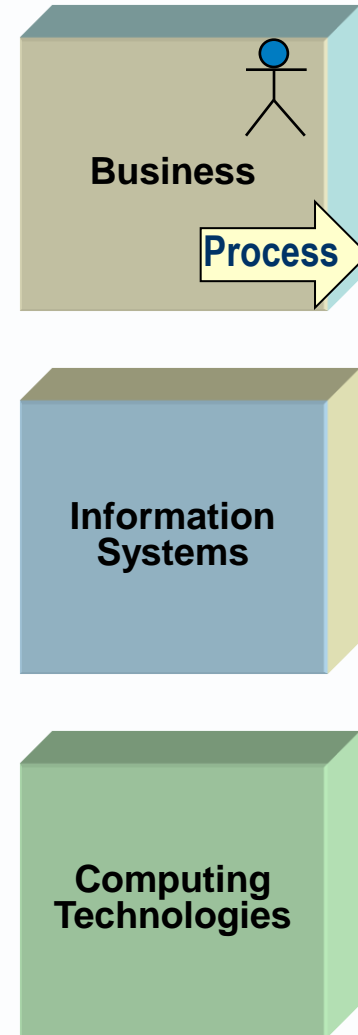
“the EA is permanent and manages the *EA artefacts* delivered by projects.” TOGAF

- ▶ EA is about the efficient & effective use of digital **information systems** by **business roles & processes**

“the effective management & exploitation of information through IT” TOGAF

- ▶ The EA is an abstract description of **business roles & processes** & the **information systems & technologies** they use.

““the EA is permanent and manages the *EA artefacts* delivered by projects.” TOGAF



ADM – the core process, the essence of TOGAF

▶ “a framework for... managing the spectrum of change required to transform an enterprise”

▶ from a baseline architecture to a target architecture.

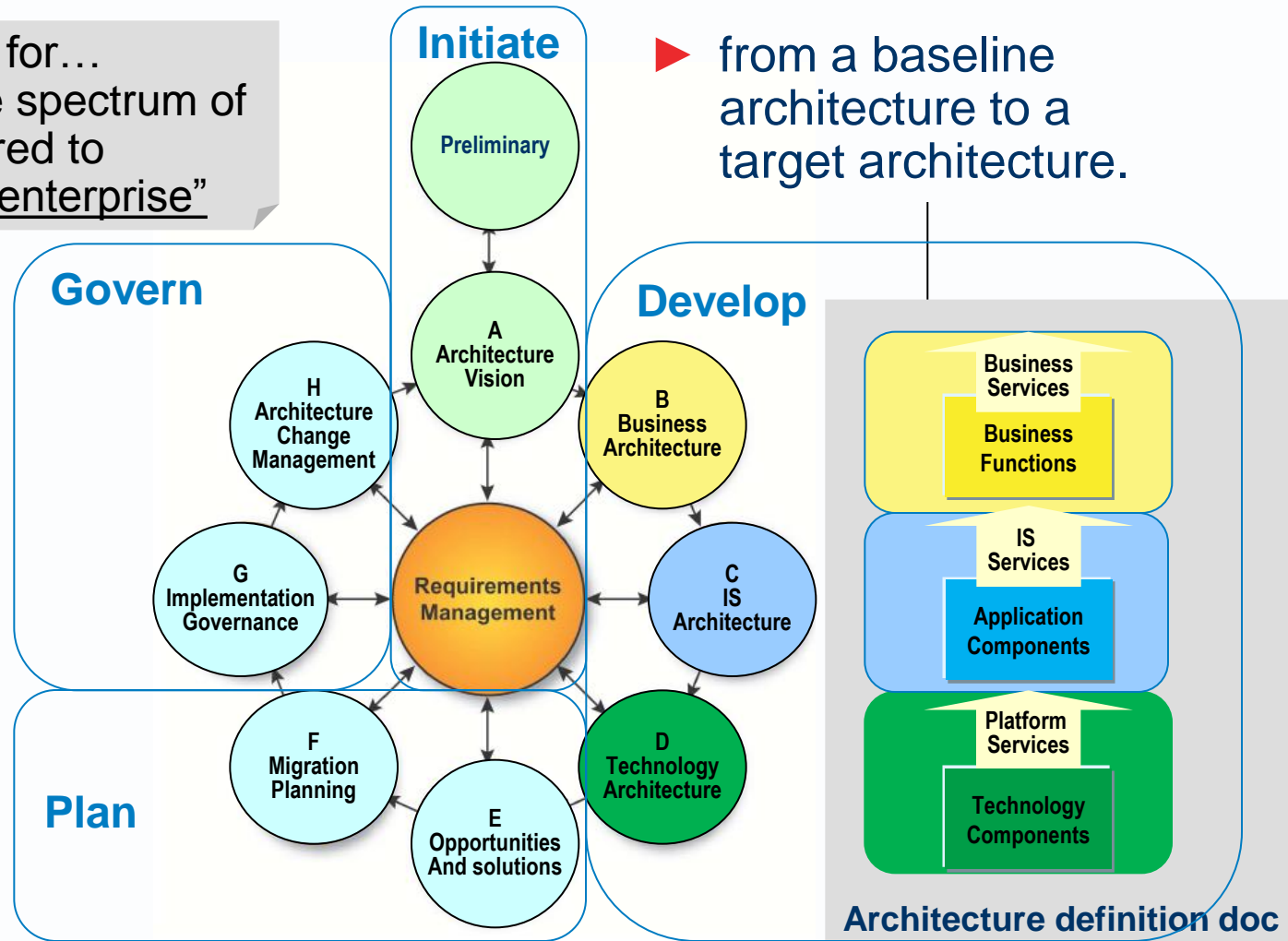


Figure 5-1 Architecture Development Cycle

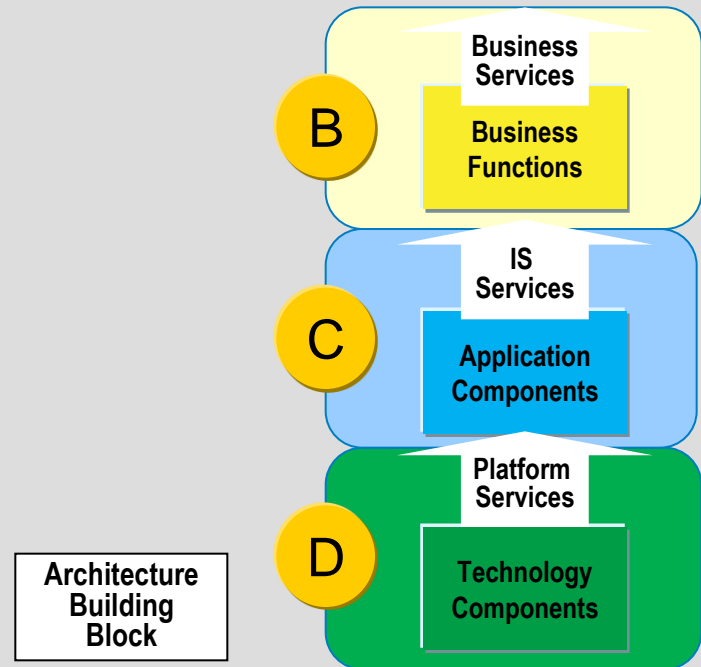
The Architecture Definition Document (ADD)

- ▶ You need an ADD to comply with the overriding mission statement of The Open Group to produce
 - Vendor-neutral specifications.
 - Portable specifications
- ▶ So stakeholders can sign off a vendor/technology-neutral architecture specification.

- ▶ Artefacts in the ADD populate the
 - “Architecture Continuum”
 - “Architecture Repository”

Architecture definition document

Descriptive artefacts identify architecture building blocks and how they are related

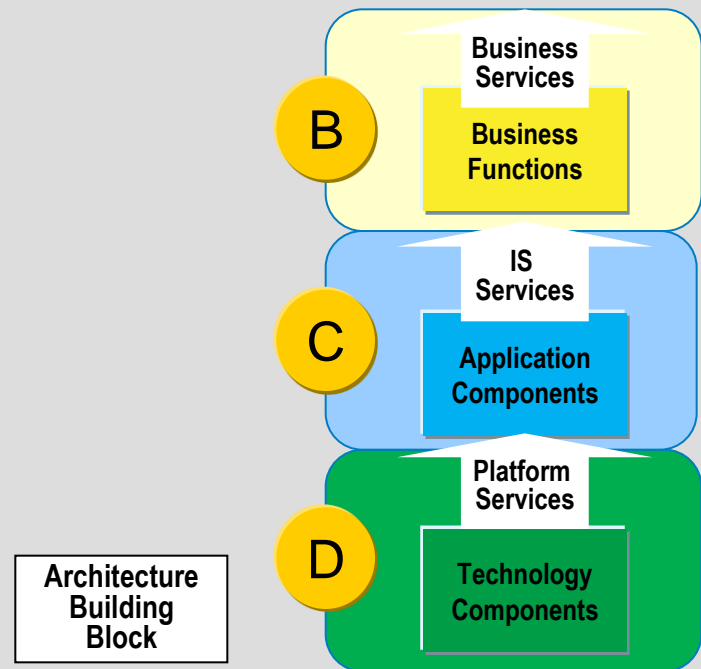


Architecture building blocks are “logical”

- ▶ An abstract specification of an enterprise /system that is
 - Sufficient to describe the essence of the business and its rules
 - But sufficiently abstract – or logical - to be portable
 - Composed of Architecture Building Blocks which “describe the functionality ... without the detail introduced by configuration or detailed design.”
- ▶ The basis of the “enterprise architecture” to be maintained and governed after solutions have been implemented.

Architecture definition document

Descriptive artefacts identify architecture building blocks and how they are related



Solution building blocks are “physical”

E Road map

Solution Building Blocks

E: “The first phase... concerned with ... how the Target Architecture will be implemented.”

“[Identifies] SBBs which could address gaps and their associated ABBs.”

“Physical elements in an EA may still be *considerably abstracted from Solution Architecture, design, or implementation views.*”

F Migration Plan

“Changes to the ABBs and interfaces will require architecture co-operation.”

“Changes to the SBBs are not a major issue as long as the interfaces and business rules are respected, and the SBB is made available across the organization.”

G Architecture Contracts

“ensure conformance by implementation projects with the defined architecture”

“Gaps in the existing enterprise solutions framework need to be identified and the specific SBBs required to fill these gaps will be the identified by the solutions architects.”

H Architecture Compliance Reports

“For maintenance changes - the outputs are Architecture updates”

“The solutions or their operational context may change, while the architecture specifications may not change”

Who is TOGAF for?

▶ "In all cases, it is expected that the architect will adapt and build on the TOGAF framework in order to define a tailored method that is integrated into the processes and organization structures of the enterprise."

TOGAF 9.1

- ▶ TOGAF can be, often is, tailored for solution architecture projects.
- ▶ But does not give solution architects all they need.
- ▶ And the ADM was written with strategic cross-organisational EA in mind

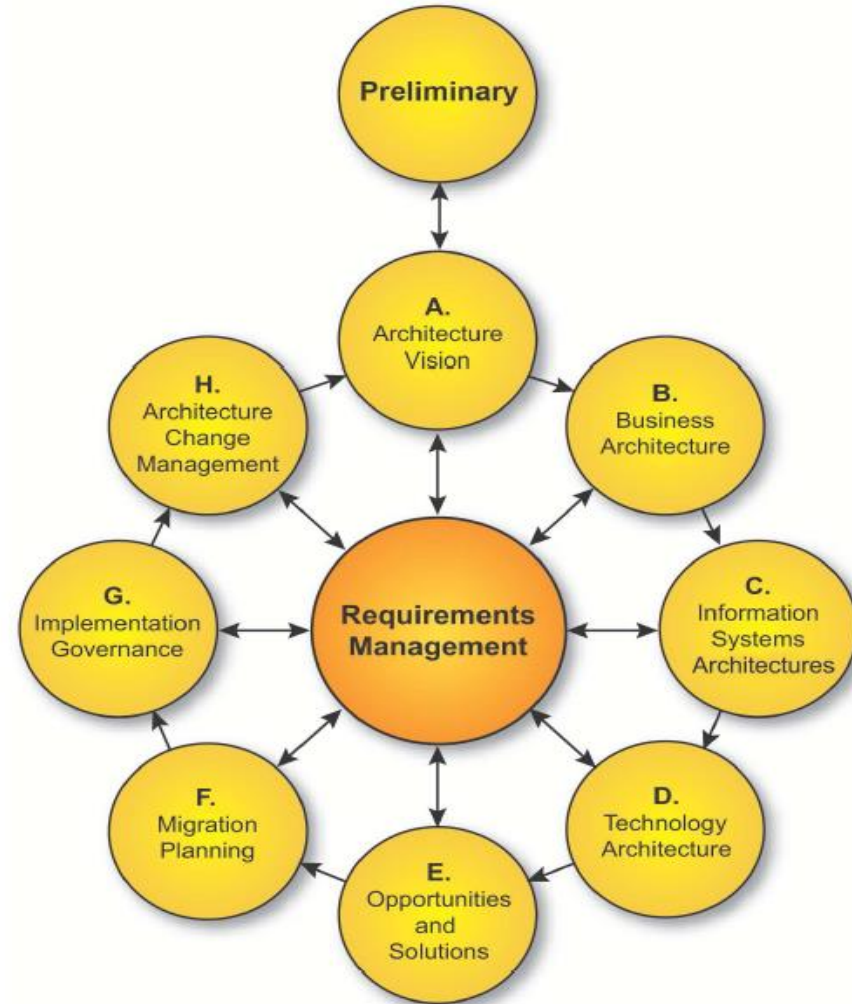


Figure 5-1 Architecture Development Cycle

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- ▶ “Much of the battle in the Preliminary Phase and Phase A is to establish the EA team as having
 - board-level, strategic and cross-organisational authority,
 - to put in place the top-down command and control structure
 - needed for cross-organisational EA to be successful.”

Chapter 1

- “horizontal - against the grain of normal vertical corporate governance.”

Chapter 32

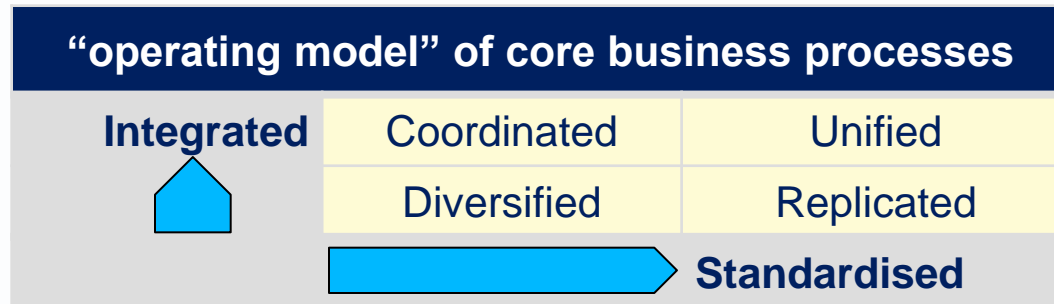
In other words, TOGAF is for EA, and
EA is for strategic and cross-organisational change

Remember TOGAF was initially written for EA

- ▶ If you view TOGAF *only* as a project or change management framework for solution or infrastructure architects, you don't really get the intention, because:

“TOGAF is intended to be a framework for

- “conducting **enterprise architecture.**”
- “managing the spectrum of change required to **transform an enterprise towards a target operating model**”



TOGAF expects enterprise architects to

1. “optimize across the enterprise the often fragmented legacy of processes (both manual and automated) into an integrated environment...”
2. “EA regards the enterprise as a system or system of systems.”
3. “The architecture crosses multiple systems, and multiple functional groups within the enterprise.”
4. “EA structures the business planning into an integrated framework...”
5. “... that is responsive to change and supportive of the delivery of the business strategy.”
6. “a structuring of Architecture Building Blocks (ABBs) which are reusable architecture assets.”
7. “Architecture assets ... are applicable across the entire scope of the EA.”
8. “Subsequent executions will be easier, as more and more architecture assets... populate the organization’s Architecture Repository.”
9. “a procurement specification that [enables] open systems”

1. Tidy up the mess of point solutions in the enterprise
2. Treat the whole enterprise as a system
3. Build a cross-organisational picture of the enterprise
4. Integrate the enterprise
5. Enable business agility
6. Facilitate reuse
7. Reuse assets across the enterprise
8. Use successive architecture development cycles to populate the [abstract] architecture repository
9. With portable vendor/technology neutral specifications

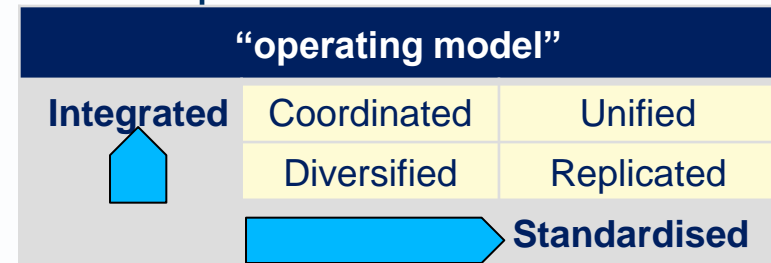
EA is expected to – maintain a repository

1. Tidy up the mess of point solutions in the enterprise
2. **Treat the whole enterprise as a system**
3. **Build a cross-organisational picture of the enterprise**
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9. **With portable vendor/technology neutral specifications**

“the EA is permanent and manages the *EA artefacts* delivered by projects.”
TOGAF

EA is expected to - integrate and increase agility

1. Tidy up the mess of point solutions in the enterprise
2. Treat the whole enterprise as a system
3. Build a cross-organisational picture of the enterprise
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Let's go back, way back

- ▶ TOGAF reflects the philosophy of TOG

1993-1996: the formation of The Open Group

- ▶ An end to the Unix wars...
- ▶ In 1993, Novell transferred the UNIX trademark and certification rights to the X/Open Consortium.
- ▶ In 1996, X/Open merged with Open Software Foundation, creating **the Open Group**.
- ▶ Open Group standards now define what is a **Unix**® **operating systems**
 - qualified to use the UNIX trademark.

The service-oriented philosophy of POSIX & UNIX standards

- ▶ Starting in 1998, the Open Group and IEEE started the Austin Group, to provide a common definition of POSIX and the Single UNIX Specification.

External logic	POSIX.1 describes an operating system by its external behavior <ul style="list-style-type: none">- as an interface to services (in C source code)- without regard to internal components or structure
Internal implementation	POSIX-compliant operating systems can, internally, implement the same interface specification in whatever manner is appropriate.

The philosophy of the Open Group is

- ▶ **Open standards**
 - ▶ Public domain
 - ▶ Backed by industry

- ▶ Like the POSIX and UNIX standards
 - **Service-oriented**
 - **Vendor and technology-neutral**

- ▶ With the idea that systems should be
 - **Interoperable**
 - **Portable**

Pressure to define an IT architecture framework

- ▶ The Clinger Cohen act
- ▶ dictated how every US federal government agency should reform its IT management
- ▶ established in law that the CIO of a federal agency is responsible for **developing, maintaining and facilitating the implementation of a sound and integrated IT architecture.**

- ▶ This and other drivers put pressure on enterprises to
 - tidy up their messy IT estate,
 - rationalise the “building blocks” that provide IT services
 - document them in a **vendor-neutral** way

Vendor-neutral technology specification

- ▶ USA federal government guidance advised agencies to have
 - **Standards**
 - **A Technical Reference model (TRM)**

External logic	A TRM describes an enterprise's infrastructure technologies by their external behavior <ul style="list-style-type: none">- the platform services they provide- without regard to their implementation by any specific vendor or technology
Internal implementation	TRM-compliant technologies can implement the TRM in whatever manner is appropriate to the enterprise

- ▶ By following the service-oriented philosophy of The Open Group
- ▶ A TRM assists in vendor-neutral technology procurement

So, TOGAF was built around a service-oriented TRM

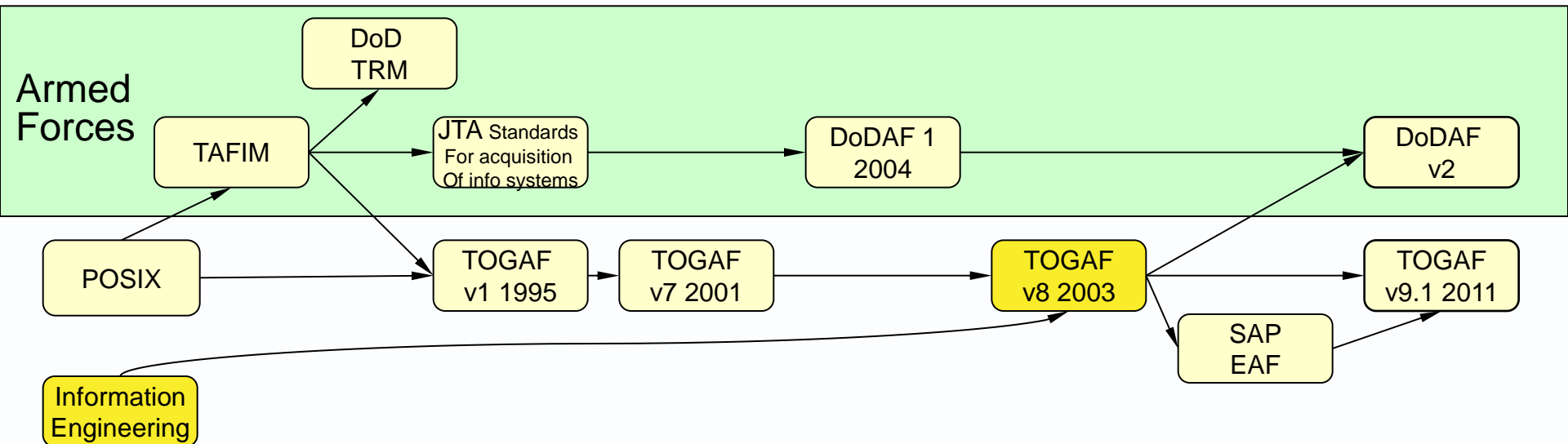
- ▶ TOGAF (v 1 to 7) was primarily about describing the IT services a business needs - at a more abstract level than source code - in portable and interoperable IT services specification.



- ▶ Then using that specification to
 - tidy up a messy IT estate,
 - rationalise the “building blocks” that provide IT services
 - document and procure them in a vendor-neutral way

2002, TOGAF 8 embraced business architecture

- ▶ Adopted IE-style "structured analysis" for business architecture



- ▶ TOGAF takes a holistic view
- ▶ IT systems exist to provide information services to businesses
- ▶ A business exists to provide business services to external entities

TOGAF's view of Business Architecture

- ▶ The business architecture is the primary architecture.
- ▶ But the focus is on business roles and processes supported by IS
- ▶ (rather than on human nature, management culture or organisation design)

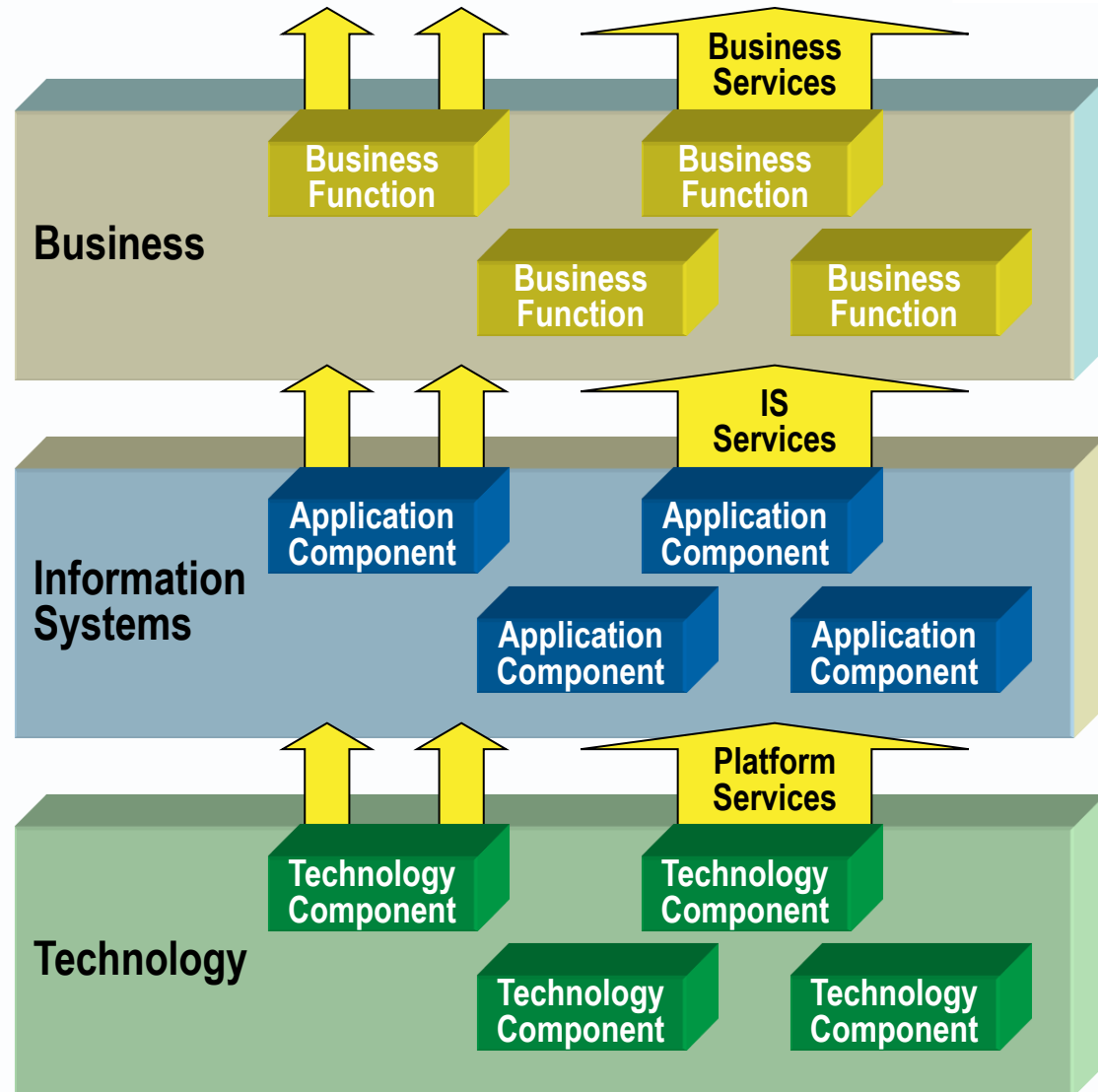
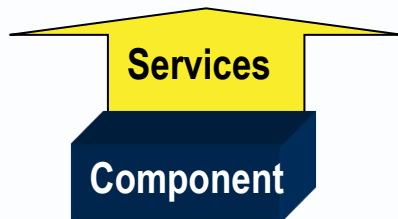
Business - roles and processes supported by IS

Information Systems - digitised business apps and data

Technology - infrastructure platform for business apps

TOGAF's 3 architecture domains and 6 essential entities

- ▶ This 3-layer view is commonplace in architecture frameworks



Today, TOGAF is centered on the business app portfolio

- ▶ Business apps are at the heart of the TOGAF meta model
- ▶ IT technology / infrastructure / operations are addressed only lightly
- ▶ As word counts suggest

Architecture	5,589
Business	2,059
View	1,836
Data + Information	1,704
Model	1,408
Application (business)	1,389
System (mostly business app)	1,357
Service	1,162
Process (mostly business)	1,098
Organization	945
Management	941
Change	726
Technol....	673
Function (mostly business)	663

Solution	575
Plan	542
Governance	541
Capability	501
IT (embraces IS)	498
Interop + integrat	471
User	354
Actor	348
Strateg	266
Design	262
Technical	215
Customer	142
Business process	117
Enterprise arc...	81
Platform	44
Developer	40
Solution arc...	14
Operator	6

▶ The Open Group is

- “a vendor-neutral and technology-neutral consortium,
- whose vision of Boundaryless Information Flow™
- will enable access to integrated information,
- within and among enterprises,
- based on open standards and global interoperability.”

Next slide

Hence, TOGAF aims to help enterprises avoid or overcome:

1. Vendor and/or technology-dependence
2. Data locked in inaccessible silos
3. Data disintegrity
4. Applications that cannot share data
5. Applications that cannot be ported between technology environments.

- ▶ “1. A trademark of The Open Group.
- ▶ 2. A shorthand representation of “access to integrated information to support business process improvements”
- ▶ representing a desired state of an enterprise’s infrastructure specific to the business needs of the organization.
- ▶ An infrastructure that provides Boundaryless Information Flow has open standard components that provide services in a customer’s extended enterprise that:
 - Combine multiple sources of information
 - Securely deliver the information whenever and wherever it is needed, in the right context for the people or systems using that information.”

A banner to follow
A vision rather than a plan..

- ▶ More memorable as the US Air Force concept of
- ▶ "A5 Interoperability"

- ▶ The required data is available
 - Any time,
 - Any where, and in
 - Any way, by
 - Any one, who is
 - Authorized

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“Operating model” for core business processes

High integration	Coordinated	Unified
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- ▶ There is much more explanation of TOGAF at avancier.co.uk
- ▶ And the TOGAF tutor's dilemma follows here >

TOGAF is a management framework for EA

- ▶ A challenge for EA
 - Can you get enough business management engagement to do EA, and so use TOGAF as intended?

- ▶ A challenge for SA
 - Does TOGAF give solution architects what they want?

- ▶ "As an open framework, [selective] use is encouraged....
- ▶ In all cases, it is expected **that the architect will adapt and build on the TOGAF framework in order to define a tailored method that is integrated into the processes and organization structures of the enterprise.**"

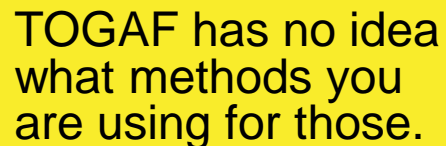
TOGAF 9.1

Ad hoc use of TOGAF is fine

- ▶ Elements of TOGAF are in used
 - ▶ solution architecture
 - ▶ business analysis
 - ▶ even technical architecture.

- ▶ But a method written for cross-organisational and strategic EA cannot provide everything a solution architect wants.

- ▶ Moreover, TOGAF cannot definitively link EA to
 - ▶ Business Planning
 - ▶ PMO
 - ▶ SDLC
 - ▶ ITSM



TOGAF has no idea what methods you are using for those.

"four management frameworks...have to work closely together..."

YOU have to make them work together

▶ Business Planning

- conceives, directs, and provides the resources for all activities required to achieve concrete business objectives/outcomes.

▶ Enterprise Architecture [EA]

- structures and gives context to activities delivering concrete business outcomes, primarily but not exclusively in the IT domain.

▶ Portfolio/Project Management [PMO]

- co-ordinates, designs, and builds the business systems that deliver the concrete business outcomes.

▶ Operations Management [ITSM]

- integrates, operates, and maintains the deliverables that deliver the concrete business.

Adapting TOGAF can take it away from EA

Consultants, solution and technical architects commonly

- ▶ bend TOGAF to tactical solution architecture
 - rather than for enterprise architecture
- ▶ use TOGAF in a selective and sketchy way
 - rather than follow the ADM process steps
- ▶ are given SBBs to implement
 - rather than define logical ABBs and then select best -fit physical SBBs.
- ▶ do not populate the “Architecture Continuum” with logical, portable and reusable ABB specifications, or leave behind any persistent and maintainable EA

““the EA is permanent and manages the *EA artefacts* delivered by projects.” TOGAF

So, the TOGAF tutor's dilemma

- ▶ Should I teach TOGAF for cross-organisational EA, as it is intended?
- ▶ Or should I teach TOGAF as a generic management process you can adapt for any large-scale change project that requires architectural thinking and documentation?