

Better Together Series

Value Realization Framework and The Open Group Architecture Framework

*Contact: Mike Walker
Architect | Value Realization Framework | Enterprise Strategy Program*

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The Authors Who Brought You This Guide

This guide was produced by the following Enterprise Strategy and Architecture specialists:



Author

Mike leads the design of how architecture guidance is created for Microsoft's Enterprise Strategy & Architecture Services Offering. He is responsible for the creation of strategy, executive briefings and the execution of Microsoft's vision on Enterprise Strategy and Architecture. Mike obtained his Open CA Distinguished Chief Architect certification. He is quoted and referenced throughout the industry as an expert in architecture shown through in articles and books such as, "Microsoft 2.0: How Microsoft Plans to Stay Relevant in the Post- Gates Era", where he is named as a thought leader. His frameworks are not only used by Microsoft Corporation but have been featured in media outlets such as: InfoWorld.com, CNN.com, eWeek.com, ComputerWorld.com, and demonstrated in keynotes by Bill Gates at industry events. Walker's insights can be found on his blog www.MikeTheArchitect.com.



Co-Author

Pietro N. Romano has close to 20 years of experience in the IT industry, working for companies mainly in the Telco and media sectors, including Telefónica.

Joining Microsoft in 2000, working in both Services and EPG, and in Enterprise Strategy for the last seven years; he currently also leads the Western Europe Enterprise Strategy Community.

Pietro holds a number of Microsoft and general industry qualifications, including MCSE, MCPD, TOGAF, PMP and CITA-P. He speaks regularly on architecture subjects at Techready and has also published in the Architecture Journal.

Contributors and Reviewers

Many thanks to the contributors and reviewers:

- John DeVadoss
- Yoav Intrador
- Renaldo Scalabrino
- Jeff Fryling
- Brant Zwiefel
- Tareq Ayub
- Rick Maguire
- Alan Hakimi

If this guide helps you, we would like to know. Tell us by writing a short summary of the problems you faced and how this guide helped you out. Submit your summary by email to MikeWalk@Microsoft.com.

Introduction

This article is part of the Value Realization Framework (VRF) Better Together Series. The Series was created to provide insights into how VRF works with, aligns with and/or provides additional capabilities to existing frameworks or methodologies. By focusing on the qualities of each framework, this series examines how each complements the other. Highlighting the distinguishing differences illustrates how you can balance aspects of the two frameworks in a way that advances value. This specific Better Together Series centers on the Value Realization Framework (VRF) and The Open Group Architecture Framework (TOGAF).

This article contains the following information:

- Key differences between VRF and TOGAF
- Similarities between the frameworks
- How to use the strengths of each framework
- Mapped process linkages
- TOGAF and VRF in Action

The level of detail provided in this overview assumes that the reader is an experienced Microsoft Enterprise Architect, with a breadth of skills for delivering effective technology consulting services. This document does not provide introductory-level instruction for the key models and techniques used in the process, so the reader is assumed to have prior knowledge of these tools.

The Frameworks

This section of the article will provide an overview into each framework, for a general understanding of the primary goals and capabilities each offer. Through this, the Microsoft Enterprise Architect and delivery team will learn about the high-level structures, terminology, and components of VRF and TOGAF.

With that grounding, the Microsoft Enterprise Architect can better understand how to evaluate and utilize the differences, similarities and overlaps of the frameworks.

The Open Group Architecture Framework

The Open Group Architecture Framework (TOGAF®) is a framework for enterprise architecture. It is comprised of seven parts that provides a methodology for the establishment of an enterprise architecture practice, capabilities, architecture planning, solution envisioning, solution architecture, enterprise planning and governance of architecture practices and assets.

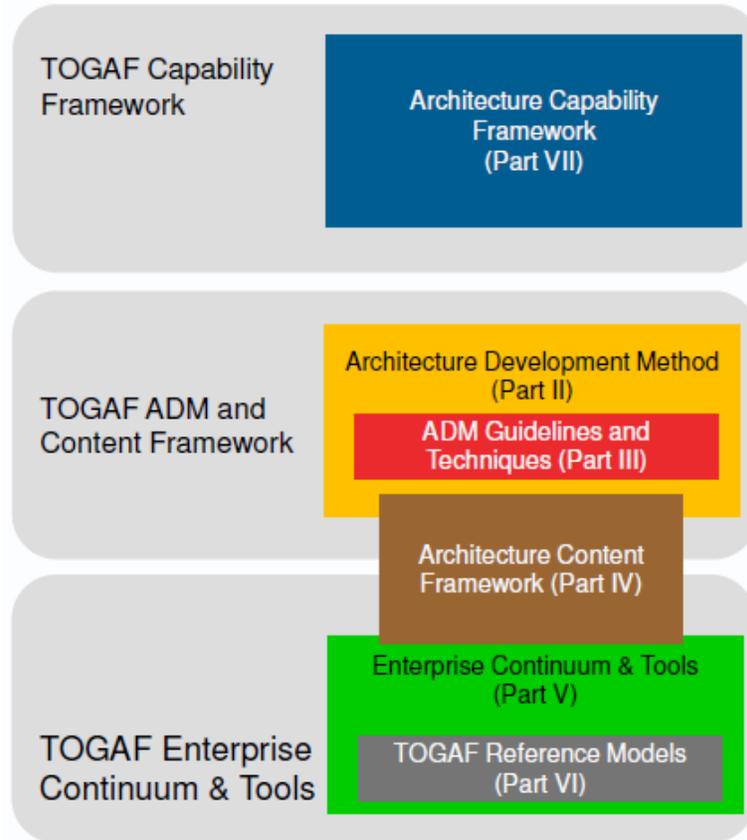


Figure 1: The Seven Parts of TOGAF

The seven parts of TOGAF include:

1. **Introduction** – Provides a high-level overview of TOGAF, general guidelines and the core vocabulary of TOGAF.
2. **ADM** – This is the core of TOGAF. It provides the iterative set of methods for developing enterprise architectures.
3. **ADM Guidelines and Techniques** – Collection of guidelines and techniques for applying the TOGAF ADM.
4. **Architecture Content Framework** – Defined and classified set of artifacts and deliverables that are supported by an underlining meta-model for maximum reusability and application.
5. **Enterprise Continuum and Tools** – Also called a “virtual architecture repository” it provides rationalization, classification and a framework for enterprise architecture knowledge management. This includes reference models and patterns and architected building blocks that are a result of the architecting process.
6. **TOGAF Reference Models** – Set of architecture reference models that include: TOGAF Technical Reference Model and Integrated Information Infrastructure Reference Model.

- 7. **Architecture Capability Framework** – Provides guidance and methods on how to establish and operate and architecture function within an organization that include: organizational models, processes, skills, roles and responsibilities.

For the purposes of this article we will focus primarily on the ADM part of TOGAF. Since VRF is primarily a consulting services methodology for Microsoft the ADM and VRF are closest fits to each other rather than the entire seven parts of TOGAF. Other parts maybe referred to in later sections but will not go into exclusive details.

Grounded in Enterprise Architecture, the TOGAF ADM is commonly referred to as the de facto methodology for the execution of enterprise architecture. TOGAF is on its ninth version and has undergone evolution from a pure IT architecture framework to an enterprise architecture framework. Below is the ADM:

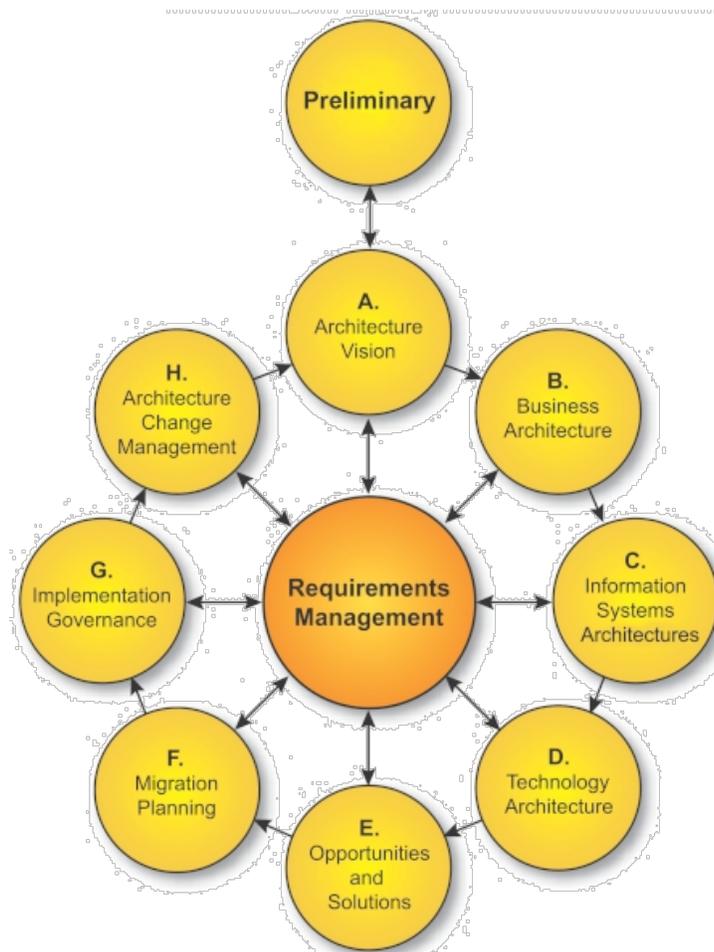


Figure 2: TOGAF Architecture Development Method (ADM)

The core of TOGAF is the Architecture Development Method (ADM). The ADM is an iterative set

of methods for supporting the architecting process. It is split into nine core phases. They include:

1. **Preliminary** – Prepares the enterprise for successful enterprise architecture through the establishment of an EA function. This phase provides the methods to implement the supporting organizational structure, roles, governance and supporting principles for the company's architecture practices.
2. **Architecture Vision** –Is the entry point into the ADM that defines or redefines foundational principles, goals, drivers that will be the basis for all decisions moving forward in the architecting process. Additionally, this phase establishes the necessary architecture engagement management functions such as stakeholder management, budgeting and approval structures.
3. **Business Architecture** – Distills the business strategy, governance, organization, key business capabilities and select processes into a form that can be rationalized and implemented into an architecture definition.
4. **Information Systems Architecture** – Broken into two aspects, data and application, this phase consumes the business architecture to produce a set of logical technology agnostic definitions in models, catalogs or matrices.
5. **Technology Architecture** – Defines the physical rationalization of an architectural solution though mapping application and data components to tangible hardware and software models, catalogs and matrices.
6. **Opportunities and Solutions** – Reviews business goals and targets and matches with current state of the defined architecture to output a set of opportunities and a future state architecture to be rationalized through a series of transition state architectures.
7. **Migration Planning** – Confirms the approach and the transition state architectures to implement the change through management frameworks and prioritization of the effort.
8. **Implementation Governance** – Performs the governance functions while the architecture development is occurring and being deployed.
9. **Architecture Change Management** – Establishes an architecture change management process to ensure that the architecture is fit for purpose and generating value.

The Value Realization Framework

The Microsoft Value Realization Framework (VRF) is the foundation for a series of Microsoft Services Enterprise Strategy offerings addressing the top concern of CIOs: Realizing the value of current and future IT investments. This is achieved by VRF's unique approach to envisioning, defining, and rationalizing business strategy and architecture. From discovery of the strategy to the implementation of solutions that support the strategy, VRF provides continuity across the life cycle, increasing the measurement and achievement of IT value.



Figure 3: VRF Cycle

The major segments of VRF include:

- **360 Assessment** – Rationalizes business strategy into actionable assessments that drive key transformational programs
- **Initiative Planning** – Connects strategy to concrete strategies and roadmaps
- **Value Realization** – Oversight and governance of solution architecture and value measurement

Contained within VRF is a collection of proven industry practices combined with unique, proven Microsoft methods, models, and tools.

Specifically, VRF is designed to address the following customer concerns:

- **Business and IT Alignment** - Business strategy and goals may be well understood but traceability is not clearly demonstrated in the IT strategy, prioritization of activities, and level of investment

- **Forecasting Value** - Value prediction is based on “best guesses,” with little, if any, basis in historical evidence
- **Quantifying Value** - Value realized from IT investments is elusive and difficult to measure, which can make the value of IT unknown or unqualified by repeatable metrics
- **Agility** - If it isn’t understood or rationalized in a manner that is actionable, IT activity can be slow to reflect changes in the business strategy
- **Maximize Value of Microsoft Investments** - Customers may not believe they get the full potential ROI from their Microsoft investment

Contrasting VRF and TOGAF

As seen in the previous sections that describe each framework independently, there are similarities between VRF and TOGAF. Each one has similar drivers that include:

- **Value realization methods and models** – Both frameworks have these methods. Within TOGAF 9 there is a specific method and a set of models called Value Realization that address value.
- **Beneficial business outcomes** – Both frameworks discuss in length about benefits and value measures. VRF has key information milestones that address value and TOGAF has KPI’s throughout each phase of their ADM.
- **Rationalization of Business Strategy** – Neither framework directly addresses the creation of strategy. However, methods for consumption and translation of strategy are provided in both.
- **Business Architecture** – While VRF doesn’t fully address the business architecture domain completely like TOGAF; VRF does fulfill the portions that enable the goals of the ESP program and the establishment of a set of programs of change for Microsoft customers.

With all the similarities these two frameworks are also very different from each other. Both share common traits but have varying levels of breadth and scope. VRF has very specific goals for Microsoft customers while TOGAF focuses on broad general value propositions.

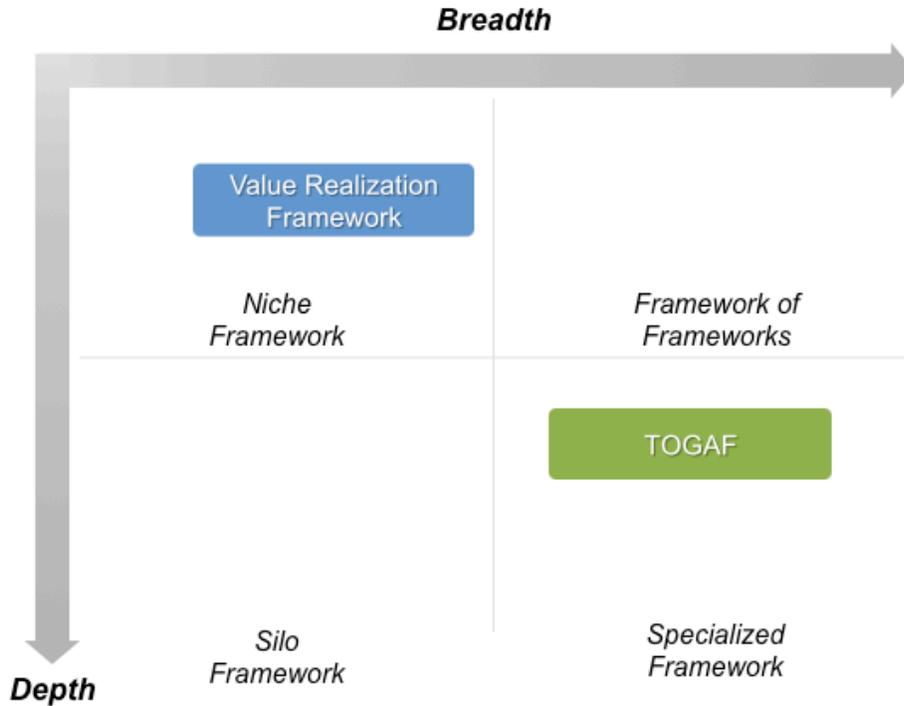


Figure 4: Framework context

As shown above, each addresses a different level of detail. The models show two dimensions. On the first axis, breadth is represented and on the second axis depth. These two broad terms are specific to the enterprise strategy and architecture domain. Breadth provides perspective on the amount of coverage of the complete enterprise strategy and architecture domain. Depth highlights the amount of detail of the coverage areas of this domain.

When contrasting the two frameworks in terms of breadth and depth it highlights how different they are. VRF is primarily a Microsoft tailored framework to support the goals and objectives of customers that purchase a consulting services offering from Microsoft. TOGAF on the other hand, is a general-purpose framework that is agnostic that is meant to address a broader set of goals. It provides a framework that can be extended or components replaced to address those goals but also provide a framework that produces results in a repeatable way.

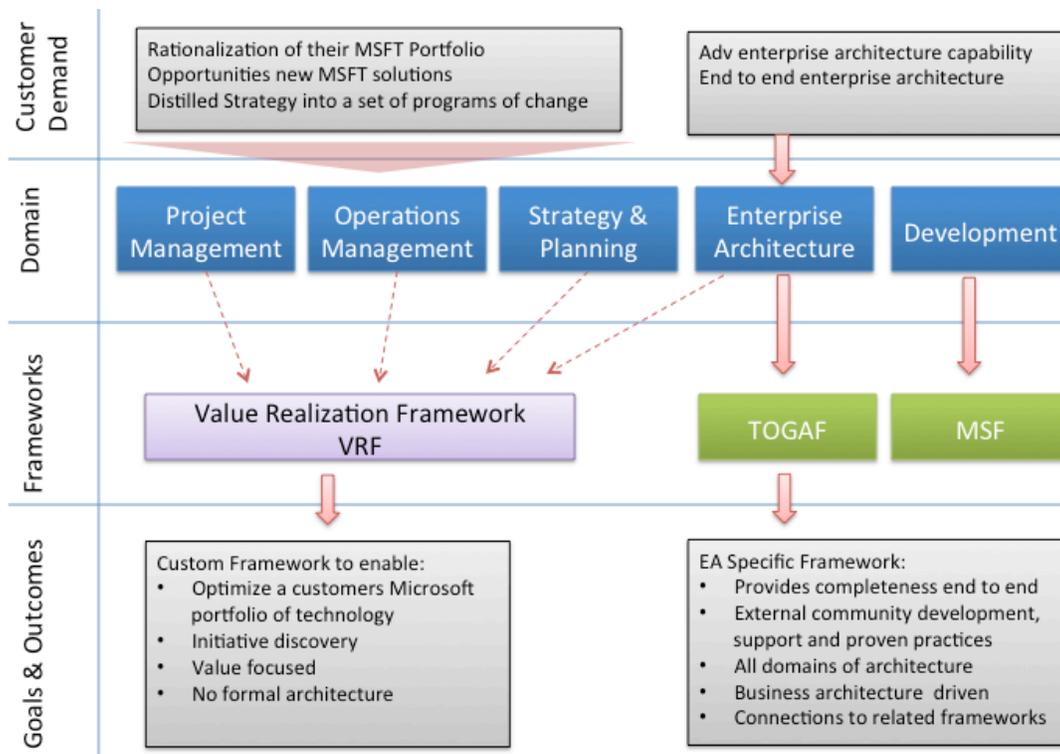


Figure 5: Framework composition

In figure 5, the illustration shows the drivers for each framework. These drivers are in the context of customer demand. The customer demands are tied to the traditional enterprise IT domains of project management, operations, strategy and planning, enterprise architecture and development.

The two frameworks have very similar audiences but the level in which each framework addresses the domain of enterprise architecture is different. VRF focuses much more broadly from a portfolio perspective and TOGAF provides deep portfolio and enterprise architecture perspectives. This is shown in figure 5,

TOGAF provides full coverage of the domain of Enterprise Architecture. It is similar to portfolio planning seen in VRF but covers many other areas of EA. VRF, on the other hand, focuses on the definition and planning aspects that then drive solutions with the corresponding governance.

First, there are small overlaps between the frameworks. This is due to the primary drivers for each, as shown in Table 1.

VRF Primary Drivers	TOGAF Primary Drivers
<ul style="list-style-type: none"> IT Strategy and Planning 	Full coverage of the business driven Enterprise

<ul style="list-style-type: none"> • Connecting Strategy to Execution • Value Realization 	<p>Architecture domain that includes Strategy, Business Application, Information, Technology and Security Architecture.</p> <ul style="list-style-type: none"> •
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Table 1: Primary Drivers for Framework Use

These drivers force the frameworks down a path with very specific directions and outcomes. VRF is focused on business strategy definition and planning, whereas TOGAF focuses on the optimization and augmentation of that strategy.

Looking at these frameworks from a contextual perspective, VRF and TOGAF can be represented as associated with either the strategic, operational, or delivery aspects of working with customers. As shown in **Error! Reference source not found.**, the three core context groups align with the frameworks most appropriate for the level and depth of the problems they are designed to address.

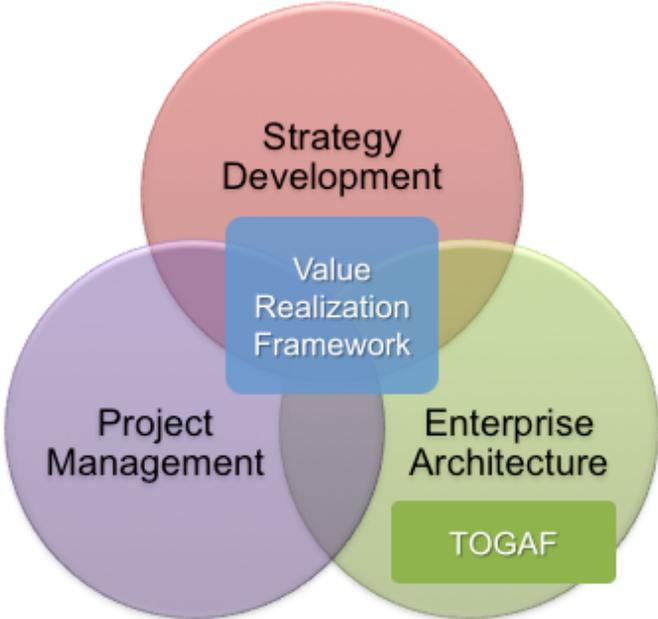


Figure 6: Context Groupings of Frameworks

The context grouping names are derived from standard terms used in the industry to describe other frameworks. Below are the definitions of each context group:

- **Strategy Development** – A framework that operates at the most senior levels of the organization, influencing and making decisions, and one that primarily delivers plans and strategies across solution and organizational boundaries
- **Enterprise Architecture** – A framework that operates across the business and IT to rationalize strategy, govern IT assets and processes, architect solutions and foster innovation.
- **Program/Project Management** – A framework that operates within the business units or IT departments responsible for planning, building, and managing the implementation solutions. This also address the greater IT or business portfolio projects that manages performance and governs of solutions included in the IT portfolio or in a production environment.

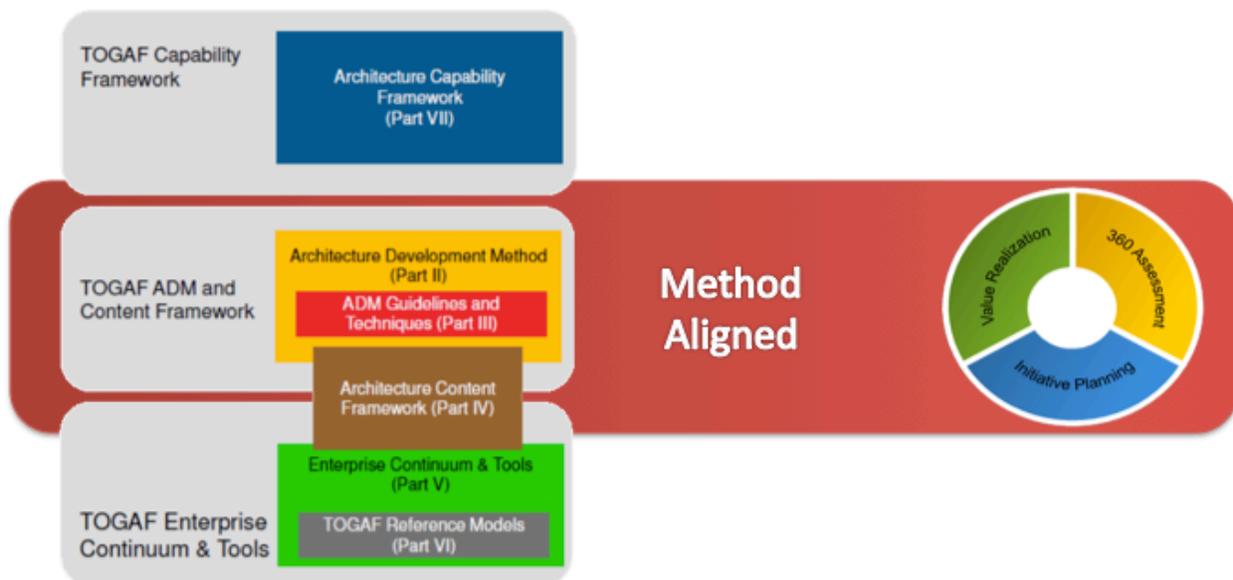


Figure 7: VRF and TOGAF Alignment

There are four core differences in these frameworks:

1. **Differing of goals and objectives** – As discussed in this section, the goals and objectives of each framework are very clearly different. These very material differences are enough to separate these two frameworks into two entirely different classes.
2. **Purpose of Framework** – TOGAF is built to apply to most if not all enterprise architecture methodology needs and can be extended as a base for other methodologies. VRF is very specific to the Microsoft Enterprise Strategy Program (ESP) by design. VRF provides a tailored best of breed approach for a very specific set of outcomes for customers.

3. **Depth of Artifacts** – For the objectives of which is defined for VRF, it goes very deep in the definition of artifacts, deliverables and a fi for purpose method. The TOGAF framework can't go into that level of detail given it has to apply to most if not all scenarios. Given its purpose it is forced to stay at a higher level of abstraction.

VRF and TOGAF Better Together

Once the basic concepts and approaches are clearly understood, it is apparent that these two frameworks most certainly complement each other. While there are minor overlaps, those overlaps are easy to understand and overcome, given the different approaches of each framework.

Identifying the how the frameworks can supplement each other is key. Table 2 summarizes some points of intersection.

TOGAF Provides VRF	VRF Provides TOGAF
<ul style="list-style-type: none"> • TOGAF provides VRF architecture focus • Extends reach of VRF • Key methods for assessments • Additional related artifacts, models, catalogs and matrices • A framework with classification, vocabulary and meta-model • Natural extension point of VRF method engagement 	<ul style="list-style-type: none"> • Additional proven models for developing strategy • Microsoft's thought leadership on business capability modeling • Additional assessment materials • Detailed industry context • Wealth of IP and industry learning's from across Microsoft and its customers

Table 2: Coordination between Frameworks

When Do I Use Each

Consuming these frameworks is relatively straightforward given that they have minimal overlap. Below are appropriate points at which to use TOGAF with VRF:

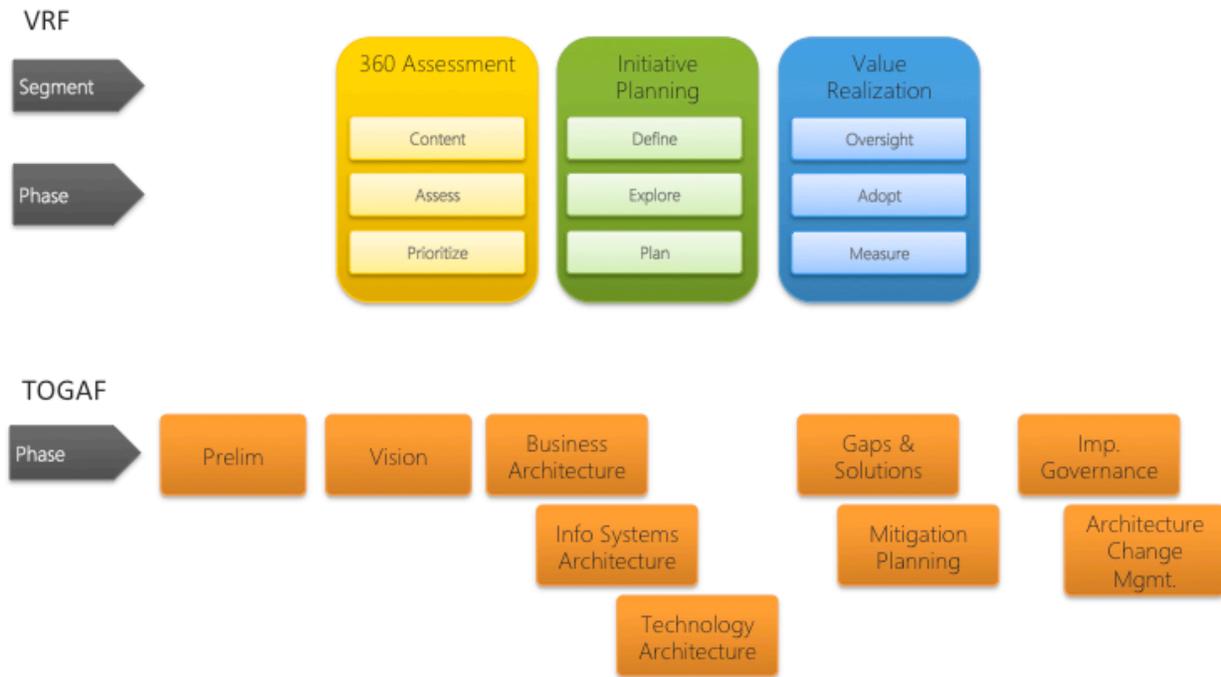
- **Architecture Development** – VRF provides methods for distilling a business strategy and assessing how to realize that strategy. However, detailed architecture methods are not built into VRF. If it is required to do detailed enterprise architecture work TOGAF provides the most robust methods of these two frameworks.
- **Familiarity** – TOGAF is the de facto standard for enterprise architecture. A customer may have standardized on TOGAF as their method for enterprise architecture and planning. It will be important to have a common vocabulary with the customer. Leveraging the

vocabulary or even TOGAF artifacts in a VRF engagement may reduce the amount of friction of complexities in a VRF engagement.

- **Connecting VRF to Architecture** - When needed, complement VRF’s focus on business strategy, portfolio rationalization and planning to include architecture this will bridge the strategy elements to the implementation aspects through the usage of the TOGAF ADM.
- **Extend Business Architecture** - Leverage additional Business Architecture methods, models, catalogs and matrices found in the TOGAF ADM Business Architecture phase.
- **Governance** – VRF is focused on realizing value at a macro level. TOGAF can supplement this by adding its governance controls, tollgates, reviews, and sign-offs.

Mapping the Frameworks

By “decomposing” the frameworks down to the next set of layers, the Microsoft Enterprise Architect and delivery team can gain insights into the interrelation of the micro-level components. These components map really well into the VRF Segments and Phases. TOGAF also decomposes the ADM into phases. Below in



, the framework components are depicted with definitions of their layering, along with the deliverables or additional methods that compose them.

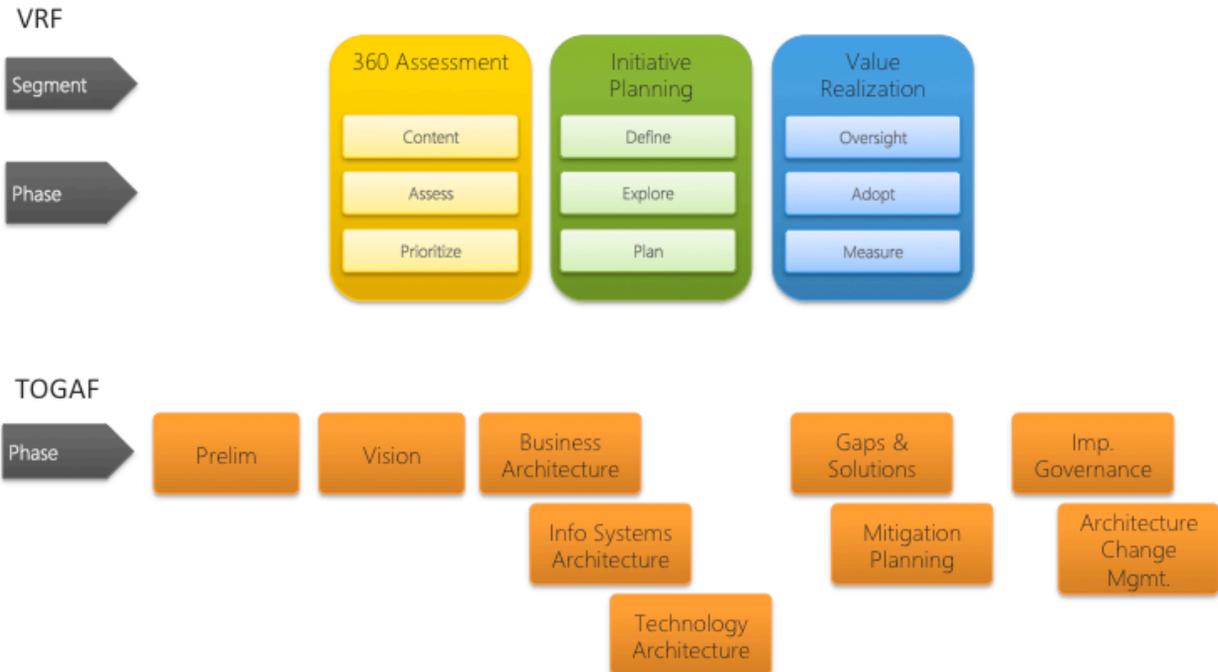


Figure 8: Elements of TOGAF and VRF

For simplification purposes both VRF and TOGAF have been flattened above in the illustration in **Error! Reference source not found.** It shows the VRF horizontally, with Segments, Phases grouped in a logical manner. TOGAF on the other hand is more of a flat phase structure so grouping was not appropriate. However, some of the ADM phases have been staggered to show closer alignment to VRF visually. Additionally, the requirements management phase is excluded from the illustration.

There are slightly different meanings for the terms used across the frameworks to describe various levels of abstraction. Additionally, the approaches of each framework to the next level below segments and phases are different.

Structurally the TOGAF ADM is very flat with phases and activities or tasks. The rationale behind this flat structure is to be as modular as possible without introducing too many complexities in hierarchy. Within each phase of the ADM it has a set of concrete activities that describe methods, models, catalogs, matrices, tools, templates, and guidance. Within VRF, there is a layer between the Activities that is described in VRF Phases. These VRF segments and phases map to the phases in the TOGAF ADM.

Only a subset of VRF segments and phases interact with the TOGAF ADM phases. **Error! Reference source not found.** shows these high-level mappings. Relationships between these two frameworks are represented in the diagram with colored and solid or dashed lines.

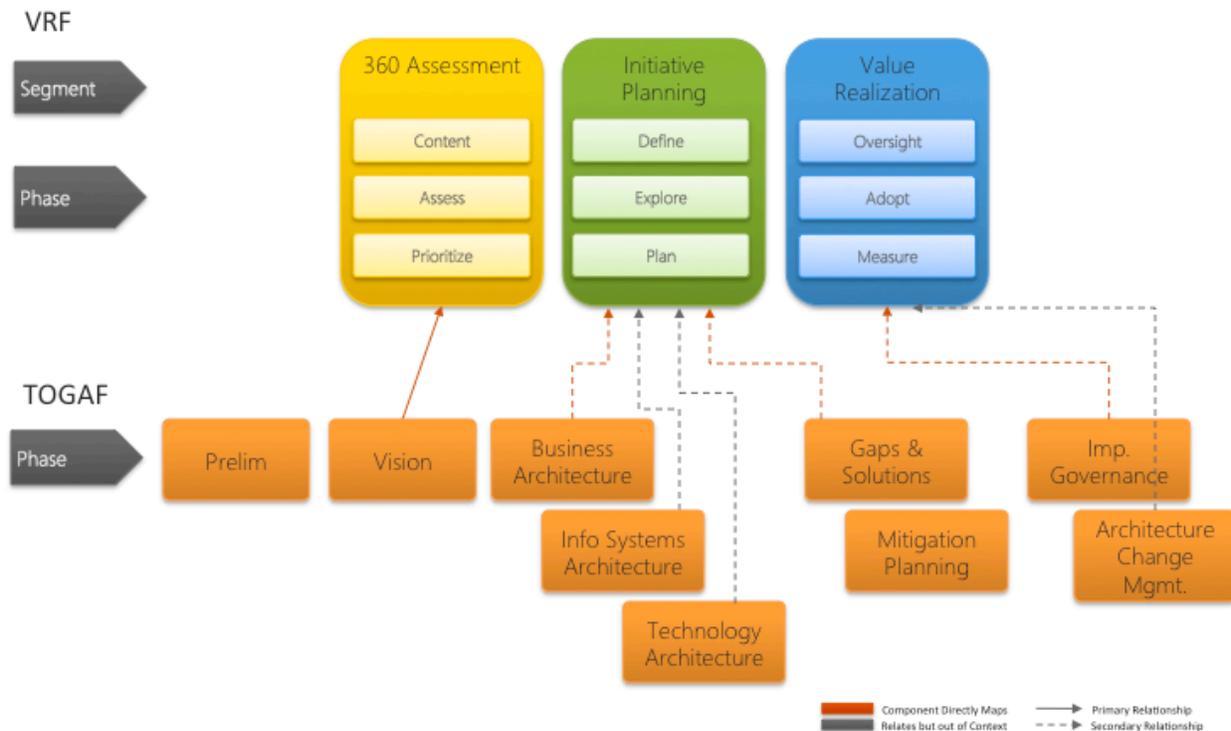


Figure 9: VRF and TOGAF Mapped

While there are very few direct intersections, the insights gathered from the model shown in **Error! Reference source not found.** show how these two frameworks really map. As shown above, the only phase that directly maps is the ADM Vision phase and the 360 Assessment segment. All others are an indirect relationship.

There are a couple of reasons for the indirect relationships between these frameworks. Those include:

- **Scope differences** – TOGAF has a different scope than VRF. Focusing on the entire domain of enterprise architecture rather than a specific aspect as seen in VRF.
- **Similar but different** – Both focus on translating strategy into a workable form, namely business architecture. However, there is an indirect relationship due to ADM methods to be used for the same process of VRF or at a much more detailed level. VRF is primarily used for the purpose while TOGAF was constructed to fit many scenarios at differing levels of abstraction, not just enterprise strategy or portfolio rationalization.

There are minimal overlaps in the execution of these two frameworks if they are used for the proper purposes. Ensuring that each framework is fit for purpose and is ended at the appropriate time is very important. Where issues can occur is when a framework is used outside its core purpose or goals in which it was built to achieve.

Conflicts can occur in the following areas if these are used in conjunction with each other:

- **Vocabulary** – The two frameworks currently have a slightly different vocabulary than each other that could cause confusion with customers.
- **Method Conflicts** – The ADM Vision phase and the 360 Assessment phase have a great deal of overlap. To avoid conflict, consider not using both but executing on one. There will be downstream method conflicts in regards to the sequencing of activities. Identifying and resolving these conflicts will be critical to ensure a smooth engagement.
- **Role Definition** – The role of Enterprise Architect is different between the frameworks. The VRF role is representative of a portion of the EA work that happens, while the TOGAF version is the standard definition of an EA.

TOGAF and VRF in Action

This section is based on a real scenario of an Enterprise Strategy Engagement where the TOGAF ADM was employed, with the intention of showing how TOGAF and VRF can be combined in practice. Although the engagement was carried out prior to the introduction of VRF, many of the same Enterprise Strategy methods, models and tools did exist and were used. These included Benefits Dependency Networks and Technology Roadmapping.

While based on a real scenario certain details are simplified to protect confidentiality, provide brevity and to allow us to focus on salient points, whilst other areas have been extended to demonstrate how VRF could be employed. To this end, we have structured this section around the major phases of VRF, integrating into the narrative the TOGAF ADM activities that were carried. We will therefore go through the following VRF phases:

- Engagement Governance
- 360 Assessment
- Initiative Planning
- Value Realization

Leveraging TOGAF ADM within Engagement Governance

Governance in VRF includes the vital activities of defining and managing Scope, managing stakeholders and tracking and periodic reporting.

The customer in question was a division of a global Telco provider, which serves end customers through its own complex, bespoke hosted messaging and collaboration platform. Whilst still a commercial success, the customer recognized that the platform needed to evolve further in order to be able to meet the demanding needs of the market place. The objective of the engagement was to analyze the Impact of the Integration of new business services on the Hosted Platform and propose a detailed roadmap. The customer's technology platform included Microsoft Exchange, Sharepoint, and OCS, with a large amount of custom .Net development for Webs, Business Logic and Web Services.

Key customer stakeholders included the upper level business managers, and IT managers from architecture and operations. Meetings and reporting were carried out on a weekly/monthly/quarterly basis as needed. Key stakeholders were familiar with TOGAF and wanted to structure the engagement around ADM phases.

With respect to VRF Engagement Governance, the following table maps the TOGAF ADM phases to the relevant VRF Deliverables:

VRF: Engagement Governance	
TOGAF Phase	VRF Deliverable/Tool
Preliminary Phase	<ul style="list-style-type: none"> • Work Order • Service Delivery Plan • Kick-Off Deck
Requirements Management	<ul style="list-style-type: none"> • Service Delivery Plan • Benefits Dependency Network (BDN)

ADM: Preliminary Phase

The Preliminary Phase purpose was to understand how architecture work was carried out at the customer: organization, frameworks, maturity, etc. As stated previously, some key stakeholders had experience of TOGAF, although the level of maturity was generally low. The decision was taken to follow the ADM phases, adapting work products to customer specific needs.

The Engagement Scope was described as follows:

- Enterprise: Only target the Organizational Unit, No External Partners/Suppliers
- Architectural Levels: Business, Data, Applications and Technology
- Vertical Scope: Level of Detail: Architecture, Detailed Designs , ready for Implementations
- Time Horizon: 12 months (initially)

ADM: Requirements Management

Requirements Management consisted in identifying, analyzing and controlling customer requirements identified throughout the engagement.

The engagement brief was to analyze the current system state and map out future states, based on Marketing and upper level Management’s strategic direction. Specifically, the customer wanted to find ways to speed the development and deployment of new and/or improved services, whilst reducing both development and maintenance costs.

Some technical stakeholders, architects and operations, were initially skeptical: they had been burned over the year with overly complicated, lengthy system evolutions. One step was to organize workshops to understand current issues and brainstorm future directions: this process of listening first helped in building trust, as well of course in finding out what the real underlying problems were.

Leveraging TOGAF ADM within the 360 Assessment

The VRF 360 Assessment phase involves understand the customer context, current and future states, and defining and prioritizing a series of initiatives. The following table maps the relevant TOGAF ADM phases to the VRF deliverables for this phase:

VRF: 360 Assessment Phase	
TOGAF Phase	VRF Deliverable/Tool
Vision Phase	<ul style="list-style-type: none"> • Benefits Dependency Network (BDN) • Industry and Customer Profile Report.
Business Architecture	<ul style="list-style-type: none"> • Benefits Dependency Network (BDN) • Business Capability Modeling • 360 Assessment Final Report

ADM: Vision Phase

The objectives of the Vision Phase included developing a high level view of the current and desired future state and a program of work to reach this state.

With regard to the current business situation, The Telco sector was and indeed still is undergoing fundamental changes; prominent among which is the convergence between IT and Cloud Computing providers; leading to the sector being known increasingly as Information and Communications Technology (ICT). The customer, like other Telco operators, was under constant pressure to reduce costs and integrate disparate IT systems.

One of the first actions was to examine the current business situation. A summary of the competitive analysis is shown below:

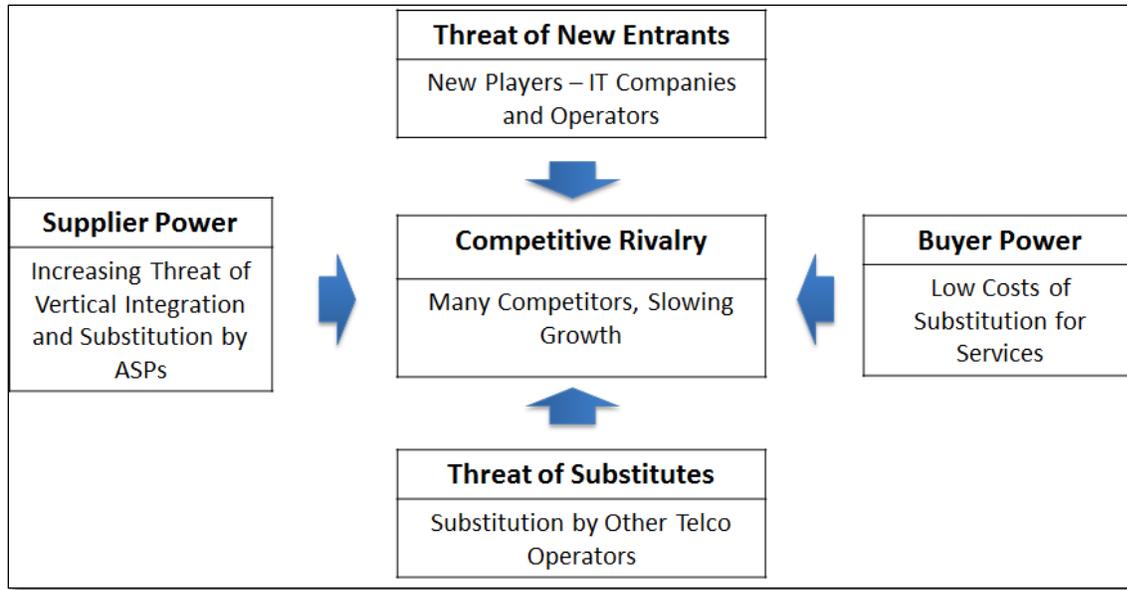


Figure 10: Porter's Five Forces Model Applied to Customer

Given these industry forces, the platform had to increase its capability to incorporate and operate disparate services. The concept of the "Service Delivery Platform" has many differing implementations in the industry. On initiating the engagement, the customer had considered using Microsoft's Connected Services Framework (CSF) as an SDP. However, news soon came that CSF was to be discontinued by Microsoft, so it was back to the drawing board.

Another key element of the business analysis was understanding the Business Drivers and key platform problems that had been identified. The customer had new kinds of clients it needed to cater for, as well as handling overall industry trends. Specific problems included the cost and time required for the following:

- Incorporation of new kinds of Customers (mobile, fiber optics...)
- Incorporation of new tariff systems (e.g. flat tariff).
- Development of new Services

ADM: Business Architecture

The objectives of Business Architecture Phase were to develop the Target Business Architecture and identify candidate an Architecture Roadmap based on a gap analysis.

The target business architecture had to include the following characteristics:

- Reduce cost and time for incorporation of new kinds of Customers (mobile, fiber optics...)
- Reduce cost and time for development of new business Services
- Greater granularity of monitoring and insight into business processes

The future roadmap was visualized from the different perspectives afforded by a Strategy Map (Financial, Customer, Internal and Learning & Growth); a sample of which is shown below:

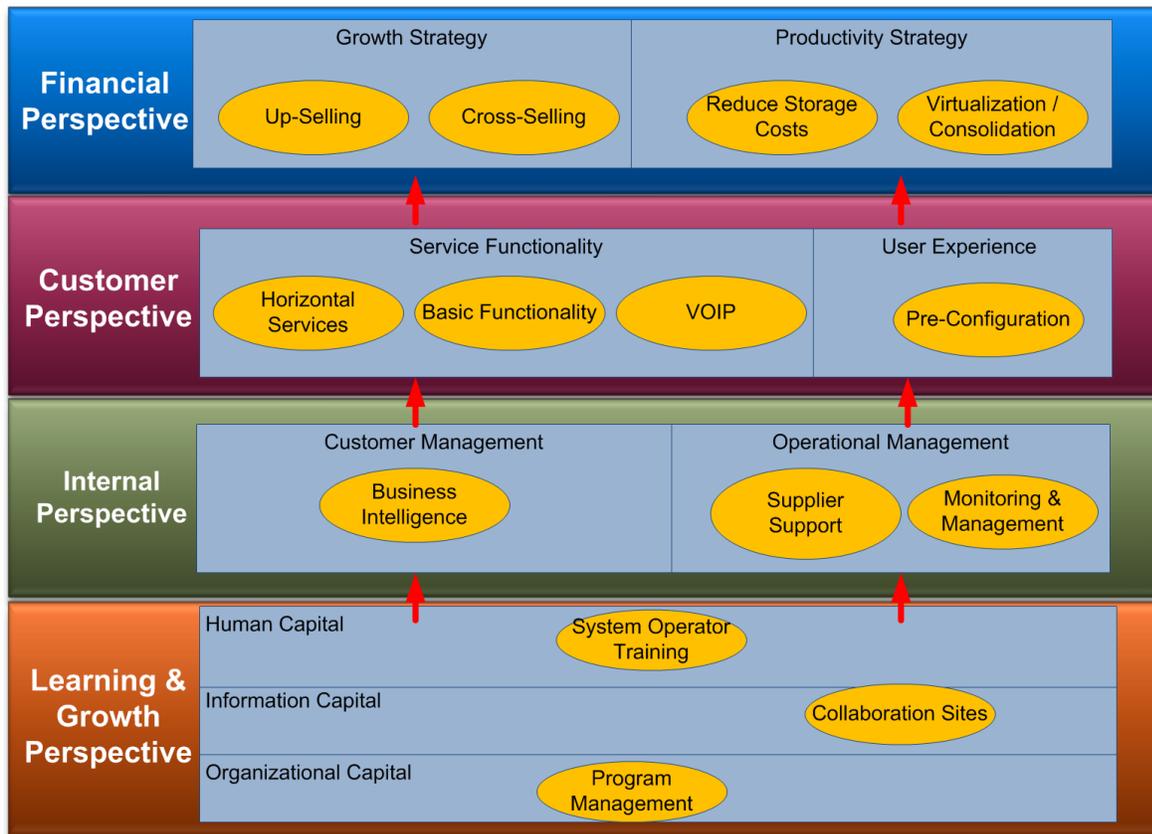


Figure 11: Kaplan & Norton Strategy Map

Leveraging TOGAF ADM within The VRF Initiative Planning phase includes deepening the initial analysis of the current business capabilities and IT services supporting them, and defining a future state, conceptual architecture and roadmap to fulfill customer objectives.

The following table maps the relevant TOGAF ADM phases to the VRF deliverables for this phase:

VRF: 360 Assessment Phase	
TOGAF Phase	VRF Deliverable/Tool
Information Systems Architecture	<ul style="list-style-type: none"> IT Service Map
Technology Architecture	<ul style="list-style-type: none"> Architecture Definition Document
Solutions & Opportunities	<ul style="list-style-type: none"> Vision & Scope Documents Benefits Dependency Network (BDN)
Migration Planning	<ul style="list-style-type: none"> Technology Roadmap Initiative Planning Final Report

ADM: Information Systems Architecture

The objectives of Information Systems Architecture Phase were to develop the Target Information Systems (Data and Application) Architecture and identify an Architecture Roadmap components based upon the previous gap analysis.

The platform architecture had evolved in many ways from its origins almost ten years earlier, showing typical signs of software degradation. Whilst a resounding commercial success, we found an architecture that had certain technical challenges and also that was essentially undocumented in its latest developments. Underlying these challenges were a series of software development processes and methods with room for improvement. The platform’s evolution over time had brought issues of maintainability and extensibility: incorporating new business functionality and rules was becoming too costly.

A simplified summary of the current and target information system’s characteristics is shown below:

- "As Is"
 - "Takes us too long to integrate new services"
 - "When we modify existing components, we have to rebuild the whole system"
 - "We have difficulty having teams work in parallel"
- To Be"
 - "Reduce the time it takes to incorporate new services"
 - "Less headaches whenever we modify the system"
 - "Make it easier to subcontract work out simultaneously"

Given the previously identified Business Drivers and platform issues, the overall solution approach was identified, summarized below:

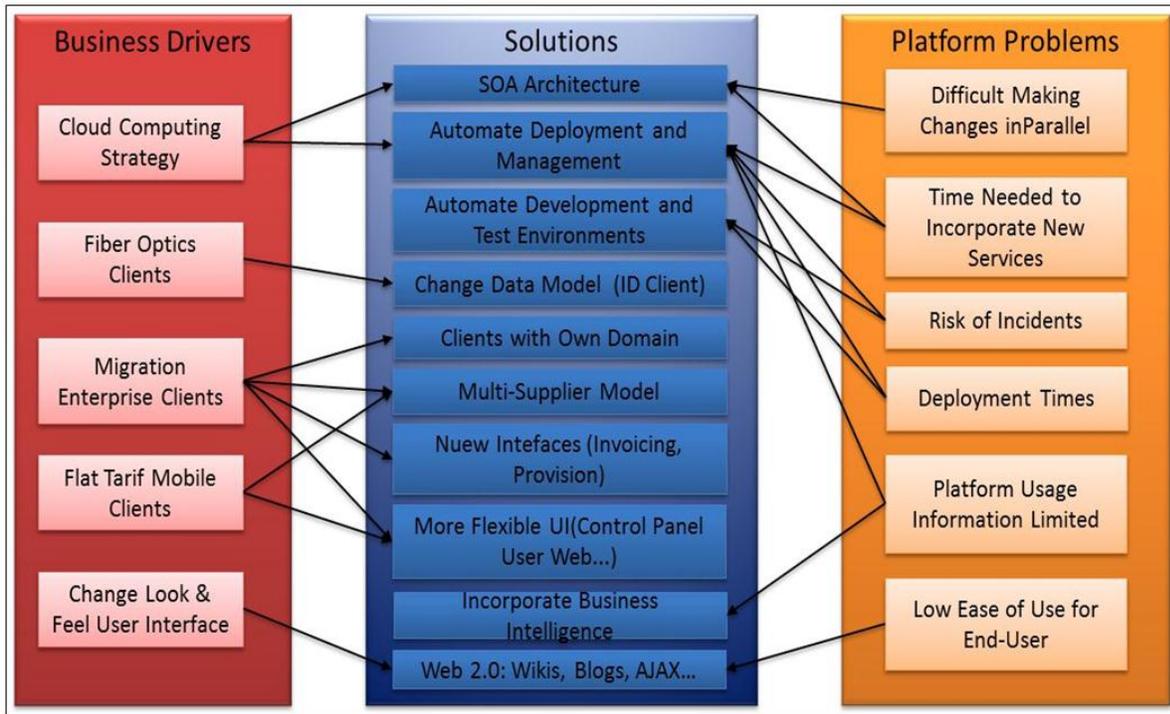


Figure 12: Business Drivers and Platform Issues

The future functional architecture of the platform was illustrated as follows:

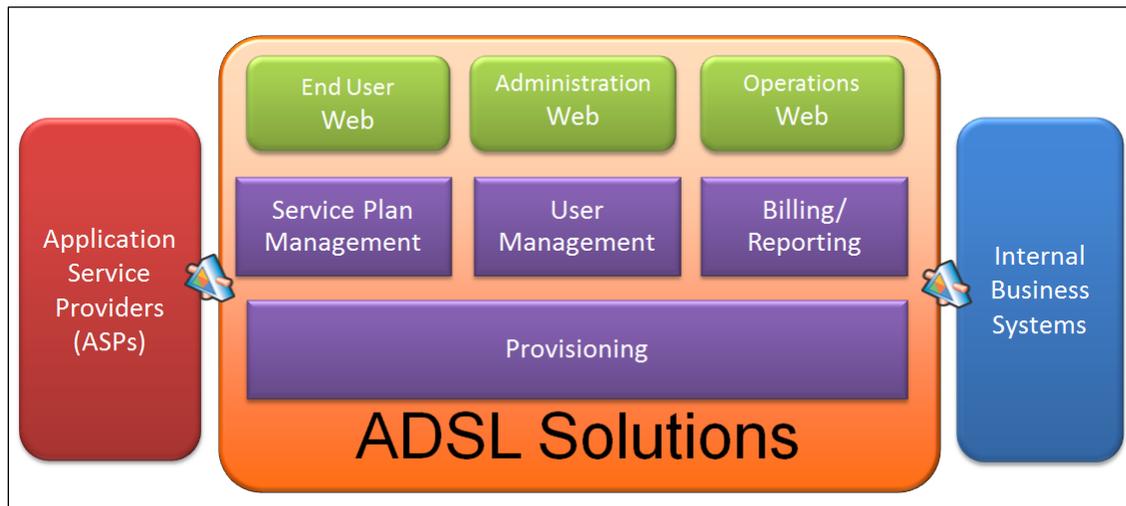


Figure 13: Functional Architecture

ADM: Technology Architecture

The objectives of Technology Architecture Phase were to develop the target logical and physical components and identify an Architecture Roadmap.

We determined that one of the root causes of the platform's rigidity to be high levels of coupling between components. One example was that of the architectural layers, where shortcuts had been introduced allowing direct communication from the presentation layer directly to the data layer:

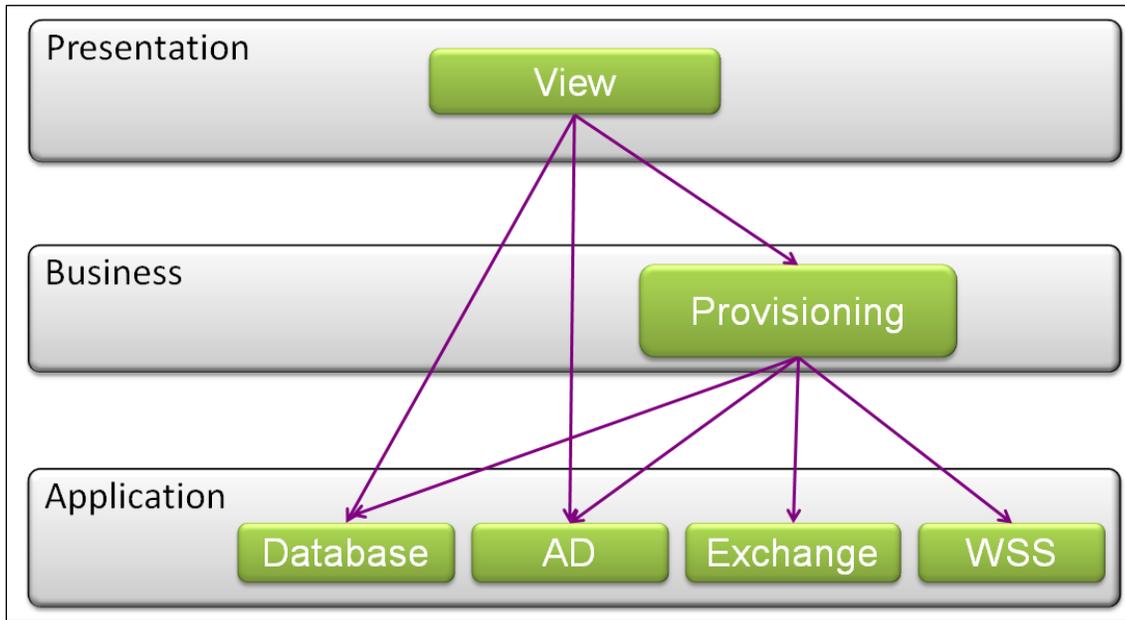


Figure 14: Architecture Layers, Initial State

Over the years, the initial object model had not been evolved optimally as new kinds of products were included, becoming somewhat convoluted and difficult to extend, as shown below:

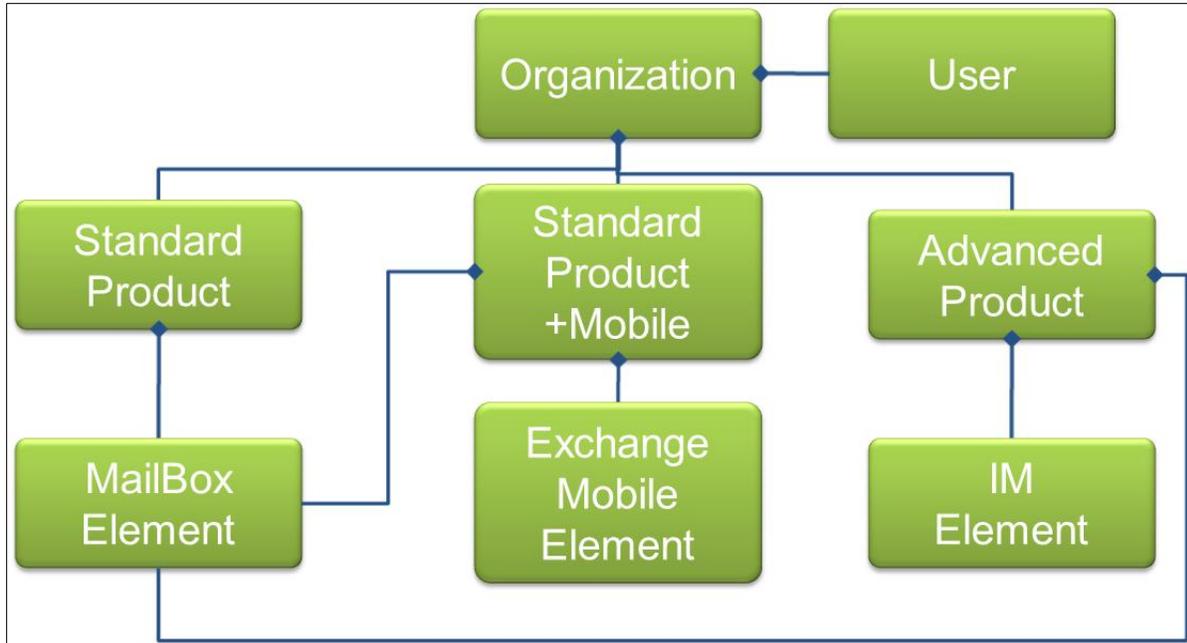


Figure 15: Object Model, Initial State

The principle focus areas for the new architectural strategy are outlined in the following sections.

Service Orientation

We applied standard principles of explicit boundaries and autonomous services.

Architectural Layers

We proposed enforcing a stricter separation of layers, above all eliminating direct contact between web pages and the data layer.

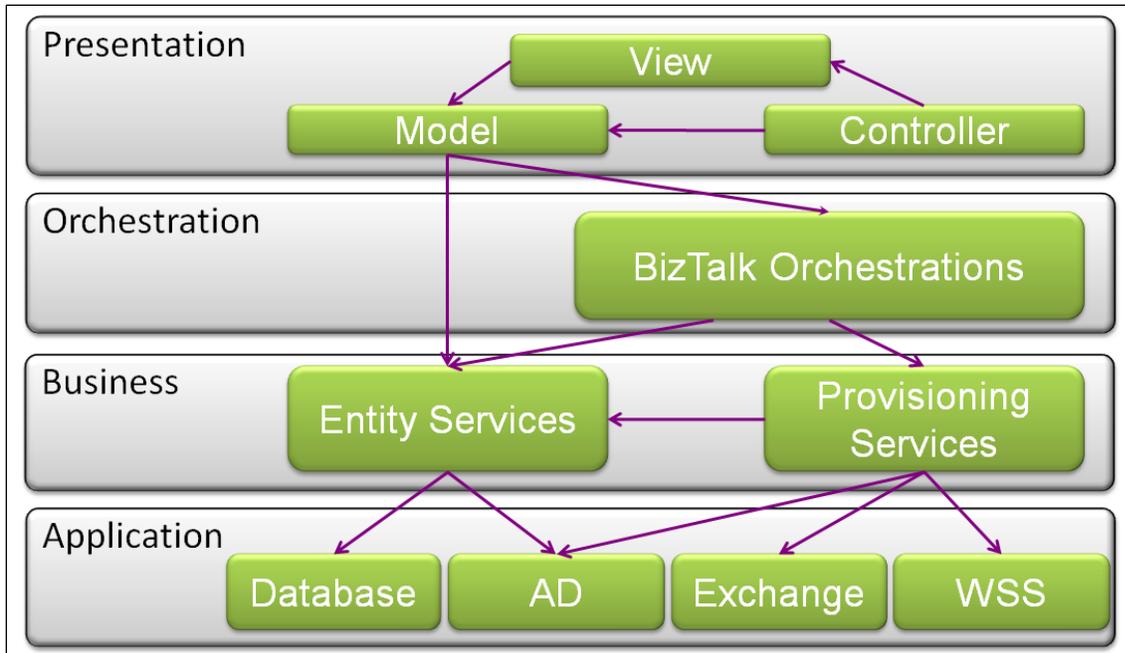


Figure 16: : Architecture Layers, To-Be State

Business Logic

Business Logic had previously hard coded into web pages and provisioning components, this was now refactored, using the object oriented mechanism of inheritance and patterns such as Dependency Injection to minimize the impact of new business objects and rules on the system. For example, previously an "Order" object existed that carried out requests for other objects: these responsibilities were encapsulated in the other objects themselves. A sample of the proposed domain model is shown below:

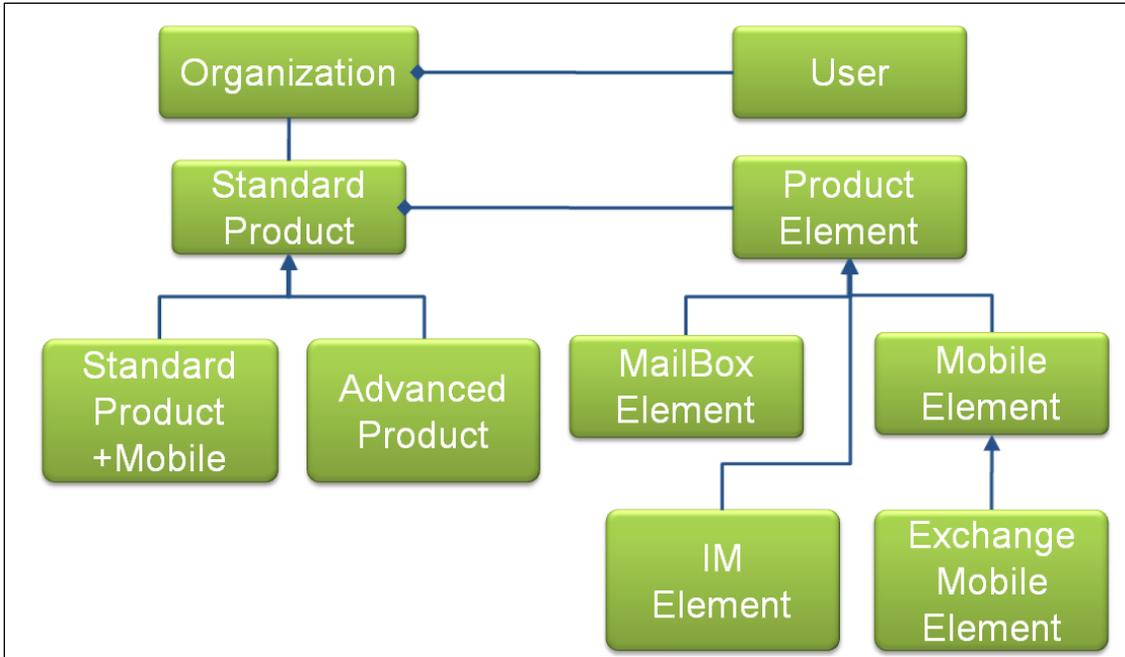


Figure 17: : Object Model, To-Be State

ADM: Solutions & Opportunities and Migration Planning

The objectives of these ADM phases were to complete the architecture roadmap and implementation plan, ensuring all stakeholders are aboard.

We set about detailing the projects and technologies required to accomplish the target architectures, creating a roadmap illustrated below:

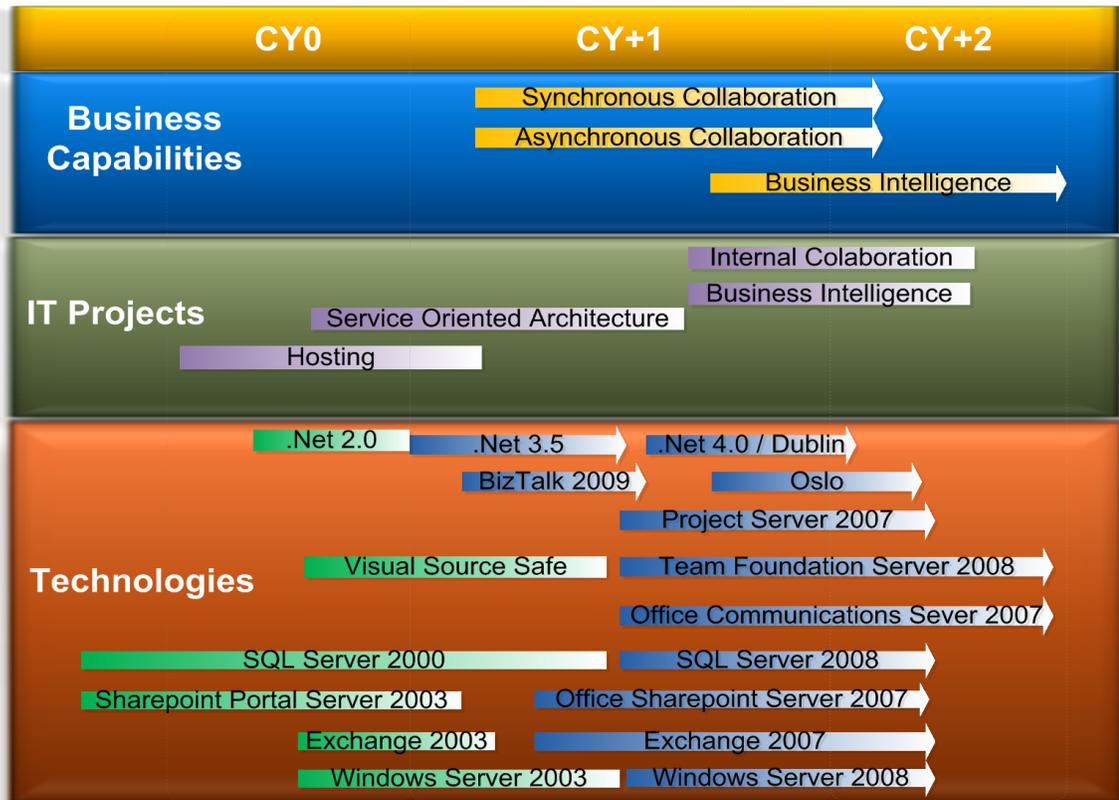


Figure 18: Roadmap

Leveraging TOGAF ADM within Value Realization

The VRF Value Realization phase provides oversight of the IT programs and the use of Microsoft technologies, monitoring and looking for opportunities to improve the value created.

The following table maps the relevant TOGAF ADM phases to the VRF deliverables for this phase:

VRF: 360 Assessment Phase	
TOGAF Phase	VRF Deliverable/Tool
Architecture Change Management	<ul style="list-style-type: none"> Periodic Reports Service Delivery Plan (Updated)

Implementation Governance	<ul style="list-style-type: none">• Value Realization Report
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ADM: Architecture Change Management

The objectives of Architecture Change Management Phase were to ensure that the architecture lifecycle and capability was maintained. This was tackled by not only following technological progress in implementation projects, but also the organizational and methodological changes required for greater architectural excellence.

ADM: Implementation Governance

The objectives of Implementation Governance Phase were to ensure correct implementation of the portfolio of projects, providing the expected value. Close following of the different phases of the successive implementation projects was required to ensure compliance with the target business and technology architectures. The new architectures proved able to provide greater agility in adapting to changing market needs, such as the incorporation of changing business rules and new kinds of customers and greater insight into business activity.

Conclusion

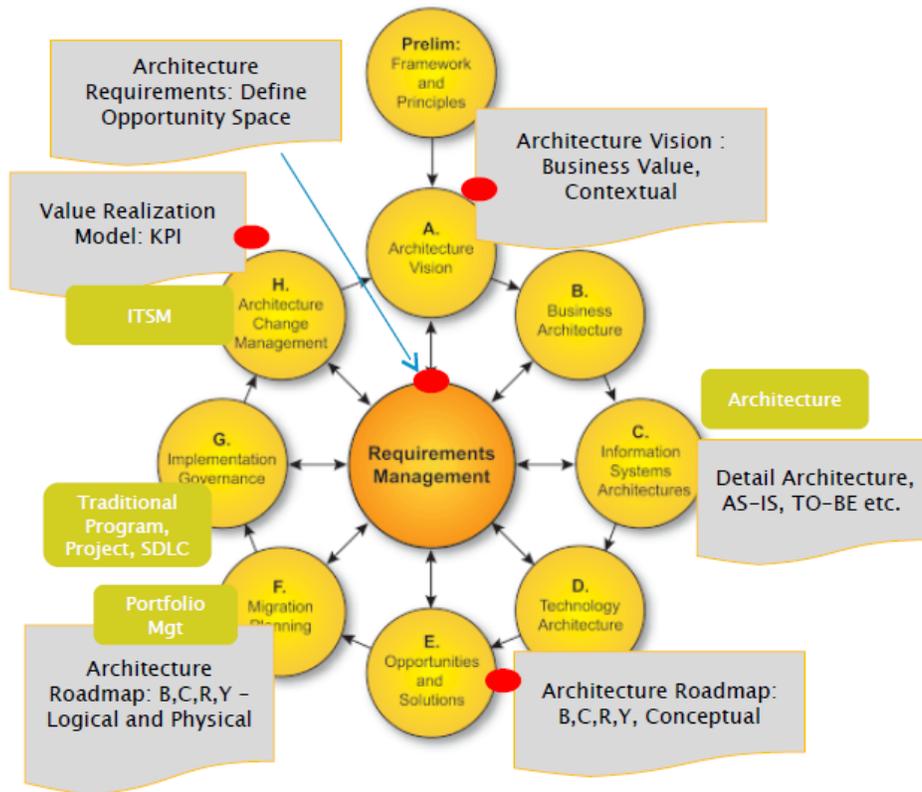


Figure 19: Elements of TOGAF and VRF

As seen above in figure 10, the key VRF methods can be overlaid on the TOGAF traditional enterprise architecture method. In this context as well it shows how the IT strategy and planning perspectives in VRF map to TOGAF’s methods to accomplish a similar task.

VRF and TOGAF in conjunction can be used throughout the technology life cycle to successfully provide business-driven technology solutions. This is from a solution’s inception to delivery through operations to final retirement.

VRF Outcomes	TOGAF Outcomes
<ul style="list-style-type: none"> Business-Aligned IT Strategic Plans Defined Program of Change Value Measures and Realization 	<ul style="list-style-type: none"> General purpose architecting method IT Strategy and Transformation Plans End to end architected solution

Table 3: Framework Outcomes

By utilizing the complementary strengths of both of these already very robust frameworks, the Microsoft Enterprise Architect can promote a more fully rounded experience for customers.

TOGAF together with VRF makes it possible to address not only IT strategy concerns, but also the broader enterprise architecture aspects that do not have as much emphasis in VRF.

Combining these two powerful frameworks can be better together in the following ways:

- Provide value to TOGAF through a very focused VRF method that allows for a lower barrier of entry for some of the tasks that TOGAF is trying to accomplish
- When needed, complement VRF's focus on business strategy, portfolio rationalization and planning to include architecture
- Bridge the connection strategy and implementation through the usage of the ADM
- Leverage additional Business Architecture methods, models, catalogs and matrices found in the TOGAF ADM Business Architecture phase
- Leverage a common classification system and vocabulary in TOGAF to complement the existing VRF methodology

Additional Information

TOGAF 9 Online Resource - <http://pubs.opengroup.org/architecture/togaf9-doc/arch/index.html>

VRF and TOGAF Quick Comparison Guide

	 VRF	 TOGAF
Purpose	IT Strategy and Planning Connecting Strategy to Execution Value Realization	Full coverage of the business driven Enterprise Architecture domain that includes Strategy, Business Application, Information, Technology and Security Architecture.
Outcomes	Business-Aligned IT Strategic Plans Defined Program of Change Value Measures and Realization	General purpose architecting method IT Strategy and Transformation Plans End to end architected solution
Framework Type (General Purpose, Vendor Specific, Solution Specific)	Vendor Specific: Methods optimized for the Enterprise Strategy Program and executed by Microsoft Enterprise Architects using a differentiating knowledge-driven framework.	General Purpose: Member-driven open framework created by the Open Group that is targeted to be the standard methodology for the practice of Enterprise Architecture.
Scope	Strategic Planning, Solution Architecture, Execution	Enterprise Architecture, IT Strategy, Business Architecture, Modeling
Audience	Primary: CIOs, Chief Architects, Enterprise Architects, business owners and sponsors Secondary: Solution Architects, Domain Architects	Primary: CIOs, Chief Architects, Enterprise Architects, Business Owners, Solution Architects, Domain Architects Secondary: Project Management Office, Operational Lines
Community Development	Closed: Microsoft-internal, select external partners	Open: Open Group Members can participate in evolving the standard.
Framework Advancement	Planned and developed by the Microsoft architecture community and Microsoft Services Enterprise Strategy.	Advancement is based on membership participation, requests and market demands.
Market Mindshare	Not a driver	de facto Standard Status
Market Gaps Addressed	Linking strategy, IT architecture and execution Assembling best-of-breed business architecture approaches Business-aligned decision-making	Enterprise Architecture Methods
Cost	Cost depends on the contractual arrangement of the service.	TOGAF is available for free online. TOGAF can be used commercially with a license agreement.