konvergent

EA Operating Models

A Comparison of Centralised, Federated and Hybrid EA Models

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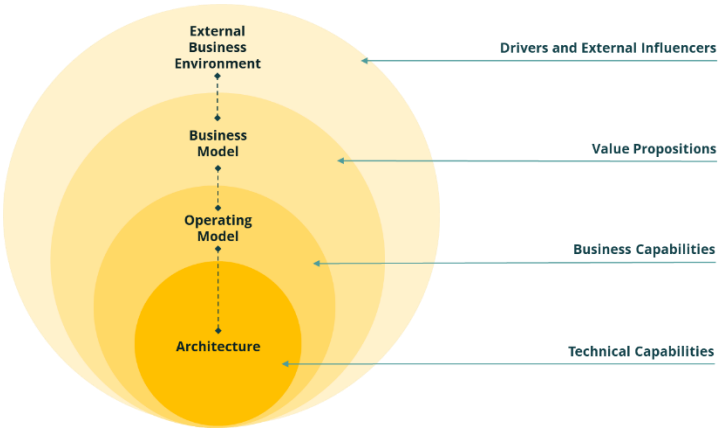
1. Introduction / Executive Summary

The operating model for your Enterprise Architecture (EA) function must be aligned to the particular structures, needs and dynamics of the business it supports, and by extension, the industry environment and external factors impacting the business.



Joined-up Thinking: Architecture follows the operating model, operating model follows the business model. When the business environment changes, architecture must enable the operating model to adapt.

Across industry, the pace and frequency of change, combined with significant evolutions in enterprise technology and the widespread adoption of Agile methodologies, have challenged the traditional EA function.

For businesses needing rapid innovation across multiple business lines, the need for responsiveness can often outweigh the benefits of standardisation, whereas in more regulated industries, or in more mature markets less subject to disruption, 'de-risking' techniques such as centralised decision-making, conformance to standards and operational efficiencies may be more valuable. All of these are important factors in deciding on the 'right' EA model.

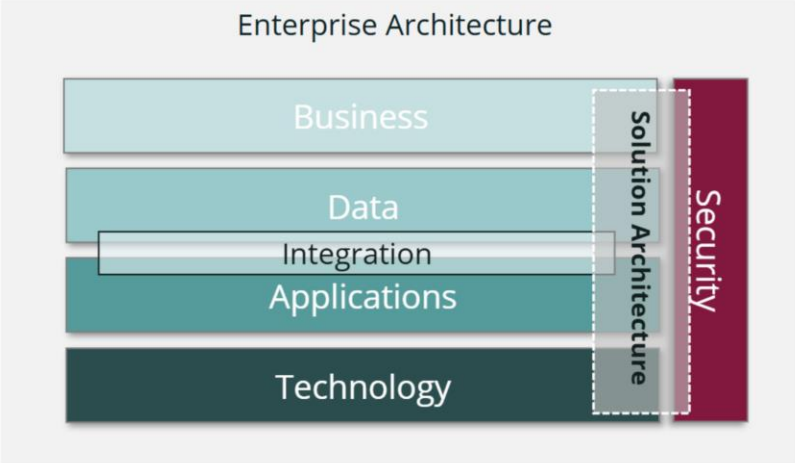
The following paper will explore the three primary models for EA: **Centralised, Federated** and **Hybrid**, providing a comparison of each, their pros and cons, and some insights based on Konvergent's experience across industry, taking into consideration factors such as the maturity of the EA function, the 'mandate' for Architecture and the drivers for change in different business environments. Finally, we will look at the conditions for selecting each of the three EA Operating Models.

2. Key Features of each model

2.1 Organisational Structure

In the **Centralised** model, all architects report into a single team that defines and governs all architectural standards, practices, and policies for the wider organization.

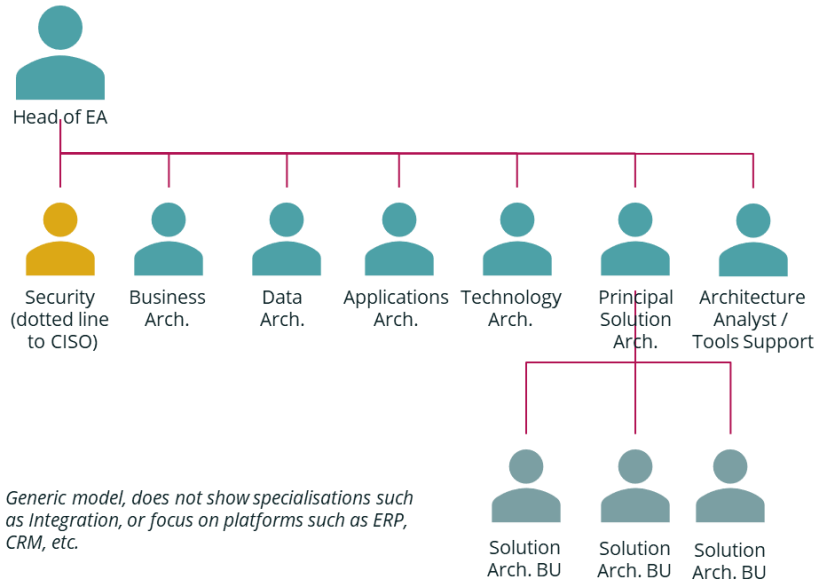
A Centralised EA function will typically be part of the CIO or CTO directorate and led by a Chief Architect or Head of EA, with individual 'Domain architects' providing Enterprise-wide coverage of a specific knowledge area (the traditional 'BDATS'[1] stack).



Typical BDATS 'stack' representation of the Architecture Domains

[1] Business, Data, Applications, Technology and Security are all key knowledge areas or 'Domains' within EA. While these are all interconnected, there are significant differences in focus, knowledge and skills within each Domain.

In this model, Solution architects are often aligned to a specific Business Unit under the leadership of a Principal Solution Architect (depending on the scale of the organisation / demands from BU's).

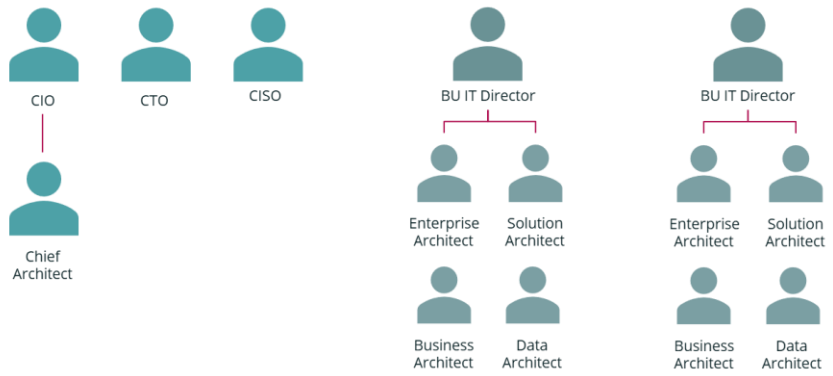


Generic model for a Centralised EA function

In the **Federated** model, Architecture activities are distributed across business units, allowing for high levels of autonomy to define or adapt architectures to suit local business requirements.

EA governance exists within a more loosely defined and governed framework set by a smaller central EA team, usually working in a policy-setting and guidance capacity, rather than a rule-making or enforcement capacity.

In this model, Architects are embedded within individual Business Units, with local reporting lines. While this provides greater flexibility and faster decision-making within business units, the federated model may create inconsistencies & redundancy, increased overall cost, and isolated decision-making leading to 'fragmentation' of the technology estate.



Federated model showing high autonomy / decentralization of IT decision making

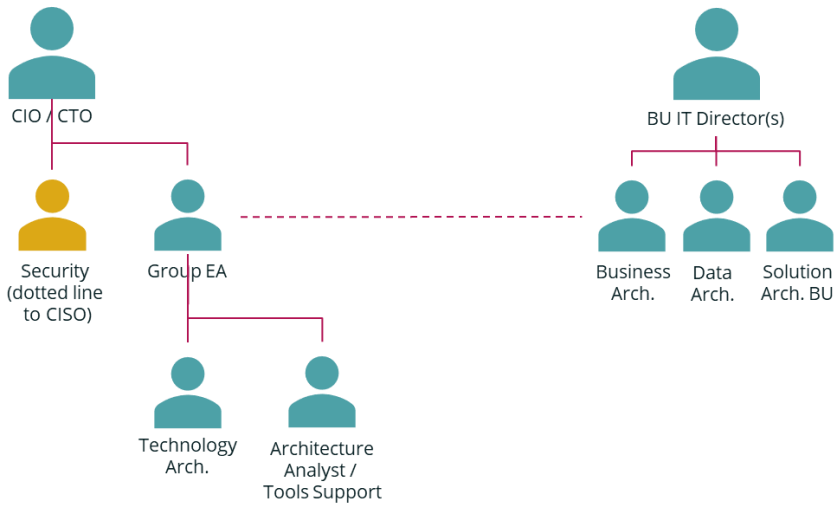
The **Hybrid** model combines elements of the Centralised and Federated approaches, and is increasingly prevalent among more mature EA functions, reflecting the need for a more pragmatic approach to Architecture that balances BU-level responsiveness with appropriate controls and standards.

In the Hybrid model, a central EA function sets standards, policies and guidelines, while allowing individual business units to develop their own architecture capability, often with dotted-line relationships to the central team.

The Group function will typically be smaller and focused on three main areas:

- Common services such as infrastructure and security
- Promotion of standards, guidelines and guardrails
- Identification and mitigation of cross-business impacts

Business Unit level architecture activities will typically focus on where there is the greatest need for adaptability and differentiation. This is most commonly found at the Business Architecture layer, where specific customer journeys and value streams will drive unique requirements, and the Applications architecture layer, where BU-specific solutions may be required.



Indicative Hybrid EA model shows the potential for fragmentation means close collaboration between Group and BU Architects is essential

2.2 Governance and Decision Authority

In the **centralised** model all architecturally significant decisions are made at the enterprise level, typically through highly formalised forums such as Architecture Review Board (ARB – focused on technology portfolio strategy) and Technical Design Authority (TDA – more focused on High Level solution design within the EA framework) processes.

In this model, relatively few people have decision-making authority, with the emphasis being on strict conformance to standards and alignment with an over-arching EA / Technology strategy.

Business Units must engage the EA function through a structured 'front door' process wherein the EA function will evaluate the totality of architecture demand with the aim of creating coherent, enterprise-wide strategies and common solutions (or managing exceptions where appropriate).

In the **Federated** model, architecturally significant decisions are made at business unit level, with minimal consultation at the Group level.

Governance is less rigid and will often take the form of architecture steering groups, rather than the more traditional ARB structure and hierarchical decision-making.

The EA steering group will typically have representatives from both the Group EA function and business unit architecture teams to coordinate overlapping or conflicting initiatives, resolve contention for shared resources, and ensure alignment with the overall EA strategy.

In the **Hybrid** model, there is a balance between central control and local autonomy, with shared responsibility for key architecture decisions.

In this model the Central EA function have a dual role; providing governance of shared assets while also acting as consultants to the business unit architects (simplistically, decisions affecting common or shared resources at taken at the Central level, with decision affecting BU-specific solution taken at the BU level, within set guidelines and standards).

For this to be effective, the modes of governance and communication must be adapted to accommodate the different 'speeds' that Architecture work may operate at, particularly where Agile development is concerned. This can be at least partially addressed through the role of 'Product Architect' – that is, Solution Architects embedded with BU level Agile teams, with a dotted line relationship to the Group and a common 'architecture backlog'.

In Hybrid scenarios, where there are diverse requirements across operationally distinct business units, the emphasis is on "Guideline-Driven Autonomy". Ideally, the Group EA function can provide the resources (standards, principles & guidelines, delivered through a consultative engagement style) to enable 'good' architecture decisions to be made within BUs without the need for onerous governance.

2.3 Resource Management

In the **Centralised** model, all EA resources are pooled and allocated centrally. Business units essentially engage with an architecture-as-a-service / Group Shared Service construct (which may be jointly funded by the various business units).

To be effective, this model requires formal SLAs, and effective Demand / Supply Planning across all BUs and Group functions.

Whilst arguably more cost-efficient and effective at embedding consistent standard, the Centralised model will often result in contention for EA resources across competing projects.

In the **Federated** model, architecture resources are distributed across different business units, each with some autonomy for architecture decision-making within an overarching framework set by the Group EA function.

In Federated organizations, Business Units have their own Enterprise Architects with a lower level of accountability to the Group, however it is still common for shared assets such as Infrastructure & Hosting to be managed and resourced centrally.

In the **Hybrid** model, Business Units have their own Enterprise Architects with 'dotted-line' accountability to the Group and some shared resources for enterprise initiatives and common services.

Solution Architects will often work at Business Unit level or be embedded with Agile teams, providing greater responsiveness to business needs. This in turn can create an increased risk of fragmentation, especially when subject to the pressures of short decision-making cycles.

3. Pros and Cons

The main trade-offs between the different models tend to be based around a small number of common challenges:

- Balancing agility / adaptability at BU level vs. standardisation and the General Interest at Group or Central level
- The speed of decision-making relative to the rate of change the BU experiences, and where decision rights should reside in the organisation
- Operational autonomy vs. alignment to common strategies, and control over the relevant resources & costs

- Solution ‘fit’ to the BU’s needs and the risk of increased technical debt as BU’s pursue local solutions, vs. the need for cost efficiency & asset reuse
- Perceived and actual differentiators at the BU level vs. common capabilities across the Group

The Centralised Model ensures high levels of consistency, strong governance, and cost efficiency through the promotion of standard and reusable assets, making it suitable for organizations prioritizing compliance, security, and standardization. However, it can lead to bottlenecks and contention for resources, reduced flexibility, and slower decision-making, which may limit responsiveness to the needs of individual Business Units (where directly market-facing priorities may outweigh the General Interest).

The Federated Model distributes architectural autonomy across business units, enabling them to adapt to their unique requirements (within a loosely governed framework set by th Group EA function). This model supports greater flexibility, innovation, and faster decision-making, which is ideal for organizations with diverse, independent business lines.

However, the federated model may lead to inconsistencies, increased redundancy, Increased complexity in integrating systems and data, and complicated governance, especially across interdependent projects. This model also tends to lead to tensions between Group initiatives (such as ERP standardisation) and BU level priorities.

The **Hybrid Model** combines elements of the Centralised and federated approaches, based around a central EA team providing core standards, common assets and cross-functional governance, while empowering business units with localized autonomy for specific architectural decisions. In this model, some overlap duplication of resources and costs is inevitable, however the scope for Group shared EA services (that is, which EA capabilities and resources should be pooled centrally) should be decided based on the specific needs and circumstances of each business.

This balance allows organizations to maintain essential controls while adapting architecture to the dynamic needs of each unit, making it well-suited to enterprises that require both agility and consistency, however it does require more

sophisticated governance to link decision flows operating at different speeds (Agile and Waterfall) and at Group and BU level.

4. When to use each option

The **Centralised** Model is more suitable for organizations where conformity / compliance to standards and cost efficiency are key, for example in heavily regulated industries (such as finance, healthcare) or where there is relatively little differentiation across business units (manufacturing, logistics).

The **Federated** Model is more suitable for organizations with diverse business units or those operating in rapidly changing markets where innovation, adaptability, and responsiveness are key.

Many organizations operate a **Hybrid** approach, where the central team sets the high-level standards and governance frameworks, and individual business units have some flexibility to adapt within those guidelines.

While this can be seen as a ‘best of both worlds’ approach allowing for autonomy within a consistent framework, the Hybrid model requires more sophisticated and collaborative governance & communication to be truly effective and offset the risks of fragmentation.

5. Other Considerations / Konvergent's Perspective

Enterprise Architecture 'as-a-service'

The Centralised model favours a Shared Services approach, requiring more formalised demand & supply management processes, and clear delineation of the scope and nature of the services to be provided, the Provider / Consumer relationship, the work products that will be produced and the engagement model to be followed (often involving BU-facing lead architects within the Group engaging directly with IT Business partners in the respective Business Units).

Architecture-as-a-service brings its own challenges as the Group EA function must be able to provide 'capability on-demand' or risk not being able to serve the needs of the Business Units. In this model, demand / supply planning based around an **Enterprise Roadmap** (spanning BUs and Group initiatives) and a common Architecture Backlog are essential tools to manage potential conflicts and resource contention.

The Mandate for Architecture

In any organisation there will typically be an explicit 'mandate' for the Architecture function, usually expressed through the appointment of different Architecture roles (such s Business Architect), as Terms of Reference for ARB and underscored by CTO or CIO endorsement. This gives the Architecture function a formalized role and a 'voice' in certain decision-making conversations. However this does not always align to the ***implicit*** or political mandate for Architecture; that is, what conversations will business stakeholders *accept EA input into*, and in what capacity?

The scope of the 'Services' your EA function can offer are defined by the 'Mandate' you have within the organisation – both explicit and implicit. Winning a broader mandate means earning trust with a broader range of stakeholders, each with their own perspectives and concerns.

EA Team Stance

Maturity and cultural factors play a part too, as does the 'stance' of the Central or Group EA Function: a well-defined set of reference architectures and standards, and a 'menu-based' approach to technology solution options (where a small number of preferred technology options are pre-defined, and clear parameters & guidelines are set out for handling exceptions), coupled with a highly consultative approach, can help to avoid the perception of EA as a blocker to decision-making or an enforcer of generic or one-size standards.

Architecture in an Agile context

With Agile ways of working now ubiquitous, the trade-off between Intentional Architecture and Emergent Design has become a perennial challenge for many businesses. Architecture has been challenged to remain relevant in an environment where planning horizons are shortened, business volatility has accelerated, and business stakeholders are increasingly technology savvy, and demanding of high levels of responsiveness in order to compete in rapidly changing markets.

Architecture must adapt to meet these challenges, by decentralizing traditional top-down control and implementing more collaborative and iterative governance to enable architecturally significant decisions to be taken by Agile teams.

In many organisations Konvergent have seen the advent of "product architects", a hybrid role part way between EA and traditional Solution Architects, usually embedded within the Engineering / Agile organisation and focused on a specific 'domain' or product area, but with a strong dotted-line to EA.

While this does bring an increased risk of divergence & fragmentation of the IT estate, the EA stance in this model needs to be more about defining guiderails and guardrails to enable 'good' decision making at pace and manage the cross-business impacts. Collaboration is key.

General observations: when it's done well / winning the implicit mandate

- Strong emphasis on Consensus-building rather than authority; start with shared vision and orientate stakeholder conversations around business drivers and business outcomes
- Advocating for the bigger picture / general interest, but not at the expense of pragmatism / realism
- Cut to the chase: uncovering the important decisions and reducing the time taken to get there. A more powerful mandate for EA is about helping to guide strategic decisions
- Keep the messaging simple, clear and business-relevant
- Working in tandem with the Business, acting as **partners and Trusted advisors** rather than gate-keepers

6. Summary

In Konvergent's recent experience (which is predominantly in the private sector, encompasses some heavily regulated industries and spans organisations ranging from 1,500 to 150,000+ FTE), modern EA practice is becoming more orientated around the concept of "Guideline-Driven Autonomy" with smaller core Group functions operating in a more consultative manner, and a balance of resources, knowledge and skills working at BU-level within an over-arching set of standards and guidelines.

Governance styles tend towards collaboration and iteration within practice communities, with architecturally significant decisions often being delegated to BU-level supported by 'menu-based' technology solution options, and Solution Architects working more closely with Agile teams at the Product level, and maintaining dotted-line relationships with Group peers.

This fits the Hybrid model, however the maturity of the EA functions at Group and BU level is a key variable in making the Hybrid EA model a viable option for any business.

While there is no single 'right answer' the optimal approach will often depend on an organization's size & structure, the maturity of the Architecture function, and critical trade-offs driven by the need to balance local autonomy, responsiveness & innovation against risk, standardisation and efficiency.