# Critical Capabilities for Enterprise Architecture Tools

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Initiatives: Enterprise Architecture

Enterprise architecture tools provide a central repository for analyzing data and metadata about a range of artifacts organizations care about, and highlight the impact of change. EA and technology innovation leaders need to assess the product capabilities of vendors in relation to key use cases.

**This Critical Capabilities is related to other research:**

Magic Quadrant for Enterprise Architecture Tools

View All Magic Quadrants and Critical Capabilities

## Overview

### Key Findings

- Enterprise architecture teams often limit the scope of their EA tool to cataloging the life cycles and constraints of existing IT systems, applications and technologies. They miss the opportunity for EA tools to capture the business architecture, which supports business strategy discussions and underpin wider change plans of the organization.
- EA tools often fail to gain traction beyond EA, which limits their benefits. Without a focus on a shared operating model for the enterprise — supporting transformation, optimization and ongoing innovation — EA tools become difficult to maintain and fall into disuse.
- EA tools involve significant investments in time and resources to configure, populate and maintain. Although necessary for long-term success, low-maturity organizations might incorrectly assume that an EA tool will be sufficient to successfully kick off an EA program and resolve all their challenges.

### Recommendations

EA and technology innovation leaders assessing EA tools should:

- Articulate the short- and long-term use cases for an EA tool by defining the critical business challenges, opportunities and objectives of the organization. Look beyond just IT rationalization and modernization to explore how the use cases and critical capabilities of EA tools in this research map to the needs of your enterprise.
- Identify the needs of both business and IT stakeholders in your evaluation by including their requirements in your use cases. Long-term EA tool success relies on broad adoption across the enterprise.
- Evaluate how vendor pricing models and usability will affect software costs and adoption. Explore the impact of business and operating model changes, increases in the number of users, and evolving integration scenarios. Look beyond the Day 1 costs and current functionality to include the costs of upgrades, software licensing implications, new functionality and the need for professional services over the whole term.

## What You Need to Know

Minimally, enterprise architecture (EA) tools provide a central repository to capture and analyze the data and metadata about the wide range of artifacts (objects) that enterprises care about. They operate at many levels and across a wide spectrum, in one way or another reflecting:

- Business strategies, objectives, capabilities, competitors, ecosystem partners, products and services, as well as the key performance indicators (KPIs), metrics, risks and the related costs.
- Supporting technologies and applications, the services they offer and the interfaces between them, the underlying infrastructure and the vendors that provide these components.
- Customer segments and stakeholder personas, customer journey maps, as well as the processes, value streams and activities that the organization depends on to deliver value.
- Business scenarios, change and transformation programs/initiatives, down to and including the individual projects and development sprints in IT.

Models contained in the repository represent the relationships between these objects. They are treated as assets that describe and shape the future of the enterprise. Many types of models are possible, depicted at different levels of abstraction (e.g., conceptual, logical, physical), in different ways (e.g., visually engaging, written descriptions), in different packaging constructs (e.g., bills of materials, configurations, policies, standards life cycling, patterns, blueprints, platforms, etc.).

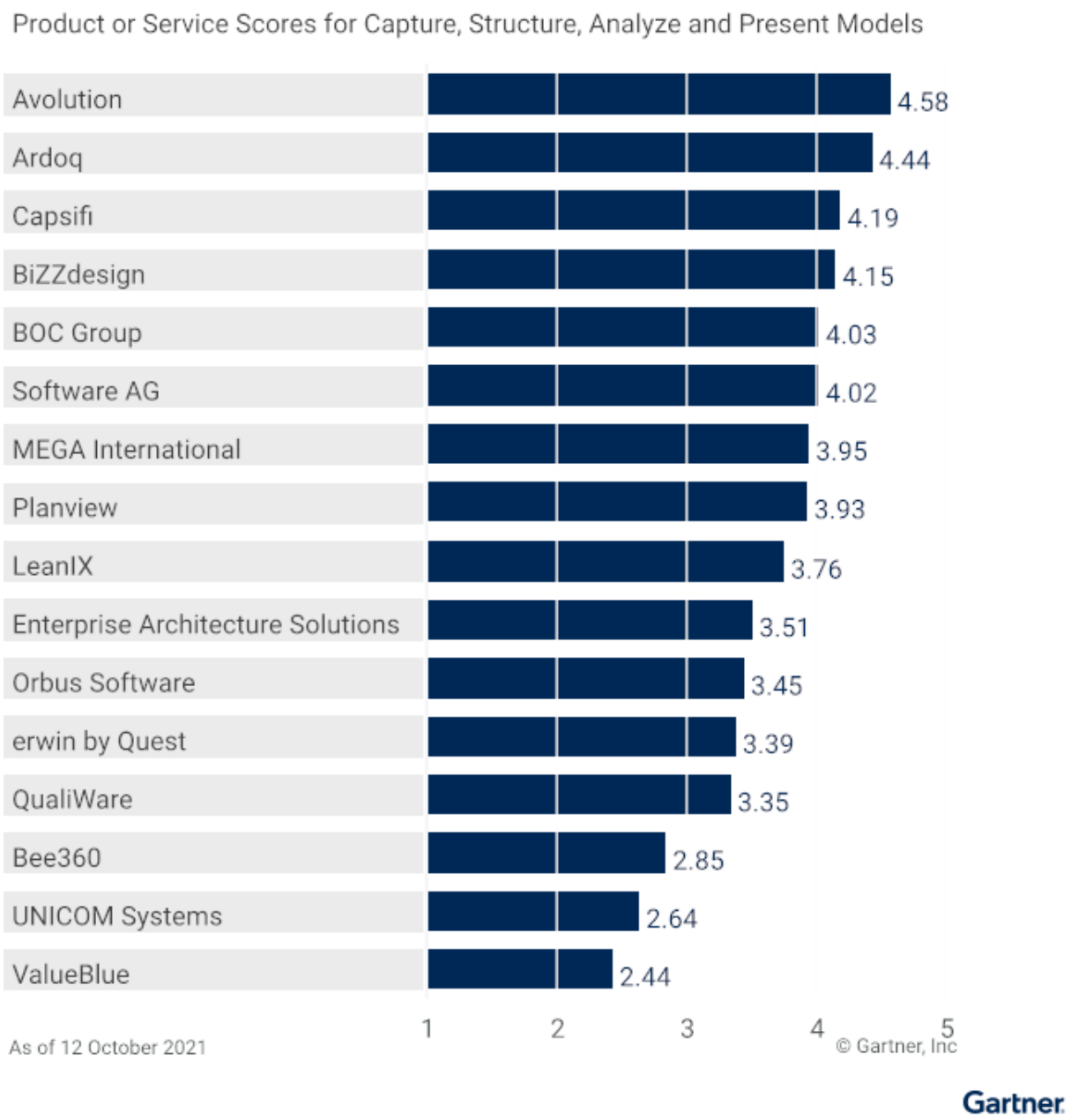
Increasingly, EA tools service a wide range of stakeholders from the boardroom and the C-suite, across all strategic and operational business roles, and down into the IT estate. EA tools are also leveraged by a broad array of architectural and IT disciplines — information, solution, security, applications and infrastructure. With a single integrated version of the truth, EA tools help these stakeholders receive relevant information, see the need for alignment and make better-informed decisions.

Gartner's vendor write-ups in this Critical Capabilities analysis highlight the key features that we identified in those demonstrations, while the use-case scores represent the formally scored, weighted aggregation of the vendor's responses to the questionnaire. Each vendor's write-up includes a description of how the product is delivered, its key differentiators and its drawbacks.

# Analysis

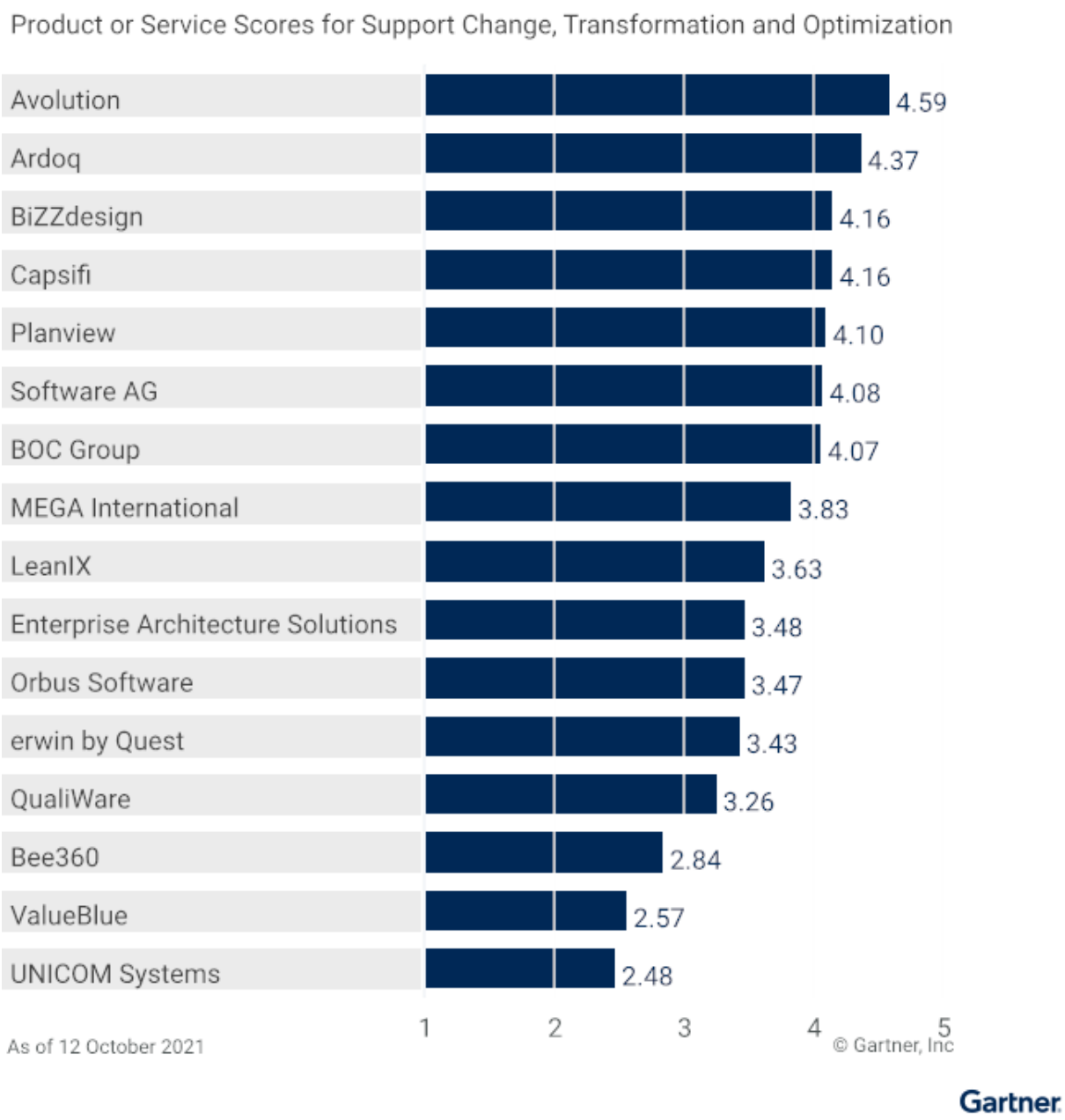
## Critical Capabilities Use-Case Graphics

### Vendors' Product Scores for Capture, Structure, Analyze and Present Models Use Case



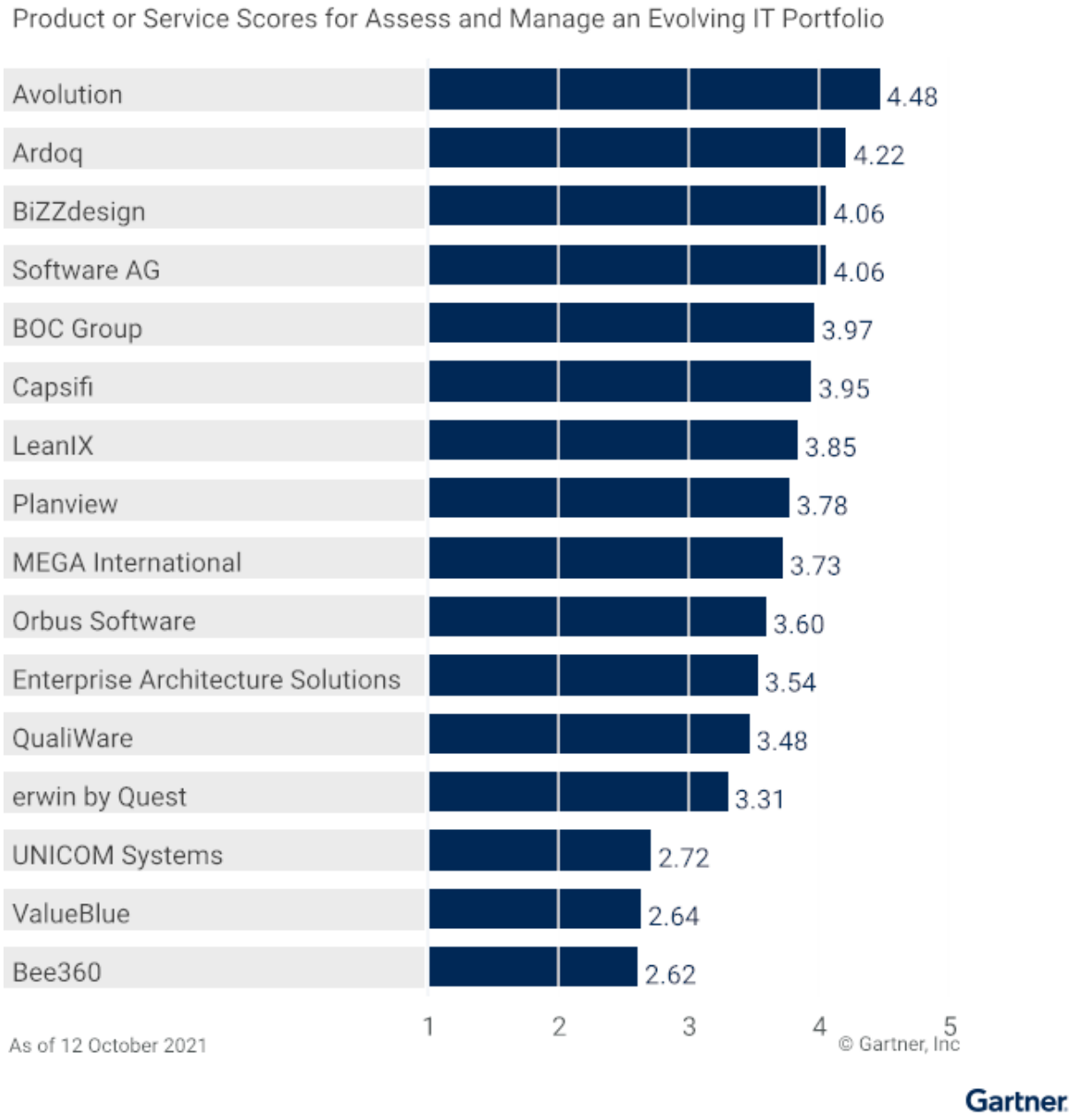

Source: Gartner (November 2021)

## Vendors' Product Scores for Support Change, Transformation and Optimization Use Case



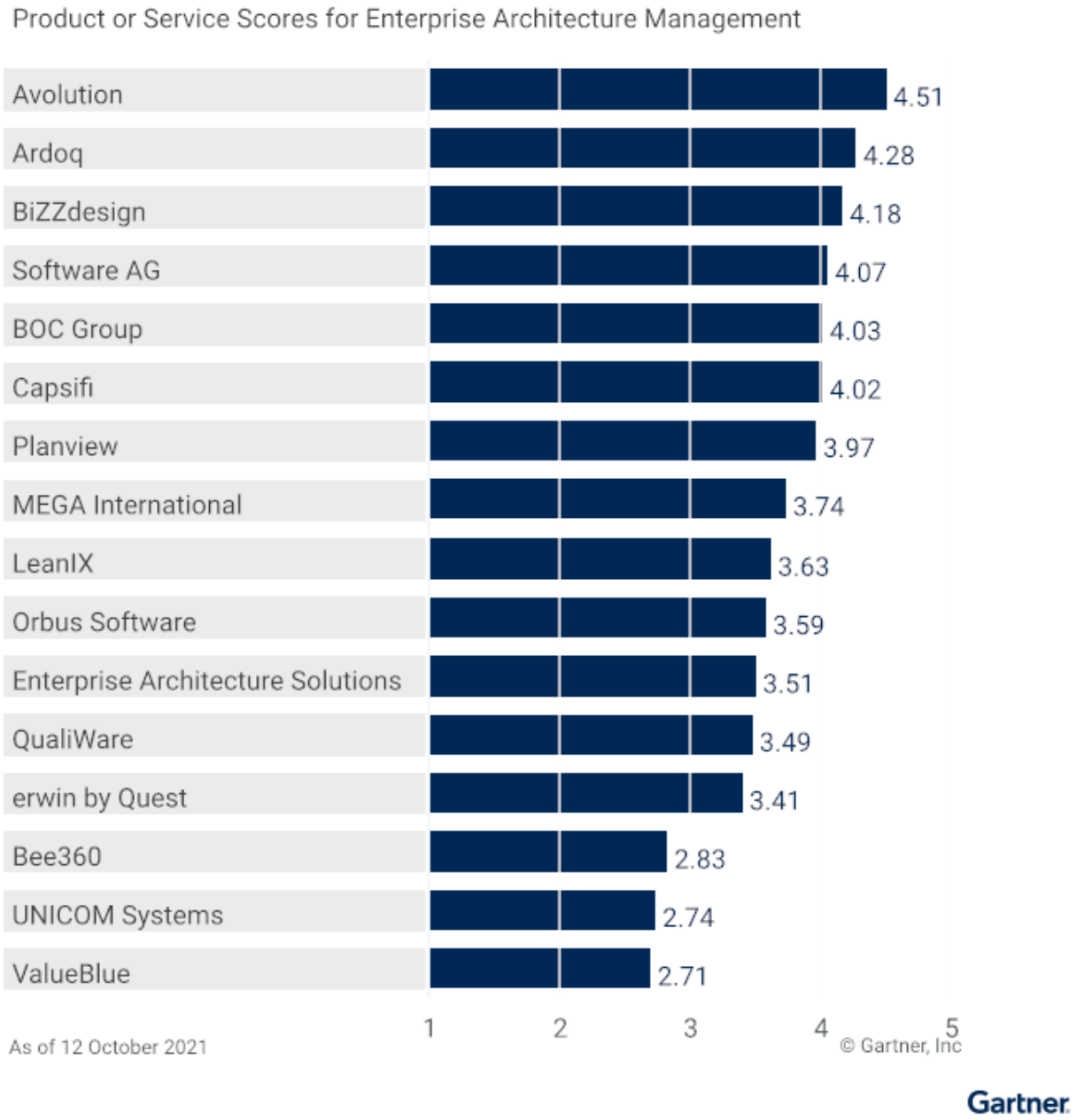

Source: Gartner (November 2021)

## Vendors' Product Scores for Assess and Manage an Evolving IT Portfolio Use Case



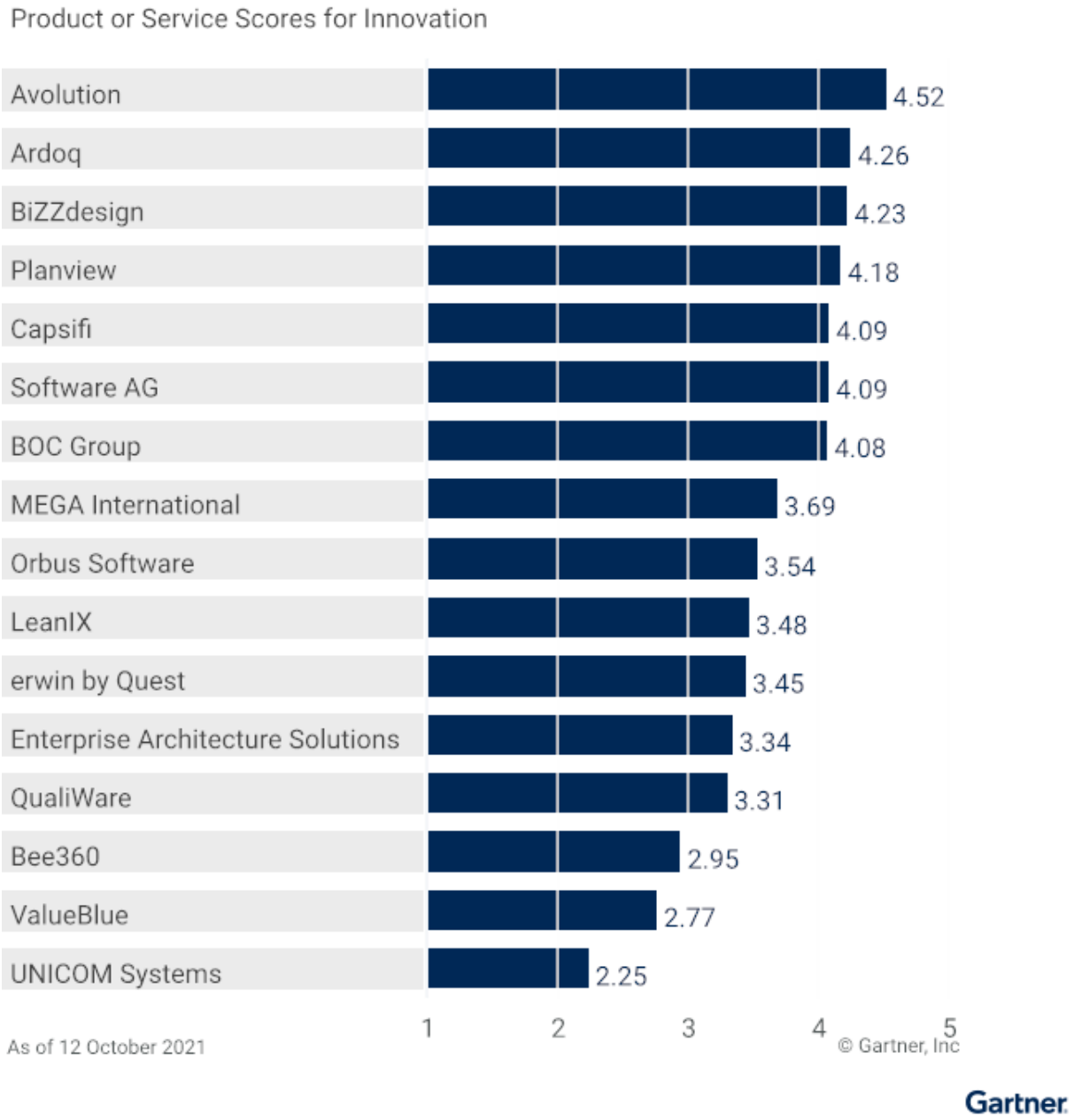

Source: Gartner (November 2021)

## Vendors' Product Scores for Enterprise Architecture Management Use Case




Source: Gartner (November 2021)

## Vendors' Product Scores for Innovation Use Case




Source: Gartner (November 2021)

## Vendors

### Ardoq

**Primary EA Product:** Ardoq is delivered as a cloud-native, continuously deployed, SaaS product. The key differentiator is the property graph database, which enables high-level control over the capturing, structuring, versioning and reuse of model components within the repository. Although the overall environment is fully extensible, that flexibility also implies that a degree of sophistication is needed to leverage the full power of the product.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (4.44):** Ardoq provides customers with 12 out-of-the-box use cases to jump-start their EA initiative and reduce the speed to value with the tool. It provides visualization styles and perspectives to generate multiple views for existing data simultaneously, without the need for manual rendering of each view. Users can extend the metamodel via a drag-and-drop interface to meet the requirements at hand. Ardoq allows for the publishing of views to nonusers with embedded presentation elements that dynamically draw from the underlying models, and it has surveying and collaboration features to capture data directly into the repository.
- **Support Change, Transformation and Optimization (4.37):** Ardoq uses data branching to create multiple future states and "what if" scenarios. The architecture branches are versioned at the object level and kept in sync with the original in the repository. A surveying feature enables sourcing of input for transformation/optimization ideas from service, application, and product owners, as well as easy consolidation and analysis of responses. With two-way integration to Atlassian Jira, Ardoq directly integrates the work of development teams and enables progress tracking.
- **Assess and Manage an Evolving IT Portfolio (4.22):** Ardoq includes an out-of-the-box dashboard for application portfolio management (APM) and integration with ServiceNow. It combines these features with embedded survey mechanisms, collaboration and configurable graphics (bubble and Gantt charts). Its new "Broadcasts" feature facilitates the automation of data gathering, quality and governance tasks, connecting the relevant people to the correct parts of the repository.

- **Enterprise Architecture Management (4.28):** Ardoq uses Gantt charts to graphically represent EA project interventions, complemented by mechanisms for skills identification/tracking and collaboration among colleagues. Stakeholders can use Microsoft Teams, Confluence or SharePoint to request an engagement with EA via customized intake forms. Engagements are viewed as objects within the repository that are then tied to ongoing change initiatives. The product has an interesting feature where nonauthorized users can suggest changes to a reference architecture by modeling a what-if scenario and submitting for review.
- **Innovation (4.26):** To support business stakeholders, Ardoq's surveying and collaboration features extend into identifying ideas, prioritizing them, and turning them into projects for the innovation portfolio and, ultimately, into development sprints for agile development purposes. Ardoq also supports the creation and use of a technology radar to track external trends and innovations and prioritize these by mapping them back to the current business capability model.

**Avolution**

**Primary EA Product:** ABACUS 8 suite, released December 2020, is delivered on-premises, as a SaaS offering or as a hybrid. Key differentiators are the graph database, the overall extensibility of the metamodel and the strong artificial intelligence (AI)/machine learning (ML) features such as autocomplete to curate metadata as well as suggest modeling gaps and make recommendations. However, with a vast array of options to comprehend and configure, some customers struggle to get set up quickly. Moreover, the ABACUS Studio product, albeit only used by the power users, still carries an outdated interface.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (4.58):** ABACUS offers a wide range of out-of-the-box UIs — to suit different user personas from EA, the business and IT — that enable modeling, navigation and filtering of data. The UI manages the correlation of data from the repository and the selected view, such that a user selection in one portlet is reflected in other elements of the dashboard. ABACUS enables the management of different "evolutions" of a baseline architecture (set of models) for scenario planning.

- **Support Change, Transformation and Optimization (4.59):** ABACUS provides out-of-the-box project- and portfolio-oriented views, with metadata-driven color-coding, rich Gantt charts and immediate impact analysis. With links to Microsoft Teams, Planner and common tools such as Jira, it supports collaboration with relevant colleagues. Other differentiators were pattern-guided process optimization and users' ability to collaborate on the same object in real time.
- **Assess and Manage an Evolving IT Portfolio (4.48):** ABACUS has out-of-the-box integration that supports bulk data ingestion through representational state transfer (REST) APIs, its product adapters (e.g., ServiceNow), as well as integration of Flexera Technopedia. There are many ways of filtering and sorting data, including the graphical selections affecting the remainder of the portlets. The tool provides an algorithm composer to create metrics and manage how they roll up or across the graph, setting new or related attributes, or generating the color-coding of capabilities.
- **Enterprise Architecture Management (4.51):** ABACUS makes it possible to construct a set of services for the management of an EA practice, including its internal operating model, and the ability to track and trace the resources and costs of individual EA engagements. ABACUS has direct support for the architecture review board (ARB) in managing architectural exceptions (waivers), and ensuring they are followed up in a timely manner.
- **Innovation (4.52):** ABACUS uses surveys as a mechanism for soliciting ideas, which are then tracked, voted on and tagged, ending up as projects in the portfolio. It further offers simplistic customer journey maps based on a process view, with color-coding for emotion and some graphical icon associations.

**Bee360**

**Primary EA Product:** Bee360, released April 2021, is delivered on-premises, or hosted on Bee360's private cloud. It replaces Bee4IT, which is maintained for existing clients. Bee360 bundles together financial management, EA management, and project portfolio management onto a single platform. Despite the change in its name, Bee360 continues to provide an IT-centric view of EA.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (2.85):** Bee360 provides a customizable default model and methodology (its "Bee Approach," focused on IT management) with objects, relationships, dashboards and actions. It provides multilingual process definition capabilities enabling retrieval of business terms and objects from a central repository with support for translation.
- **Support Change, Transformation and Optimization (2.84):** With multiple views and dashboards, including distinct Kanban boards, Bee360 focuses on planning and realization, integration and technology management. With a single corporate license, and through integration with Teams, it supports real-time collaboration by all employees on any plan or action.
- **Assess and Manage an Evolving IT Portfolio (2.62):** Bee360 supports multiple planning horizons for portfolio roadmaps, providing the means for comparison and tracking changes. Leveraging Bee360's IT workflow capability, application assessments are assigned to the relevant individuals and notifications are generated. It further offers metadata-supported, TIME-based assessments of applications and the projects or services they support.
- **Enterprise Architecture Management (2.83):** Bee360's dedicated EA management dashboard is IT-centric, with views such as technology usage, IT spending and demand heat maps, and metrics focused on system maintenance, architecture support and unassigned applications. It requires dedicated customization efforts to support the broader EA discipline, or manage the skills and expertise of enterprise architects beyond IT.
- **Innovation (2.95):** Featuring a trends radar, Bee360 can help enterprise architects document and prioritize trends and technologies, and link them to artifacts, projects and actions, systems, and business initiatives. Bee360 can show where a trend or technology was adopted by the organization.

**BiZZdesign**

**Primary EA Product:** HoriZZon, Version 4, was released April 2021 and delivered as a fully hosted SaaS solution, on-premises, or as a hybrid of on-premises and cloud-based components. Key differentiators are robust metrics and investment analysis features and a high-security environment. Though BiZZdesign has developed a modular platform, the combination of modules, its credit-based pricing, license type and consulting can be overwhelming for customers.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (4.15):** Data is ingested via dedicated connectors (ServiceNow, Jira, Excel, SQL databases, etc.), or through REST APIs with a graphical tool to configure and test integrations. Alongside business capability maps, HoriZZon supports Business Process Modeling Notation (BPMN) and Decision Model and Notation (DMN). Workflow and Microsoft Teams support help drive user interactions and surveys, while additional publishing to Confluence and SharePoint allow for users to navigate, validate, update and collaborate.

- **Support Change, Transformation and Optimization (4.16):** HoriZZon supports the analysis of application and infrastructure contribution to cost. Business capability maps link to business goals, strategies, customer journeys, processes, applications, data and technology. The tool enables creation, categorization, and ranking of gaps between current and desired transformational state with the ability to compare scenarios across time.

- **Assess and Manage an Evolving IT Portfolio (4.06):** The HoriZZon repository stores all application metadata, which is displayed in out-of-the-box, customizable dashboards for IT portfolio management. Upstream and downstream dependencies, along with application and technology roadmaps, help identify conflicts, while Jira and Confluence integration ensure that development backlogs are synchronized. A dedicated vendor footprint dashboard provides visibility into contracts and spend. The tool also supports streamlined ARB governance functions.

- **Enterprise Architecture Management (4.18):** HoriZZon can represent EA services (products) and supporting capabilities through end-to-end workflows to represent the different stages and artifacts of the engagement. The product provides an EA capability model with a mapping to EA services and associated demand management features, and with both forward-looking and historical data. A benefits register allows the user to drill down further into the EA products and projects from which those benefits derive, making it easy to track the value of the EA to the business.

- **Innovation (4.23):** Concepts such as ideation campaigns, technology radars and innovation funnels are mixed with Object Management Group (OMG) Business Motivation Model (BMM) constructs, value proposition design and design thinking canvases. Ideas are managed through the funnel and assessed back to the impact on the capabilities and technologies, and ultimately translated into projects. Metrics are tracked for each idea such as viability, adaptability, feasibility, strategic fit, etc.

**BOC Group**

**Primary EA Product:** ADOIT Version 13.0, released April 2021, is delivered either on-premises or via SaaS through public/private cloud. With a complete UI overhaul in 2021, ADOIT is based on a set of tightly integrated components with a published API. It has a relatively accessible metamodel and configuration features, which architects use to develop persona-specific dashboards and portal interfaces. Assessing and setting up the broad array of features can be a challenge.

Use-Case Ratings:

- **Capture, Structure, Analyze and Present Models (4.03):** ADOIT supports the creation, maintenance and analyses of many different object types and their relationships across multiple models. ADOIT is easily integrated into other common tools, pulling/pushing data from/to other environments, such as configuration management databases (CMDBs), Jira/Confluence and Microsoft Teams. It also has accessible features for metrics calculation, along with a dynamic, drag-and-drop UI, which includes most-recently used artifacts/views and a navigation snail trail.
- **Support Change, Transformation and Optimization (4.07):** ADOIT uses the "plateau" concept from ArchiMate as the basis for project comparison and side-by-side comparison with other plateaus. A plateau is defined as a relatively stable state of the architecture that exists during a limited period of time. The "architecture time machine" feature enables users to drag the slider of the timeline for an architecture or project, exploring how it has/will change over time.
- **Assess and Manage an Evolving IT Portfolio (3.97):** ADOIT provides full traceability of applications' life cycles and their supporting technologies, including tolerate, invest, migrate or eliminate (TIME)-based assessments, as well as representations of applications across projects, business capabilities and associated plateaus. Real-time connectors to other tools, such as Microsoft Teams and Confluence, support collaboration. ADOIT also comes with components for tracking individual technologies (such as technology radars) and importing external data sources, such as Technopedia, to support formal risk assessments.

- **Enterprise Architecture Management (4.03):** An optional component of ADOIT — the ADOIT Connect for Objective and Key Result (OKR) module — helps set OKRs for key stakeholders and then track progress against them, including drilling down further into assessments and initiatives. It is also possible to view usage analysis of EA services to better understand evolving stakeholder needs. The ADOIT app within MicrosoftTeams enables enterprise architects to collaborate closely on specific artifacts in real time.
- **Innovation (4.08):** The ADOIT chatbot (Elli) facilitates quick ingestion of ideas. Features such as the design-thinking canvas help create storylines, moodboards and customer journey maps, along with support to take ideas through project inception into development. The product also incorporates complementary concepts, such as value proposition design and its rendition of the business model canvas.

**Capsifi**

**Primary EA Product:** Jalapeno Version 1.29, released June 2021, is available on-premises, hosted on private cloud or public cloud, yet licensed primarily as a SaaS solution. Jalapeno is not modularized, but provides role-based pathways with defined access to features to allow strategic and operational decision making for executives, business and technology stakeholders.

Use-Case Ratings:

- **Capture, Structure, Analyze and Present Models (4.19):** Jalapeno applies an interpreted ontology mechanism/semantically aligned knowledge graph to reflect a shared operating model. Through industry or generic metamodel templates, it supports the definition of all objects (capabilities, processes, objectives, pain points, etc.) and their states (defined by the metamodel), which, in turn, drive the UI.
- **Support Change, Transformation and Optimization (4.16):** Jalapeno is structured to consistently align change scenarios to the business strategy and operating model. It ensures value streams, customer journey maps and personas tie into value propositions, capabilities and processes, and links these back into needs, benefits, goals and objectives through “value trees.” Integrated project and portfolio tooling allows users to navigate from subproject up to program, and back down into related epics and sprints in Jira.

- **Assess and Manage an Evolving IT Portfolio (3.95):** Jalapeno captures metadata and relationships across all applications, systems, technology components and platforms. It also stores the life cycle and allows for planning scenario-based roadmaps and heat maps, including cost/spend analysis. Jalapeno includes real-time data virtualization integration with ServiceNow.

- **Enterprise Architecture Management (4.02):** Through direct-accessible insight consoles, Jalapeno provides consolidated organizational views, with pathways and features to map out the capabilities, skills, competencies, services and objectives of any role or function, including EA. Jalapeno supports tracking EA project initiatives and the assignment of skilled resources, right through into active support for an ARB or EA community of practice (CoP) — assessing in-flight projects and how they link to goals and objectives.

- **Innovation (4.09):** The idea management "pathway" enables Kanban-style introduction, assessment, prioritization and consolidation of ideas and concepts, from inception to value realization. It includes a variety of idea-scoring mechanisms to determine value, risk, suitability and viability of ideas, and follows progress of value realized through agile delivery features.

**Enterprise Architecture Solutions**

**Primary EA Product:** Essential Project, Version 6.12, released March 2021. Rather than per-user-based pricing, Enterprise Architecture Solutions (EAS) offers its SaaS and Docker editions as annual subscriptions, while Essential Open Source is available for free installation. Other than its extensible modeling editors and views, a key differentiator is the "Essential Playbook" feature that provides context-specific guidance to help users get started with the tool. A major drawback is the lack of sophistication in the dashboard graphics. In addition, rather than dedicated connectors for important infrastructure products, such as ServiceNow, customers must build their own bridges using the extensive REST APIs.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (3.51):** The Essential platform is a set of cloud-native, loosely coupled services based on an underlying graph-based database, with an ontology management capability enabling the core extensibility, flexibility and scalability. "Everyone's Essential" feature allows users to combine and adapt the editors and views to engage the different classes of stakeholder across their enterprise.

- **Support Change, Transformation and Optimization (3.48):** When creating projects and programs, Essential allows the user to link to other elements and turn them into a set of "value drops." It offers a range of lenses (capabilities, channels, technologies, etc.), and includes prebuilt functionality to align to business objectives, cost-benefit analysis, and an integrated benefits register. The interactive Gantt chart enables users to explore and assess the impact of changes.

- **Assess and Manage an Evolving IT Portfolio (3.54):** The product incorporates required functionality to create an integrated view of the IT portfolio. REST APIs provide secure, bidirectional real-time and batch-based integrations with external environments — for example, automatically generating the JSON for DevOps tooling (Jira or Clarity). The architect can also "roll the clock forward" to see how an architecture evolves over time.

- **Enterprise Architecture Management (3.51):** Essential provides basic support for this use case — users must navigate across the repository, focusing on their identified projects, applications and related business objectives. It is also possible to drill down from a given EA principle or guideline and explore projects where that concept was being followed (and not followed).

- **Innovation (3.34):** Essential users can capture and track their ideas, before capturing and structuring assumptions around an idea. Users create relationships to other repository objects (including other ideas), before potentially turning them into projects or incorporating into a wider change program. However, Essential was relatively light in terms of the design thinking capabilities.

**erwin by Quest**

**Primary EA Product:** erwin Evolve, version 2020.1.1, released April 2021, is offered as on-premises, private or Azure-hosted options. Key differentiators include persona-based UIs with federated model content and client jargon adoption across views. For advanced modeling, analysis, integration and governance, it relies on integration with its erwin Data Transformation and erwin Data Intelligence Connect for Evolve tools.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (3.39):** erwin Evolve is built to capture any business or IT artifact with its properties and relationships as objects in a repository governed by a metamodel. Users can assess how combinations of these objects direct and manage business and IT operations. This flexibility comes with a learning curve and requires EA rigor and maturity to maximize value.

- **Support Change, Transformation and Optimization (3.43):** Through the ability to define any kind of relationship between artifacts in the metamodel, erwin Evolve allows for contextual mapping and analysis of the potential impact of changes to model elements — including the impact of strategy, capability, program, project, operational or organizational changes.
- **Assess and Manage an Evolving IT Portfolio (3.31):** erwin Evolve positions applications as the starting point for IT portfolio management. It allows for create, read, update, delete (CRUD)-based access and authorization and decision workflows to manage life cycle stages, supporting services, vendors and contracts, standards and architectural patterns, along with associated costs.
- **Enterprise Architecture Management (3.41):** With a flexible metamodel at the core and the aim to support the definition and relationship of any kind of object, erwin Evolve enables the definition of EA charters, services, and roles and responsibilities. It includes a library of prebuilt models, reflecting common standards and frameworks to simplify the creation of, among others, organizational entities or functions, including EA.
- **Innovation (3.45):** erwin Evolve tracks the relevant object types for managing innovation — from ideas through creation of project initiatives. Enterprise architects can capture simplistic ratings of ideas, aggregate scores and set metadata around design thinking life cycle stages, as well as link them to other objects in the repository, such as the basic representation of personas.

**LeanIX**

**Primary EA Product:** LeanIX EA Suite (EAS) is delivered as a cloud-native, continuously deployed, SaaS product. Key differentiators are high scalability, a modern graph database and GraphQL, and REST APIs for integration. However, for more advanced project and portfolio management (PPM) capabilities, LeanIX relies on ServiceNow, and for detailed modeling, it relies on Signavio and Lucidchart.

LeanIX has renamed its Enterprise Architecture Suite product to Enterprise Architecture Management outside the analysis period of this research. While there might not be any changes to features, services or licensing models, these have not been assessed.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (3.76):** The out-of-the-box data model of LeanIX uses "Fact Sheets" to capture metadata about an object and its relationships to other elements in the repository. This metadata and relationships between objects are the basis of analysis tooling, such as supporting impact assessments, which can then be individually governed. Reports and user workspaces are role-based and customizable.

- **Support Change, Transformation and Optimization (3.63):** LeanIX's licensing model encourages the involvement of all types of users across the enterprise. The newly released "Business Transformation Module" includes capabilities to track objectives and enables "what if" analysis against multiple future states.

- **Assess and Manage an Evolving IT Portfolio (3.85):** In its Application Portfolio Management module, LeanIX EA Suite provides TIME-based assessments with traceability back through the capabilities, applications, technologies and underlying IT components. LeanIX has recently implemented a proprietary IT life cycle catalog that it sees as a differentiator over relying on third-party tooling such as Technopedia. The product incorporates data quality features for sourcing missing information and validating existing data.

- **Enterprise Architecture Management (3.63):** LeanIX uses Fact Sheets to represent EA services. This enables the user to drill down within a service to visualize resource utilization and effort, as well as project budget and cost. Data is ingestible from integration partners, such as Apptio. It's also possible to create an EA service portal for stakeholders, allowing them to request EA services, track initiatives and contact EA experts. LeanIX provides out-of-the-box service maps for some industries.

- **Innovation (3.48):** LeanIX incorporates innovation dashboards, future-state roadmaps and customer journey mapping features. Innovation opportunities are linked to strategic objectives and transformation items to enable users to track progress. Roadmap reports highlight dependencies and conflicts, while customer personas/journeys can help to identify tactical innovation targets.

**MEGA International**

**Primary EA Product:** HOPEX version 4.2, released 22 March 2021, is delivered both as an on-premises and a SaaS offering. The key differentiators for HOPEX are its "app store" functionality, and the unbundling among/separation of the modules for solutions and information architecture, business process analysis (BPA), IT portfolio management, and IT strategic planning. However, with its broad features, clients can find it complex and time-consuming to set up and populate the repository.

Use-Case Ratings:

- **Capture, Structure, Analyze and Present Models (3.95):** HOPEX captures domain-specific vocabulary with multilingual translations to support federated organizations. It interprets metadata linked to stored objects to provide 2D and 3D visualizations of repository contents. In common with other products, HOPEX has integration with Microsoft Teams to support wider stakeholder engagement and also makes the repository available to mobile users.
- **Support Change, Transformation and Optimization (3.83):** HOPEX supports the Business Motivation Model Object Management Group (OMG) standard, leveraging it to capture the transformation vision and link that to capabilities, applications, customer journey, etc. Roadmaps represent the different phases and stages of a transformation initiative to provide support for the comparison of different scenarios, highlighting the implications for application modernization. Additionally, HOPEX now provides the business model canvas template, linked to existing repository elements, to support creation of new products and services.
- **Assess and Manage an Evolving IT Portfolio (3.73):** The HOPEX IT Portfolio Management module supports tight integrations with ServiceNow and Technopedia. The product also provides out-of-the-box reports, such as TIME-based assessments and purchasing rationalizations. Its autogenerated workflows help keep metadata updated. Through its integration with Unified Compliance Framework (UCF), HOPEX allows users to download regulatory frameworks such as National Institute of Standards and Technology (NIST), Sarbanes-Oxley (SOX), International Organization for Standardization (ISO) 27001, etc.
- **Enterprise Architecture Management (3.74):** HOPEX supports the definition of EA services and provides mechanisms to visualize roadmaps and resource allocation, as well as captures the timesheets and expenses of those involved. Although the UI is a little dated in places, HOPEX has prebuilt support for governance processes and policies associated with technology strategy planning, obsolescence and rationalization.
- **Innovation (3.69):** HOPEX provides the ability to capture, assess, analyze, catalog and campaign for ideas supported by embedded chats. The mobile app feature to translate whiteboard sketches to process models is also interesting.

**Orbus Software**

**Primary EA Product:** iServer365, version 1.36, released May 2021, is a pure SaaS solution. It's the cloud-native alternative to iServer 2020, version 12.0, released October 2020, which is delivered on-premises and on private cloud. The key differentiators are the deep integration of Microsoft 365 applications, and its Solutions Hub, which provides a growing catalog of self-service extensions that customers can instantly deploy to their iServer365 environment. However, the overall functional complexity of the product set is overwhelming, making it difficult for new customers to choose appropriate add-ons, and for new users to navigate the user interface.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (3.45):** iServer365 provides extensive repository capabilities, predefined and configurable metamodels, and several visualizations and analysis options, simplified through use-case-based solutions. It includes support for, among others, BPMN, UML, and ArchiMate and allows for free-form modeling of reusable assets through Visio. Orbus leverages Microsoft Teams to deploy surveys and facilitate collaboration.
- **Support Change, Transformation and Optimization (3.47):** iServer365 includes Capability Maturity Model Integration (CMMi); COBIT; strength, weakness, opportunity and threat (SWOT); and political, economic, social, technological, legal and environmental (PESTLE) surveys and analysis features to assess business operating maturity across people, processes, information and technologies. It has out-of-the-box functionality to prioritize, measure progress and attainment of goals, and change programs and projects. Additionally, it supports integrations with project management tools like Microsoft Project Online or Jira.
- **Assess and Manage an Evolving IT Portfolio (3.60):** iServer365 has more than 25 out-of-the-box dashboards to help assess and analyze investments in context of business strategy, capabilities and processes. This includes determining technology roadmaps and life cycle management through technical risk and application impact assessment of change scenarios.
- **Enterprise Architecture Management (3.59):** iServer365 does not yet include a dedicated enterprise architecture management (EAM) solution. However, through its Microsoft SharePoint and Teams integration, it provides the option to create an EA team site, and its modeling capabilities support setting up and maintaining an EA service catalog, KPIs and performance.

- **Innovation (3.54):** In its Solution Hub, Orbus includes a dedicated "iServer Ideation" solution. Users can follow an idea from inception to delivery using native SharePoint and Microsoft Project integration. Independent of the dedicated solution, iServer365 natively allows users to suggest, add, discuss, and initiate ideas and actions as feedback on any view or object, which can then be assessed and potentially followed up. The challenge is the native capabilities require separate governance as there is no dedicated mechanism or process for picking up on feedback.

**Planview**

**Primary EA Product:** Planview Enterprise One, latest version released in June 2021. An optional innovation management tool, Planview Spigit is available but licensed separately. Both tools are available in SaaS form, and Enterprise One is also available on-premises. The overall platform incorporates EA tooling, but it is primarily focused on the PPM functionality across the wider enterprise.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (3.93):** The web-based UI of Enterprise One is complemented by a Visio plug-in, both of which pull and commit data to the central repository. Alongside metadata-driven color-coding, modeling, and annotations, filterable node diagrams support navigation and analysis, traversing the relationships of the repository. Collaborative team workspaces and commenting are supported. Publishing of dashboards/reports is done statically.
- **Support Change, Transformation and Optimization (4.10):** Enterprise One provides extensible templates for different stakeholder views, making widespread use of Gantt and bubble charts and provides detailed financial planning views and reports out of the box. Strategic portfolio planning features support the ability to drill down into the tactical projects and the epics within the overall program. Enterprise One leverages Kanban board features at the lower levels to augment and surface information for high-level scenario comparisons.
- **Assess and Manage an Evolving IT Portfolio (3.78):** REST APIs, web services and data collectors provide many ways to get data in and out of the tool. Surveying features and tight Excel integration facilitate the maintenance of metadata in the repository. Extensive visualization tools, with an emphasis on the TIME methodology, manage the portfolio and aggregate and analyze metrics and costs. The product provides support for roadmaps and timelines across federated organizational units and multiple geographies.

- **Enterprise Architecture Management (3.97):** Architects can define EA services and connect those services to specific steps, deliverables and metrics. The tool provides out-of-the-box event-driven or time-based service triggers. Users can map services down to the skill level to define needed resources and identify organizational gaps. Dedicated team workspaces facilitate collaboration and transparency.

- **Innovation (4.18):** This use case did not take into account additional functionality provided by Planview's Spigit product. Enterprise One allows for the collection, scoring and analysis (e.g., SWOT or PESTLE), evaluation against strategic objectives, and assessment of the cost-benefit of ideas. Ideas can be moved into lightly governed workspaces where teams can collaborate with models and Kanban boards to iterate and deliver an idea into production.

**QualiWare**

**Primary EA Product:** QualiWare X Version 10.4, released 4 November 2020, is available on-premises and via the public/private cloud. Key differentiators include the continued focus on process modeling, along with support for business users and non-EA stakeholders. However, with a vast array of features, the product is inherently complex, and it is challenging for new users to choose the right options to ensure that data in the repository is maintained appropriately.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (3.35):** QualiWare supports import from external tools, such as CMDBs, spreadsheets, web-based modelers and traditional forms. Picture recognition supports model creation from sketches and drawings. The product incorporates good process and decision-modeling capabilities, with support for BPMN, DMN, Rummler-Brache and ArchiMate. Its SAP Solution Manager integration helps sync process structure and information with the EA repository.

- **Support Change, Transformation and Optimization (3.26):** QualiWare separates the current and future-state architectures in private workspaces (all managed in the same repository). In this way, it supports analysis and comparison across scenarios in the form of charts and heat maps, with assessments of cost-benefit, resource allocation, value creation, business outcome and relationship patterns.

- **Assess and Manage an Evolving IT Portfolio (3.48):** QualiWare provides a built-in "governance engine" that combines workflows and scheduled tasks to fetch or update content. External systems can access content via REST or Object Linking and Embedding Database (OLE DB) APIs, with sample integrations offered out of the box. A relatively nonintuitive UI provides analysis support for enterprise investments associated with strategic goals, contribution analysis to business outcome and risk assessments. Its Compliance Desktop provides features to document and improve compliance with industry standards.

- **Enterprise Architecture Management (3.49):** QualiWare supports all key frameworks (TOGAF, FEAF, DoDAF, etc.), and uses scripts to import ISO, SOX and General Data Protection Regulation (GDPR), along with appropriate metamodel customization. The product would benefit from better predeveloped features to support the definition and management of EA services, staffing and skills.

- **Innovation (3.31):** The collaboration module supports the collection of ideas, as well as manages idea refinement and rating with limited support to track emerging technologies, trends and disruptions. The product relies on its spreadsheet-style UI to manage metadata related to ideas, which is then filtered down to present all the ideas at a given stage in the ideation funnel. The QualiApp mobile app can also capture ideas as pictures with comments. An innovation canvas helps users explore the idea portfolio and link the portfolio with business context, while the 3D visualization mechanism can help users explore the relationships with other objects, such as applications and change projects.

**Software AG**

**Primary EA Product:** Alfabet 10.9, released in April 2021, is available on-premises and in public/private cloud deployments. Alfabet FastLane is an entry-level, SaaS-only product with a reduced scope. A long history of deployments in a wide variety of scenarios has driven extensive functionality in Alfabet. However, the blurred overlaps between Software AG's business process management tool (ARIS) and its EA repository (Alfabet) can be confusing and challenging to maintain.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (4.02):** With differentiated functionality for many distinct user types (personas), Alfabet supports the creation, maintenance and analysis of all key object types across multiple models, as well as the development of relationships among those objects.

- **Support Change, Transformation and Optimization (4.08):** Alfabet links customer and stakeholder objectives, providing traceability from third-party vendors and trade-offs across the project portfolio and its applications, through project-level epics and sprints of agile development.
- **Assess and Manage an Evolving IT Portfolio (4.06):** Capturing metadata on application and technology estates is clearly a key strength. Analysis tooling helps slice and dice information to make TIME-based assessments and then overlay them onto application and technology roadmaps, comparing scenarios and associated costs.
- **Enterprise Architecture Management (4.07):** Alfabet demonstrated EA service definition with an emphasis on APM. This extended to capturing the information on colleagues and stakeholders. We saw little in terms of EA project support.
- **Innovation (4.09):** Alfabet was configured for idea scoring and tracking, capturing metadata on the concepts and linking ideas to capabilities, objectives and other objects in the repository. Alongside that was the ability to survey colleagues, import external data and then feed that through into technology trends and radar maps, and further into the portfolio of projects or investments.

**UNICOM Systems**

**Primary EA Product:** UNICOM System Architect, Version 11.4.8.2, released April 2021, is delivered on-premises, via private cloud or installed stand alone. It includes a fat client modeling tool, a web-enabled client (System Architect XT [SA XT]) and a publisher tool. UNICOM licenses a separate PPM tool, Focal Point, that is not included in this assessment. System Architect struggles to compete with more modern tools outside of its core federal market due to an outdated UI and a system that is not intuitive to navigate, unlike some of its cloud-native, modern competitors.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (2.64):** All the key object types are represented in the fat client of System Architect. Navigation of the repository is done via drop-downs, tabs and dialogs. The web client can expose reporting and models in a more streamlined way with views that users can personalize. System Architect directly integrates with PowerBI with batch updates of data and can generate unique URLs using SA Publisher or export data via zip files.

- **Support Change, Transformation and Optimization (2.48):** System Architect supports the creation of roadmaps and Gantt charts to achieve a desired future state. It has functionality to visualize multiple futures in different workspaces and provides reporting mechanisms to compare across these workspaces. Scenarios can be merged with the current state to update to a new baseline.
- **Assess and Manage an Evolving IT Portfolio (2.72):** System Architect relies on the separately licensed Focal Point for much of its analysis and decision support capabilities. Within the product itself, there is the capability to capture and query granular data about the technical architecture. Reports can be generated and exported for sharing or further analysis.
- **Enterprise Architecture Management (2.74):** UNICOM has a set of preloaded architecture survey questions that enable users to drill down into the repository with support for users to create their own surveys. Users can search for consistency, audit trails, counts and statistics, and a large set of architecture templates, reference models, and tools to build architecture.
- **Innovation (2.25):** SA XT, the web client, is used to capture information from employees within the organization. Users can create and define new ideas and all associated metadata. Ideas are manually created and not solicited via surveys. The rich client supports the curation, grouping and analysis of ideas. Ideas can be connected to branches of the architecture and modeled. Further analysis and ranking of ideas relies on exporting ideas over to Focal Point.

**ValueBlue**

**Primary EA Product:** BlueDolphin, latest version released June 2021, is delivered only as a SaaS solution. The product is based on an underlying NoSQL database with a single-page application user interface built on top of a microservice cluster. Key differentiators are data ingestion employing an API and in-app user support. Although BlueDolphin provides some support for most EA use cases, ValueBlue must continue to enhance the sophistication of its features to compete effectively.

**Use-Case Ratings:**

- **Capture, Structure, Analyze and Present Models (2.44):** BlueDolphin utilizes an initial maturity and priority assessment within the tool to guide users to specific use cases and areas to focus on to accomplish strategic objectives. The central repository of BlueDolphin is based on ArchiMate and free shape modeling. ValueBlue utilizes a data collector API for import/export connections to CMDBs, IT service management (ITSM) and other tools.

- **Support Change, Transformation and Optimization (2.57):** The vendor provides templates for a variety of common models, such as business model canvases and business capability maps, and links these to business objectives/goals. These models, along with industry/ecosystem modeling and customer journey mapping, support BlueDolphin's emphasis on capability-based planning for business transformation. Execution of a defined change strategy is supported via PPM functionality that is built into the tool and integrations with tools such as Jira.

- **Assess and Manage an Evolving IT Portfolio (2.64):** With out-of-the-box dashboards for APM and GDPR, the Jaspersoft business intelligence integration helps build persona-specific dashboards. In addition to exporting information in various formats, BlueDolphin supports data exchange with any application via the OData interface, as well as publishing views to external portals, such as Microsoft Teams. BlueDolphin has the functionality to build relationships and view interdependencies across applications, infrastructure, data and business processes. The tool supports the tagging of individuals for notifications and "guest links," which allows the curation of specific data from subject matter experts (SMEs).

- **Enterprise Architecture Management (2.71):** BlueDolphin helps architects understand their practice's maturity with an initial setup maturity and objectives assessment. It also provides templates of steps, deliverables and stakeholders for common EA services that users can adopt or modify for their own use. However, the tool lacks the functionality to track the outcomes of engagements.

- **Innovation (2.77):** ValueBlue provides an idea radar to capture and visualize innovation ideas and dedicated workspaces to link ideas to capabilities and create business cases for review and analysis. Similar to how the tool handles projects, ideas are prioritized, connected to business goals and even associated with other in-flight projects. Users can vote on the ideas and exchange thoughts via the basic chat features.

## Context

Between August of 2020 and August of 2021, Gartner received more than 600 inquiries from clients asking about how to select, configure and leverage EA tools. This is a 100% increase over prior years. Regardless of whether customers are buying their first EA tool, or are current users looking for something better, clients see EA tools as critical to the delivery of services to support their organizations' strategic, tactical and operational goals. In the beginning, organizations want to capture interdependencies between their operations, applications and technology systems. EA tools also support the journey of helping the organization make better decisions, deliver more effective change and transform itself. The tools enable the organization to take a wider perspective, beyond the siloed needs of an individual function or business area.

The selection process for an EA tool should involve performing a thorough RFP and proof of concept (POC) to ensure that any prospective solution meets the requirements, the practices, and the needs of the variety of roles and skills across the organization. This Critical Capabilities research provides a granular framework within which customers can assess the functionality of the tools. It should not be used in isolation but in combination with the Magic Quadrant for Enterprise Architecture Tools. Magic Quadrant and Critical Capabilities research complement each other. The Magic Quadrant's analysis covers 15 dimensions across two axes: Ability to Execute and Completeness of Vision. Its objective is to help clients shortlist suitable vendors. The Critical Capabilities research centers on a single dimension — a vendor's product or service — on the Ability to Execute axis. It equates to a "double click" drill-down, with a focus on the 12 functional capabilities that, in Gartner's view, are critical for supporting the major EA tool use cases.

## Product/Service Class Definition

EA tools enable organizations to examine the need for, and the impact of, change inside and outside the organization by:

- Capturing the interrelationships and interdependencies within and among an ecosystem of partners, operating models, capabilities, people, processes, applications and technologies.
- Providing a central repository catalog of data and metadata about the artifacts, objects and assets an enterprise cares about and their related life cycles.
- Depicting models that represent the relationships among these objects. These models are themselves treated as assets that describe and shape the future of the enterprise.

- Helping with investment decisions at the level of IT and the broader enterprise.
- Combining with operational performance data to help improve business outcomes and shape the construction and ongoing development of digital platforms.

The functional capabilities that Gartner assesses as critical in support of an EA tool are listed in the Critical Capabilities Definition section below.

## Critical Capabilities Definition

Critical capabilities are split across required (core) and optional. The core capabilities of these tools are described in the sections that follow.

**Repository**

An EA repository aims to provide a single source of truth for the organization with storage, categorization and versioning of objects and model primitives of various sorts, as well as the relationships between them and related business artifacts and views.

All vendors use a database of some sort to store data, with an extensible metamodel. This metamodel is at the core of the system to enable enterprise architects to represent new classes and business concepts, as well as design new metrics and relationships. Collectively, these features enable enterprise architects to represent the artifacts the business cares about, their attributes and the relationships between them. This structure provides a common language for the organization, helping to drive alignment and underpin decision making.

The key differentiators involve:

- **Graph Databases:** Traversal and retrieval of information across graphs is more rapid, compared with joins in a relational database. This enhances the flexibility and agility to effectively store relationships and supports changing data models.
- **Leveling:** This helps enterprise architects represent value streams, as well as support the aggregation of metrics and connection to portfolio analysis tooling to create transparency.

### Modeling

Modeling is about structuring relationships across entities, such as business strategies, objectives, goals, constraints, capabilities, personas, customer journeys, activities, processes, value streams, policies, decision models, metrics, applications, technologies, roadmaps, projects and programs.

Most vendors provide simplistic process modeling and limited support for linking elements in the repository to defined business capabilities, goals, outcomes, strategies and objectives. Some vendors provide relatively sophisticated methods for modeling; others rely on separately licensed tools.

The key differentiators involve the degree of support for:

- **Identifying Dependencies and Metadata:** Tools provide varying levels of support for capturing relationships among objects — some come with direct support for common relationships such as how a project, program or idea links to other repository components via named relationships. Other tools enable the definition of any sort of metadata or relationship — for example, assigning a maturity level to a capability or service, but only providing generic mechanisms for users traversing the repository.
- **Customer Journey Maps, Value Streams, Ecosystem Models and Decision Models:** Enterprise architects can capture an outside-in view of how the enterprise delivers customer value using techniques, such as BPMN and, increasingly, DMN, linking these models to representations of customer journeys. Some tools provide rich support for these techniques, others have simplistic tooling, whereas still others rely on this functionality from separately licensed partner products.
- **Aggregation of Metrics:** Metrics may relate to just about any sort of object in the repository. Tools differ in the ways they track, link and aggregate metrics across various levels and taxonomies of these elements. For example, goals, objectives and business capabilities enable enterprise architects to capture customer satisfaction and directly reflect business value.

### Analysis

Analysis tooling provides the ability to identify, assess, prioritize and track gaps, challenges, opportunities, and risks within and across portfolios of business capabilities, investments, processes, projects, applications and technologies.

Features such as heat maps, gap analysis, basic scenario planning and risk indicators are common across all vendors. Collectively, these features enable enterprise architects to provide information and advice to their organization, supporting decision making around business investments and risks, as well as formulating effective responses to industry and technology disruptions.

The key differentiators involve the degree of support for:

- **Analysis Across Multiple Horizons and Scenarios:** Tools take different approaches to support comparisons across various future states described as plateaus (in the style of ArchiMate), or branches of the current state. This may include interactive visual exploration across elements in the repository, and the aggregation of costs across project and change initiatives.
- **Sophisticated Assessments:** This refers to an extension of basic dashboards and portal technologies where multiple analytic views automatically update based on selection or filtering in one pane. This helps enterprise architects to more easily construct analyses to fit business needs by extracting granular or high-level perspectives.
- **Comprehensive Risk Assessment:** This helps represent risks as components, create a risk catalog, set up acceptable limits and support aggregation across different levels. These risks are linked to other component types in the repository for qualitative, as well as quantitative, assessment and enable enterprise architects to create mitigation plans.

**Presentation**

Displays and illustrations of information in the form of dashboards, heat maps, models and scenarios contribute to the presentation capability of the tool. This helps colleagues understand and assess the impacts associated with decisions and proposed solutions.

Almost all tools have out-of-the-box dashboards to depict information related to portfolios of objects in the repository, such as applications, business capabilities and goals in views such as tables, bar charts and bubble charts. Tool features vary in the sophistication and support for customization, interactive visualizations, type of canned dashboards and the ability to create new dashboards from scratch.

The key differentiators involve the degree of support for:

- **Role-Based and Configurable Dashboards:** In addition to canned role-based dashboards, support for configuring and personalizing those dashboards based on priorities is useful. Enterprise architects can leverage reporting and analysis widgets on dashboards with user-defined searches. These are enhanced with modern graph databases.
- **Interactive Visualizations:** These provide an easy way to explore the repository and visualize the relationships, intersections and dependencies among repository elements from different perspectives. Views such as 3D or 2D graphs, chord diagrams, tree maps, and navigable matrix diagrams and multidimensional roadmaps help enterprise architects visualize the impact of change.

**Usability**

Usability is about ease-of-use features and functions that enable support for various classes of users. Apart from enterprise architects, this includes analysts, business users, technology architects, strategy analysts and operations researchers.

Virtually all tools support exhaustive lists of values and lookups, some have drag-and-drop features for modeling. Most vendors provide a manual, while some provide context-sensitive help and tool tips. To ease collaboration, most tools also have some form of embedded chat features and/or integrations with other tools, such as Microsoft Teams and Slack.

The key differentiators involve the degree of support for:

- **Microinteractions:** These are small interactive design moments during which the tooling can enhance the user experience; for example, voting on content, swiping down to refresh data or adding items to a shopping cart. These interactions make the product more intuitive and natural than using multiple clicks and selections to perform similar tasks.
- **Guided Navigation, Autogeneration of Views, Smart Search and Virtual Assistant Support:** Tools take quite different approaches to help a user to navigate through the complexity of the information in the repository. Smart searches enable the reuse of complex queries and the user traversing related concepts without realizing that they are leveraging the defined relationships and metadata. Templates and reusable components enable the creation of custom experiences for different classes of user across the enterprise. In some of these tools, this sort of thing is sublimely easy; in others, enterprise architects must wrestle with clunky UI designs.

- **In-App Chat Support and Real-Time Collaboration:** In-app chat support is handy for tool users to raise issues and request support, rather than mailing the vendors or going to a different ticket-raising platform. A few vendors provide real-time collaboration to enable team members to work on different parts of the same artifact. With the increased use of virtual work teams and the "anywhere enterprise," this aspect has become even more important.

**Configuration and Management**

This capability covers the setup and administration features to support the security of the EA tooling platform, along with setting up different classes of users, their access rights and feature alignment. This also involves controlling access to information stored in the repository.

All vendors provide customizable out-of-the-box roles and role-based access controls with support for SSO. They have access permissions tied to a role or a division, rather than at an individual user level. Most integrate with identity and access management (IAM) tools.

Key differentiators involve the degree of support for:

- **Abstract Access Mechanisms:** Role-based access systems are just the starting point. Support for multiple inheritance and polymorphism is helpful in implementing more-complex access control mechanisms. These sorts of features are important in industries, such as pharmaceuticals, research and military.
- **SOC 2 Compliance:** From a security point of view, SOC 2 compliance for SaaS applications is becoming increasingly important. This certification tests how the vendor securely manages data to protect the interests and privacy of its customers. Few vendors have SOC 2 compliance, while some are midway through the certification process.

**Extensibility**

This involves extending the metamodel of the EA tool through the definition of new modeling primitives (concepts) and relationship types, up to new graphical representations and enforcing domain-specific rules. All vendors support extensible metamodels in some form.

The degree of sophistication in the extensibility of the tools varies significantly, ranging from a simplistic addition of new attributes for process or capability, through to designing and enforcing new graphical notations. Metamodel extension implies a deep understanding of the business domain and the implications of changing the primitives and the underpinning of the EA tools.

The key differentiators among tools involve support for:

- **Accessibility:** The ability to easily understand how the tool operates and the usability of the extension mechanisms themselves vary significantly. Key questions emerge, such as who is the target user of this extensibility? Does that extension mechanism itself rely on recursive and extensible structures? How are the semantics of the metamodel aligned with industry frameworks? Such advanced functionality implies careful access control.
- **Creation of Domain-Specific Ontologies and Methodologies:** Support for the creation of custom language and mapping of synonyms, unique data types, attributes and relationships enable customers to create a unique methodology that suits the needs of their specific organization.
- **Enforcing Graphical Notations:** The ability to extend object classes, underlying notations, relationships types and methodologies enables the organization to reflect its domain-specific context. Furthermore, these new extensions may need exposure in the standard graphical libraries, making them reusable across the UI.
- **Federated Extensions:** In combination with sophisticated access controls, some tools provide out-of-the-box mechanisms to support the extension of the organizational methodology for a specific part of a federated organizational structure. This can help users develop different viewpoints of the same content for different stakeholder groups.

**Publication**

Publication focuses on enabling wide consumption of the data contained within the EA tool — across the enterprise and beyond. This implies the ability to capture comments and feedback on that content, and/or score elements contained in repository views.

Although the ability to enable different classes of users restricted access to the repository data is a core feature of all tools, how EA tools enable data consumption varies considerably. Personalized views, reviewing, tagging and notification features in different forms are common across all vendors. Some vendors provide capabilities to survey and capture feedback from non-EA stakeholders. Other vendors provide predeveloped processes to validate repository contents across different versions. Some vendors also provide secure APIs to publish content through third-party applications and dashboards, such as Microsoft PowerBI. A few vendors take this a step further to deliver dynamic analysis content to stakeholders, along with scheduled alerts and reports. Delivering repository information via these sorts of integrations may have significant licensing cost implications.

**Frameworks**

Frameworks are a starting point for structuring the repository and the relationships among artifacts. There is a focus on support for different architectural methods and vertical industry models. The EA tool supports choosing the EA frameworks to adopt, and identifies overlaps and gaps.

Some vendors provide mechanisms to apply compliance and regulatory frameworks, such as NIST, GDPR and SOX. Most support industry architectural and process frameworks, such as American Productivity & Quality Center (APQC), DoDAF, Banking Industry Architecture Network (BIAN), enhanced Telecom Operations Map (eTOM) and ACORD. Most vendors extend consulting support to help customers understand gaps and select a suitable framework.

**Integration**

Integration mechanisms expose and import data to and from other products, enabling the EA tool to be a hub uniting other common tools in the enterprise technology ecosystem. This includes categories such as product management, CMDB, PPM, business process management suite (BPMS) and process mining.

Almost all vendors provide some out-of-the-box integrations with external applications for product management, CMDB, ITSM, PPM, governance, risk and compliance (GRC) and/or BPMS. Virtually every tool provides extensible REST APIs, while several support GraphQL APIs. Some tools provide out-of-the-box mechanisms to align imported data with the existing object structure, ensuring unique alignment between objects in the repository and these external data sources. Some vendors also provide bidirectional integration to keep external applications in sync — for example, most have some form of integration with ServiceNow, Technopedia and Jira. Others integrate with tools such as Microsoft Teams and Slack to ease collaboration and engagement of users across the enterprise. While most vendors provide basic Excel import and export, some vendors take this a step further to deliver intuitive interfaces and templates to support importing and exporting data through Excel files, which can be quite helpful in the initial setup.

Key differentiators involve the degree of support for:

- **Lossless Import and Data Enrichment:** Sophisticated Excel-based import mechanisms and API-based data loaders are valuable when setting up a new tool or moving from an old version. Some of these tools take this a step further by automatically extracting column headers and align it with the metamodel, while others provide extraction, transformation and loading (ETL)-style enrichment mechanisms and/or validation wizards.
- **Interface Builder for Easy Integration:** This sort of feature goes beyond Excel-based loaders and dedicated integrations. It enables enterprise architects to map external data sources to appropriate element types and fields in the EA tool. This eventually enables automated information exchange and better enables EA tools to play that tool hub role.

**Automation**

Automation features help enterprise architects to industrialize their activities, delivering value more quickly and reliably, while keeping information up to date and fresh. Here, we explore process and policy automation functionality used in the tool (rather than served up externally).

Most vendors have some sort of process support functionality integrated in their EA tool. This is usually in the form of “workflows” for common governance functions and is not extensible or adaptable by the user organization.

Key differentiators involve the degree of support for:

- **Automated Attestation:** Automatically triggering attestations for repository content helps keep the repository up to date and avoids accumulation of irrelevant components or artifacts. These processes are usually triggered based on metadata about the life cycle of the application or technology, or some change that affects the component.
- **Custom EA Processes:** A few vendors provide sophisticated tooling to enable organizations to create their own governance processes and procedures. This sort of dynamic workflow capability can include support for data-driven routing and work assignment, event-based triggers, approval by assigned individuals and survey management mechanisms.
- **Event Correlation Against Streaming Data:** A few tools provide support for real-time event correlation and analysis of real-time data feeds. This sort of functionality can then trigger alerts or processes and provide metrics aggregations or link to deeper analytics to better support decision making by leaders and other stakeholders.

**Innovation Management**

This focuses on mechanisms that support the creation and tracking of innovation and change initiatives. This includes support for ideation, trendspotting, and the engagement of colleagues, PPM links and benefit realization.

Almost all vendors provide elementary features to capture an idea and link it to projects and initiatives. Most vendors support voting or rating of ideas, tagging individuals, and commenting, as well as linking ideas to business outcomes, capabilities, processes and other objects in the repository. Having created relationships with these other items, users can then explore and navigate across the repository.

Key differentiators involve the degree of support for:

- **Structured Collection of Ideas and Advanced Collaboration Environments:** Capturing ideas, opportunities, trends, disruptions and emerging technologies helps open multiple starting points for innovation initiatives. Tools typically enable stakeholders to collaborate via embedded chats, annotate ideas and further flesh out a concept before incorporating it into a change initiative or project.
- **Design Thinking:** Tools provide varying degrees of support for design thinking initiatives, such as the ability to create rich personas, capture jobs to be done and design customer journey maps. These sorts of features help participants focus and redesign their organizational products and services.

- **Mapping Ideas to Other Elements in the Repository and Roadmapping:** These include objectives and outcomes, business capabilities, initiatives, and products, showcasing delivery of value across value streams and the wider value chain. These linkages help ideas become part of the enterprise roadmaps, based on agreed acceptance criteria.
- **Dashboards and Idea Funnels:** Dashboards capturing the business cost (or risk) of an idea can help stakeholders make better and more-informed decisions. Some tools provide direct support for an "idea funnel" that helps the organization take a view across a portfolio of ideas and assess progress, allocate budgets, etc.

## Use Cases

### Capture, Structure, Analyze and Present Models

EA practitioners need to model future- and current-state business capabilities, processes and rules, information, resources, ecosystems, applications, products, and services.

Enterprise architects and other users across the enterprise will contribute data and information to the contents of the repository. These users will also consume and analyze that data, create insights, share with their colleagues, and present this data in a way that helps leaders make better and more informed decisions.

Enterprise architects need the ability to consistently catalog the:

- **Objects and Artifacts of the Organization:** This covers all types of things the business cares about, and their respective life cycles; capturing attributes and metadata about those items. For example, a business capability will have a certain maturity level and may evolve to become a core or differentiating capability.
- **Relationships Among These Objects:** That means building up relationships by linking and structuring the elements of the repository into meaningful models and roadmaps. For example, a business capability may manifest in a set of processes and projects, while a range of applications and technologies support it.
- **Metrics and KPIs of the Enterprise:** These metrics could be about any object type in the repository. Their definition and deployment will inevitably evolve. For example, the metrics associated with a business capability provide an effective way for a large, federated organization to apply a set of consistent metrics enterprisewide.

As a starting point, enterprise architects might begin with a reference framework, which is then adapted to more closely match the needs of the organization.

### Support Change, Transformation and Optimization

Enterprise architects plan and track change, including facilitating the development of new services and products, as well as supporting acquisitions, mergers and divestitures.

Enterprise architects are often involved in:

- **Developing the Shape and Substance of Transformation Initiatives:** Inevitably, that means engaging business stakeholders with a primary focus on enabling business alignment and change, rather than the traditional scope of IT.

- **Supporting the Business and Facilitating Stakeholders:** As they define the scope of that change, enterprise architects help these stakeholders clarify their vision, and identify the benefits and challenges, conflicts and dependencies, as well as the roadmaps associated with getting there.
- **Helping Colleagues Develop and Deploy New Services/Products:** Although these products usually focus on an organization's customers, they may also cover supporting other internal stakeholders.

The number of potential users of the EA tool for this use case is really quite large. Most will have little interest in dealing with the complexity of the IT domain.

#### Assess and Manage an Evolving IT Portfolio

Delivering business value means designing services, managing IT portfolios, architecting solutions, guiding technology projects, optimizing cost/revenue and mitigating risk.

Enterprise architects play an important role in most organizations, as they guide the organization in reducing the long-term costs of IT. Apart from cataloguing the IT estate, this involves:

- **Assessing Dependencies Between Applications and Supporting Technologies:** It also involves capturing application characteristics and driving assessments, such as TIME, to support rationalization and modernization of the IT estate.
- **Ensuring Proper Governance of Development Projects:** Typically, this involves the creation of appropriate guidelines and guardrails for development teams. In more formal settings, it also implies supporting how projects are initiated and signed off.
- **Guiding Projects' Technology Selection and Rationalization:** Enterprise architects may need to ensure proper sourcing guidelines, and emphasize factors such as cost optimization, revenue growth and risk mitigation.

#### Enterprise Architecture Management

To meet the demands of stakeholders, EA leaders need to deliver an agile and compelling set of services and manage the knowledge and resources at their disposal.

With such a broad spectrum of potential activities, EA leaders are challenged to keep everything on track and deliver against the expectations of both business and IT stakeholders. An EA tool can help EA leaders to:

- **Manage the EA Practice in Accordance With the EA Operating Model:** Effectively, this means helping enterprise architects design their products and services (applying the support change, transformation and optimization use case to themselves) in support of the targeted outcomes of the business.
- **Track and Trace the Individual Interventions:** This covers everything from solution delivery to projects and other engagements of the EA team. It also necessitates the ability to look across all engagements, and assess potential and benefits delivered (e.g., an EA benefits register). This implies giving enterprise architects the tools they need to track their time and the resources they consume.
- **Manage the Skills and Expertise of EA:** Enterprise architects need to manage the life cycle of their own methods and artifacts and assess their effectiveness — for example, support for the development of guidelines, design principles and templates.

**Innovation**

Helping organizations track and leverage emerging trends and digital technologies with support for structured, flexible and iterative methods and tools.

In many ways, the innovation use case is a drill-down for the support change, transformation and optimization use case, which is focused on how the EA tool facilitates the organization in developing and supporting innovation initiatives, particularly in leveraging new technologies and becoming more "digital." This extends into how tools deliver a platform to enable innovation with structured, flexible, and iterative methods and features to support the idea life cycle, as well as the collaboration of various stakeholders. We explored how the EA tool helps enterprise architects to:

- **Track Ideas and Concepts From Ideation to Commercialization:** Develop innovation roadmaps to capture changing strategies and innovation opportunities. That also means managing the pipeline and portfolio of ideas/concepts and the ability to create metadata around each, against which enterprise architects might assess potential cost, risk, etc.
- **Support Businesspeople and Technologists as They Design Their Futures:** This means supporting how organizations apply design thinking techniques, such as design of a desired customer experience or developing a new way of doing things. It also implies the provision of traceability from ideation through the operationalization of the experience.

- **Align With In-Flight Projects and Predict Interdependencies, Interrelationships and Business Outcomes:** Stakeholders need a visual representation of the state of change relative to plans, in-flight efforts and existing assets, given strategic goals, strategies, missions and/or objectives.

## Vendors Added and Dropped

### Added

No vendors have been added to this iteration of the Critical Capabilities.

### Dropped

No vendors have been dropped for this iteration of the Critical Capabilities.

# Inclusion Criteria

### Table 1: Weighting for Critical Capabilities in Use Cases

(Enlarged table in Appendix)

| *Critical Capabilities* | *Capture, Structure, Analyze and Present Models* | *Support Change, Transformation and Optimization* | *Assess and Manage an Evolving IT Portfolio* | *Enterprise Architecture Management* | *Innovation* |
|---|---|---|---|---|---|
| Repository | 18% | 10% | 17% | 5% | 5% |
| Modeling | 25% | 20% | 0% | 7% | 8% |
| Analysis | 14% | 15% | 10% | 15% | 10% |
| Presentation | 8% | 15% | 15% | 10% | 10% |
| Usability | 10% | 15% | 10% | 8% | 15% |
| Configuration and Management | 5% | 0% | 7% | 5% | 0% |
| Extensibility | 4% | 0% | 0% | 10% | 0% |
| Publication | 6% | 10% | 0% | 10% | 17% |
| Frameworks | 0% | 5% | 10% | 5% | 0% |
| Integration | 5% | 0% | 16% | 10% | 5% |
| Automation | 5% | 0% | 10% | 5% | 0% |
| Innovation Management | 0% | 10% | 5% | 10% | 30% |
| As of 12 October 2021 | | | | | |

Source: Gartner (November 2021)

This methodology requires analysts to identify the critical capabilities for a class of products/services. Each capability is then weighted in terms of its relative importance for specific product/service use cases.

Each of the products/services that meet our inclusion criteria has been evaluated on the critical capabilities on a scale from 1.0 to 5.0.

## Critical Capabilities Rating

### Table 2: Product/Service Rating on Critical Capabilities

(Enlarged table in Appendix)

| Critical Capabilities | Ardoq | Avolution | Bee360 | BiZZdesign | BOC Group | Capsifi | Enterprise Architecture Solutions | erwin by Quest | LeanIX | MEGA International | Orbus Software | Planview | QualiWare | Software AG | UNICOM Systems | ValueBlue |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Repository | 4.7 | 4.6 | 2.3 | 3.9 | 3.7 | 4.6 | 3.7 | 3.2 | 4.3 | 3.9 | 3.2 | 3.7 | 3.3 | 3.9 | 2.5 | 2.3 |
| Modeling | 4.5 | 4.7 | 2.8 | 4.2 | 4.2 | 4.5 | 3.6 | 3.6 | 3.3 | 4.2 | 3.5 | 3.9 | 3.4 | 3.9 | 2.4 | 1.9 |
| Analysis | 4.7 | 4.7 | 3.3 | 4.5 | 4.0 | 4.3 | 3.7 | 3.1 | 3.9 | 4.1 | 3.4 | 4.5 | 3.2 | 4.2 | 2.9 | 2.2 |
| Presentation | 4.7 | 4.8 | 2.8 | 4.0 | 4.3 | 3.8 | 4.1 | 3.4 | 4.0 | 3.9 | 3.6 | 4.1 | 3.4 | 4.1 | 2.9 | 2.8 |
| Usability | 4.0 | 4.3 | 3.0 | 4.0 | 4.1 | 4.0 | 2.9 | 3.5 | 3.6 | 3.8 | 3.0 | 4.0 | 2.4 | 4.3 | 2.1 | 3.2 |
| Configuration and Management | 3.5 | 4.5 | 2.8 | 4.2 | 4.4 | 3.0 | 3.3 | 3.7 | 3.8 | 4.0 | 3.8 | 3.3 | 3.6 | 4.1 | 3.1 | 2.6 |
| Extensibility | 4.4 | 4.4 | 2.5 | 4.2 | 3.9 | 4.2 | 4.0 | 3.8 | 3.1 | 3.6 | 3.5 | 3.8 | 4.0 | 4.0 | 3.8 | 3.3 |
| Publication | 4.4 | 4.6 | 3.7 | 4.3 | 4.0 | 3.9 | 2.8 | 3.5 | 3.7 | 3.5 | 3.6 | 4.5 | 3.5 | 4.0 | 2.7 | 3.1 |
| Frameworks | 3.2 | 4.3 | 1.0 | 3.7 | 3.7 | 3.7 | 3.6 | 3.6 | 3.2 | 2.8 | 4.2 | 3.5 | 3.9 | 4.2 | 3.2 | 2.8 |
| Integration | 4.2 | 4.3 | 2.8 | 4.0 | 4.1 | 3.9 | 4.3 | 3.0 | 4.0 | 3.5 | 3.9 | 3.3 | 4.1 | 3.9 | 3.7 | 3.1 |
| Automation | 4.1 | 4.2 | 3.0 | 4.2 | 3.5 | 3.6 | 2.0 | 3.2 | 4.0 | 4.0 | 3.8 | 3.6 | 3.8 | 4.0 | 1.7 | 1.9 |
| Innovation Management | 3.9 | 4.4 | 2.6 | 4.4 | 4.1 | 4.1 | 3.2 | 3.6 | 2.8 | 3.4 | 3.8 | 4.3 | 3.5 | 4.1 | 1.3 | 2.8 |
| As of 12 October 2021 | | | | | | | | | | | | | | | | |

Source: Gartner (November 2021)

Table 3 shows the product/service scores for each use case. The scores, which are generated by multiplying the use-case weightings by the product/service ratings, summarize how well the critical capabilities are met for each use case.

### Table 3: Product Score in Use Cases

(Enlarged table in Appendix)

| Use Cases | Ardoq | Avolution | Bee360 | BiZZdesign | BOC Group | Capsifi | Enterprise Architecture Solutions | erwin by Quest | LeanIX | MEGA International | Orbus Software | Planview | QualiWare | Software AG | UNICOM Systems | ValueBlue |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capture, Structure, Analyze and Present Models | 4.44 | 4.58 | 2.85 | 4.15 | 4.03 | 4.19 | 3.51 | 3.39 | 3.76 | 3.95 | 3.45 | 3.93 | 3.35 | 4.02 | 2.64 | 2.44 |
| Support Change, Transformation and Optimization | 4.37 | 4.59 | 2.84 | 4.16 | 4.07 | 4.16 | 3.48 | 3.43 | 3.63 | 3.83 | 3.47 | 4.10 | 3.26 | 4.08 | 2.48 | 2.57 |
| Assess and Manage an Evolving IT Portfolio | 4.22 | 4.48 | 2.62 | 4.06 | 3.97 | 3.95 | 3.54 | 3.31 | 3.85 | 3.73 | 3.60 | 3.78 | 3.48 | 4.06 | 2.72 | 2.64 |
| Enterprise Architecture Management | 4.28 | 4.51 | 2.83 | 4.18 | 4.03 | 4.02 | 3.51 | 3.41 | 3.63 | 3.74 | 3.59 | 3.97 | 3.49 | 4.07 | 2.74 | 2.71 |
| Innovation | 4.26 | 4.52 | 2.95 | 4.23 | 4.08 | 4.09 | 3.34 | 3.45 | 3.48 | 3.69 | 3.54 | 4.18 | 3.31 | 4.09 | 2.25 | 2.77 |
| As of 12 October 2021 | | | | | | | | | | | | | | | | |

Source: Gartner (November 2021)

To determine an overall score for each product/service in the use cases, multiply the ratings in Table 2 by the weightings shown in Table 1.

## Critical Capabilities Methodology

This methodology requires analysts to identify the critical capabilities for a class of products or services. Each capability is then weighted in terms of its relative importance for specific product or service use cases. Next, products/services are rated in terms of how well they achieve each of the critical capabilities. A score that summarizes how well they meet the critical capabilities for each use case is then calculated for each product/service.

"Critical capabilities" are attributes that differentiate products/services in a class in terms of their quality and performance. Gartner recommends that users consider the set of critical capabilities as some of the most important criteria for acquisition decisions.

In defining the product/service category for evaluation, the analyst first identifies the leading uses for the products/services in this market. What needs are end-users looking to fulfill, when considering products/services in this market? Use cases should match common client deployment scenarios. These distinct client scenarios define the Use Cases.

The analyst then identifies the critical capabilities. These capabilities are generalized groups of features commonly required by this class of products/services. Each capability is assigned a level of importance in fulfilling that particular need; some sets of features are more important than others, depending on the use case being evaluated.

Each vendor’s product or service is evaluated in terms of how well it delivers each capability, on a five-point scale. These ratings are displayed side-by-side for all vendors, allowing easy comparisons between the different sets of features.

Ratings and summary scores range from 1.0 to 5.0:

1 = Poor or Absent: most or all defined requirements for a capability are not achieved

2 = Fair: some requirements are not achieved

3 = Good: meets requirements

4 = Excellent: meets or exceeds some requirements

5 = Outstanding: significantly exceeds requirements

To determine an overall score for each product in the use cases, the product ratings are multiplied by the weightings to come up with the product score in use cases.

The critical capabilities Gartner has selected do not represent all capabilities for any product; therefore, may not represent those most important for a specific use situation or business objective. Clients should use a critical capabilities analysis as one of several sources of input about a product before making a product/service decision.

## Document Revision History

Critical Capabilities for Enterprise Architecture Tools - 14 December 2020

Critical Capabilities for Enterprise Architecture Tools - 16 December 2019

Critical Capabilities for Enterprise Architecture Tools - 24 October 2018

Critical Capabilities for Enterprise Architecture Tools - 27 February 2018

Critical Capabilities for Enterprise Architecture Tools - 9 January 2017

Critical Capabilities for Enterprise Architecture Tools - 7 December 2015

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## Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

Magic Quadrant for Enterprise Architecture Tools

How Products and Services Are Evaluated in Gartner Critical Capabilities

Toolkit: How to Construct a Winning RFP for Buying EA Tools

How Markets and Vendors Are Evaluated in Gartner Magic Quadrants

How to Develop a Winning Value Proposition for Buying Enterprise Architecture Tools

Avoid the 13 Worst EA Practices to Ensure Success in the Digital Business Era

8 Steps to Start or Restart a High-Impact, Business-Outcome-Driven EA Program

Enterprise Architecture Must Evolve Into an Internal Management Consultancy

3 Steps to Creating Enterprise Architecture Services

Role of Business Architecture in Digital Business: Benchmark Data

Remote Work Will Push EA Leaders to Develop Interaction Plans and Leverage an Ecosystem of Tools

## Table 1: Weighting for Critical Capabilities in Use Cases

| *Critical Capabilities* | *Capture, Structure, Analyze and Present Models* | *Support Change, Transformation and Optimization* | *Assess and Manage an Evolving IT Portfolio* | *Enterprise Architecture Management* | *Innovation* |
|---|---|---|---|---|---|
| Repository | 18% | 10% | 17% | 5% | 5% |
| Modeling | 25% | 20% | 0% | 7% | 8% |
| Analysis | 14% | 15% | 10% | 15% | 10% |
| Presentation | 8% | 15% | 15% | 10% | 10% |
| Usability | 10% | 15% | 10% | 8% | 15% |
| Configuration and Management | 5% | 0% | 7% | 5% | 0% |
| Extensibility | 4% | 0% | 0% | 10% | 0% |
| Publication | 6% | 10% | 0% | 10% | 17% |
| Frameworks | 0% | 5% | 10% | 5% | 0% |
| Integration | 5% | 0% | 16% | 10% | 5% |
| Automation | 5% | 0% | 10% | 5% | 0% |

| *Critical Capabilities* | *Capture, Structure, Analyze and Present Models* | *Support Change, Transformation and Optimization* | *Assess and Manage an Evolving IT Portfolio* | *Enterprise Architecture Management* | *Innovation* |
|---|---|---|---|---|---|
| Innovation Management | 0% | 10% | 5% | 10% | 30% |
| As of 12 October 2021 | | | | | |

Source: Gartner (November 2021)

## Table 2: Product/Service Rating on Critical Capabilities

| *Critical Capabilities* | *Ardoq* | *Avolution* | *Bee360* | *BiZZdesign* | *BOC Group* | *Capsifi* | *Enterprise Architecture Solutions* | *erwin by Quest* | *LeanIX* | *MEGA International* | *Orbus Software* | *Planview* | *QualiWare* | *Software AG* | *UNICOM Systems* | *ValueBlue* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Repository | 4.7 | 4.6 | 2.3 | 3.9 | 3.7 | 4.6 | 3.7 | 3.2 | 4.3 | 3.9 | 3.2 | 3.7 | 3.3 | 3.9 | 2.5 | 2.3 |
| Modeling | 4.5 | 4.7 | 2.8 | 4.2 | 4.2 | 4.5 | 3.6 | 3.6 | 3.3 | 4.2 | 3.5 | 3.9 | 3.4 | 3.9 | 2.4 | 1.9 |
| Analysis | 4.7 | 4.7 | 3.3 | 4.5 | 4.0 | 4.3 | 3.7 | 3.1 | 3.9 | 4.1 | 3.4 | 4.5 | 3.2 | 4.2 | 2.9 | 2.2 |
| Presentation | 4.7 | 4.8 | 2.8 | 4.0 | 4.3 | 3.8 | 4.1 | 3.4 | 4.0 | 3.9 | 3.6 | 4.1 | 3.4 | 4.1 | 2.9 | 2.8 |
| Usability | 4.0 | 4.3 | 3.0 | 4.0 | 4.1 | 4.0 | 2.9 | 3.5 | 3.6 | 3.8 | 3.0 | 4.0 | 2.4 | 4.3 | 2.1 | 3.2 |
| Configuration and Management | 3.5 | 4.5 | 2.8 | 4.2 | 4.4 | 3.0 | 3.3 | 3.7 | 3.8 | 4.0 | 3.8 | 3.3 | 3.6 | 4.1 | 3.1 | 2.6 |
| Extensibility | 4.4 | 4.4 | 2.5 | 4.2 | 3.9 | 4.2 | 4.0 | 3.8 | 3.1 | 3.6 | 3.5 | 3.8 | 4.0 | 4.0 | 3.8 | 3.3 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Publication | 4.4 | 4.6 | 3.7 | 4.3 | 4.0 | 3.9 | 2.8 | 3.5 | 3.7 | 3.5 | 3.6 | 4.5 | 3.5 | 4.0 | 2.7 | 3.1 |
| Frameworks | 3.2 | 4.3 | 1.0 | 3.7 | 3.7 | 3.7 | 3.6 | 3.6 | 3.2 | 2.8 | 4.2 | 3.5 | 3.9 | 4.2 | 3.2 | 2.8 |
| Integration | 4.2 | 4.3 | 2.8 | 4.0 | 4.1 | 3.9 | 4.3 | 3.0 | 4.0 | 3.5 | 3.9 | 3.3 | 4.1 | 3.9 | 3.7 | 3.1 |
| Automation | 4.1 | 4.2 | 3.0 | 4.2 | 3.5 | 3.6 | 2.0 | 3.2 | 4.0 | 4.0 | 3.8 | 3.6 | 3.8 | 4.0 | 1.7 | 1.9 |
| Innovation Management | 3.9 | 4.4 | 2.6 | 4.4 | 4.1 | 4.1 | 3.2 | 3.6 | 2.8 | 3.4 | 3.8 | 4.3 | 3.5 | 4.1 | 1.3 | 2.8 |
| As of 12 October 2021 | | | | | | | | | | | | | | | | |

Source: Gartner (November 2021)

## Table 3: Product Score in Use Cases

| *Use Cases* | *Ardoq* | *Avolution* | *Bee360* | *BiZZdesign* | *BOC Group* | *Capsifi* | *Enterprise Architecture Solutions* | *erwin by Quest* | *LeanIX* | *MEGA International* | *Orbus Software* | *Planview* | *QualiWare* | *Software AG* | *UNICOM Systems* | *ValueBlue* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capture, Structure, Analyze and Present Models | 4.44 | 4.58 | 2.85 | 4.15 | 4.03 | 4.19 | 3.51 | 3.39 | 3.76 | 3.95 | 3.45 | 3.93 | 3.35 | 4.02 | 2.64 | 2.44 |
| Support Change, Transformation and Optimization | 4.37 | 4.59 | 2.84 | 4.16 | 4.07 | 4.16 | 3.48 | 3.43 | 3.63 | 3.83 | 3.47 | 4.10 | 3.26 | 4.08 | 2.48 | 2.57 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Assess and Manage an Evolving IT Portfolio | 4.22 | 4.48 | 2.62 | 4.06 | 3.97 | 3.95 | 3.54 | 3.31 | 3.85 | 3.73 | 3.60 | 3.78 | 3.48 | 4.06 | 2.72 | 2.64 |
| Enterprise Architecture Management | 4.28 | 4.51 | 2.83 | 4.18 | 4.03 | 4.02 | 3.51 | 3.41 | 3.63 | 3.74 | 3.59 | 3.97 | 3.49 | 4.07 | 2.74 | 2.71 |
| Innovation | 4.26 | 4.52 | 2.95 | 4.23 | 4.08 | 4.09 | 3.34 | 3.45 | 3.48 | 3.69 | 3.54 | 4.18 | 3.31 | 4.09 | 2.25 | 2.77 |
| As of 12 October 2021 | | | | | | | | | | | | | | | | |

Source: Gartner (November 2021)