The Architect in the Organization

What is the function, task and role of the architect in the organization?

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Key Takeaways

➢ An architect provides insight and overview into the current and future capabilities of an organization, how these are implemented with performing and outdated or malfunctioning solutions and how these should be implemented in the future, aligned with the strategy. Capabilities are the ability of an organization to perform activities.

➢ An architect is a planner, designer, builder and reviewer/auditor of new modern and outdated integral systems and enterprise-wide solutions for organizations.

➢ An architect is busy connecting people and communicates often and much with owner/clients and key stakeholders on requirements, solutions and the impact of change.

➢ An architect creates many and understandable visualizations for stakeholders, such as a concept design sketch, artist impression, customer journey map, structure diagram, capability map, and layered map, etc. to test ideas, increase support for certain architecture designs and to report insights an overview.

➢ An architect creates architectures, architecture designs and architecture reviews & reports for systems and organizations and uses concepts and principles explicitly in them. The concepts and principles always need to be proven and clearly visible.

➢ An architect contributes to the faster and more sustainable solution of modern and complex issues in an organization by creating architectures, architecture designs and architecture reviews & reports. An architect not only contributes to making the organization work more efficiently and effectively, but also contributes to improving and innovating the products and services of the organization, the future solutions for complex issues in the ecosystem of the organization.

Executive Summary and Conclusions

This document clarifies the function, task and role of the architect in the organization for board members, directors and managers so that the architect can be deployed more efficiently and effectively. This document also makes their own role as owner/clients and stakeholders clearer.

Most large organizations today employ different types of architects, such as business architects, IT architects and (cyber)security architects. This document clarifies the functions, tasks and roles of the different types of architects in the organization.

The identity of an architect in the organization is to be a designer and builder of modern integral systems and organization-wide solutions and someone who connects people so that they can find each other in the requirements of modern systems and solutions.

The function of the architect in the organization, in a generic sense, is mainly seven things:

1. **CREATING ARCHITECTURES** – Creating architectures, such as a business architecture, IT architecture and a (cyber)security architecture, consisting of the many concepts, principles with the necessary visualizations and views thereof.
2. **CREATING ARCHITECTURE DESIGNS** – Creating architectural designs using the architectures to realize modern solutions or modernize/replace existing outdated solutions. The architectural designs also contain many visualizations and views
3. **PREPARING ARCHITECTURE REVIEWS & REPORTS** – Doing (unsolicited) architecture reviews and making architecture reports in which (outdated) solutions are examined with modern requirements.
4. **BUILDING & REPLACING SOLUTIONS** – Contribute as supervisor/delegated owner/client to the realization and construction of modern solutions that meet new requirements and ensure that outdated solutions meet the new requirements.
5. **MANAGING AN ARCHITECTURE PORTFOLIO** – Keeping an architecture portfolio (with visualizations) up to date in order to inspire clients and stakeholders.
6. **MANAGING THE ARCHITECTURE REPOSITORY** – Keeping an architecture repository up to date, often with an intranet-based portal, containing all data with which documents, models, visualizations and views can be quickly generated for clients and stakeholders to provide them with independent insight in and provide quick access to the architectures, designs, reviews and portfolios.
7. **MANAGING ROADMAPS & DASHBOARDS** – Keeping architecture roadmaps and architecture dashboards up-to-date and providing insight, often via the portal, for clients and stakeholders.

An architect works together with 1) owner/clients, 2) stakeholders, 3) designers, specialists and experts and 4) contractors and projects.

The role of the owner/client (these are usually board members and directors) is:

- Providing architecture assignments, architecture design assignments and architecture review & reporting assignments to architects.
- Requesting (unscheduled) sessions from the architect in which he can at any time provide insight into the state, maturity and quality of capabilities and existing (old) solutions and new solutions that are being built.
- Approve architectures and designs and provide feedback on the contents of the repository.
- Viewing and using the roadmaps, dashboards and visualizations when making decisions.

The role of stakeholders (usually these are managers) is:

- Drawing up programs of requirements together with the architects and reviewing and providing feedback on architectural documents, design documents, reviews, reports and the many visualizations contained therein
- Viewing and using the roadmaps, dashboards and visualizations when making decisions.

The role of the designers and specialists and experts is:

- Together with the architects, create the architectures, designs, reviews, reports and models, create visualizations and views, give feedback and use them in practice.

The role of the projects and contractors is:

- Realize new solutions or improve malfunctioning existing solutions using the approved architectures, designs, reviews and reporting.

The architect draws up architectures consisting of a set of concepts, principles, rules and standards that are necessary to give substance to the functions and capabilities in an organization.

Business Functions are the collections of similar activities that are performed in an organization, such as the sales function, production function and customer services function.

Capabilities are the abilities an organization has to potentially perform activities when needed. For example, prospect qualification, risk positioning and online B2C sales as part of sales function. Decentral materials planning, carbon-neutral manufacturing and straight through processing (STP) as part of the production function. Customer data analytics, robotic process automation (RPA), 360 client view, customer terms contacts and self-service as part of the customer services function.

In the architecture design, the architect uses the concepts, principles, rules and standards from the architectures. An architecture design describes with a roadmap how a migration can take place so that a new system or solution can actually be successfully implemented, or an old system or malfunctioning solution can be replaced. This brings the capabilities of the organization to a higher level of maturity.

The architect focuses on the implementation of concepts and principles in order to provide an organization with new capabilities or to get existing capabilities at a higher maturity level. The architect replaces malfunctioning outdated solutions with modern new solutions through the implementation of concepts and principles. This is often requested from the strategy and business model of the organization or from external legislation and regulations.

The architect makes architecture reviews and architecture reports that mainly consist of visualizations showing where the concepts with the principles have already been fully or partially implemented. They show where malfunctioning outdated systems and solutions are and how modern new systems and solutions will solve problems.

Architecture governance and architecture policy significantly contribute to the success of the architect.

Architects are always busy with exploring, visualizing and improving outdated malfunctioning solutions in the organization and have a list of them.

Start as an owner/client (board-member or director) by asking an architect for an architecture review of a malfunctioning outdated solution and what to do about it, because of the strategy.

Introduction

The purpose of this document is to clarify the function, task and role of the different types of architects in the organization, such as a business architect, IT architect and security architect, so that the architect is used more efficiently and effectively and thus has more added value.

The target audience of this document are the owner/clients and stakeholders with whom the architects work together and the architects in the community. The owner/clients and stakeholders are often the C-suite and the management of organizations, who need a better and more understanding about working with architecture and the function of the architect for more results from architecture.

For decades there has been a position in the organization called an architect. Often the position is named Enterprise Architect, IT Architect, Security Architect, Solution Architect, and the like. Worldwide, more and more practitioners of the architecture profession are joining the organization and there are more and more training courses and certificates.

Working with architecture, carrying out architecture projects and having architecture teams in the organization offers many advantages and can provide many results. However, the world is changing, and therefore the function of the architect must be adapted to that changing world in order to continue to achieve results.

The past years, from different frameworks, methods, reference architectures and modeling languages such as ISO 19439, Zachman, FEAF (US), DoDAF, NAF (formerly MODAF), EIRA (EU), TOGAF, IndEA, NORA, GEA, DYA, ArchiMate, UML and DEMO, people all over the world have given shape to the role of the architect. The question is whether this interpretation is sufficient for the function, task and role of the architect in the organization to be able to cope with the current challenges that organizations will face in the coming years to 2030 and 2040.

Wouldn't we upgrade the architect for this too, for example, be the right hand of the decision-makers in an organization? What impact will this have on the current position, task and role of the various architects such as IT Architect, Business Architect, Application Architect, Security Architect?

This document proposes to look at architecture differently using a different method: Dragon1. The open Dragon1 method for Enterprise Architecture sees an architect as a designer of integrated systems and enterprise-wide solutions for the complex challenges that organizations face today. The architect is stimulated to address the challenges of organizations by designing, visualizing and implementing solutions with very mature and compliant concepts and principles incorporated.

Tips for clients and stakeholders of organizational change:

- *Give the architect concrete architecture & design assignments for modern integrated systems or enterprise-wide solutions*
- *Ask the architect to make unsolicited simple visualizations that explain complex issues*
- *Ask the architect weekly for an architecture review of an outdated solution in the organization and ask for an architecture report that states what has been done in the past week about it*
- *Ask the architect to proactively prepare a weekly report in which the current and future state or situation of a defined area is described and visualized and what the impact is of matters that are not compliant with principles, rules and standards or have been implemented insufficiently mature.*

This makes working under architecture much more effective for everyone!

Upgrading the function of the Architect to be able to address the current modern challenges

What does an architect in the organization normally do?

Whether the architect is an enterprise architect, business architect, IT architect or security architect, there are a couple of things any architect will automatically, by nature do. And they worked for years in a row to add value to the organization with his role.

These things are:

- Visualizing the current state and future state of the organization in various business domains and so called "layers" of the organization. Often these layers are business, application, data, IT and security.
- Looking at the strategy, quality system, policies, business model and target operating model of an organization and assessing if they are all aligned well or if there are gaps and trying to close these gaps.
- Developing a vision and strategy for the organization how to do things in a modern and smart way. Finding out where an organization uses outdated technologies and solutions to solve todays' problems and then help to replace them with modern and smart versions. Developing a roadmap.
- Visualizing the interrelationship and dependencies within domains and layers and across domains and layers, so everyone understands what the impact of change is and where there will be resistance to change.
- Looking if the implemented processes and applications fit the strategy, quality system, policies, business model and operation model well. Are they well aligned? Identifying any gaps and trying to close these gaps.
- Looking at the business capabilities and business processes of the organization and assess whether they are sufficiently implemented and or supported with reliable IT, modern technologies and source with skilled people.
- Looking at the data, application and IT infrastructure of the organization and assess whether they are functionally and technically fit and enabling the business processes to run well.
- Looking at the overall security and the security in detail of processes, data, applications and IT-infrastructure components.

The benefits for any organization in having architects doing these things are:

- Enabling better and faster decision making for C-level and management
- Improved communication between C-level and management
- A more agile (flexible) organization, responding quickly to changes in the environment
- Better aligned processes, applications and IT with the strategy and target operating model. Improved consistency.
- Better and more efficiently run projects
- Reduced risk and costs in processes and application and IT
- Higher business continuity and security
- A better place to work for as employee or work with as partner
- A better company to get products and services from as a client or customers

But is this doing these things enough nowadays?

There are many major social, cultural, societal, economic, technological and ethical issues that public organizations and commercial companies have to answer year after year.

Think of modern challenges such as using less plastic in an organization, lowering the carbon footprint, introducing hybrid or remote working, using AI algorithms wisely and in moderation in order to sell more to customers or develop healthy and fair food products that contribute to a healthier life, etc. Also think of challenges such as simplifying the tax system, improving youth care, the housing market, healthcare, the job market, public transport, a more collaborative judicial chain, more efficient government services and ensuring that benefits and compensation are more and better spent in the right place.

Not everything that can be done because of powerful technologies such as AI, should be done. Everyone is aware of that now these days. Misuse of the possibilities of technology is still lurking. As people and as architects we have a responsibility to society.

The architects in the organization are the people who design architectures and use the architectures to design and realize systems that provide answers to the issues outlined. They explicitly use concepts and principles to create higher quality architecture designs than without using concepts and principles explicitly. It is important not to forget that the architectures and architecture designs must also be continuously maintained, and that usage and effectiveness must be measured continuously.

It is recommended to work with EA tooling and an EA governance process to safeguard all this. In the EA software, you then have all data and architecture products (such as used designs, models, visualizations, concepts, principles, rules, guidelines, policies, processes, applications, etc.) digitally, generated and up-to-date available for all types of architects, who can then use, supplement, deepen and detail each other's works. It is also directly available and usable for the clients and stakeholders.

The architects in the organization often do the same work as building architects, but in completely different areas. Architects in the world of construction and engineering are able to provide wonderful answers to complex issues. Don't we want that in the organization?

For this, it is important that you have architects who can supplement the current interpretation of the function, task and role with the function, task and role of a building architect. People who are continuously busy creating architectures and architecture designs using proven and experimented concepts and principles. You want architects to be architects not only in name, but also to have the skills or knowledge. A very experienced IT professional, program manager or super-specialist is not the same as an architect.

An architect is of great value in an organization as the right hand of a decision-maker. The decision-maker indicates which strategic, tactical or operational insights and overviews he or she needs. The architect then creates or generates these insights and overviews as quickly as possible on the basis of available data in the form of visualizations and views.

A visualization is a graphical representation of a model. An architect always shows the current or future state or situation of a certain area in the organization on a visualization. A view is often a kind of overlay on a visualization to make clear what is or is not good about the current situation or desired situation. Common visualizations that an architect makes are a concept design sketch, artist impression, customer journey map, capability map, value stream map, roadmap, structure diagram and a layered map.

When not enough data is available or the quality of the data is too low to make a substantive visualization, the architect also makes visualizations, views and reports of this fact.

These visualizations then indicate why the data is not available or is of too low quality, what the impact is (like not being in control or being able to respond too slowly to incidents) and what is needed to have that data quickly available from now on.

One of the first things that is often significantly improved and modernized in an organization via architecture, is data management. This based on a report made by the architect with visualizations and views that show the importance of better data management in light of the strategy or the goals of the organization.

Various issues within and outside the organization can be easily solved if high-quality data is used and shared much more often, more efficiently and more securely throughout the organization and the chain.

Therefore, it is important to clearly define the task, role and function of the architect that is required for the organizations and their current and future challenges. The better we do that, the more added value the architect has.

In order to clearly articulate the task, role and function of the architect in this document, we now first define the terms task, role and function. Then it is indicated what an architect is and what an architect does in an organization, according to the method of Dragon1.

Terms Definitions

Below are the definitions of important terms used in this document. These term definitions form a large part of the core of the body of knowledge (BoK for Enterprise Architecture of the Dragon1 Method.

Function (I) – Office, position, occupation, service, capacity, position within a company or organization.

Function (II) – A standard collection of tasks, rights and obligations for a person within a certain domain, for example within an institution such as a company or association, but also, for example, within a project.

Task – A part of a job title and the contents of an assignment to perform certain activities.

Role – Someone who fulfills a role takes responsibility for a set of tasks that are not specific to the position held.

Architect – A designer who makes architectures, architecture designs and architecture reports of often complex systems and solutions. In the architectures and the architecture designs, the architect makes the concepts and principles used explicitly visible and the architect makes many visualizations, viewpoints and views for the stakeholders. A functional designer or technical designer often makes much less visible use of concepts, principles, viewpoints and views. An architect usually first starts by making visual architecture reports. This is the easiest way to start up architecture in an organization.

Owner/Client – The person who owns or has ultimate responsibility for a domain or organization that provides architecture assignments to the architect or the architect team / manager EA.

Stakeholder – A person or organization that has an interest in a well-functioning organization, a well-functioning system or a solution that has been realized. One stakeholder is often more important than the other stakeholder. An architect uses this to weigh requirements differently. An architect defines at least 1 viewpoint for each stakeholder and always makes at least 1 visualization or view for each stakeholder associated with that viewpoint.

Program of Requirements – A set of wishes and requirements set by clients and stakeholders for solutions for the organization, a part of the organization, to deal with usually a set of issues or problems in the organization.

Architecture – An architecture is a set of concepts and principles that are applied to a system to make that system more robust, functional, usable and beautiful for a large group of different users in all usage situations, usage conditions, management situations and management conditions. Rules, guidelines and standards derived from the concepts and principles are also part of the architecture. By applying to a system, we mean that an architecture design of the system is made, in which the concepts and principles are visible and measurable. The system produces a (partial) solution for the challenge the organization is currently facing. The architecture of a system is the conceptual blueprint or the conceptual structure of a system. The structure of a system is the arrangement of the parts of a system. Architecture is more than just recognizing the subsystems and parts of a system with the mutual relationships between the parts.

Architecture Design – A design (construction plan) of a system, in which concepts and principles have been made explicit that ensure functionally and technically the system becomes even better and stronger in all usage and management conditions. There are also rules, guidelines and standards used in an architecture design. In the Netherlands, the term project start architecture (PSA) is sometimes used instead of architecture design.

Architecture Portfolio – A set of visual examples and evidence from the architect's previous commissions that allow the architect to demonstrate his or her abilities to clients and stakeholders and thereby inspire them for new architecture design assignments. In fact, an architect can hardly do without an architecture portfolio. When an architect is not on an architecture design assignment, this architect often works on updating his or her architecture portfolio.

Architecture Report – A document and or set of visualizations that describe to what extent (compliance and maturity) one or more domains, functions, systems, capabilities, processes, services, applications and IT components in the organization comply with reference models, concepts, principles, policies, rules, guidelines and standards. Architects proactively prepare, solicit and unsolicited, architecture reports for clients and stakeholders. Architecture reports are often the first visualizations or documents an architect creates in an organization.

Viewpoint – The job, task, and role-related interest of a stakeholder. A viewpoint consists of one or more function-, task- and role-related questions about how a system does something. From a financial point of view (Financial Viewpoint) a CFO has a financial interest in how a system is realized and works. A user has a user viewpoint (User Viewpoint). Other common viewpoints are: Management Viewpoint, Maintenance Viewpoint, Security Viewpoint, Environmental Viewpoint, Functional Viewpoint and Technical Viewpoint. An architect makes at least 1 visualization or view for each viewpoint.

View – A visualization of one or more views. A visualization of a quality aspect or cross-section of a system. Usage situations, usage conditions, management situations and management conditions are often discussed in one view. An architect makes at least 1 separate visualization or view for each identified stakeholder. Sometimes views are wrongly labeled as viewpoints. Though, a viewpoint is from where you look. A view is what you see.

Concept – An abstraction of an implementation, an approach, method or idea. A concept is a conceptual system. Examples of concepts are Self Service, Data Validation and Vulnerability Scanning. Every organization today should have maturely implemented these concepts.

Principle – The enforced way a (part of a) concept works, producing a certain result. A principle is an inevitable consequence or working mechanism of a concept. Sometimes the short statement or name of a principle is written down in the form of a guideline. This makes a principle much less effective. The advice is to write down a short statement of a principle in the form of a working mechanism that includes an inevitable consequence. An example short statement of the Principle of Self Service: "Enabling people to choose products and pay for themselves without the intervention of an employee ensures that the number of transactions per unit of time can be significantly higher, resulting in lower costs and more revenue." A guideline or rule is NOT a principle. Guidelines and rules are very important. They should be used to implement or take into account a principle. Architects can find many proven principles in other fields, think of cell principles from biology, and see how they have brought benefits and build a library of them.

Element – A logical and functional part of a system or concept.

Component – A physical implementation of an element.

Capability – A capability is something an organization (potentially) can do well. A capability is an implemented concept in the organization. An example of a capability is Self Service. Self Service as a concept exists in the world without being implemented. The capability Self Service cannot exist in an organization without the concept being implemented.

Rule – An agreement between parties that describes what to do or what to abide by. A rule can be with or without consequences or penalties for violation. A business rule restricts freedom of movement or defines a rule of conduct or choice in an organization.

Guideline – An advice or recommendation to help people carry out activities and make decisions. Sometimes guidelines are euphemistically labeled as principles. Dictionaries also give room to that. However, this is not recommended, because often the law of nature, inevitable consequence or working mechanism on which the guideline is based is not communicated along with it, causing the guideline not have the intended effect.

System – A group of interacting and/or interconnected elements that form an identifiable whole from a set of rules. An organization consists of 1 or more systems.

Standard – A procedure or set of agreed standards and requirements for performing certain tasks or activities related to products, services and processes. The agreements are recorded in a specification document. Standards are recognized or adopted by groups of people or organizations.

Organization – An organization is a collaboration between people aimed at achieving a specific goal. A commercial business, an agricultural business, a tourism business, a healthcare facility, an

educational institution, and a government agency are all examples of organizations. An organization is a form of a system. Transactions take place continuously in an organization. Organizations are constantly changing, partly because they are in contact with their environment and because technical developments are constantly taking place. With architecture, the transactions of an organization can be designed effectively and efficiently, taking into account and responding as much as possible to the continuous change of the organization.

Project – A project is a temporary organization. A project often has a lifespan of less than a year.

Transaction – An agreement or communication (series of exchanges of facts, data and/or information) between two systems and/or aimed at delivering an asset. An asset is something of value or importance to the systems or people involved. Many transactions take place in and between systems and therefore also organizations. Designing the transactions of an organization from architecture increases the quality of the organization in many aspects.

Policy – A set of goals, rules, and guidelines for using resources and achieving goals to guide action and decision-making. The policy describes how an organization would like to see employees or systems make use of the available resources. Architecture must be in line with or form part of the policy as much as possible in order to be effective. Policies must always be aligned with processes and procedures. Architects have a task of doing that.

Experiment – An architect is busy every day getting to know new concepts and principles and doing architecture experiments with them in a controlled environment. As an architect, you want to avoid experimenting in production at the customer. Nowadays, large organizations have increasingly created separate environments for this.

The Architect's Function

In short, an architect is a designer who works closely with clients and stakeholders to create architectures and architecture designs for systems and to realize these systems for organizations in various aspect areas, such as business, data, application, IT infrastructure and security.

An architecture is a set of concepts and principles that are applied to a system to make that system more robust, functional, usable and beautiful for a large group of different users. By applying to a system, we mean that an architecture design of the system is made, in which the concepts and principles are visible and measurable. The system produces a (partial) solution for the challenge facing the organization at that time.

The function of an architect is to be a person who makes designs for certain cross-sections or sub-areas of an organization. In some cases, the architect also makes the planning and in some cases executes the designs.

An architect is a planner, designer and implementer who consciously uses concepts and principles when creating and realizing a design.

In order to be able to make an architecture and an architecture design, the architect needs input. This input is formed by a program of requirements, in order to be able to unite a collection of requirements (which are sometimes contradictory) in a building.

An architect receives architecture design assignments (also called architecture assignments or design assignments).

Different types of architects

There are different types of architects in an organization.

Regardless of the type of architect, any architecture helps decision-makers to manage better. For this purpose, architects make comprehensible reports, visualizations and views available that show weaknesses and opportunities for improvement. For example, reports, visualizations and views of half-implemented concepts, faltering principles and standards that have not been enforced, which are of great strategic importance.

Depending on the type of architect, an architect creates specific designs, reports, visualizations and views.

Below are some common types of architects listed and what the in essence create:

Enterprise Architect – An enterprise architect often creates enterprise architectures and architecture designs for entire organizations or large parts of organizations and cross-organizational chains. An enterprise architect usually has a lot of knowledge and skills of different types of architects.

Business Architect – A business architect often makes business architectures and architecture designs for business capabilities and business processes and cross-organizational process chains.

Application Architect or **Cloud Architect** – An application architect often creates application architectures and architecture designs for applications, interfaces and cross-organizational application chains.

Information Architect – An information architect often makes information architectures and architecture designs for complete information systems and cross-organizational information chains.

Data Architect – A data architect often creates data architectures and architecture designs for data collection, data flows, data objects, transactions and flows and cross-organizational data flows.

IT Architect – An IT architect or IT Infrastructure architect often makes IT architectures and architecture designs for IT Infrastructure or parts thereof and cross-organizational IT Infrastructures.

Solution Architect – A solution architect often creates solution architectures and architecture designs for solutions and cross-organizational solutions. A solution is a coherent whole of processes, applications and IT Infrastructure with which problems are solved.

Security Architect – A security architect often makes security architectures and architecture designs for security aspects of the organization of processes, applications and IT infrastructure. A security architect monitors the proper use and application of security architecture principles, security measures and security standards. IT Security, Integral security and Cybersecurity.

All these types of architects must keep good track of the innovations and developments in their field. New concepts, principles and use cases are added every day.

The Architect's Tasks

Even though every organization is unique, and every architect is unique, there are many common tasks to be recognized by the architect.

It is the taskpoliy of the architect to draw up programs of requirements together with the client and stakeholders. A schedule of requirements explores what different problems need to be solved in conjunction and what requirements are placed on the complex solution.

Common tasks for the architect are:

- Making proposals for an architecture design assignment to the client.
- Draw up a schedule of requirements.
- Conversations and interviews with the client and stakeholders to create support for ideas, visions and designs.
- Making architectures (bringing together proven concepts and principles).
- Making an architecture design for a system. The architecture designs consist of different stages and levels of abstraction.
- Making visualizations as part of the architecture designs to be able to explain to clients and stakeholders how a certain architecture, architecture design or system is a solution or answers to set requirements.
- Drafting viewpoints
- Drafting views
- Thinking in terms of scenarios and modeling and visualizing different scenarios with different architectures and designs.
- Planning the development of architectures and the realization of systems.
- Making a cost estimate for the realization of a system.
- Setting up and managing a central EA repository.
- Keeping up to date with literature, trends and developments in the various types of major issues that play a role in and around an organization.
- Managing the issues, trends and developments in a repository.
- Discovering concepts and principles in the literature.
- Learning from and experimenting with concepts and principles.
- Giving inspiring presentations and demos about new concepts, technologies, standards to clients and stakeholders.
- Managing the implemented concepts in a repository.
- Managing the organization's approved architecture principles in a repository.
- Visualizing and managing the architecture choices and architecture agreements.
- Managing the architectures, architecture designs, visualizations, viewpoints and views in a repository.
- Including architecture (concepts, principles, rules, guidelines and standards) in the policies.
- Monitoring and reporting how well policies, processes and procedures are aligned and that no important processes stay at maturity level 1 (CMM Level 1 = initial / ad hoc / undocumented / chaotic).
- Proactively produce relevant and understandable (visual) reports for clients and stakeholders on a weekly and monthly basis.

- Reviewing/auditing functions, systems, capabilities, processes, data objects, applications, services, IT components on maturity and compliance with reference models, concepts, principles, rules, guidelines and standards.
- Managing architecture reports in the central EA repository.
- Realizing and managing your own and personal architecture portfolio.

Architectures

Architects are commissioned to create architectures. Architects use these architectures to create architecture designs and architecture reports.

An architecture is a coherent whole of concepts, their principles and optionally derived rules, guidelines and standards.

An architecture is NOT a document. After all, without a document, a system or organization still has an architecture. Architecture should be documented and visualized as much as possible because you often encounter resistance when changing a system or organization. The better the architecture is documented, the better you can deal with that change resistance.

It is recommended to build a central EA repository in the organization and to generate the architecture documents from the EA repository. This makes it possible to always have sufficiently up-to-date architectures that can be used in the work.

Below we describe the different common types of architectures and what they usually consist of.

Reference Architecture – A set of reference models containing concepts, principles, rules, guidelines and standards. Reference architectures are often drawn up and made available by governments, industries or by very large organizations for the various subsidiary organizations.

Enterprise Architecture – A set of coherent, adopted and approved reference models, concepts and their principles, rules, guidelines and standards, which give direction to the design of business domains, sub-organizations and the "layers" or sub-architectures of an organization. An enterprise architecture increases alignment and coherence in an organization between domains, organizations and departments. An enterprise architecture is often divided into sub-architectures such as a business architecture, data architecture, application architecture, IT Infrastructure architecture and security architecture. An enterprise architecture document and the EA repository contain many models, visualizations, viewpoints and views. These things help to implement and use the enterprise architecture and enterprise architecture designs. An enterprise architecture deals with generic and specific services and solutions for all functions, domains, sub-organizations and departments of the organization. Projects would do well to always use the available enterprise architecture. Even though a complete enterprise architecture document can easily contain many pages, it is advisable to generate an enterprise architecture document every year from a central EA repository as a reference.

Business Architecture – A set of coherent and approved concepts and their principles, rules, guidelines and standards, which give direction to the implementation of the business capabilities and business processes of an organization. A business architecture document and the EA repository contain many business capability & business process models, visualizations, viewpoints and views.

These things help to implement and use the business architecture and business architecture designs. Projects would do well to always use available business architecture.

Application Architecture – A set of coherent and approved concepts and their principles, rules, guidelines and standards that guide the procurement, development and implementation of an organization's applications. An application architecture document and the EA repository contain many application models, visualizations, viewpoints and views. These things help to implement and use the application architecture and application architecture designs. Projects would do well to always use available application architecture.

Cloud Architecture – Usually a combination of an application architecture and an IT architecture that is a conceptual blueprint for a cloud with the most important reference components. A cloud architecture often describes how applications can best be migrated to the cloud and kept operational in the cloud.

Information Architecture – A set of coherent and approved concepts and their principles, rules, guidelines and standards, which give direction to the interpretation of the information policy of an organization, the information domains and the information systems of an organization. In an information architecture document and in the EA repository there are many information models, visualizations, viewpoints and views. These things help to implement and use the information architecture and domain-oriented information architecture designs. Projects would do well to always use available information architecture.

Data Architecture – A set of coherent and approved concepts and their principles, rules, guidelines and standards, which guide the implementation of an organization's Data Policy. In a Data architecture document and in the EA repository there are many Data models, visualizations, viewpoints and views. These things help to implement and use the Data Architecture and Data Architecture designs. Projects would do well to always use the available Data architecture.

IT Architecture – A set of coherent and approved concepts and their principles, rules, guidelines and standards, which give direction to the implementation of the IT policy of an organization. An IT architecture document and the EA repository contain many IT models, visualizations, viewpoints and views. These matters help to implement and use the IT architecture and IT architecture designs. Projects would do well to always use available IT architecture.

Solution Architecture – A set of coherent and approved concepts and their principles, rules, guidelines and standards, which give direction to the support of a business process or part thereof with an integrated combination of information, data, applications and IT Infrastructure components of an organization. A solution architecture document and the EA repository contain many models, visualizations, viewpoints and views. These things help with the implementation and use of the solution architecture and solution architecture designs. Projects would do well to always use available solution architectures.

Security Architecture – A set of coherent and approved concepts and their principles, rules, guidelines and standards, which give direction to the implementation of the information security policy of an organization. A security architecture document and the EA repository contain many security models, visualizations, viewpoints and views. These things help with the implementation

and use of the security architecture and security architecture designs. Projects would do well to always use the available security architecture.

Architecture Designs

The architecture design assignments that an architect receives are often complex and difficult. For example: modernize things, make things less complex and introduce two new systems.

These are very difficult assignments because there are all kinds of dependencies and relationships of processes, activities, applications, interfaces and IT components that make the simple standardization and replacement of old solutions a difficult and complicated job.

You can also only solve major system changes in an organization from an architecture perspective. Sometimes organizations are now trying to tackle this without architecture and with only agile projects. However, this is often not possible in the planned time at justifiable costs. For example, because of test requirements, management requirements, security requirements, interfacing or integration requirements that come into the picture (too) late.

An architect is someone who makes a design on a conceptual, logical and physical level consisting of concepts, principles, elements, components and standards. The designs that an architect makes are called architecture designs.

An architecture design is a design or construction plan for a system or solution and always consists of concepts and principles and many visualizations, viewpoints and views. An architecture design can be created in an EA tool and a document can be generated based on that. This is better than making an architecture design in, for example, a word processor such as MS Word. The architecture design can be managed much better in one tool.

The architecture designs that an architect makes are designs in which concepts and principles are used. The architecture designs often contain many visualizations to properly illuminate certain partial aspects or views. In the field of architecture, these kinds of visualizations are called views. The viewpoint from which these visualizations are created is called the viewpoint.

An architect makes iterative and lateral designs at different stages and at different levels of abstraction:

- Design Sketch, Sketch Draft or Charcoal Sketch (Conceptual Design Sketch)
- Preliminary design or preliminary design (Preliminary Design)
- Final Design (Final Design)
- Detail design (Detailed Design)

In an architecture and an architecture design, a distinction is made between the current situation of the architecture, the future situation of the architecture and intermediate plateaus.

- The current architecture, also known as AS-IS, IST or Current State Architecture
- Architecture plateau 1, called temporary architecture or Transitional Architecture
- The future architecture, also called TO-BE, Soll or Future State Architecture

In order to be able to make these architecture designs, the architect draws up a program of requirements together with the client and stakeholders. Also, the architect needs architectures as input that contain approved concepts and principles for use.

The architect always discusses the various designs with clients and stakeholders, refines the designs and tries to obtain approval for the designs.

And so, step by step the architect works towards a 'yes' to the detailed design, which often entails many costs and has a lot of impact on the environment in which it is applied. Therefore, it is necessary that the design goes through these stages and that no hasty and expensive decisions are made.

Architecture Governance and Architecture Policy

In order to ensure that an EA repository that has been set up remains usable for the client and the stakeholders, it is important that the architect contributes to ensuring that the architecture management and the architecture policy are properly set up.

Architecture control is the entirety of processes and procedures to set up a continuously operating well-oiled machine. The architecture policy is the way in which architectures, architecture designs and architecture reports should be created, managed and used.

The architect can and should contribute to a proper implementation of management and policy by adhering to the agreements made and proactively reporting to those responsible when something is missing or has been implemented insufficiently maturely.

For example, a change management process may not be sufficiently mature. While that process should in fact already ensure an up-to-date CMDB. Or perhaps a communication process is not set up compliantly, while the intranet should contain comprehensible information about working under architecture.

It can also happen that processes and procedures for managing data, on which the architect depends, do not get off the ground because employees are less trained. Or that managers monitor compliance with certain data management processes and procedures less than necessary. In such cases, an architect can proactively report what, why and how this could be improved.

It is common for an organization's intranet or in the EA Tool itself to contain the following documents for good governance and architecture policy: EA Governance, Architecture Vision, Annual Plan Architecture, Architecture Policy, Architecture Principles, separate architecture policy agreements in the field of privacy, authentication and exchange of dates. This intranet page is also often the entrance to the EA repository and the models, visualizations and views published therein.

An architect can monitor and report on this.

Architecture Visualizations, Viewpoints and Views

It is the task of the architect that the owner/client and stakeholders always have access to visualizations and views that they need and can use when making decisions.

It is also the architect's job to ensure that clients and stakeholders fully understand why they should request a particular visualization or view. Once those visualizations and views are there, owner/clients and stakeholders need to have a good understanding of what they see on them and what they can do with them: guidance in their work and support for decision making.

The architect should discuss with owner/clients and stakeholders their interests and needs for visualizations and views.

Every stakeholder, whether it's a board member, director, manager, employee, partner, supplier or client, has interests and needs for information. A viewpoint is a job or role related interest or need for information. So, every stakeholder has viewpoints. A viewpoint can be defined with a set of 1 to 10 questions.

A view is the graphical representation (on top of a base visualization) of the answers to the questions. The relation between a viewpoint and view is the following: a viewpoint is a point from which a stakeholder is looking to the organization, a view is what the stakeholder sees as a result.

It is the job of the architect to track down and retrieve the viewpoints and questions per viewpoint a key stakeholder has. Next it is the job of the architect to define how to realize the visualizations with views that show the questions to the answers. In detail the architect should define which data is needed and which rules, standards or principles should be applied onto a model or visualization in order to be able to show the view.

Note: In conversations with stakeholders, the architect should avoid using technical architecture words such as viewpoint and view as much as possible, and preferably speak about insights, overviews, design sketches, blueprints, landscapes, roadmaps and mood boards.

What helps is that an architect has knowledge of the most common visualizations that can be expected to create. These types of visualizations are often also recognized in architecture policy so that an architect can sufficiently train and prepare to make such visualizations.

List of frequently made and requested architecture visualizations:

1. Stakeholder onion model
2. Strategy map with Balanced Scorecard
3. Business Model (optionally using the Business Model Canvas)
4. Target Operation Model
5. Customer Journey Map
6. Architecture model (Concepts and Principles overview)
7. Structure diagram
8. Design Sketch, Concept Sketch or Principle Sketch
9. Concept Detail Design Drawing or Principle Detail Design Drawing
10. Situation drawing: actor flows in a structure visualization
11. Artist Impression and Architecture Poster (talking board)
12. Infographic of a topic to be discussed across the organization
13. Enterprise Blueprint (a 3, 4, 5 or 6 layer board)
14. Business Function Model
15. Products and Service Model
16. Organization Chart

17. Business process flow model (BPMN)
18. Business Capability Map and Heat Map
19. Business process landscape (overview)
20. Information Domain Model
21. Information Model
22. Data Landscape (Overview)
23. Services Model Plus Catalog
24. Application landscape or System landscape (overview) plus catalog
25. Interface Landscape or Integration Overview
26. Application detail model
27. Solution design model
28. IT infrastructure landscape
29. IT infrastructure aspect visualizations
30. Security blueprint
31. Cross-reference maps (Dependency/Coherence Maps) – a visualization that relates two or more (type of) objects to each other or shows dependency and coherence (coherence) and shows weaknesses or opportunities for improvement. For example, the purchasing department in relation to the sales department and the processes in relation to applications and employee population in relation to strategically required knowledge and skills.
32. Enterprise transformation roadmap (roadmap) and technology roadmap
33. Chain model/ ecosystem model (which partners, role and dependencies does the organization have in the economy and its sector)
34. Skills/ competence gap matrix: which competencies do the organizations have and which do they lack? Where are the holes? What should people be trained in better (online)?
35. Knowledge cards and education cards
36. Dashboard

Note: The difference between a landscape visualization and a blueprint visualization is often the level of detail. A landscape is usually a global overview for management. A blueprint is usually a very detailed blueprint for technical people.

An architect normally makes three versions of each of these types of architecture visualizations: the current state version and the future state version and the reference model version. An architect often creates 1 to 5 different views per visualization (a kind of overlay on the visualization to give meaning. The views then show, for example, maturity and compliance with principles, standards, rules and guidelines.

An architect often makes a plan or roadmap together with the client and stakeholders to make the above visualizations. An architect can normally substantiate the usefulness of the various visualizations and show inspiring examples to the client and stakeholders (from his architecture portfolio).

Architecture Reports

Architecture is useless if it does not lead to solutions/changes. Changes only come if they are well managed and architecture is used to support this.

But how do you ensure that the architecture and architecture designs are used by the administrators and management (the decision-makers)?

One way to do this is to make frequent iterative architecture reports that show how the current situation in the organization is increasingly reflecting the architectures and architecture designs. In other words: how people do or do not adhere to what has been agreed. The better and more clearly that is done, the better people feel in the next iteration.

The Dragon1 method stimulates an architect to make architecture reports.

An architecture report is a set of facts, findings and conclusions. An architecture report contains visualizations with views that show compliance and maturity. An architecture report makes clear what the difference is between what has been agreed (goals and requirements) and what has been achieved. An architecture report makes clear what the impact is of not doing or realizing what was agreed.

An architecture report uses visualizations to clarify how well concepts and principles have been implemented, what the desired and undesirable dependencies are between components, and what the impact of changes is. An architecture report shows where the blind spots in the organization are in terms of data and an architecture report makes clear how a chosen solution can be profitable.

The architectures and architecture designs that an architect makes contain concepts and principles, rules, guidelines and standards. But it is not always easy to implement these in a mature and compliant manner, especially if the concepts or principles are already partly present in the organization and all kinds of dependencies and historical matters make changes difficult.

That is why it is important that the architect often produces architecture reports that show how well the architectures and architecture designs have been implemented.

The architecture reports therefore clearly show which maturity and compliance in the field of concepts, principles, rules, guidelines and standards have been achieved at any time in a certain domain.

It's common for some major changes and system changes to require multiple iterations to get the job done. Realizing major changes in one go by simply shooting an architecture or architecture design into the organization is not often done.

The advice is: make often and many architecture reports, iteratively.

Other Characteristics of an Architect

Various characteristics, roles and activities of an architect are further:

- An architect seamlessly switches between strategic, tactical and operational thinking and working.
- An architect is well in problem formulation & solving and solution design & realization
- An architect thinks from a holistic point of view.
- An architect never loses sight of the human dimension.
- In commercial organizations, the architect never loses sight of the customer and the employee.

- In public organizations, the architect never loses sight of the citizen and the civil servant.
- An architect is honest, understanding and direct.
- An architect can explain complex matters in a very simple and understandable way.
- An architect can think critically (Critical Thinking) and creatively (Creative Thinking).
- An architect is a challenger. And challenges the C-suite and management with fresh ideas.
- An architect knows the mission, vision, strategy and business model of the organization well and uses this to create appropriate architectures and architecture designs.
- An architect acts as an auditor or reviewer of systems and as a guardian of quality and principles.
- An architect knows the management paradigm of organizations and knows the relationship between strategy, policy and management of an organization.
- An architect is someone who can visualize and communicate well in order to win people over to the ideas, visions and designs.
- An architect provides inspiration sessions, is good at telling stories.
- An architect takes long walks with clients and stakeholders to discuss difficult issues and choices.
- An architect is very good at separating main issues from side issues.
- An architect is a connector. Sometimes clients and stakeholders are far apart with their requirements, the challenge is to get this together.
- An architect must be a chameleon so that people drop their facade, and in this way can penetrate to the essence of the problem. Making the problem behind the problem visible.
- An architect has a well-developed situational awareness.
- An architect likes to be completely absorbed in the client's organization.
- An architect has an eye for design costs and construction costs. An architect can make a financial business case, prepare budgets and report financially.
- An architect in an organization is the right-hand man for C-level in the organization and works in a team: The EA Team.
- The EA team can have different roles such as: EA, BA, IA, TA, SecA.
- An architect benefits from an EA governance process in the organization that clearly states why and how architecture is used and how the enterprise architecture in all its facets can be set up and maintained.
- An architect proactively contributes to setting up, implementing and monitoring the EA governance process.
- What kind of architect you are, depends mainly on your knowledge and skills in the field of certain concepts.
- An architect not only reports what data is known but an architect also reports what data is unknown and missing to show that certain architectures are full of assumptions or that certain architecture designs cannot be made or that some decisions cannot be made insufficiently substantiated.
- An architect proactively reports when certain crucial data is not known or missing in a certain area, as a result of which an organization is in principle not in control in that area. Sometimes this is because certain processes have not been implemented, are insufficiently

or immaturely implemented, or because the organization itself has too little knowledge and skills.

- An architect proactively reports with knowledge maps, process maturity maps and skills matrices which knowledge and skills are missing in the organization, given the strategy and business model of the organization.
- It is important that an architect knows what a design is and that the architect can design.

Start the Discussion in the Community

This document proposes the additions to the function, task and role of current architects in organizations to meet the future challenges of organizations.

These future challenges are social, cultural, societal, economic, technological and ethical issues.

The architect will make important contributions by being the right hand of the decision-makers.

The architecture community is invited to respond to this document and incorporate the mindsets into discussions.

Feedback

Do you have any feedback on this document? Send your input to info@dragon1.com

All submissions and contributions will be taken seriously and considered for use in improving this document.

Links & Webinars

Zachman – https://www.zachman.com/

TOGAF – https://www.opengroup.org/

DoDAF – https://dodcio.defense.gov/library/dod-architecture-framework/

NAF (NATO Architecture Framework) - https://www.nato.int/cps/en/natohq/topics_157575.htm

MoDAF has been replaced by NAF

EIRA (European Interoperability Reference Architecture) - https://joinup.ec.europa.eu/collection/european-interoperability-reference-architecture-eira

NORA – https://www.noraonline.nl

GEA – https://www.Groeiplatformgea.nl/

DYA – https://www.sogeti.nl/expertises/methods/dya

UML – https://www.uml.org

ArchiMate – https://www.opengroup.org/archimate-forum/archimate-overview

DEMO – https://ee-institute.org/

Dragon1 – https://www.dragon1.com/resources (specification of the Dragon1 open EA method)

Free materials

Dragon1 is an open Method for Working under Architecture in the organization. The entire specification of the method is available free of charge on the Dragon1 website.

The website includes the following:

- The description of the way of thinking, working method, modeling & visualization way and support & management way of the method
- Examples of architectures, architecture designs and reports
- Examples of the most common architecture visualizations
- Lists of concepts and principles for architects to use as examples to draw from.
- Competency-based job profiles for the different types of architects
- List of defined architecture terms
- Management dashboard to measure the implemented architectures with the associated concepts and principles.

Anyone can use the examples on the Dragon1 website to make their own architectures and architecture designs.

Part of Dragon1 is the open .dragon1 file format. A JSON-based architecture data interchange file format.

https://www.dragon1.com/downloads/enterprise-architecture-layers-map.dragon1

This file can be viewed with the Dragon1 Viewer:

https://www.dragon1.com/viewer?f=https://www.dragon1.com/downloads/enterprise-architecture-layers-map.dragon1&s=all&b=1

In the Dragon1 Viewer, the .dragon1 files and Excel Sheets can be uploaded and viewed.

The specification of .dragon1 files and Excel Sheets can be found on the Dragon1 website.
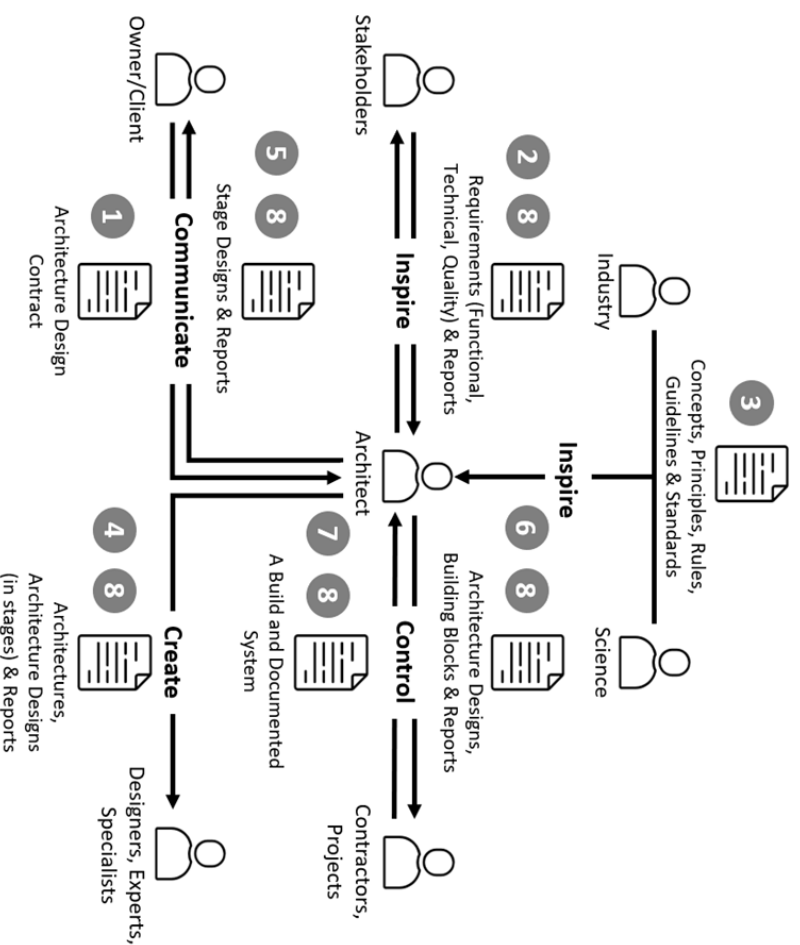
Webinars

On Thursday afternoons there often is a free Dragon1 Webinar of the Dragon1 User Group in which everyone can participate. In these webinars, everyone can ask each other and Dragon1 Experts questions. For the link to the webinar, visit www.dragon1.com/help

How the Architect in the Organization works

Inspire – Create – Communicate – Control

Inspire — Concepts, Principles, Rules, Guidelines & Standards (3)

Industry

Science

Architect — Architecture Designs, Building Blocks & Reports (6) (8) — **Control**

Requirements (Functional, Technical, Quality) & Reports (2) (8) — **Inspire**

Stakeholders

Stage Designs & Reports (5) (8) — **Communicate**

Owner/Client — Architecture Design Contract (1)

Architectures, Architecture Designs (in stages) & Reports (4) (8) — **Create**

Designers, Experts, Specialists

A Build and Documented System (7) (8)

Contractors, Projects

Dragon1 Way of Working

1. The owner/client issues an architecture or architecture design contract to the architect. Or the architect decides to create proactively an architecture report on an issue, situation or project.

2. The architect, as designer of integral systems and enterprise-wide solutions, moderates a program of requirements and collects project needs and requirements with the owner/client and stakeholders. The architect uses critical thinking for challenging the owner/client and stakeholders in their needs and requirements. The architect inspires the owner/client and stakeholders with stories and an architecture portfolio.

3. The architect selects concepts with certain principles (working mechanisms) provided by the industry/science/literature and creates a conceptual architecture design with it (in an iterative and evolutionary way). The architect uses creative thinking to select the concepts and principles and or creates new concepts and principles and does experiments with them.

4. The architect creates an architecture design iteratively in stages or phases: a conceptual design sketch, preliminary design, definite design and detailed design. The architect does this in collaboration with other architects, designers, experts and specialists.

5. The architect proposes finished stage/phase designs to the owner/client for approval. And every time, if possible, the owner/client consults stakeholders and signs the designs off.

6. The architect hands over signed-off stage/phase designs by the owner/client to the contractors or projects for feedback or as a work package.

7. The contractors and projects create more detailed designs and builds the system in parts and as an integrated whole. This in an iterative and evolutionary way, supervised by the architect.

8. The architect constantly creates understandable architecture reports, including simple visualizations of challenges, issues & solutions, with concepts, principles, rules & standards.

Common Concepts an Architect uses in designs:
Standardization, Usability, Modularity, Simplicity, Generalization, Specialization, Service Orientation, Loosely Coupling, Single Source of Truth, Data Management, Data Validation, Data Privacy, Security, Scalability, Cloud-Based, Automation, Robotization, Digitization and LEAN.