Lean Architecting with Dragon1

"lean architecting is structuring and bringing order into complex and changing environments by means of approving architecture principles and having them used by projects governing the way they design and build solutions"

Introduction of Lean Architecting with Dragon1

Lean Architecting is a light weight architecture approach that is part of Dragon1, the open architecture method and SaaS platform. Dragon1 is an open standard and internationally recognized as Architecture Framework (ISO Architecture Framework, Open Group, Gartner, Forrester and IBM). For more information about Dragon1, visit www.dragon1.com/resources and www.dragon1.com/platform.

"Lean Architecting" consists of trimmed down processes, products and services in order to get quick but future proof results in an efficient and effective way. Lean architecting is ideal to realize architectural guidance for running projects, that maybe started without architecture. At conceptual, logical and physical level lean architecting results into describing or prescribing what concepts, principles, elements and components should and should not be used or may and may not be used.

Normally creating an architecture is done in a waterfall manner: first requirements are collected, then an architecture is designed and then projects make use of the architecture. But this causes a lot of time to go by where projects are not making use of a common architecture.

Dragon1 has recognized this and developed an approach to have projects make at an earlier stage use of a common architecture. This we call Lean Architecting.

Below a short introduction is provided for some of the working processes of Lean Architecting.

Before that we introduce the basic of the Dragon1 architecture method to provide a common understanding of what is architecture and why to make use of it.

What is Architecture and Why to use it?

Working with Architecture according to Dragon1

In order to explain what is architecture we present here a few important definition from the Dragon1 method. This part takes careful attention when reading.

Dragon1 defines **architecture** in general as the art and science of the designing and building structures. The **architect** therefore is a designer and supervisor or project manager of structures.

The architecture of a **structure** is defined in Dragon1 as the total concept of a structure, consisting of a coherent set of constructive, operative and decorative concepts. A structure is defined a **system** with a constructive, operative and decorative dimension. Architects design a structure at conceptual, logical and physical level.

A **concept** is defined as an approach abstracted from its implementation. The enforced way a concept works producing results is defined as the concepts **principle**. Concepts and principles at logical level explain how **elements** collaborate and at physical level how **components** collaborate.

The architect gets a architecture design **contract** from an **owner/client**. The architect create a program of **requirements** together with the **stakeholders**. Using this program of requirements he creates an architecture design at three levels of abstraction in a very interactive with the stakeholders. Finally the structure is **build** using the architecture designs.

All these definitions have been researched scientifically and defined based on observation and inference and comply to the three basic quality attributes of definitions.

One can design and build structures or systems with and without architecture. Design without architecture often means design without creating a design at conceptual level and using that to come up with a solution for a large set of requirements, some of which are conflicting and to deal with a huge amount of complexity and a continuous changing environment and structure.

Common types of structure to Design and Build with Architecture

There are eight common types of architecture that are used for design and building structures at a higher level of quality than otherwise:

1. Enterprise architecture is used to design, build or change and innovate integral parts of enterprises
2. Business architecture is used to design, build or change and innovate integral parts of business systems (or business models)
3. Information architecture is used to design, build or change and innovate integral parts of information systems
4. Application Architecture is used to design, build or change and innovate integral parts of application landscapes and applications in particular
5. Data Architecture is used to design, build or change and innovate integral parts of data systems (or data models)

6. Technical architecture or IT architecture is used to design, build or change and innovate integral parts of IT-infrastructures
7. Security Architecture is used to design, build or change and innovate integral parts of security systems
8. Software Architecture is used to design, build or change and innovate integral parts of software systems
9. Solution Architecture is used to design, build or change and innovate integral parts of solutions

The words enterprise, business, information system, application, data, IT-infrastructure, security and solution are also defined in Dragon1.

If the structure in the organization has a high complexity and undergoes continuous change or if a number of structures need to be merged or standardized, it is best to work with architecture to create designs and build the solution.

Working with architecture can be done in two ways: Full scale, using the whole Dragon1 method, or slim and trimmed down, lean architecting. Sometimes full scale just doesn't work because some key things, like strategy and trained architects, are not in place. Then having benefit from the architecture in projects would take too long. The answer then is: Lean architecting with Dragon1.

The following paragraphs all dive into Lean Architecting with Dragon1, focused on bringing order for a certain type of structure, by approving and apply principle by principle for that structure. Project can make use of the approved architecture principles to focus the way they design and build solutions.

Discovering, Selecting and Proposing Architecture Principles

Some organizations have their strategy in place and documented and some don't. If an organization has strategy in place, from it the need for certain business concepts and IT concepts and their principles can be derived. If a strategy is not in place, of the shelf reference architectures and standard best practices can still be used to select and propose architecture principles. This speeds up working with architecture significantly.

Concepts are approaches abstracted from their implementation. Examples of concepts are: open standards, open source, self-service, e-invoicing, single sign-on and cloud-based. Each of these concepts have their principle: the enforced way they work, producing results.

Architects discover, select and propose concepts and principles to be used/implemented in the organization. Concepts and their principles are discovered in literature and in successful applications. When proposed concepts are approved they are made part of an architecture. Dragon1 defines an architecture as a total concept of a structure, system or solution. And when a concept is made part of an architecture, the principle of that concept, becomes an architecture principle.

Architects work with concepts and principles because that always leads to / works towards a unified, adaptive, and above all, connected organization or enterprise. Architects commonly

start doing this when the organization or enterprise needs to change. Architects must address time, budget, quality, best practices, literature, risks and resources for their principles. Strategies, business cases, projects and solutions are common starting points for the needs to change.

With only the products below an architect brings structure and guidance in an enterprise or organization. For this way of working there is no restriction on the types of principle or whether they are enterprise wide or domain specific.

Products:

- Concept Definition and Principle Statement
- Concept Sketch and Principle Details Diagram
- Principle Impact Diagram and Landscape Impact Diagram

Important steps to take:

- Define and promote creating concept sketches and creating principle diagrams as a service in the enterprise or organization

Governance and Management of Architecture Principles

Architecture principles must always be managed, owned and governed to ensure working towards an unified, adaptive, cohesive and connected enterprise or organization. Making use of architecture principles will always structure changes and guide innovation in an organization and reduce its complexity.

Governance of architecture principles means that every principle can be identified uniquely for its definition, owner and impact. It is preferred to make a chief officer or a manager owner of all architecture principles in the company and to have a change process in place, with a change advisory board and architecture team.

Management of architecture principles means making sure that every principle used appropriately whenever it should and could.

With the defined products below an organization can evolutionary build up an architecture in the most effective and efficient way. Bit by bit, piece by piece, principle by principle. The framework lists all the concepts and principles approved and made part of architecture. The domains model lists all the area recognized in the organization or enterprise where concepts and principles could our should be applied. Often people make use of MOSCOW indicators or maturity level indicators (ranging from 1 to 5).

If a concept and its principle can are made part of an architecture, the architecture can be used as common architecture for all projects.

It is preferred that the owner of the architecture, concepts and principles appoints an architect to every domain in the domains model. It is also preferred to document the processes of

selecting, proposing, governing, managing, applying and giving feedback on principles. And to evaluate these processes monthly and quarterly. This will keep Lean Architecting lean!

Products:

- Architecture Principles Framework and Library
- Enterprise Domains Model
- Process description of working with principles
- Architecture Principles Management Report

As alternative for principles some organizations work with a norms, standards and rule base. These are not the same things but can have the same effect.

Important steps to take:

- Appoint an owner for all architecture principles
- Officially approve architecture principle
- Process all changes with change orders
- Document the processes for working with architecture principles

Application of Architecture Principles

It is preferred to have every project and business process in the organization or enterprise to state how they do or do not make use of or comply with approved architectures, concepts and principles. Architects should be notified in advance whenever projects are started up, so they are enabled to facilitate the projects as optimal as possible to use the architecture, concepts and principles.

Architects sometimes need to create context and domain specific diagrams in addition to the basic principle diagrams to make it as easy as possible for project workers to implement the principle or comply with their design to the principle.

When concepts and their principles have been approved for usage enterprise-wide or domain specific or even are made part of an architecture, the concepts and principles will always act as a guide for projects.

Whatever a project or business process does or must deliver, it must comply with the principle. If a project doesn't do that, it will produce a result that will not align as well as possible or as it should be because of the strategy. It may sometimes seem or feel like a short term benefit, not complying with a principle. But practice has shown that not complying with an approved principle even on short term already increases costs, risks, misunderstanding and failure.

Products:

- Solution Architecture diagram
- Additional architecture principles diagrams / stakeholder specific views

Important steps to take:

- Create stakeholder specific, easy to understand, views of the architecture principles

Communication of Architecture Principles

The enterprise or organization can make optimal use of their intranet for communicating the common architectures, concepts and principles. The architects, by iteration, build up an architecture blueprint or domain landscape for the architectures and domains they select and apply concepts and principles for.

Providing all stakeholders with the same overviews and insights of approved and thus common architecture, concepts and principles ensure that everyone can make use of them and can share the knowledge.

On the Dragon1 SaaS platform these blueprints and landscapes can be visualized, published and communicated to any stakeholder. The blueprints and landscapes are created integral, dynamic and interactive, so any changes or impact will be reflected immediately.

Products:

- Architecture Blueprints
- Domain Landscapes
- Architecture Principles eBook

Important steps to take:

- Create architecture blueprints and domain landscapes in an iterative way
- Publish the architecture blueprints and domain landscapes to the stakeholders
- Monitor and manage that the stakeholders view and comment the publications

Feedback of Architecture Principles

It is preferred to have projects and business process provide feedback on making use of architecture, concepts and principles to architects and the owner of the architecture. This will make sure that continuously the architecture, concepts and principles are improved.

On a regularly basis project portfolios should be reviewed to check if projects provide feedback on architecture principles.

Products:

- Architecture Principles Evaluation Report

Important steps to take:

- Review project portfolios regularly

Dragon1

As discussed lean architecting with Dragon1 is a light way of working with architecture. Dragon1 as method also provides a more thorough and mature way of doing architecture. Dragon1 as a method provides a way of thinking, way of working, work of representing or modeling, way of supporting and way of managing. The method contains over 300 defined terms, reference models, a modeling language, document templates and checklists.

If the standard building process of Dragon1 is followed, architects first inspire owner/clients with their portfolio for architecture designs. Next, the architects agree on services and get an architecture design contract from the owner/client. The architects visualize the business model and create business cases and moderate programs of requirements. Next, they design architectures. With these architecture designs great structures and solutions are build executing the strategy of the organization.

This of course takes much more time than lean architecting, but in certain situations making full use of the method is surely something to be considered. If an organization or enterprise is at the start of a major program that needs to reduce the complexity of the organization significantly and transform the organization fundamentally and strategically, working with architecture is the road to success.

Starting with lean architecting is always a smart decision for short terms results. Stepping up to make full use of the method a smart strategic mid-term and long term choice.

Got Interested?

Dragon1 is an open method and SaaS platform for working with architecture. Dragon1 supports executing all the activities that are outlined in this document, creating the mentioned products.

If you are interested in implementing Lean Architecting with Dragon1 in your enterprise or organization, you can contact us any time via phone on +31 (0)317 411 341 or by email via info@dragon1.com. We are looking forward to work with you.

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