

APPENDIX 1

ARCHITECTURE MATURITY MATRIX

Introduction

The Architecture Maturity Matrix was introduced in Chapter 6. This instrument enables any organization wanting to professionalize its architectural practices to devote the right amount of attention to the right area at the right time. The Maturity Matrix helps you to recognize the appropriate steps for improvement in areas of the organization that have priority at any given time.

To identify the appropriate improvement steps, it is first necessary to assess the state of the organization in terms of the Maturity Matrix's 18 key areas. This appendix will help you to perform this assessment. This appendix identifies checkpoints for every level of each key area to determine whether an organization has attained the level in question.

If an organization does not satisfy all the checkpoints of a given level but the organization still wants to reach that level, some suggestions for improvement may be useful. We provide those suggestions for improvement in this appendix. They are explicitly intended as suggestions, and are neither exhaustive nor applicable to every situation. They are meant to be sources of inspiration derived from our experiences – you can extract whatever is useful and then supplement it with your own improvement activities.

To appreciate the structure of this appendix it is helpful to refer to the Architecture Maturity Matrix (Figure A1.1).

In the Maturity Matrix, the columns represent stages on the pathway of increasing maturity. The rows contain the 18 key areas. The letters in the matrix indicate the level of maturity at each stage. The step-by-step improvement progresses from left to right in the matrix.

Observe the following rules in applying the Maturity Matrix:

- An organization attains a level when all the checkpoints at that level and all preceding levels have been satisfied.

Key area	Stage	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Development of architecture			A			B			C						
Use of architecture				A			B				C				
Alignment with business			A				B				C				
Alignment with the development process				A				B		C					
Alignment with operations					A				B			C			
Relationship to the as-is state					A					B					
Roles and responsibilities					A		B					C			
Coordination of developments								A			B				
Monitoring				A		B			C		D				
Quality management									A		B				C
Maintenance of the architectural process								A		B		C			
Maintenance of architectural deliverables						A			B						C
Commitment and motivation		A						B		C					
Architectural roles and training					A		B			C			D		
Use of an architectural method					A						B				C
Consultation				A		B				C					
Architectural tools								A				B			C
Budgeting and planning						A						B		C	

Figure A1.1 Architecture Maturity Matrix

- An organization achieves a stage of maturity when all the levels at that stage and at all previous stages have been attained.

In this appendix, the notion of architecture is being interpreted broadly as a consistent set of principles and models that give direction to the design and realization of processes, organizational structures, information, applications and technical infrastructure of an organization. If an organization possesses such principles and models, we consider those to be a part of architecture, even if they are not identified as such by the organization.

In the context of this appendix, the term architectural process refers to all the activities involved in making and maintaining architectures, as well as aligning them with such other processes as planning and control, decision making, development and operations and maintenance.

It is furthermore assumed that Development with(out) Architecture is performed in projects, which may be either in-house or outsourced. These projects can involve the development and implementation of IT solutions in either customized or standardized packages, as well as updates to processes and organizational structures.

Individual sections devoted to each of the key areas in the Architecture Maturity Matrix are presented in the order that the areas are listed in the matrix, beginning with *development of architecture*. The levels (A, B, C and D) in each of the areas will be discussed. Checkpoints and suggestions for improvement are provided for each level. These can be used to establish where you are in

terms of your own situation and how you might improve it. The suggestions for improvement can also be used to take advantage of opportunities in your organization apart from the levels you are currently working on.

Development of Architecture

• Level A: Architecture undertaken in projects

The development of architecture is undertaken as a project with a sponsor, a pre-defined final result and an end date.

Checkpoints

- Is an architecture only developed if there is a sponsor for it?
- Is a Project Plan drafted before an architecture is developed?

Suggestions for improvement

- *Arrange for a sponsor.* Ensure that the primary sponsor for any architecture being developed is explicitly indicated. Take the task of finding a sponsor seriously. This means that the sponsor should be actively involved in the development of the architecture.
- *Develop architecture according to a plan.* Establish the architectural product that is needed. Then make a Project Plan for the development of the architecture. Implement the plan as a project. Include the elements mentioned in Chapter 4 in the plan: sponsor, purpose and target group, orientation, use of the architecture, scope and content of the architecture, relationship with the other architectures, approach, stakeholders, approval and maintenance of the architecture.
- *Arrange for coaching.* Where necessary, obtain coaching, mentoring or training for your own architects from experienced architects elsewhere.

• Level B: Architecture as a continuous process

Architecture must be kept up to date, since the world is not standing still. Once developed, architectures should be put into operations and maintained. There should be some release procedure or a form of release management for architectural products.

Checkpoints

- Is the development of architecture viewed as a continuous process?
- Is the architecture kept up to date?
- Is there some form of release management?

Suggestions for improvement

- *Set up release management for architecture.* To begin with, provide each architectural product with a version number, version history, owner, date and status. When there are new developments that require the architecture to be modified, a new version with updated version data is issued. Additionally, consider establishing review and acceptance procedures.
- *Demonstrate architectural coherence.* Demonstrate the coherence between architectures by making the relationships among the various architectures in the organization apparent. The DYA framework can be used for this purpose. By positioning all the architectures in this framework, it is possible to reveal the elements common to several architectures.

● Level C: Architecture as a facilitation process

It is clear to all stakeholders that the sole purpose for developing architecture is to support the changes needed to achieve business goals. The goal and function of every architecture is apparent right from the start.

Checkpoints

- Prior to developing architecture, has it been established who the sponsor is?
- Prior to developing architecture, has it been established who will profit from the results?
- Besides the architects, are other parties involved in the development of architecture (for example, business managers, administrators, developers, production employees)?

Suggestions for improvement

- *Actively involve stakeholders.* Actively involve stakeholders in the development of architecture to an extent corresponding to the degree of their interest. Describe the role of the stakeholders in the Project Plan for the relevant architecture.

Use of Architecture

• Level A: Architecture used informatively

The architecture gives a clear picture of where the organization wants to be and inspires it to strive after this to-be state. This vision is endorsed by management. All employees have access to the architectural products.

Checkpoints

- Is there an architecture that management recognizes as such?
- Does the architecture give a clear indication of what the organization wants?
- Is the architecture accessible to all employees?

Suggestions for improvement

- *Publish the architecture.* Ensure that the existing architectures are brought to the attention of the organization. Publish the architecture on the intranet. To raise the profile in a more active manner, make presentations to specific target groups. Only develop architecture that fits in with the vision of where the organization ultimately wants to go.

• Level B: Architecture used to steer content

The architecture is, in fact, used to steer the choices made in projects. Projects must comply with the architecture.

Checkpoints

- Is the architecture used to give direction (in advance) to business and IT developments?
- Are projects clear about the parts of the architecture that apply to them?
- Does the architecture provide concrete guidelines that can be used by projects?

Suggestions for improvement

- *Implement project-start architecture.* Supply each project with a project-start

architecture. Project-start architectures are formulated so that they are accessible, understandable and applicable to projects. Project-start architectures also provide the frameworks that give effective direction to the decisions made in projects.

- **Level C: Architecture integrated into the organization**

Architecture is an integral component of organizational governance. It is an important factor in decision-making processes.

Checkpoints

- Is architecture used in the organization's decision-making processes?
- Is architecture incorporated into the organization's planning and control cycle?
- Is the architecture based on the vision of senior management?

Suggestions for improvement

- *Incorporate architecture into the planning and control cycle.* Incorporate the role of architecture into the organization's planning and budgeting cycle. This means that, in formulating annual plans, architectural factors are considered when projects and programs are being selected. In practice, this mostly occurs by involving a member of the architect team in planning.

Alignment with Business

- **Level A: Architecture tested for compatibility with business goals**

Architectural choices are supported by establishing a direct relationship to the business goals.

Checkpoints

- Is there a clear relationship between the architecture and the organization's business goals?
- Is the architecture evaluated in terms of the business goals?

Suggestions for improvement

- *Explain the basis of the architecture.* Examine the existing architecture and relate choices and agreements to the business strategy and goals (to the extent that this has not already been done). The DYA architectural framework can help you here. If such a relationship cannot be established, take a very critical look at the architectural principles and models. Frequently, choices and agreements are made about architecture without any reference to business goals and requirements. As a consequence, the choices are constantly being questioned.

• Level B: Architectural process geared to business goals

The development of architecture is geared to the business goals of the organization. The decision to work on architecture is completely determined by the business changes in store.

Checkpoints

- Do architects and business representatives meet regularly?
- Is the development of architecture concerned with concrete business goals?
- In developing architecture, is it generally clear which business goal is involved?

Suggestions for improvement

- *Set up account management for business.* Initiate dialogue with business managers and their representatives, such as the information managers of the business units. This can be done by allocating business domains to the architects. The architects build up a lasting, structural relationship with their "accounts." They come to know what is going on inside the given business domain, where the needs are and how architecture can contribute to the achievement of the business goals.

• Level C: The architectural process is an integral component of business

Architectural thinking is an essential constituent of the organization. Architects and business managers together participate in the Strategic Dialogue. Architecture offers concrete support for the strategic discussions of the organization.

Checkpoints

- Are there regular discussions with business when architecture is being developed?
- Does business feel that it is involved in the architectural process?
- Is architecture regarded as a strategic factor by senior management?

Suggestions for improvement

- *Involve architecture in the pre-project phase (Strategic Dialogue).* To begin with, collaborate with business management to determine what the added value of architecture has to be for the organization. Based on this determination, establish the added value of architecture in the business discussions leading up to the initiation of projects in formulating the business cases, for example. This added value is mostly to be found in the rapid provision of insight concerning the consequences of choices and the manner of achieving business goals.
- *Set up issue management.* Make an agreement with the business managers that the architect team will take on the task of monitoring difficult issues. This means that the architect team will prepare and coordinate the handling and resolution of these issues with business management, and incorporate the results into policy. Of course, the resolved issues are also immediately converted into architecture.

*Alignment with the Development Process***● Level A: Ad hoc**

There is some awareness in projects that frameworks exist and that work is being performed in accordance with them. Here and there, projects even ask for such frameworks.

Checkpoints

- Are there projects that take architecture into account?
- Are questions about the architecture coming from projects?

Suggestions for improvement

- *Discuss the role of architecture with project managers.* With the project managers, discuss what the relationship is between architecture and projects, why architecture is important and what this means for project execution. For example, have an architect discuss this at a project managers' work meeting.

● Level B: Structural

Projects are assumed to work within architectural frameworks. Architecture is a component of the standard working procedure for projects.

Checkpoints

- As a rule, do projects comply with architecture?
- Does architecture have a place in the standard development process?
- Do the architects pay explicit attention to the usability of the architecture in projects?
- Are standards and norms used in the development process?

Suggestions for improvement

- *Embed architecture in the project method.* Many organizations have a method for working on projects. This can be a standard method, such as PRINCE2, but it can also be the organization's own procedure as laid out in a project manual. Give architecture a place in this procedure by literally writing it into the standard project work procedure. The role of architecture is therefore explicitly added to the project method.

● Level C: Interactive

There is an interactive dialogue between architects and projects in which the architects support projects in their use of architectural frameworks and projects provide feedback on the quality and applicability of the architecture.

Checkpoints

- Does feedback from the development process to the architectural process occur on a regular basis?

- Do the architects help the developers focus the general architectural principles on their specific situation?
- Do the developers actively help with the development of architecture?
- Have processes been established so that, in special cases, in a deliberate and controlled way development can deviate from the architecture?

Suggestions for improvement

- *Set up account management for the development process.* Initiate regular meetings between members of the architect team and representatives from system development. The purpose of these meetings is to ensure good collaboration between architects and projects.
- *Collectively develop project-start architecture.* Have architects and project teams together develop the project-start architecture, which is architecture focused on the situation of a specific project.
- *Introduce the management letter.* Occasionally stakeholders will agree, after discussion and by consensus, to allow a project to deviate from the architecture. Use the management letter as a tool to record and distribute these agreements. The agreements described in the management letter determine how the deviation will be handled and if/how a structural solution will be realized. The management letter can also be a component in a project-start architecture.

Alignment with Operations

● **Level A: Ad hoc**

There is some awareness that, on the one hand, operations and maintenance issues (such as the ability to install, learn and restore) must be considered when making architectural choices and, on the other hand, operations and maintenance must also comply with the architectural frameworks.

Checkpoints

- Do administrators take architecture into account?
- Are Operations and Maintenance issues dealt with in the architecture?

Suggestions for improvement

- *Discuss the role of architecture with administrators.* With the administrators, discuss what the relationship is between architecture and O&M, why architecture is important and what this means for performing operations and maintenance. For example, have an architect discuss this at an administrators' work meeting.

● Level B: Structural

Administrators are assumed to work within the frameworks of the architecture. It is standard practice to consider O&M issues when developing architecture.

Checkpoints

- Is it standard for Operations and Maintenance to be a key consideration when developing architecture?
- Are administrators required to comply with architecture?

Suggestions for improvement

- *Integrate architecture into operations and maintenance procedures.* Incorporate the role of architecture into operations. For example, this means that change requests must be subjected to an architectural review.

● Level C: Interactive

There is an interactive dialogue between architects and administrators in which the architects support the administrators in their use of architectural frameworks and the administrators provide feedback on the quality and applicability of the architecture.

Checkpoints

- Does feedback from administrators to the architectural process occur on a regular basis?
- Are administrators involved in the development of architecture?
- Are there guidelines concerning the maintenance of systems that were developed without architecture?

Suggestions for improvement

- *Set up account management for operations and maintenance.* Initiate regular meetings between members of the architect team and administrator representatives. These meetings have, among other things, the aim of taking an inventory of the administrators' architectural wants.

Relationship to the As-Is State**• Level A: Attention to the as-is state**

The architecture does not only sketch the desired target state but devotes a great deal of attention to the current state (existing processes, organizational structures, information, applications and technical infrastructure) and the manner of dealing with it.

Checkpoints

- In the architecture, is attention paid to the as-is state (existing processes, organizational structures, information, applications and technical infrastructure)?
- Has a policy been formulated concerning the as-is state (existing processes, organizational structures, information, applications and technical infrastructure)?

Suggestions for improvement

- *Formulate policy for as-is state.* Develop a vision about the future of the current state of processes, organizational structures, information, applications and technical infrastructure. Based on this vision, formulate concrete guidelines on how to proceed. These guidelines indicate the conditions under which parts of the current state should be replaced or updated.
- *Set up asset management.* Map out the entire set of IT assets (applications and technical infrastructure) and subject it to asset management. Take such matters into account as the functional and technical value of applications, life-cycle management, costs and use. The objective of asset management is to enable IT investment decisions to be made in a thoughtful manner.

• Level B: Attention to migration

The architecture provides insight into the possibilities of migrating from the as-is to the to-be state.

Checkpoints

- Does the architecture indicate a relationship between the as-is and the to-be state?
- Does the architecture suggest any guidelines concerning migration (how to move from the as-is to the to-be state)?

Suggestions for improvement

- *Draft a migration scenario.* Sketch the possibilities of migrating from the as-is to the to-be state based on architecture. Include these possibilities as a standard component of the architecture. It has already been stated in Chapter 4 that advice on the effects of architecture should be a component of the architecture.

Roles and Responsibilities**• Level A: Responsibility for architectural content assigned**

Responsibility has been assigned for the architectural content. The architecture has an owner.

Checkpoints

- Has the responsibility for the architectural content been explicitly assigned to someone?
- Does the architecture have an official status in the organization?

Suggestions for improvement

- *Obtain a mandate for architecture.* Ask senior management to express their commitment to architectural practices and to explicitly assign the responsibility for the architecture.
- *Draw up a table of responsibilities.* Construct a table of responsibilities in which architecture-related tasks are matched with the various functions in the

organization. Indicate the person responsible for each task as well as the person who performs it. For this purpose, use such techniques as RACI (Responsible, Accountable, Consulting, Informed) or RAEW (Responsibility, Authority, Expertise, Work).

- *Set up an architecture board.* Create an architecture board to formally approve architectural products and to provide an escalation platform to deal with deviations from the architecture. Members of the architectural board are to be recruited from the senior management of both business and IT.

● **Level B: Management responsible for the architectural process**

The management-level responsibility for the process of developing architecture and using it in the organization has been assigned.

Checkpoints

- Has someone at the management level been assigned responsibility for architecture?
- Has an owner of the architectural processes been appointed?

Suggestions for improvement

- *Appoint a process owner for architecture.* Assign ownership of the architectural process. The process owner of architecture is not only responsible for the processes in which architecture is developed but also for its alignment with other processes, such as the development and maintenance processes. The process owner is responsible for the effectiveness and efficiency of the architectural processes.

● **Level C: Senior management responsible for the effect of architecture**

Architecture is included in the portfolio of one of the senior managers. The consequences of architectural practices are evaluated.

Checkpoints

- Has someone at the senior management level been assigned responsibility for architecture?
- Is architecture also the responsibility of business management?

- Has the person (or body) responsible for architecture been made accountable for the extent to which architecture contributes to the business goals?

Suggestions for improvement

- *Allocate final responsibility for architecture.* Ensure that senior management is actually involved in architecture, especially on the business side. Ensure that the ultimate responsibility for the architecture is allocated to the portfolio of a business manager.
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Coordination of Developments

- **Level A: Steering the content in each project**

The architecture is used to steer the content of projects insofar as their delineation and high-level design choices are concerned. Before a project is initiated, an examination is made of how it will fit into current and planned projects.

Checkpoints

- Is the architecture used as a guiding principle in making design choices for individual projects?
- Is architecture used to prevent projects from having to reinvent the wheel?
- Is architecture used to prevent projects from doing work that has already been done?

Suggestions for improvement

- *Make project-start architecture mandatory.* The project-start architecture makes architecture accessible to projects and makes it possible to steer their content. Not a single project is begun without project-start architecture.

- **Level B: Coherence among projects**

Architecture is used to actively monitor the entire range of projects. Projects are delineated on the basis of architecture, and the results of the various projects are coordinated with each other.

Checkpoints

- Is architecture used to achieve coherence among projects?

- Is architecture used to distribute development activities among projects?

Suggestions for improvement

- *Embed architecture in project-portfolio management.* If a form of portfolio management exists, which would typically be financially oriented, introduce some architectural requirements into it. These will be specifically concerned with the coherence among projects. Collective or infrastructural elements should be included in collective projects. A rudimentary form of enterprise architecture is required to give shape to such activity.

Monitoring**• Level A: Reactive monitoring**

Projects are reviewed to ensure compliance with architecture.

Checkpoints

- Is any consideration given to architecture in project progress reports?
- Are projects checked to ensure compliance with architecture?
- Does non-compliance with architecture have any consequences for the project manager or sponsor?

Suggestions for improvement

- *Implement an architectural review.* Schedule testing at points along the system development trajectory and test a project for compliance with architectural commitments. In addition to testing at the start of the project, test at other appropriate moments, like the delivery of the functional and technical design and the acceptance of the business solution. Link up with any feedback or testing mechanisms that may already exist (review procedures, go/no go moments, progress reports). If there are no testing mechanisms, an instrument such as a building permit may be used.

• Level B: Proactive monitoring

Proactive efforts are made to ensure that projects comply with the architecture.

Checkpoints

- Are any control instruments being used to enforce compliance with the architecture (for example: building permits)?
- Do architects participate in design phases and definition studies?
- Are proactive efforts made to ensure that projects comply with architecture (for example: architecture promotion activities, relationship building with project managers, participation in project kick-offs)?

Suggestions for improvement

- *Implement project coaching.* Have an architect coach a project from its initiation or kick-off to its completion. The architect advises the project about architectural concerns and indicates how the project can comply with the architecture. Ultimately, the project decisions are made by the project manager and sponsor (with an escalation procedure in case of risky or unjustified deviations from the architecture). Project coaching can be implemented project by project, beginning with the most strategic projects.

● Level C: Embedded monitoring

Compliance with architecture is a standard component of project execution and is embedded in work procedures.

Checkpoints

- Is compliance with architecture a component of the project assignment?
- Is it a given that projects will comply with architecture?

Suggestions for improvement

- *Embed the compliance with architecture in the project method.* Make compliance with architecture a standard component of the project method. Many organizations have a standard method, such as PRINCE2. Indicate how monitoring compliance with architecture is incorporated into the project method.

● Level D: Integrated monitoring

Compliance with architecture is an integral component of enterprise governance.

Checkpoints

- Is architecture used to monitor the coherence of business and IT developments?
- Is compliance with architecture included in the organization's planning and control cycle?

Suggestions for improvement

- *Include the monitoring of architecture in the planning and control cycle.* Including architecture in the organization's planning and control cycle means that compliance with architecture is incorporated in the testing of annual plans. In practice, this mostly occurs by involving a member of the architect team in the evaluation (audit interviews) of the annual plans.

Quality Management**● Level A: Retrospective validation**

Developed architectures are validated in the best possible way. Questions are asked about the choices made, their suitability given the strategy and business goals of the organization and their effectiveness in delivering the intended benefits.

Checkpoints

- Are efforts made to validate the architecture in one manner or another?
- Are standards of quality identified for the architecture?

Suggestions for improvement

- *Establish an architectural review procedure.* Set up a review procedure to ensure that architectural products are reviewed by all the relevant stakeholders in the organization. Using a review matrix, it is possible to establish in advance the parties who should review architectural products.

● Level B: Quality process developed

A process has been developed to ensure the quality of architecture.

Checkpoints

- Is attention systematically focused on the quality of the architectural process?
- Is there an architectural quality program?

Suggestions for improvement

- *Audit architecture.* Establish the quality requirements that the architecture must satisfy (both in terms of its process and content). Have audits regularly conducted in order to ascertain whether these requirements have been satisfied.

● Level C: Embedded quality policy

The assurance of architectural quality is a part of the organization's integral quality policy.

Checkpoints

- Is the quality of architecture a part of the organization's overarching quality policy?
- Is there a structural provision that focuses attention on the consequences of architectural practices (for example: the extent to which architectural practices contribute to the achievement of strategic business goals)?
- In considering the quality of architecture, is any thought given to the relationship of architecture to other processes in the organization (for example: strategy formulation processes, development processes)?

Suggestions for improvement

- *Include architectural processes in the quality system.* Include architectural processes in the organization's overall quality system. If there is no overall quality system, the architecture process can perhaps be used as a pilot to set up such a system. The objective of a quality system is to structurally evaluate and improve the architectural process.

Maintenance of the Architectural Process

- **Level A: Maintenance performed in a fragmented manner**

It is recognized that the architecture process must be maintained.

Checkpoints

- Has the architectural process been described?
- Is the architectural process known to the organization?
- Has it ever been verified if the architectural process is still sufficient?

Suggestions for improvement

- *Conduct an assessment.* Conduct an assessment of the current state of affairs in the architectural process. The Architecture Maturity Matrix can be used for this purpose.
- *Describe the architectural processes.* Describe the architectural processes, such as the establishment and maintenance of architecture, the formalization of architectural products, the role of architecture in projects and maintenance, and the role of architecture in the pre-project phase. Include this in an architectural handbook.

- **Level B: Maintenance procedures are established**

Procedures have been established to maintain the architectural process.

Checkpoints

- Have maintenance procedures been established for the architectural process?
- Has maintenance of the architectural process been assigned within the organization?
- Are changes to the architectural process immediately communicated to stakeholders?

Suggestions for improvement

- *Establish a maintenance procedure for the architectural process.* Establish

procedures to deal with changes to the architectural process. The aim of these is to actively maintain the architectural process and to keep it up to date.

● **Level C: Continuous process improvement**

The architectural process is regularly scrutinized and improvements are made on the basis of findings.

Checkpoints

- Is the architectural process evaluated at regular intervals?
- Is there a mechanism in place for submitting proposals to improve the architectural process?
- Do proposed improvements regularly result in actual adjustments to the architectural process?

Suggestions for improvement

- *Implement assessment and improvement cycle.* Establish a system in which assessments of the architectural process are regularly made. Ensure that the resulting proposals for improvement, along with any other suggestions for improvement that may occasionally arise, are evaluated according to a standard procedure and result in the necessary changes to the architectural process. Publish, communicate and implement these modifications.

Maintenance of Architectural Deliverables

● **Level A: Maintenance is performed in a fragmented manner**

At set times, checks are performed on the architectures to ensure that they are still up to date. If this proves not to be the case, maintenance is carried out.

Checkpoints

- Has it ever been verified that the architecture is still up to date?
- Have outdated components been removed from the architecture?
- Has a new version of the architecture ever been issued?

Suggestions for improvement

- *Update architecture.* Examine the existing architectures. Are the principles and models still current? Are there any inconsistencies? In making these evaluations, constantly ask whether the architecture continues to serve the current business goals. Eliminate any elements that have become outdated or redundant, and adjust the architecture to meet current requirements. A framework, such as the DYA architecture framework, is a handy tool for this task.

• Level B: Maintenance procedures are established

Procedures have been established to keep architectural products up-to-date.

Checkpoints

- Has a maintenance procedure been established for architectural products?
- Is there a change management procedure in place for architectural products (a procedure for making changes to architectural products)?
- Is maintenance of architectural products one of the tasks mentioned in the architect's job description?
- Are changes to the architecture immediately communicated to all stakeholders?

Suggestions for improvement

- *Establish a maintenance procedure for architectural products.* Establish procedures for making changes to architecture (change management), for including architectural artifacts in the total architectural package and for maintaining the consistency of this totality. The aim is to actively maintain the architecture as a whole and to keep it up to date. A framework, such as the DYA architecture framework, is a handy tool for this task.

• Level C: A maintenance policy exists

A policy has been formulated concerning the manner in which architectural products are maintained. This policy is based on views about the quality assurance of the architectural products.

Checkpoints

- Is there a policy on the maintenance of architectural products?
- Are distinctions made in the ways of maintaining various architectural products?

Suggestions for improvement

- *Develop a maintenance policy.* Formulate a policy indicating how the maintenance of the various architectures is to be handled. This can, for example, indicate the architectures that are actively maintained, the times when such maintenance occurs and the individual(s) who perform(s) it.

Commitment and Motivation**● Level A: Allocation of budget and time**

Time and money are committed to architecture for the benefit of an architect team and/or an architectural project.

Checkpoints

- Does management regard architecture as important?
- Are money and time allocated to architecture?

Suggestions for improvement

- *Bring architecture to the attention of management.* Convince management of the value that architecture adds to the organization. Ask management to openly acknowledge architecture's value in both words and actions.
- *Obtain a budget.* Make a budget available. This can occur by explicitly including the role of architecture in annual plans or budget proposals or by earmarking time and/or money for it.

● Level B: Architecture integrated into the processes of change

Management recognizes and openly acknowledges that architecture is an indispensable part of the management and implementation of change.

Checkpoints

- Do business and IT management openly acknowledge architecture to be an indispensable part of business and IT projects?
- Do the guidelines concerning time, money and quality given by management to projects indicate that compliance with architecture is regarded as important?
- Are chapters on architecture included in the project plans?
- Do the organization's employees place any value on architecture?

Suggestions for improvement

- *Have management make the case for architecture.* Together with management, evaluate the value added by architecture and commit managers to the open support of it.
- *Include compliance with architecture in the project assignment.* Make compliance with architecture a standard component of the project assignment. While the project method describes how a project is executed, the project assignment indicates what the results of the project are to be.

● Level C: Continuous architectural improvement accepted by organization

Among management, there is a wide recognition that architecture is of strategic importance and that continuous attention to the quality of architectural practices is justified.

Checkpoints

- Are architects supported by management to continuously improve the architectural process?
- Does the organization supply regular feedback on the architectural process?

Suggestions for improvement

- *Involve the organization in the improvement trajectory.* Do not undertake a series of improvements on your own but keep the organization informed about progress. For instance, a customer satisfaction survey can be conducted in order to support the launch of improvement initiatives.

Architectural Roles and Training

• Level A: Role recognized

The architect's role is recognized in the organization.

Checkpoints

- Does the role of architect exist in the organization?

Suggestions for improvement

- *Set up an architect team.* Assign a number of employees the role of architect, whether or not on a full-time basis. Adopt a principle requiring part-time architects to spend a minimum of 16 hours a week on architectural activities. If desired, the architects can be coached by experienced architects from outside the organization, either individually or in group training sessions.

• Level B: Role described

The architect's tasks and responsibilities are clearly described.

Checkpoints

- Have the architect's tasks and responsibilities been defined?

Suggestions for improvement

- *Describe the role of the architect.* Formally establish the architect's tasks and responsibilities and ensure that this role is approved at the management level.
- *Draft a service catalogue.* To make the added value of the architect team clear to the organization and to indicate the services that architects provide to the organization, compile a service catalogue for the team.

• Level C: Role supported

The architects are supported in the performance of their tasks and responsibilities with training, tools and a platform for the exchange of best practices.

Checkpoints

- Are the architects provided with methods and tools?

- Are there any training courses for the architects?
- Is there any provision for the exchange of best practices?

Suggestions for improvement

- *Professionalize the role of the architect.* Create an environment that nurtures and promotes professionalism. Architects have the resources that they need, the exchange of best practices is facilitated and training or coaching is provided.

- **Level D: Role valued**

The architect's role is recognized and valued. Employees can have a career in architecture.

Checkpoints

- Are architects given the opportunity to be certified?
- Is there a training program for architects?
- Is there a career path for architects?

Suggestions for improvement

- *Remunerate the architect and recognize the role of the architect.* Provide architects with a career path and give them the opportunity to distinguish themselves. Enable them to become certified and to make a career of architecture (with appropriate remuneration). Facilitate their ongoing education.

Use of an Architectural Method

- **Level A: Project specific**

The establishment of architecture is preceded by the establishment of an applicable method. This can vary from architecture to architecture.

Checkpoints

- Is a Project Plan developed for each architectural project?
- Is the method defined for an architectural assignment actually applied?

- Does the method applied in an architectural assignment distinguish among the various aspects involved (for example: processes, data and applications)?

Suggestions for improvement

- *Establish a method in an architectural Project Plan.* Define the method for developing architecture in an architectural Project Plan. The method describes the results that will be delivered and the activities required for this purpose. Describe the results as accurately as possible. Make distinctions among the various aspects (for example: processes, data, applications), forms (principles, policy directives, models) and/or perspectives (enterprise architecture, domain architecture, project-start architecture).

● **Level B: Organization generic**

The organization employs a standard methodology in developing architecture.

Checkpoints

- Is a formalized generic architectural methodology used in the organization?
- Is the generic architectural methodology adopted in every architectural project?
- In executing architectural projects, are any deviations from the generic architectural methodology substantiated and documented?

Suggestions for improvement

- *Implement an architectural method.* Implement an organization-wide architectural method. This means that agreements are reached on the ways of differentiating architectures, the manner in which architectures are documented and how they are developed. These can, for example, be recorded in an architectural handbook.

● **Level C: Organizationally optimizing R&D activities**

The method of developing architectures is regularly evaluated and, where necessary, adjusted.

Checkpoints

- Is there a structured process for gathering feedback on the generic architectural methodology?

- Is the generic methodology subject to structural maintenance and innovation (R&D)?

Suggestions for improvement

- *Evaluate the architectural method.* Set up a mechanism to periodically examine the architectural method and, where necessary, adjust it. Stakeholders obviously must be informed about adjustments.
-

Consultation

● **Level A: Internal architectural meetings**

The architects regularly hold internal meetings in which experiences are exchanged and content issues discussed.

Checkpoints

- Are there regular architect team meetings?
- Are the agreements made within the architect team properly documented?

Suggestions for improvement

- *Institute architect meetings.* Institute a periodic (weekly or biweekly) internal architect meeting. The primary purpose of this meeting is the transfer and exchange of knowledge. At these meetings, new developments can be reported and discussed, and new issues raised. Compile a decision and action list based on each meeting and distribute it.
- *Organize workshops.* Besides the periodic meeting, practice has proven it is extremely refreshing and useful to hold, once in a while (for example, once a year) a one- or two-day workshop somewhere off the organization's premises. This allows the architect team to reflect and to examine the performance and effectiveness of the architecture function. Besides strengthening team spirit, significant improvement initiatives can emerge from this exercise.

● **Level B: Meetings with sponsors and users of architecture**

There are regular meetings with sponsors and users of architecture about the function of architecture in the organization.

Checkpoints

- Do regular meetings occur with the sponsors of architectural projects?
- Do regular meetings occur with the developers who (are to) work in compliance with the architecture?
- Is a record kept of the agreements made with the sponsor of the architecture?
- Is a record kept of the agreements made with the developers who (are to) work in compliance with architecture?

Suggestions for improvement

- *Conduct a Stakeholder Inventory.* Identify the stakeholders of architecture, what their interests are, what roles they play insofar as architecture is concerned and how they can be involved. This inventory can be used to determine the appropriate manner of communicating with stakeholders.
- *Draw up a Communication Matrix.* Construct a Communication Matrix in which a record of communication with each target group (group stakeholders and interested parties) is kept, indicating what architectural topic will be discussed, when, how and by whom. In this way, the Communication Matrix constitutes an instrument in which all communications concerning architecture are planned and monitored. In planning communication activities, it is extremely important to have a clear idea about what the objective is. In addition, the timing of the actions is important. Waiting too long before communicating to stakeholders leads to an ivory-tower situation. Communicating too soon creates the risk that expectations may be aroused that cannot soon be fulfilled.
- *Establish an architectural community.* Establish a community in which architects and stakeholders talk about issues in an informal manner. The aim of the architectural community is to involve people in the organization with architecture and, at the same time, to create a sounding board for the architects. The issues can involve both the content and the process of architecture. At a later stage, the community can be given a more formal status. See the improvement suggestions for “Set up an architectural platform” in the following level.

- **Level C: All-encompassing discussions about the quality of the architectural processes in the organization**

In meetings with the most important stakeholders, consideration is given to possible or desirable improvements to the architecture function.

Checkpoints

- Are there regular meetings with the sponsors and users of architecture at which to discuss proposals for improving the applied architectural methodology and the architectural processes?
- Is a record kept of the agreements made to improve the architectural methodology and processes?

Suggestions for improvement

- *Set up an architectural platform.* Set up an architectural platform in which architects and stakeholders can come together and, in a formal manner, discuss issues and make decisions. The most important stakeholders are business managers, project managers and IT management (system maintenance and development). The issues can involve both the content and the process of architecture. If necessary, work groups can be instructed to research and elaborate certain elements.

Architectural tools

- **Level A: Ad hoc and product based**

Tools are used in a fragmentary manner to support architectural practices. An example would be a process management tool for developing process architectures.

Checkpoints

- Are tools used to support architectural practices?

Suggestions for improvement

- *Run a pilot using architectural tools.* Undertake a pilot project using a tool to support the development and maintenance of architectures. Begin with a tool for the aspect or area in which the need for a tool is greatest (for example: process architecture). Use the pilot project to acquire experience with the tool and to determine the architectures for which the tool may be useful.

• Level B: Structural and process based

The architects all use the same tools. These tools not only support the development of individual architectures but also the process of developing and maintaining them.

Checkpoints

- Do the architects use the same tools?
- Is the management of architectural tools explicitly assigned to someone in the organization?
- Do the architectural tools support the architectural process?

Suggestions for improvement

- *Implement architectural tools.* Select the architectural tool(s) that best supports the architect's work and implement it/them organization-wide in such a manner that the use of the tool is integrated into the organization's architectural process.

• Level C: Integration of tools

The architects are supported by an integrated set of tools for performing various functions, where the integration of the tools ensures the overall consistency of the architectural artifacts.

Checkpoints

- Are the employed architectural tools integrated in one way or another?
- Can the architectural tools be used to ensure the consistency of architectural artifacts?

Suggestions for improvement

- *Implement an integrated toolkit.* Implement an integrated toolkit that not only develops various architectures but, given the integration of the tools, ensures architectural consistency.

Budgeting and Planning

- **Level A: Project specific**

A planning procedure precedes the development of architecture. Adherence to the plan is monitored throughout the development trajectory.

Checkpoints

- Are plans made for architectural projects?
- Is the progress in an architectural project monitored?

Suggestions for improvement

- *Make plans for architectural projects.* Formulate a plan for architectural projects. This plan at least includes an estimate of the project duration, the human and other resources required, and time frames for the completion of project components and milestones.

- **Level B: Organization generic**

There is a standard budgeting and planning methodology for the development of architectures.

Checkpoints

- Is there a standard budgeting and planning methodology for architectural projects?
- In executing architectural projects, are any deviations from established budgets and plans documented and explained?

Suggestions for improvement

- *Implement a planning method.* Implement an organization-wide planning method. This means that a plan is always formulated for architectural projects in accordance with a prescribed set of standard activities, rules and guidelines for budgeting and planning.

• Level C: Optimizing

The budgeting and planning of architectural projects is conducted in a systematic and professional manner with attention to the quality of the process.

Checkpoints

- Is there a systematic process for gathering feedback on the budgeting and planning method used for architectural projects?
- Is there any statistical data available on the budgets and plans for architectural projects executed in the past?

Suggestions for improvement

- *Evaluate architectural plans.* Collect data on planning and execution of previous architectural projects and use these empirical figures to professionalize the planning process.

To Conclude

The employment of architecture involves many factors. In this appendix, we have defined 18 of them – each one with its own developmental path. That is too many for an organization to address all at once. The Architecture Maturity Matrix is an instrument to focus attention on specific areas, one at a time. Using the checkpoints it is possible to determine the current status of an organization. Mapping the organization onto the Maturity Matrix can identify the key areas to be emphasized in the near future and to what extent this should be done. The suggestions for improvement show the concrete actions that are appropriate in the given circumstances.

APPENDIX 2

THINKING ABOUT CHANGE IN FIVE DIFFERENT COLORS

Introduction

The implementation of architecture represents a trajectory of change and must be approached as such. Fortunately, there is a great deal of literature available. Various change management approaches and theories have been developed. It is certainly worthwhile, in beginning a process of professionalization, to familiarize yourself with the field.

One approach that strongly appeals to us and that we want to share with you is De Caluwé and Vermaak's color model of thinking. In their book *Learning to Change* they use colors to represent the ways of thinking and acting that characterize an organization, organizational unit or person. They distinguish five such colors: yellow, blue, red, green and white. The most suitable manner of change depends upon the dominant color.

Yellow is an approach based on socio-political observations about organizations. Interests, conflicts and power all play important roles. Change is achieved when you get everyone pulling in the same direction.

Blue is characterized by the logical design and rational implementation of change. To a large extent, the path to results follows rational arguments that are planned and measured using indexes.

Red is centered on personal relationships. Change is accomplished by deploying, for example, such HRM instruments as evaluation and remuneration systems and assessments. People do something when they get something in return.

Green is based on learning, both by individuals and by the organization as a whole. Change occurs by placing motivated people in learning situations.

White characterizes a self-organization process that generates new structures and modes of behavior. People and organizations are continuously undergoing change.

This kaleidoscope can be used to examine architectural practices as well.

The Colors of Change in Relation to Architecture

The Yellow Look

Architecture should be viewed as part of the socio-political dynamic. Since it reproduces the collective vision of the organization, it is a means of getting everybody in step. Support is crucial. The development of architecture occurs by organizing workshops for all the stakeholders. One main architectural goal is to streamline discussions of content issues and, above all, to provide solutions. Architecture involves making agreements. By employing architecture, it becomes possible to discover and work toward common interests.

The underlying purpose of architecture is to achieve business goals. In doing this, the interests of the various business units are given serious consideration and weighed appropriately. Conflicting interests are recognized and resolved through negotiation. In this case, architecture helps to create win-win situations.

Appropriate Procedure

First of all, strive for a widely supported fundamental vision. What are the basic architectural principles? All parties should be involved in determining them. In the beginning, pay a great deal of attention to raising architecture's profile. The organization must recognize the importance of participating in this image-building exercise, as important decisions are made at this point. The focus is on workshops. Once the underlying vision is in place, examine its significance for the organization's work practices. All developments are immediately checked against this vision. If a development does not fit into it, a committee of representatives then determines what to do. Continued support from the entire organization remains a constant preoccupation. This requires such activities as regular stakeholder meetings.

The Blue Look

Architecture is a control instrument. Its purpose is to tightly control the changes in an organization. Architecture ensures that project results are compatible with the greater whole. An important tool in this regard is the project-start architecture. Project planning can also be made more reliable with the help of architecture. With the help of architecture, decisions can be supported more clearly and on the basis of rational arguments. The architecture is developed by architects who

have expertise and make decisions focused on business goals. The validity of the architecture is demonstrated using a means-ends hierarchy. The total set of projects is coordinated by some form of project-portfolio management.

Appropriate Procedure

A project-based approach is used to develop architectural practices. The deliverables are defined: an initial version of the architecture, the maintenance processes, an updated project method, escalation mechanisms, etc. A project team undertakes to deliver these items. Once the project is completed, the next phase is initiated: the actual employment of the architecture. At that point, the developed processes are put into effect.

The Red Look

Architecture is meant to improve collaboration and establish clearer goals. It is a vehicle to involve various disciplines in working toward certain results. Because architecture makes the relationships among things clear, work packages and personal targets can be coordinated with each other. The purpose of architecture is to ensure that employees are given clear targets on the basis of which they can be evaluated in a transparent manner and appropriately remunerated. An important part of the architecture is the organization architecture: the vision of how an enterprise has to be organized and what types of employees are required.

Appropriate Procedure

Roles are defined at the start, along with responsibilities, architect duties and organizational positions. Tasks and responsibilities in all related areas are recorded in job descriptions. New job descriptions are established for the architect roles. New sorts of targets are formulated. Employees are personally informed of what working with architecture means for them personally and how it can be to their advantage (earning promotions, as a platform for good ideas, enabling new task assignments)

The Green Look

Architecture provides an organization with a stepping stone to learning, development and innovation. Since the vision of how things must be done is incorporated into an architecture, this vision is stable and accessible to the entire organization. This stability and continuity means that employees can build upon knowledge acquired by others. Instead of continuously reinventing the wheel, it is possible to pick up where someone else has left off.

Appropriate Procedure

Right from the start, working with architecture is presented as a shared learning process. The process begins with courses on *architectural practices*. Stakeholders from all branches of the organization are invited to attend. In this way, everyone is given a clear idea of what architecture is and why the organization wants it. Courses tailored to the various target groups are also organized. Presentations by external experts are held as well. The architects are stimulated to write for publication and to attend conferences (both as speakers and audience members). For the advanced architects, there is a biweekly master class on architecture in which experiences and best practices are exchanged. The architects are assisted by a coach.

The White Look

Architecture is a response to the organization's collective expertise. By reflecting on strategic issues, architectural principles bubble to the surface more or less on their own. These are assembled into an architecture. New architectural principles will be created as the need arises. In this way, architecture is a mechanism that provides a place for employees' self-organization and their compulsion to innovate, while ensuring good results.

Appropriate Procedure

The concept of architecture and its added value are brought up periodically for discussion. A watchful eye is kept on those individuals in the organization who tend to take up ideas and run with them a bit. When employees do this, they are observed in order to see what they accomplish. If subtle intervention is advisable, they are pointed in the right direction. The various architectural initiatives may be

correlated in some way or another, without forcing cohesion. Intervention only occurs when conflicts arise that have a detrimental effect on the organization. Architectural practices are permitted to flourish without obstruction, but if architectural initiatives fail to get off the ground, the organization understands that to mean they are not ready to work with architecture. Architecture is not mandatory.

The color model of thinking is a handy tool with which to examine architecture from various perspectives. It illustrates the fact that people and business cultures can differ. An architect who takes such differences into account in his or her approach and communication practices will be more successful than one who fails to do so. It is therefore worthwhile to learn to recognize colors, to play with them and to act accordingly.

Mismatching Colors

The following examples illustrate what can go wrong when there is an undetected mismatch of colors. The sketches concern situations in which there are differences in color between the architects and the rest of the organization – particularly management.

A Blue Architect in a Yellow Organization

Tony Ashe is hired as an information consultant for the Concern IT department. One of his responsibilities is IT architecture. He has definite views on this subject, so the assignment is appropriate. Without delay, Tony begins to draft a well-conceived architectural document. After two months, it is ready. Tony takes it to his boss, Mark Templeton, in order to explain the next step in the process: the distribution of the architectural document and the establishment of review procedures for projects.

The meeting seems to go well. Mark appears to fall into line and says that he will draw up a distribution list, but then does not follow up on this discussion for two weeks. With some effort, Tony is able to arrange another meeting with Mark. It is certainly a good document; that's not the issue. They discuss the timing, other priorities, and sensitivities in the organization. The final word is that the document will not be distributed. The timing is just not right because all sorts of developments are going on, and there appears to be a reorganization in the works. They have to wait for that. Right now, the priority is for Concern IT to maintain its current position.

An IT day is organized for the business units in order to strengthen the relationship between Concern IT and the Business Units. Architecture is given a place on the agenda and Tony makes a presentation. He indicates that, besides an IT architecture, there should be a process architecture. One doesn't yet exist, so Tony proposes to make a start on it. He displays the architecture and says that those present will have to validate it. By the time he has reached this point in his presentation, he has long since lost his audience. After a little polite applause at the end of Tony's presentation, Mark states that, of course, some consideration must be given to precisely how to handle the architectural document. Although business will certainly not be burdened with it, it is certainly nice to have such a document to fall back on. Everyone nods politely and proceeds to the next item on the agenda.

Tony is bewildered. How could this happen? Hadn't he been asked to develop an architecture? And now it appears that no one was expecting it. They were all busy with their own positions and the forming of coalitions. Don't they see that huge opportunities for synergy will be lost to the company if they don't begin work on his architecture? Oh well! If they don't want to, they don't. He has done his job. The ball is now in management's court.

After a few months, a completely frustrated Tony leaves the company to go to work for a competitor that is looking for an IT architect.

Green Architects in a Red Organization

The directors of the Volin Company, which has 450 employees, decide that there should be more structure in the company's IT practices. Until now, the departments have been able to directly approach someone they happen to know in IT and ask for changes or even new applications. Given the IT department's service-oriented outlook, IT has been quite willing to satisfy these requests. Gradually an uncontrolled proliferation of systems has evolved and no one knows any longer if or how they are interrelated. The directors have also heard about the problem of legacy, and want to avoid it. As a result, a number of senior IT specialists are given the assignment of developing architecture.

John Thorpe, Margaret Feldman and Berry Wiggins enthusiastically sit down to work. They have always been the first to learn something new. They read articles and books, attend conferences and register in courses at the Open University. They attempt to involve their colleagues in this learning process – not only colleagues in their own IT department but also those from other departments. They recognize that architecture is not something confined to the IT department alone and that collaboration with business is crucial. Unfortunately, collaboration and learning

has not always been well received. People are interested, but active involvement – that’s another story. People won’t do what there isn’t a time code for, and the bosses won’t assign time codes for activities that are not directly involved in making money. If it isn’t a part of the employee training plan, employees would have to work on it in the evenings. But why would they do that? There wouldn’t be any pay-off for it in this company. Too bad, the employees say. They’d have really liked to participate.

And so John, Margaret and Berry continue on their own. Slowly, they begin to get a grasp on the notion of architecture and what its value could be for their company. Things continue like that for a while. John, Margaret and Berry have the feeling that they are making good progress. But they are concerned that the rest of the organization cannot be brought onsite.

At the time of the annual performance appraisal interviews, John goes into the interview with his manager, Peter Miller, full of confidence. It is a great surprise to John that Peter is not at all satisfied. Wasn’t John supposed to deliver an architecture? Where is it? John explains that delivering an architecture is not something that you can just do. It takes time! Many more people will have to become involved. To do it properly, the organization must collectively adopt a process of architectural thinking. You must not think of architecture as a product but as a continuous process.

Peter is not pleased with this answer. That wasn’t the deal. Everything sounds so vague. Peter needs to see concrete goals and milestones. What else can he evaluate? As he sees it, things have not gone well. It won’t count for this year’s evaluation, but he wants to see John come up with some concrete milestones for the coming six months. Otherwise, John could better spend his time on other activities.

White Architects in a Yellow Organization

Albert Johnson, senior information analyst in the retail division, has become enthusiastic about architecture. He went to a conference on architecture, heard about DYA and is convinced that his organization could find it extremely useful. As soon as he returns to work he talks animatedly about it with his colleagues, hoping to ignite their enthusiasm. There is certainly room for structural improvements in their work procedures; surely they want to work on that.

Enthusiastically, Albert assembles a group of fellow employees. Every Friday afternoon at four they meet to discuss architecture and to investigate what they can do about it themselves. There are many opportunities, so they get down to work. They begin small by streamlining their own activities using templates, structures

and approaches that they collectively develop. Before long they are attracted to the notion of components, which they can see will make their information supply more flexible. They conceptualize distinct components and share their models with their immediate colleagues. Gradually they win an increasing number of supporters for their ideas.

Suddenly, the edict comes down from management: we are converting to an ERP package.

Why an ERP package? That doesn't fit with the notion of components. What do you mean by components? How are they involved? Everyone is switching to ERP. We cannot allow ourselves to fall behind.

This is certainly a jolt for Albert and his group. They had things well in hand, and then along comes management with such a worthless idea. But hey, things aren't that bad. We'll just keep on with what we're doing. An ERP package is not going to work here. While a grandiose program is set up in the organization to implement ERP, Albert and his cohorts happily continue along developing their component architecture.

Although things are never so black and white, situations like those described above will certainly be recognizable to many people. However, when you find yourself in such a situation, it is often difficult to determine exactly where things are going wrong. In these cases, the five-color model provides an excellent tool for gaining better insight into the underlying circumstances. This manner of thinking in color also helps to determine how improvements can be implemented to produce the right blend of colors.

For more information about the color model of thinking, we refer you to De Caluwé and Vermaak [5].

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ABOUT THE AUTHORS

This book is written by two principal consultants enterprise architecture of Sogeti Nederland B.V. In this capacity they have advised and supported many organizations and companies in different countries all over the world. Among them the authors share many years of experience in the field of enterprise architecture. The book is based on these experiences as well as on the experiences of many other professionals in the field. The authors have brought together some twenty of these professionals in an architectural community that convenes three times a year to discuss actual themes in the field of enterprise architecture.

The authors also converted their knowledge into workshops and courses of various depths and breadths. In addition they frequently present the material contained in the book to companies as well as professional organizations.

They put their knowledge also to use by performing assessments of the state of the enterprise architectural processes within organizations.

Martin van den Berg

Martin van den Berg is an architecture service line manager at Sogeti Nederland B.V. In this role he is responsible for the development of architecture services and expertise in Sogeti. Additionally he provides guidance to organizations in the professionalization of working with architecture. He is one of the founders of DYA and co-author of *Dynamic Enterprise Architecture, How to Make It Work*.

Martin van den Berg is also chairman of the architecture section of the Dutch Computer Society. Martin has published several articles and is a much sought after speaker at architecture seminars.

Marlies van Steenbergen

Marlies van Steenbergen is principal consultant enterprise architecture at Sogeti Nederland B.V. As such, she has guided many organizations in the implementation of an effective enterprise architecture practice. She also transfers her experience and knowledge in the field of architecture by coaching architects and architecture teams. Marlies van Steenbergen is one of the founders of DYA and co-author of *Dynamic Enterprise Architecture, How to Make It Work*. She chairs Sogeti's Architectural Competence Network. Marlies has published several articles and is a frequent speaker at architecture seminars both at home and abroad.

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