Chapter 10
Involving the right stakeholders – Enterprise coherence governance

Abstract In this Chapter, we argue that ACET requires the involvement of (at least) two complementary types of frameworks. From a Blue-print thinking perspective, a design framework is needed to structure the actual architectural design thinking. Existing frameworks such as Zachman, IAF, Dya and TOGAF are candidates for the role of the design framework. Which of these frameworks ïňĄts best to a speciïňĄc organisation, depends on the type of organisation, and the best ïňĄtting design philosophy. Next to a design framework, the Yellow-print thinking perspective suggests the use of an organisation speciïňĄc engagement framework that is concerned with the question of which groups of stakeholders to include in enterprise architecture decision-making during an enterprise transformation, and how to operationally engage them. This framework depends, more than a design framework, on the (strategic) priorities of the organisation, and the stakeholders involved in enterprise transformations. Even more, depending on the scope and impact of an actual enterprise transformation, more situation speciïňĄc tuning of the engagement framework may be needed. The engagement framework suggested by the GEA method involves the (organisation speciïňĄc) enterprise coherence dashboards.

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10.1 Introduction

Efforts to transform an enterprise, from its business processes to the underlying IT, often fail. In Op 't Land et al. (2008), the authors provide a summary of possible causes for failures of strategic initiatives: "*The road from strategy formulation to strategy execution, including the use of programmatic steering, is certainly not an easy one to travel. Research shows that less than 60% of the strategic objectives in*

organisations are reached". In addition, our own experiences with enterprise transformations in practice, also indicate that existing methods and frameworks for enterprise architecture often fail to contribute to the success of such transformation projects.

As argued in (Op 't Land et al., 2008; Wagter, 2009), architecture should offer senior management the means to obtain insight, and to make decisions about the direction of enterprise transformations. As such, it should act as a means to steer enterprise transformations, while in particular enable senior management to govern coherence. In 2006, these experiences and insights triggered the consultancy firm Ordina to initiate a multi-client research programme, resulting in the development of the GEA method (Wagter et al., 2007; Wagter, 2009). As a prelude to the actual development of GEA, in line with design science (Hevner et al., 2004), a survey was conducted among the participating organisations to identify the requirements on GEA. This survey showed that these experiences were not limited to Ordina only, but was shared among a broad range of client organisations participating in the programme. The underlying issues were also considered grave enough for the participating client organisations to indeed co-invest, in terms of time and money, in the development of GEA.

This Chapter and Chapter 18 are based on elements from the GEA method, in particular those pertaining to the involvement of the right stakeholders.

10.2 Beyond engineering

Enterprise transformations typically touch upon various aspect of an enterprise, while the resulting changes are likely to have a profound and lasting impact (see Section 1.2). As a result, enterprise transformations involves many stakeholders with differing stakes and interests, who will try to influence the direction and / or speed of the transformation accordingly.

As suggested in general project / programme management approaches (Franckson and Verhoef, 1999; PMI, 2001; Axelos, 2009), it is important to manage the interests and stakes of stakeholders explicitly. This particularly applies to situations where there is a large variety of stakeholders involved, such as enterprise transformations.

As also argued in Chapter 8, stakeholder communication in enterprise transformation requires more than an engineering approach. Several existing architecture approaches and frameworks, such as, Zachman (Sowa and Zachman, 1992), DYA (Wagter et al., 2005), Abcouwer (Abcouwer et al., 1997), Henderson & Venkatraman (Henderson and Venkatraman, 1993), TOGAF (The Open Group, 2009), IAF (van't Wout et al., 2010), ArchiMate (Lankhorst, 2012; Iacob et al., 2009), advocate a rather "engineering oriented" style of communicating with senior management and stakeholders in general. The architecture frameworks underlying each of these approaches are very much driven by "engineering principles", and as such correspond to a Blue-print style of thinking about change (De Caluwé and Vermaak,

2003). To act as a steering instrument for senior management, a Blue-print style of thinking, however, does not suffice. Stakeholder interests, formal and informal power structures within enterprises, and the associated processes of creating win-win situations and forming coalitions, should also be taken into consideration. In terms of De Caluwé (De Caluwé and Vermaak, 2003), this is more the Yellow-print style of thinking about change.

In the remainder of this Chapter, we will therefore start by exploring the underlying causes that drive the need to explicitly manage stakeholders during enterprise transformations in terms of *social complexity* and *fragmentation* (Section 10.3). We then continue by considering the impact of fragmentation on enterprise transformation, in particular its impact on *enterprises coherence* and the need to govern this coherence explicitly (Section 10.4). This then provides us the insight to formulate specific requirements towards approaches for ACET (Section 10.5).

10.3 Stakeholder fragmentation in enterprise transformation

To explain how social complexity may seriously jeopardise the success of a project and / or programme, Conklin (2003b) has coined the term *fragmentation*:

> "*Fragmentation suggests a condition in which the people involved see themselves as more separate than united, and in which information and knowledge are chaotic and scattered. The fragmented pieces are, in essence, the perspectives, understandings, and intentions of the collaborators.*"

Conklin (2003b) also argues that stakeholder *fragmentation* is one of the key forces that threatens the succes of projects and / or programmes (such as enterprise transformations). There is a clear danger that stakeholder variety, and the potential fragmentation it may cause, is not seen and / or acknowledged on time. As Conklin (2003b) states:

> "*Fragmentation can be hidden, as when stakeholders don't even realise that there are incompatible tacit assumptions about the problem, and each believes that his or her understandings are complete and shared by all.*"

Conklin (2003b) identifies two core factors that contribute towards fragmentation: *social complexity* and *wickedness*. Below we will discuss these factors in more detail.

As discussed in Section 1.2, local optimisation may have a detrimental effect on the ability of enterprise transformations meet their goals. We argue that this tendency for "local optimisation" is actually a symptom of stakeholder fragmentation.

10.3.1 Social complexity

Conklin (2003b) introduces the notion of social complexity as the number and diversity of involved in a project. In terms of this definition, if the number of stakeholders

and influencers of an enterprise transformation increases, and / or the diversity of their stakes increases, then the social complexity of the enterprise transformation is also said to increase.

Specific stakeholders might even harbour contradicting stakes and interests themselves. Such contradictions might e.g. involve short-term needs vs. long-term needs, and local (business unit) needs vs. global (enterprise-wide) needs. The actual prioritisation between such needs may depend on the role / perspective the stakeholder stakes. Therefore, when "counting" the number of stakeholders it is actually better to think in terms of *stakeholder roles* rather than merely counting people.

Stakes and interests are not the only contributors to the *diversity* of the players involved in a enterprise transformation. As discussed in Chapter 8, cultural diversity is also a major factor influencing success and failure of transformations, as it largely determines the attitudes of stakeholders towards the way they regard the world, their position in negotiations, their attitude to changes, etc. This can be summarised by the pseudo formula:

$$\textit{social complexity} = \#\ \textit{stakeholder roles} \times \textit{diversity of stakes} \times \textit{diversity of cultures}$$

10.3.2 Wickedness

Another major factor contributing to stakeholder fragmentation is the inherent complexity of the "problem" that is to be "solved" by the project / programme. Large scale transformations of enterprises tend to behave as *wicked problems* (Rittel and Webber, 1973; Conklin, 2003b). As discussed in Conklin (2003b); Head and Alford (2015), *wicked problems* distinguish themselves from *tame problems* in that:

- A wicked problem is not understood until after the formulation of a posible solution.
- Solutions to wicked problems are not simply right or wrong. One might be better than the other, but there is no clear right or wrong.
- Wicked problems have no clear stopping rule, i.e. it is not clear when the problem has been solved.
- Every wicked problem is essentially novel and unique.
- Every solution to a wicked problem is a "one shot" operation. Trying out a possible solution (if possible at all), will already alter the circumstance towards future attempts.
- Wicked problems have no clear given alternative solutions.

It should be noted here that *tame* problems are not necessarily *easy* problems. For example, Fermat's *Last Theorem* (no three positive integers a, b, and c can satisfy the equation $a^n + b^n = c^n$ for any integer value of n greater than two), is indeed a hard problem. At the same time, however, it is a highly tame problem.

Enterprise transformations are wicked by nature in the sense that more often than not, the precise requirements of a solution are not known clearly beforehand, it is

also not clear what challenges may have to be overcome "along the way", while the circumstances / context under / in which the transformation takes place changes during the transformation.

As mentioned before, the factors of *wickedness* and *social complexity* actually amplify each other (Conklin, 2003b). This can be summarised by the pseudo formula:

$$fragmentation = wickedness \times social\ complexity$$

10.4 The need govern enterprise coherence

Enterprise architecture is generally positioned as a means to steer and coordinate enterprise transformations. As argued by e.g. Op 't Land et al. (2008); Wagter (2009), architecture should offer senior management the means to obtain insight in, and to make decisions about, the direction of enterprise transformations. As such, it should act as a means to steer the direction of enterprise transformations. At the same time, however, experience in practise shows (Wagter, 2009) that enterprise architecture fails to deliver on its promise to steer the direction of a transformation, and essentially succumbs to the powers of stakeholder fragmentation.

10.4.1 Enterprise coherence governance

Wagter (2009) results from the multi-year and multi-party research project GEA. This programme was triggered by the observation that enterprise architecture fails to deliver on it promises. A survey (Wagter et al., 2007) held at the start of the GEA research programme showed that key triggers for the participants to participate in the programme were indeed:

- many enterprise transformation efforts fail,
- failing to adopt a holistic approach to address key business issues, frequently resulted in a unilateral approach from an IT oriented perspective,
- existing architecture methods fall short in meeting their promises because:
  - they are set up from an IT perspective only,
  - they hardly address the strategic level of the organisation,
  - they are set up in terms of the Business / IT gap and
  - their underlying IT architectures applied on the enterprise-wide level are unjustly called EAs.

The GEA programme took as its driving hypothesis (Wagter et al., 2013a; Wagter, 2013):

> "*the overall performance of an enterprise is positively influenced by a proper coherence among the key aspects of the enterprise, including business processes, organisational culture, product portfolio, human resources, information systems, IT support, etc.*"

where *enterprise coherence* is defined as:

> "*The extent to which all relevant aspects of an enterprise are connected, necessary to let the enterprise meet its desired results.*"

What is to be regarded as relevant aspects, as referred to in the above definition, is organisation dependent. Even more, the clarity (and resolve) with which an organisation has identified / prioritised these aspects is one of the parameters determining their ability / maturity to govern enterprise coherence. In Wagter et al. (2012d, p. 28–52) we have discussed the concept of the (organisation specific) coherence dashboard, which enables organisations to precisely express the relevant aspects that need to be connected.

As argued above, during enterprise transformations, *stakeholder fragmentation* is likely to have a negative impact on enterprise coherence, unless explicitly governed. A key first step in the aforementioned GEA programme was the development of an Enterprise Coherence-governance Assessment (ECA) (Wagter et al., 2011, 2012d) to obtain a clearer understanding of the challenges to enterprise coherence and its associated governance of coherence, as well as the impact of enterprise coherence governance on organisational performance. An assessment (Wagter et al., 2011) done among the participating organisations showed that more then 85% of the organisations involved in the first ECA studies lack explicit enterprise coherence governance as part of their traditional enterprise architecture approaches.

10.4.2 Beyond blue-print thinking

The driving hypothesis of the above mentioned GEA programme was translated to the ambition to extend the means of enterprise architecture management with the ability to better govern enterprise coherence (Wagter, 2013; Wagter et al., 2011, 2012a,b, 2013b). As a result, the main challenge facing the GEA programme (Wagter, 2009, 2013) was to develop a strategy to better manage stakeholder fragmentation, and as a result better govern enterprise coherence..

To enable enterprise architecture management to better deal with (potential) stakeholder fragmentation, it was necessary to, as also argued in Chapter 8, look beyond a traditional "engineering style" of thinking. To more precisely define what is meant by "engineering style", we turn to the work of De Caluwé and Vermaak (2003), who have identified a number of core perspectives on change processes in organisations:

Yellow-print thinking – Bring the interests of the most important players together by means of a process of negotiation enabling consensus or a win-win solution.

Blue-print thinking – Formulate clear goals and results, then design rationally a systematic approach and then implement the approach according to plan.

Red-print thinking – Motivate and stimulate people to perform best they can, contracting and rewarding desired behaviour with the help of HRM-systems.

Green-print thinking – Create settings for learning by using interventions, allowing people to become more aware and more competent on their job.

White-print thinking – Understand what underlying patterns drive and block an organisation's evolution, focusing interventions to create space for people's energy.

When we used the term "engineering style" we, therefore, actually refer to a Blue-print style of thinking. As suggested by De Caluwé and Vermaak (2003), it is recommendable to also take the other (complementary) perspectives into consideration when changing / transforming (parts of) an enterprise

Traditional enterprise architecture approaches and frameworks, including e.g. the Zachman (Sowa and Zachman, 1992) and IAF (van't Wout et al., 2010) frameworks, the ArchiMate language (Lankhorst, 2012; Iacob et al., 2012), as well as the DYA (Wagter et al., 2005) and TOGAF (The Open Group, 2011) architecture methods, essentially take a Blue-print perspective on change. Each of these approaches is based on an a priori fixed *design philosophy* in terms of which different perspectives are identified, usually going from *business* to IT (the so-called Business-to-IT stack). The identified perspectives, are solely based on a *prescriptive* design philosophy, following a pure rational line of reasoning (i.e. following Blue-print style of thinking), rather than on the actual stakes and interests of the key stakeholders in a specific organisations. The latter would require the inclusion of a more Yellow-print style of thinking.

When indeed including a Yellow-print style of thinking, it also becomes necessary to look beyond the traditional Business-to-IT stack focus of most existing enterprise architecture approaches and frameworks, which as also been identified by Proper and Lankhorst (2014) as one of the important trends in enterprise architecture. Case studies involving the use of GEA (e.g. Wagter et al. (2012b)) indeed also support this view. We return to this issue in Section 10.5.

10.4.3 Engaging stakeholders

Including a Yellow-print style of thinking in enterprise architecture practices would also suggest the integration of methods and techniques such as the Soft-Systems Methodology (Checkland, 1981), Group Based Modelling (Vennix, 1996), Collaboration Engineering (Briggs, 2004; Briggs et al., 2006), IBIS (Conklin, 2003a) and Dialogue Mapping (Conklin, 2005), into an approach for ACET.

Early results on the use of such techniques to better involve stakeholders of enterprise transformations can be found in e.g. Nabukenya (2005, 2009); Nabukenya et al. (2007, 2009) in terms of collaborative strategies to formulate policies / principles for Business-IT alignment, and in Nakakawa et al. (2011a, 2010b); Nakakawa (2012) in terms of a collaborative approach for the formulation of enterprise architectures.

Some of these results have been operationalised in terms of e.g. GEA's enterprise coherence dashboard (Wagter et al., 2012a, 2013a) and the CAEDA approach (Nakakawa et al., 2013, 2011b; Nakakawa, 2012).

10.5 Requirements for enterprise coherence governance

As argued by Op 't Land et al. (2008); Wagter (2009), architecture offers a means for management to obtain insight in the organisational structure, as well as to make decisions about the direction of enterprise transformations. As such, it should act as a means to steer enterprise transformations, while in particular enabling senior management to govern the enterprise's coherence. We regard enterprise architecture as the appropriate means to make enterprise coherence explicit, as well as controllable / manageable, or at least influenceable.

The GEA project (Wagter, 2009) used three key sources to identify the requirements for enterprise coherence governance:

1. the involvement of stakeholders, and senior management in particular,
2. management control,
3. change management and
4. general systems theory.

Below we discuss these requirements in more detail. Requirements we would consider to not only be relevant to the GEA project, but to architectural coordination in general.

10.5.1 Stakeholder involvement

Effective governance of enterprise coherence requires an active involvement of senior management. This, however, implies two important requirements:

Strategy driven – It is necessary to take the concerns, and associated strategic dialogues, of senior management as a starting point. In other words, the way in which architecture is integrated into the strategic dialogue should take the concerns, language, and style of communication of senior management as a starting point. When not doing so, it will be difficult to really involve senior management. Even more, the strategic dialogues provide the starting point for steering enterprise transformations and to guard coherence.

Respecting social forces – The social forces, be they of political, informal, or cultural nature, within an enterprise should be a leading element in governing enterprise coherence. As discussed in the introduction, an important reason for using architecture to steer and coordinate enterprise transformations is the fact that those design decisions which, in principle, transcend the interests of a specific project can be guarded / enforced that way.

Doing so, however, also requires a strong commitment from senior management to these design decisions. Local business stakeholders, such as business unit managers, who have a direct interest in the outcome of a project, may want to lead projects in a different direction (more favourable to their own local / short-term interests) than would be desirable from an enterprise-wide perspective.

> Such divergent forces are also likely to lead to erosion of the desired enterprise coherence. This explains the need to reduce the space for own interpretation on lower management levels by substantiating the decisions, made on strategic level, with unambiguous arguments harmonising all concerns at stake.

As argued above, existing architecture approaches (Sowa and Zachman, 1992; van't Wout et al., 2010; Lankhorst, 2012; Iacob et al., 2012; Wagter et al., 2005; The Open Group, 2011) operate from a Blue-print style of thinking. The above requirements clearly suggest the use of another style of thinking in terms of stakeholder interests, formal and informal power structures within enterprises, as well as the associated processes of creating win-win situations and forming coalitions. In terms of De Caluwé and Vermaak (2003), this would be more of a Yellow-print style of thinking about change. In the GEA programme, the latter line of thinking was taken as a starting point, by taking the perspective that the actual social forces and associated strategic dialogues within an enterprise should be taken as a starting point, rather than the frameworks of existing architecture approaches suggesting the full makeability of an organisation.

The latter does not imply that the existing "Blue-print style frameworks" are not useful. On the contrary. An engineering perspective is much needed. At the same time, it needs to be embedded in a Yellow-print oriented process. Architecture models produced from an engineering perspective potentially provide thorough underpinning of the views, sketches and models used in the strategic dialogues with senior management. However, rather than structuring the models and views in terms of 'information architecture', 'application architecture' and 'infrastructure', they would have to be structured based on those domains that are meaningful within the strategic and political dialogue in an enterprise. For example, in terms of 'human resourcing', 'clients', 'regulators', 'culture', 'intellectual property', 'suppliers', etc. Needless to say that this is also highly organisation specific.

10.5.2 Management control

One of the leading theories in the field of management control is "*Levers of Control*" by Simons (1994). Simons identifies the following levers of control:

1. Diagnostic control systems used to monitor and adjust operating performance.
2. Belief systems that communicate core values such as mission statements, credos and vision statements.
3. Boundary systems that define the limits of freedom, such as codes of conduct and statements of ethics.
4. Interactive control systems that provide strategic feedback and vehicles to update and redirect strategy such as competitive analysis and market reports.

These levers of control led us to the following insights. To give direction on a strategic level we have to distinguish between a *sustainable* purpose and a *changeable* shape of an organisation. The purpose is formulated on the level of purpose and

the shape is described on the design level. Belief systems typically contribute to the level of purpose. This leads to the requirements for enterprise coherence governance as show in Table 10.1.

Lever of control	Requirement
Diagnostic control systems	Goals have to be an element of enterprise coherence at the level of the purpose of an organisation and objectives an element of enterprise coherence at the design level of an organisation
Belief systems	The level of purpose of the organisation must be within the scope of enterprise architecture This requirement is associated with the previous mentioned requirement *scope*
Boundary systems	Boundaries must be made explicit since boundaries define relations between angles of an organisation, and as such form a basic asset of enterprise coherence
Interactive control systems	The effect of intended strategic interventions on the enterprise coherence should be made clear interactively and beforehand

Table 10.1 Enterprise coherence governance requirements from a management control perspective

10.5.3 Change management

A third foundation for requirements on enterprise coherence governance is based on the notion that organisations are a social technical combination of humans and supporting technology. Here we refer to the work of Balogun et al. (2003): "*Exploring Strategic Change*". The basic idea is that every choice made in a change process should be based on the context and the purpose of the change process. A study conducted by Reitsma et al. (2004): "*What is the best change approach*" has enhanced this basic idea with the statement that there is a link between the choice of approach and purpose of the change. Since this study concerns successful change processes (in various sectors), the conclusion has been drawn that it is sensible regarding change processes to consider on which organisational aspects the change is essentially focussed and in line with this to choose an appropriate approach.

Based on these insights the requirements on enterprise coherence governance as formulated in Table 10.2 were derived.

10.5.4 General systems theory

The second theoretical foundation concerns the general systems (cybernetics) perspective, where an organisation is seen as a controllable open system (de Leeuw, 1982). The control paradigm, as introduced by e.g. de Leeuw (1982); de Leeuw

Socio-technical combinations	Requirement
Choice made in a change process should be based on the context and the purpose	The scope of enterprise coherence governance should include both internal and external angles of the organisational transaction environment The purpose of a change process should be in line with the goals on the level of purpose and objectives on the design level The organisational aspects that are dominant in the solution for a business issue, determine the choice of approach Every change process should be argued by the application of the enterprise coherence governance before execution
Choice of an appropriate approach determines the success	The *solution direction and choice of approach* should be just one element of the decision Regarding the decision-making process, enterprise coherence governance should contribute to both the solution direction and choice of approach of a business issue Enterprise coherence governance should guide the realisation of the *solution direction and choice of approach* of a business issue An appropriate approach needs appropriate enterprise coherence products

Table 10.2 Enterprise coherence governance requirements from a change management perspective

and Volberda (1996), identifies a set of conditions for effective control. Compliance with these conditions also implies a promise, namely to achieve an effective control situation. These conditions are (de Leeuw, 1982; de Leeuw and Volberda, 1996):

1. The controlling system must have a goal to guide it in governing the controlled system.
2. The controlling system must have a model of the controlled system.
3. The controlling system must have information about the controlled system, namely the state of the specified system parameters and subsequent acting environment variables.
4. The controlling system must have sufficient control variety.
5. The controlling system must have sufficient information processing capacity to transform information (3), using a model (2), taking into account the objectives (1) into effective control measures (4).

Based on these conditions for effective control the requirements for enterprise coherence governance as listed in Table 10.3 were derived.

10.6 Conclusion

As also suggested by Proper (2014), we argue that ACET requires the involvement of (at least) two complementary types of frameworks. From a Blue-print thinking perspective, a *design framework* is needed to structure the actual architectural design thinking Proper and Op 't Land (2010). Existing frameworks such as

Conditions for effective control	Requirement
Specify a goal to the controlled system	Objectives have to be an element of enterprise coherence at the design level of an organisation
Have a model of the controlled system	The model of enterprise coherence must represent the dynamics of the design level of an organisation
Have actual information about the controlled system	The actual state of enterprise coherence must be represented on a permanent basis including current state as well as future directions
Have sufficient control variety	Enterprise coherence governance must have sufficient levers to influence enterprise coherence on the design level, and support the interdependancy with the level of purpose as well. The latter should include: forward and backward governance, event driven and cyclic governance, single and multi level governance (recursivity and projection)
Have sufficient information processing capacity	Restrict the complexity and information overload by differentiating enterprise coherence in several interdependent levels. Allocate sufficient resources to enterprise coherence governance, distinguished by processes, products, people, means, governance, methodology and all based on a clear vision

Table 10.3 Enterprise coherence governance requirements from a general systems perspective

Zachman (Sowa and Zachman, 1992) and IAF (van't Wout et al., 2010), ArchiMate (Lankhorst, 2012; Iacob et al., 2012), DYA (Wagter et al., 2005), or TOGAF (The Open Group, 2011), are candidates for the role of the design framework. Which of these frameworks fits best to a specific organisation, depends on the type of organisation, and the best fitting design philosophy.

Next to a *design framework*, the Yellow-print thinking perspective suggests the use of an organisation specific *engagement framework* that is concerned with the question of which groups of stakeholders to include in enterprise architecture decision-making during an enterprise transformation, and how to operationally engage them. This framework depends, more than a design framework, on the (strategic) priorities of the organisation, and the stakeholders involved in enterprise transformations. Even more, depending on the scope and impact of an actual enterprise transformation, more situation specific tuning of the engagement framework may be needed.

The engagement framework suggested by the GEA method involves the (organisation specific) *enterprise coherence dashboards* (Wagter et al., 2011, 2012d) as will also be discussed in Chapter 18.