FROM ENTERPRISE ARCHITECT TO OPPORTUNITY ARCHITECT

THE CHANGING ROLE OF ENTERPRISE ARCHITECTURE IN A DIGITAL TRANSFORMATION CONTEXT

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Foreword

In today’s world, the digital revolution is all around us. In order to stay relevant and keep up with the speed of this digital revolution, incumbent organisations face an unmistakable need to digitally transform. At the same time, new business opportunities can be explored, and organisations are offered the opportunity to use the potential of this revolution to their advantage.

This white paper marks the conclusion of the Digital Transformation Research Project, which was jointly conducted by the Vlerick Centre for Excellence in Enterprise Architecture and our partner LoQutus. Through a series of case studies on 13 organisations, both member and non-member organisations of the Vlerick Centre of Excellence in Enterprise Architecture, our aim was to gain insights in an organisation’s digital transformation journey, and, more specifically, in the involvement of Enterprise Architecture (EA) in this process. We would like to thank all organisations who collaborated with us on this project and shared their experiences: Acerta, Agentschap voor Onderwijsdiensten, Axa, CM, Colruyt, Eandis, ING, KBC, Mastercard, NMBS, P&V Group, Proximus and VDAB.

This paper summarises the most striking results of this digital transformation research project, and identifies opportunities as well as risks for EA practitioners in the context of a digital transformation.
Executive summary

In 2013 we launched our first research project, focussed on changing practices in the EA field and the evolving skillset of the enterprise architect. We identified several characteristics of truly EA-infused organisations. Over the years, organisations have focussed on increasing maturity of traditional EA practices. But clearly more was needed. The real challenge was, and still very much is, how to infuse EA in everyday organisational practices. How to be relevant as an enterprise architect? How to create organisational impact? How to mature from EA 1.0 to EA 2.0?

Fast forward to 2015-2016: organisations in constant flux, VUCA\(^1\), exponential organisations, the fourth industrial revolution, ... the organisational environment is ever more challenging. Organisations respond by transforming their business: more digital, more design-focussed, more agile and more embedded in an ecosystem. A fundamental transformation felt in every fibre of the organisation. So what does this mean for the enterprise architect? Which new challenges and opportunities arise? Our fundamental research question remains the same: how can they create organisational impact? Especially in a world driven by digital transformation. Enterprise architects have reached a crossroad: they can either take up a leading role and support their organisations in this new journey, or they do not accept the invitation to the digital party\(^2\). Yes, our research clearly indicates there is an invitation. But it takes two to party.

Through the analysis of 13 case studies, this white paper assesses the current role of enterprise architects in a digital transformation. The analysis of the interview data resulted in 6 main findings on the role of EA in digital transformation initiatives. First, we discovered that an organisation’s digital transformation is high on the executive committee’s agenda, which opens the door for enterprise architects. Second, EA is finding its way to the board room, which shows C-level executives increasingly acknowledge the need for enterprise architecture. The third main research finding is that, if architects are involved in the digital transformation, they often leave the project early. The tasks and responsibilities of enterprise architects are mostly situated at the start of the digital transformation project, while their involvement at the later stages of the digital transformation is rather limited to a gatekeeping function. Next, the trend of “pragmatic EA” continues, with the gradual acceptance of semi-formal methods, where architects must find a balance between creating useful and easy-to-understand EA models. Further, enterprise architects are struggling with innovation, being perceived by the business as enablers of innovation rather than leading the way. Finally, bimodal IT is a major challenge for architects, as they are

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\(^1\) An acronym for Volatility, Uncertainty, Complexity and Ambiguity.

generally well acquainted with the organisation’s legacy systems, yet struggle to define their role in dealing with exploratory and agile front-facing IT systems.

Today, enterprise architects are at a crossroads. The digital transformation projects in their organisations have rendered them more valuable. They are moving out of the doldrums. But will they focus on enabling & support? Or will they move one step beyond, leading the way, becoming true opportunity architects?
1. The changing role of EA in a digital transformation context

In times where digitisation is radically transforming many industries, incumbent organisations are trying to grasp what the digital age means for their current business model. In order to stand out, the development of the following digital capabilities is key:

- developing digital product innovation skills in order to meet changing customer expectations in a digital world;
- providing a seamless (digital and physical) multi-channel experience;
- using big data and advanced analytics to better understand customer behaviour; and
- improving the automation of operations and the digitisation of business processes.

While, until a few years ago, some organisations believed that adding a few nicely designed front-faced tools, or a focus on process automation would be sufficient to keep abreast with the digital revolution, organisations are now moving beyond this limited digital focus. Today, we see that digital transformation is approached from (1) the customer perspective; (2) the employee perspective; and (3) a collaboration perspective. Moreover, organisations face speed-to-market pressures, forcing them to quickly adapt to the new digital environment. In order to be able to develop these capabilities and to respond to the challenges of the digital world, organisations must have the right processes, structures, IT systems, roles and incentives in place. As these elements all interact with one another, this is where enterprise architecture (EA) as a management discipline comes into play.

As the discipline of EA is maturing, the role of enterprise architects has now moved beyond IT architecture: “IT architecture was a useful introduction to the practicing of EA within companies, but that was just the start of it”. EA is now helping to manage an organisation’s complexity, and enabling an understanding of the structure and behaviour of the organisation’s business and IT from a holistic viewpoint. Moreover, the discipline of EA can help the organisation’s decision-makers creating the roadmap from strategic goals through project investments to measurable business value and performance improvements.

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It is expected that, in the coming years, organisations capable of developing strong EA competencies may develop an important competitive advantage in the digital economy.\(^7\) Thus, the current role of enterprise architects in a digital transformation context warrants further research.

2. “To transform or not to transform” is not the question

Research set-up

In the course of October and November 2015, we conducted 13 case studies on the role of enterprise architects in digital transformation. This research was jointly conducted by the Vlerick Centre for Excellence in Enterprise Architecture and our partner LoQutus.

The organisations selected for the case studies were characterised by (1) a minimum level of EA maturity, and (2) an ongoing “digital transformation”, which was defined as “a specialised type of business transformation where IT plays a dominant role, and where an organisation’s strategy, structure, culture and processes are transformed by using the potential and power of digital media and the Internet”.8

The sample selection covers various sectors (Banking, Payments & Insurance, Transport, Energy, Retail & Distribution, Government and Telecom), and its overall EA maturity varies between “Foundation” (the organisation has an enterprise-wide view and a plan for technology, which are used to align the organisation’s business and technology) and “Extended” (the science, tools and techniques of EA are

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<th>Research in figures</th>
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<td><strong>13 case studies</strong></td>
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<td><strong>17 semi-structured interviews</strong></td>
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| **Case study selection criteria** | • Minimum level of EA maturity  
  • Involved in enterprise-wide digital transformation |

Figure 1 – Research in figures

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extended into (and used by) all parts of the enterprise to design/describe much more than technology).⁹

In total, 17 semi-structured interviews were conducted with employees in charge or closely involved in their organisation’s digital transformation. Each with a clear view on the role of EA in this context. The final interviewee selection included profiles such as CIO, E-transformation Director, Enterprise Architect, Head of Architecture, Innovation Manager and Director of IT. Thus, both the business side as well as the enterprise architect practitioners’ side was represented in the interviews.

Interviewees were questioned about the main challenges their organisations are currently facing in a fast-moving digital world, the characteristics of the digital transformation of their organisation, the parties initiating and/or involved in the digital transformation project, and, most importantly, the role of enterprise architects in this context. Our analysis provides valuable insights in the extent to which enterprise architects are involved in digital transformation, including the scope of their tasks and responsibilities, and the impact of EA on an organisation’s ongoing transformation.

The perspective on digital transformation is maturing

All interviewed organisations reported that they currently face challenges which force them to revise their current way of operating. These challenges come in different forms: becoming a “paperless” organisation, moving beyond commodity services and creating value propositions for a digital world, introduce digital customer touchpoints, adapt digital innovations to regulatory requirements, or transform the existing infrastructure in line with new technologies.

The nature of the observed digital transformations can be grouped into several digital transformation types (Figure 2), whereby we see a strong focus on the customer perspective (E.g. digital customer touchpoints), the employee perspective (E.g. becoming a paperless organisation), and the collaboration perspective (E.g. open data). The size of each circle gives an indication of the frequency of each observed digital transformation type. In several case studies, more than one digital transformation type was identified. It is clear that the main focus of digital transformation projects focuses on customer interaction: creating digital touchpoints for customers, capturing data and leveraging it for better targeting. Digital transformation seems dominated by projects from the marketing realm.

As different as the challenges of each organisation may be, none of the interviewees questioned the need to digitally transform. All interviewed organisations reported to be involved in digital transformation initiatives with a profound impact on the organisation. In our previous study we reported the end of corporate-wide, top-down

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large EA projects. EA on a project-by-project basis gained momentum. Today, EA is again, either in a supporting or leading role, part of large, corporate-wide digital transformation programmes.

The case studies show that organisations are coping with the digital transformation challenge by addressing the organisation’s needs at a systemic level. Using this approach, the entire set of interacting components of the enterprise, such as the organisation’s strategy, organisational structure, processes, applications, data & technology stack are taken into account. Enterprise architects are consulted when connecting front and back, developing open APIs, setting-up data lakes and building the new infrastructure for the organisations. Great stuff, but again, mainly IT-focussed. Yet, we did come across opportunities for enterprise architects to move beyond their traditional IT realm.

The next section assesses the role of EA in a digital transformation context, as the above described holistic approach may pose an opportunity for enterprise architects collaborate actively and guide the way. Moreover, multiple risks and opportunities for EA practitioners in this context are identified.

![Diagram](image.png)

**Figure 2 - Categorisation of the types of digital transformation**
3. The role of EA in a digital transformation context: findings, opportunities and challenges

The analysis of the interview data resulted in **6 main findings** on the role of EA in a digital transformation context. Further, several related challenges and opportunities were identified for EA practitioners in this context. The analysis was concluded with a validation of the results during a feedback session of the Centre of Excellence in EA at Vlerick Business School, attended by 12 EA practitioners from various industries.

Figures 3-6 and 8-10 summarise the main research findings, as well as one opportunity and one risk related to each specific finding. It must be emphasised that the list of findings and related challenges and opportunities is by no means exhaustive. However, this section, summarised in figure 10 aims to provide an overview of the most striking conclusions with regard to EA in a digital transformation context, which were consistently observed in the case studies and further validated.

**Finding 1: digital transformation is becoming a priority of the executive committee**

As digital transformation initiatives are becoming more strategic and enterprise-wide, they are being closely monitored by the organisation’s executives. The parties leading or involved in the digital transformation projects were often selected by the executive committee, who they directly report to. This evolution paves the way for EA to gain visibility towards the organisation’s executive committee, and to prove its added value in a digital transformation context.

The case studies demonstrate that the view of executives on EA and its added value is crucial as to whether enterprise architects are formally involved in the
organisation’s digital transformation projects. A clear example can be found in one of the case studies, where an enterprise architect commented: “The executive committee acknowledged that the existing silo structure was a major obstacle in realising the intended customer centricity, and more generally, our organisation’s digital transformation. Here, EA got in the picture as a way to adapt the organisation’s silo-structure.”

Using this “foot in the door” of the intended digital transformation and taking on a proactive attitude may lead to the opportunity of increased EA involvement in the transformation programs as of the initial phase. As digital transformation is high on the executive committee’s agenda, it is up to EA to put itself on the map here as a management discipline capable of guiding the organisational, process and technology changes that come with a digital transformation effort at the enterprise-wide level. It is a challenge for enterprise architects not to “miss the digital boat” and take on a proactive approach in ensuring EA involvement in their organisation’s digital transformation.

Finding 2: enterprise architects are getting access to the board room

A previous study, conducted in 2013, reported that C-level executives generally perceived EA as being too technical, formal and prescriptive, relying on complicated techniques and elaborate frameworks. Moreover, due to its origins in the IT domain, the business value of EA had not been widely established. ⁴

Today, we see that this perception has evolved in several organisations. 8 out of 13 organisations reported that EA is finding its way to the board room: in one of the case studies, the organisation’s CEO even declared that re-designing the organisation’s architecture was a top priority, and that investments had to be made in designing the right architecture in order to successfully implement the ongoing digital transformation. More generally, the analysis of the interview data showed a clear trend that C-level executives have now become more acquainted with EA as a management discipline. One e-transformation director illustrated this trend as follows: “Our enterprise architects are increasingly invited by the executive committee for advice and assistance when defining the organisation’s digital strategy and translating this strategy to a future-proof organisational architecture.”

When asked about the “keys to success” in this matter, the following elements were mentioned consistently:

- Having a (chief) enterprise architect in the organisation who is able to translate EA concepts to the board’s language, is invaluable in order to convey the added value of EA in a digital transformation context. This requires strong

communicative skills, and the capability to build up a network within the organisation. A strong business partner can take up a similar role to connect and promote EA with the organisation’s senior management.

The EA discipline within the organisation has now reached a sufficient level of maturity, providing EA with a proven track-record of adding value. In several organisations where senior management is now a loyal supporter of EA, it was argued that this support emerged after an initial successful intervention of architects in various projects. One Head of EA underlines that “by taking on an enabling role, EA has been able to demonstrate its potential to add substantial value in comparison to the previously adopted transformational approach where no models or structure supported the change. Thus, architects are able to build credibility and demonstrate how EA can become the board’s partner in guiding structural changes within the organisation”. Such an approach can contribute to raising awareness within the board that “gut-feel” does not suffice to successfully complete an organisation’s digital transformation, and that EA has value to add here.

All organisations where EA is on the executive committee’s agenda reported that an important success factor in this regard are personal relations and beliefs: the former chief architect who now directly reports to the board, or informal contacts which are well-established between an enterprise architect and a board member.

Several case studies showed that senior management support is key in order to convey the added value of EA to the business-side of the organisation. In a top-down approach, where the executive committee or CEO obliges project managers to sit around the table with enterprise architects before the start of a transformational project, it was reported that this obligation creates an opportunity for the business to get acquainted with EA and, at best, its benefits. This obligatory involvement of architects creates affinity with EA within the organisation, which can
be leveraged. In organisations where EA has not found its way to the board (yet), the roles assigned to enterprise architects in the digital transformation context were consistently reported to be more limited.

One interviewed innovation manager described this effect as follows: “At first, the only incentive for a project manager to invite enterprise architects to the table and discuss my projects was to follow the procedure imposed by our CEO and obtain the project approval. Now, our incentive to do so is that we have experienced in the past that the involvement of enterprise architects prevents us to make stupid decisions.”

In multiple case studies, it was highlighted that one of the main challenges faced in order to bring EA to board level was the investment of time and continuous efforts required to adjust EA concepts to the board members’ knowledge of the discipline, and to build a good relationship between the EA team and the board. Here, it is important that this role is taken up by the people within the EA team who possess the right communication skills.

Finding 3: when architects are invited to the digital party, they often leave early

The case studies revealed that the involvement of enterprise architects in large transformational programs is generally established. In 12 out of 13 case studies, architects were reported to be involved — to a greater or lesser extent — in their organisation’s digital transformation efforts. However, the interview data show that, in a majority of the case studies, an enterprise architect’s tasks and responsibilities are mostly situated at the start of the project, and mainly include scope definition, budgeting decisions and requirements setting.

When asked about the architect’s role during the next phases of the transformation, most interviewees agreed that this role is mainly limited to doing a minimal follow-up of the projects. A common argument put forward was that an architect’s role in this phase can be characterised as the “auditor”, where the architect follows the projects from a distance, acts as a gatekeeper and guards whether the requirements and scope set at the start of the project are complied with.

Nevertheless, several interviewees indicated that this phase is where the architect can make a difference: in setting things right as from the start. In organisations where the involvement of architects at the later stages of the digital transformation is not limited to a gatekeeping function, the interviewed architects report that playing a more extensive role in the implementation teams is highly relevant. The role of architects as a full member of the implementation teams is profoundly different, as they share the team’s responsibility to deliver the digital transformation. The Head of EA in one of the interviewed organisations, clearly convinced of the added value of this approach, stated: “Close collaboration with the business during the implementation phase allows the architects to collect information on how the predefined architectural requirements are realised in practice, and to see what works
and what does not.” This approach allows architects to challenge the implementation team on the impact of its decisions on the organisation’s architecture. Architects can take this real-world evidence to the next architectural exercise, which allows them to closely align the organisation’s blueprint architecture with the business reality.

Figure 5 – finding 3 and related challenge and opportunity

The involvement of architects at the start of digital transformation projects provides the opportunity for architects to extend their involvement into the implementation phase. Here, it is key for architects not to limit their involvement to simply ticking the boxes, and to act as a controller. Instead, the architect can contribute by taking on a closed-learning approach and becoming a coach during the implementation phase of the digital transformation projects. Moreover, this provides the opportunity to spread EA throughout the organisation. Enterprise architects should keep their eyes open for opportunities in this regard, and take on a proactive role.

Such a role is not yet a reality in most organisations. One enterprise architect commented during the feedback session on the research that “EA has to choose its battles”, not only due to the limited resources of the EA team, but also due to the fact that architects often do not feel comfortable or possess the right skills to play a more extended role throughout the transformation. Another challenge put forward in this regard, is that several architects reported to be comfortable in their role in the preliminary study phase of the project. As such, many architects are bound to leave the digital party early.

Finding 4: enterprise architects are gradually accepting semi-formal methods

“Visualising an architectural framework may look impressive, but it is worth nothing if it is not applied later on” says one CIO, commenting on the finding that architectural models and frameworks are generally perceived by the business as being overly complex and technical. As the business feels pressure to accelerate the organisation’s digital transformation, interviewees from the business side report to
perceive the use of such frameworks as a delaying factor. Also, these frameworks and models are often not understood by the business. Thus, they should be avoided. In line with the trend of lightweight governance, several EA teams reported to have adopted a semi-formal approach to EA, where the enterprise-wide architectural models and frameworks are used less often and where architects translate specific conclusions into easy-to-understand models in a common language. The tagline here can be summarised as: “Semi-formal is good enough”.

When asked about the opportunity of using EA methods in a less rigid way, interviewees consistently responded that it creates buy-in from the business. By re-using existing terminology used by the business, several interviewees reported that this approach leads to a further spread of the use of EA throughout the entire organisation. Instead of pushing EA models and frameworks top-down, architects can use this approach to architect the organisation in collaboration with the business. A clear example of this approach can be found in one of the case studies, where the enterprise architect stated that: “Before, formal EA-models and frameworks were forced upon the business in a top-down way, and architects could design EA models independently. Now, they are adopting a more collaborative approach, where architects must discuss the organisation’s architecture with the business, and must explain the designs to the business. Nevertheless, this can be a frustrating process.”

These findings build further on the research results of the 2013 study, where it was concluded that organisations no longer believed in large-scale top-down EA programmes, and where a more pragmatic EA approach was advised, in which the enterprise-wide picture is still outlined on a high-level, but where EA focuses on deliverables that are useful and used in the organisation.11

The analysis of interview data shows that this evolution brings along new challenges. In organisations where the EA team has been adopting such an EA

approach, the architects reported that they are struggling with finding their role in this new — less formal — approach, and with abandoning the models and frameworks that were used before. Also, a drawback to this approach is that the EA models are often created *ad hoc*, and are not actively maintained and consolidated. This makes it difficult to re-use them or integrate them in the organisation’s architectural models. Architects must find a balance between creating useful EA models, and models which are easy-to-understand, but very unstructured and difficult to re-use or integrate in the enterprise architecture later on. A guiding principle here is the ultimate goal is not to design the perfect architecture, but the most future-proof architecture, adapted to the organisation’s business reality and strategy.

**Finding 5: architects are struggling with innovation**

“Innovation” is the process of turning opportunities into new, value generating ideas, and positioning those ideas into widely used practices.¹² This process can have different degrees of impact on the organisation, varying from incremental innovation to radical innovation.¹³ The case studies revealed that enterprise architects play a role in the incremental innovation process (for example an update of IT applications), while this is less the case for more radical innovations. Architects are rather perceived by the business as enablers of innovation than creators of the latter type of “innovation”, which are often front-faced and marketing-driven. The interviewed enterprise architects stated that, when it comes to the set-up of labs and agile experimentation, they are struggling to position themselves.

In the process of innovation and exploration of new business opportunities, potential products and services are to be found in the intersection of desirability (“Does the proposed product/service fill a customer need, and do our customers actually want the product/service?”), feasibility (“Does our organisation have the required capabilities of delivering this product/service?”) and validity (“How does this product/service deliver value to the business?”).

![Diagram showing the intersection of desirability, validity, and feasibility as dimensions of business opportunities assessment](image)

**Figure 7 - Dimensions of business opportunities assessment**


In our 2013 study, we concluded that the role of enterprise architects in this regard was typically located in the “feasibility” segment. While today, architects are still mainly active in the feasibility segment, the analysis of the interview data demonstrates that the role of enterprise architects in innovation is now also entering the validity segment. In some cases, the role of architects in innovation was reported to be non-existent, whereas in the majority of organisations, the role of architects was mainly doing feasibility studies (the feasibility dimension) and assessing whether new ideas of the business fit the overall strategy of the organisation (the validity dimension). When interviewees were asked whether architects would be able to contribute to the desirability segment, this was not seen as a strength of architects.

![Figure 8 – finding 5 and related challenge and opportunity](image)

Nevertheless, several interviewed architects have expressed their ambition to contribute to their organisation’s (more radical) innovation processes in a more substantial way than they are currently doing. In this regard, we see **opportunities** for enterprise architects to add value in (1) the first step of the innovation process, the articulation of a clear innovation ambition, either endogenous or exogenous, as well as in (2) ensuring the link between the organisation’s different innovation ambitions; and (3) participate in strategic discussions.

### Articulation of a clear innovation ambition

An organisation’s **endogenous innovation ambition** is aimed at activating the hidden growth potential of the organisation’s existing products or services. This innovation ambition can either take the form of (1) optimising existing products for

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the existing customers; or (2) the introduction of “adjacent innovations”, leveraging existing capabilities in other domains.\textsuperscript{16}

When playing on the level of optimisation, the enterprise architect’s involvement adds value with regard to operational excellence, by operating in a “constraint-mode”, which means that his role is understanding the impact of the proposed changes on the organisation’s different departments, activities and processes. However, if the organisation’s innovation ambition relates to adjacent innovations, the enterprise architects oversight and insights in the organisation makes him well-placed to map the existing capabilities in a structured way, as well as to provide direction in redesigning the existing organisational structures. More general, the enterprise architect can add value by operating in an “option-mode”, by providing guidance as to which adjacent innovations on the table are feasible to implement, given the organisation’s existing asset base.

The \textit{exogenous innovation ambition}, on the other hand, is focused on identifying external assets offering opportunities for innovation.\textsuperscript{17} This innovation ambition typically aims at the development of “breakthrough products”, where the used benchmark is not the existing organisation, but other disrupting companies. On this level of the innovation ambition, the enterprise architect adds value by operating in an “opportunity-mode” and by thinking out-of-the-box.

\subsection*{Ensuring the link between different innovation ambitions}

Enterprise architect involvement is not only valuable with regard to realising the above mentioned innovation ambitions, but also with regard to ensuring the link between their organisation’s different innovation ambitions.

Examples of an architect’s contribution in this regard are the identification of assets that have previously been developed in order to strengthen the core which can be leveraged for disruptive products; or the development of a strategy to push disruptive products that were developed in a lab into the core organisation.

One interviewee commented: “In order to ensure the link between all ongoing and newly proposed innovation initiatives within our organisation, we are planning the set-up of an “Architecture Board”.

\subsection*{Participating in strategic discussions}

Given the fact that enterprise architects have an excellent oversight and insight at enterprise level, there is an opportunity for architects to act as a partner of the


business in shaping the vision of which direction the organisation must evolve in, while connecting the different departments, units and silos within the organisation. Together with the business, they are well-placed to participate in several important strategic discussions, such as the feasibility of scaling the innovation projects, or which investments should be added to the investment portfolio.

When contributing to innovation, creative skills are essential. However, surprisingly, when questioning chief architects about essential skills they look for when hiring an architect, “creative skills” were not often mentioned. Therefore, it was identified to be a challenge to include creative profiles in EA teams, who also possess excellent technical and analytical skills.

**Finding 6: bimodal IT is a major challenge for architects**

The subject of coping with bi-modal IT proved to be unavoidable, as such an IT landscape was omnipresent in the case studies. Gartner defines “bimodal IT” as the practice of managing two separate coherent modes of IT delivery, one focused on stability and the other on agility. Mode 1 is traditional and sequential, emphasising safety and accuracy. Mode 2 is exploratory and nonlinear, emphasising agility and speed.18

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![Figure 9 - finding 6 and related challenge and opportunity](image)

Overall, architects reported to be well acquainted with mode 1, while this is far less the case for mode 2, which often takes the form of front-facing systems and technologies emerging next to the legacy systems of mode 1. In the majority of the case studies, enterprise architects are not involved at all during the set-up of these front-end innovations. In a few other organisations, efforts are made to introduce an agile way of working in the environment of traditional IT systems with EA involvement, but this is not running smooth yet. However, In the context of a digital transformation, it will be key to connect both systems, as the exchange of information between both is one of the prerequisites to achieve customer centricity.

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In order to achieve outside-in thinking and great customer experiences, a solid and future-proof architecture is needed for both the front-end and back-end of the organisation.

This context provides an opportunity for enterprise architects, who understand the complexity of the existing legacy systems, to connect both systems and to integrate them in a future-proof architectural blueprint. Architects must avoid to postpone the integration problem, and must take the initiative to get a grip on the bi-modal IT structure.

The challenge relating to bi-modal IT is to avoid an IT structure with an architected back-end and a non-architected front-end. It was marked as a major future challenge to integrate these front-faced IT systems with the legacy systems. One architect referred to these mode 2 systems as “shadow IT”, as they had been developed by the business side of his organisation, who was determined to move forward fast and in an agile way, without involving the IT department nor its enterprise architects, who were perceived by them as being more rigid and slow-paced.
Overview of main findings, challenges and opportunities

Finding 1: Digital transformation is becoming a priority of the executive committee
- Challenge: Take on a proactive approach and ensure EA involvement
- Opportunity: Opportunity for EA to gain visibility and put itself on the map

Finding 2: Enterprise architects are getting access to the board room
- Challenge: Required time and continuous effort to bring EA concepts to board level
- Opportunity: Leverage increased affinity of the business with EA

Finding 3: When architects are invited to the digital transformation, they often leave early
- Challenge: EA has to "choose its battles" due to limited resources
- Opportunity: Use foot in the door to extend EA involvement and play coaching role in next phase

Finding 4: Architects are gradually accepting semi-formal methods
- Challenge: Finding balance between re-usable and easy-to-understand EA models
- Opportunity: Create buy-in from the business

Finding 5: Architects are struggling with innovation
- Challenge: Development of creative skills
- Opportunity: Act as a co-creator of innovation and ensure link between different ambitions

Finding 6: Bi-modal IT is a major challenge for architects
- Challenge: Avoid architected back-end and non-architected front-end
- Opportunity: Connect both IT modes and integrate them in architectural blueprint

Figure 10 - Findings, opportunities and risks for EA practitioners in a digital transformation context
4. From Enterprise Architect to Opportunity Architect

Enterprise Architects are at a crossroads. Digital transformation is high on many executive committees’ agendas. Increased customer centricity, experience- and data-driven business, new tech-savvy competitors, a faster pace of innovation, experimentation, agile/design-driven ways of working and increased importance of ecosystems all blend together in a perfect storm called digital transformation. Organisations cannot tackle these challenges anymore with one-off point solutions. Clearly, a more systemic, architecture-driven approach is needed. Our research shows that many organisations are starting to feel this in every fibre of the company. As such, the stage is set. It is up to the enterprise architect to decide whether they will be in the play or not. And, more importantly, which role they will play. Based on our interview data, we see an emerging need for a new type of enterprise architect for digital transformation: the opportunity architect.

How does an opportunity architect differ from a traditional enterprise architect? We identified the following characteristics in our cases:

1. *They coach the business.* It is clear from the cases that organisations tend to overestimate the short term and underestimate the long term disruptive nature of technology and digital business models. Digital transformation indeed has plenty of potential for organisations, yet it does not come free. Coaching the business means telling them what they need to, but often do not want to hear. Showing them what they need to, but do not want to see: complexity, interdependencies, interconnectedness. This at the risk of, yet again, being seen as someone who slows down, restricts and audits the business rather than enabling it. However, true digital transformation can only happen when organisations face and deal with these issues. It is a capability they have to further develop and enterprise architects play an important coaching role in this: learning how to face, deal with and even capitalise on these challenges. But at the risk of having to leave the digital party, enterprise architects should transcend their traditional role of operating in a constraint-mode. They have to move beyond the challenges and see the opportunities.

2. *They lead and get out of their comfort zone.* Dealing with innovation, seeing the outside-in perspective, understanding end-clients, understanding changing business models. It all seems far away of what many enterprise architects focus on today. Still, if enterprise architects restrict themselves to the domain of feasibility, they condemn themselves to being kings of constraints. Many business (transformation) managers are searching for ways to enable digital transformation and accelerate the pace. They do not need enterprise architecture roadblocks on their way. Even if these roadblocks are useful and valuable. In a digital context, there is a strong need for architectural
leadership, as the organisation eventually will have to be capable of scaling and industrialising the newly developed digital innovations. In order to take up this leadership, enterprise architects must evolve towards operating in an “option-mode” and “opportunity-mode”. This new role of opportunity architect does not imply that architects should opportunistically force their involvement in the transformation upon the business wherever possible. On the contrary, opportunity architects choose their battles strategically and only intervene where their involvement is of true value. As such, they provide direction in redesigning the existing organisational structures, or they create opportunities for innovation by thinking out-of-the-box. This means enterprise architects should take up a leading role in f.e. explaining:

- How open APIs will help their organisation lead the way in a newly emerging ecosystem.
- How a data lake is crucial in better understanding customer needs.
- Why poor information management increases customer churn.
- Which back-office investments are needed before the business can truly scale at the pace it wants to.
- Which business processes are superior to the competitor’s and should be further leveraged.
- How cross-organisational data-integration can build new services that can delight clients.
- Which business capabilities need to be co-created with clients and can be supported by the organisations processes and IT systems.

Not every enterprise architect is fit to become an opportunity architect. Not every enterprise architect has to become an opportunity architect. But what is clear from this study, is that organisations in the midst of a digital transformation need opportunity architects. Traditional enterprise architects will always be needed and will continue to have a place in organisations. But more is needed in this fast-changing business environment. Perhaps traditional enterprise architects will gradually become a commodity whilst opportunity architects will be the true source of differentiation for digital transformation.
About the Centre for Excellence in Enterprise Architecture

In 2013, Vlerick Business School and its research partner LoQutus conducted an intensive, year-long study of Enterprise Architecture (EA) usage and management. The impetus for the study was the perception that Enterprise Architects are looking to re-position their function to serve their organisations more effectively in turbulent times, and one finding was that the EA domain requires a balance of opposites: discipline and creativity, rigor and pragmatism, accuracy and nuance, long-term vision and short-term results. We argue that, as an Enterprise Architect views an organisation as a complex system, EA is a business discipline and should not be confined to the ICT domain.

From the presentations and discussions of this paper and the subsequent seminars we held, one thing became very clear: there is a strong need for community building, sharing best-practices and discussing challenges in the field of Enterprise Architecture.

The Centre for Excellence in Enterprise Architecture aims to help organisations translate the theories and concepts of EA into practice. One of the main focus domains for 2016 onwards is digitisation and, more specifically, the role of EA in this context.

About Our Prime Foundation Partner LoQutus

As an expert in the field of EA management, LoQutus is a pioneer in guiding organisations towards digitisation of their services and operations. Although LoQutus mainly positions itself as an IT expert, it is more convinced than anyone that EA management needs to be applicable in practice.

LoQutus is part of the Möbius group.

Member companies in 2016

Axa, Base, Eandis, FOD Financiën, ING, NMBS, P&V and Proximus.

Objectives of the Research Centre

The Centre aims to create an interactive, practice-based, closed community focusing on:

- Co-creating new content on practice-based topics in the field of EA;
- Stimulating an exchange of ideas, best-practices and company approaches;
- Generating discussions and letting ideas collide on EA management;
- Discussing company-specific challenges/issues with peers;
- Building a shared knowledge base on EA and EA management practices which is accessible for all member organisations;
- Linking EA with other Vlerick fields of expertise: strategy, management, leadership, change and communication;
- EA = combined Business + ICT view;
- No focus on frameworks; not a sales club; no tools/techniques fetish; and
- Content is king, networking a nice extra.