

# Article

## Enterprise Architecture Practice in Retail: Problems and Solutions

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### Abstract

Currently Enterprise Architecture (EA) is widely practiced in different organizations working in diverse industries across the globe. Although it is generally acknowledged that there are no universal one-size-fits-all approaches to EA practice suitable to all organizations and industries, features and peculiarities of the approaches to EA followed in different industries are still poorly understood. In this article I analyze the EA practice in a large Australian retail chain operating in the fast-moving consumer goods business, discuss the industry-specific challenges with EA experienced by this company, and describe their potential solutions and mitigation strategies followed by the company.

### Keywords

Enterprise Architecture (EA), Retail, Problems, Solutions

### INTRODUCTION

An Enterprise Architecture (EA) can be represented by a collection of documents describing an enterprise from an integrated business and IT perspective intended to bridge the communication gap between business and IT stakeholders and, thereby, to improve business and IT alignment. An EA practice implies the development and use of a variety of documents typically called EA artifacts that translate global executive-level strategic decisions into specific information systems supporting them (Ahlemann et al. 2012).

Currently, EA is widely practiced in different organizations across the globe working in diverse industries, including banking (Gerber et al. 2007; Gonzalez 2011; Murer et al. 2011), agriculture (Hungerford 2007; Hungerford 2009), healthcare (Venkatesh et al. 2007), academia (Anderson et al. 2009), as well as a multitude of other sectors (Lynch 2006; Pheng & Boon 2007; Rees 2011; Richardson et al. 1990; Smith et al. 2012). At the same time, it is generally acknowledged that there are no universal one-size-fits-all approaches to EA practice suitable to all organizations and industries (Kotusev et al. 2015; Park et al. 2013; Saha 2009). However, despite the evident diversity of the industries where EA is successfully practiced, features and peculiarities of the approaches to EA followed in different industries are still poorly understood. Essentially, there is little information available on the specificity of an EA practice in different industries. On the one hand, it is not clear which characteristics of an organization's industry are significant and should be taken into account from the perspective of an EA practice. On the other hand, it is not clear exactly how these characteristics of an

organization's industry may influence the design of an EA practice in such an organization.

In order to better understand the influence of a specific industry on an EA practice I studied in detail the EA practice in a large and widely known Australian retail chain (that wished to remain anonymous) operating largely in the fast-moving consumer goods business and then analyzed industry-specific features of this EA practice. The retail industry, and especially its fast-moving consumer goods segment, is characterized by high sales volumes, low margins, fast stock turnover, and heavy reliance on complex logistic networks for goods delivery and storage. From the management perspective the competitive position of a retail chain largely stands upon three pillars: lowering the cost, increasing the revenue, and improving the customer experience. The Australian retail market is very dynamic, highly competitive, and influenced by aggressive new market entrants. Companies are constantly competing on price and struggling to increase their market shares, while continually accommodating changing legislation. Moreover, companies have to respond quickly to their competitors' moves in order to stay afloat. Therefore, the fast-moving consumer goods retail business in Australia is very fast-paced, cost-sensitive, and reactive. Its business environment is highly competitive, rapidly changing, and largely unpredictable.

This article continues as follows: (1) I provide a brief overview of the studied organization, (2) I describe the "nuts and bolts" of the EA practice in this organization, and (3) I discuss the influence of industry on the EA practice including the most pressing industry-specific problems and their potential solutions.

## COMPANY OVERVIEW

FMCG (fictitious name to ensure anonymity) is a major player in the fast-moving consumer goods retail market in Australia. It has multi-billion dollar revenues and employs tens of thousands of people, including several hundred IT staff and a similar number of its partners' outsourced IT personnel. The company is split into several lines of business and operates several hundred retail outlets across Australia.

FMCG largely implements the Diversification operating model (Ross 2005; Ross et al. 2006; Weill & Ross 2009) since different lines of business within FMCG are relatively independent, do not follow globally standardized business processes, and do not share global data, except for the supporting functions; for instance, finance and HR. However, each line of business implements the Unification operating model (Ross 2005; Ross et al. 2006; Weill & Ross 2009) because all retail stores within each line have standardized processes, IT systems, and shared databases for their main data types; for instance, logistics and products. Each line of business has its own IT delivery function.

Initially the strategic architecture for FMCG was planned by solution architects on an unsystematic basis. The first attempts to start practicing true EA can be dated back to 2007 when the role of enterprise architect was established. However, due to the fast-paced and reactive nature of FMCG's business, its architecture function has since undergone a number of transformations. The meaning of the enterprise architects' role at FMCG has been periodically redefined and the number of enterprise architects at FMCG has changed accordingly.

For a period of time FMCG had a very strong and influential centralized EA team which tried to proactively plan the strategic architecture for the whole organization, but this team was considered too bureaucratic by senior business stakeholders since all IT investments needed their agreement and approval. As described by an enterprise architect:

*"Architects told the business what the business was gonna do and because of that the business felt they weren't listening and getting what is required to respond. And [business] will go and get frustrated."*

At one point FMCG had one enterprise architect for each line of business, largely responsible for managing solution architects working for that line, but this model did not work well either because enterprise architects concerned with people leadership were unable to also produce a meaningful proactive strategic vision for the organization.

Currently, FMCG has a centralized and lean EA team focused more on identifying new IT-enabled business opportunities for growth and operational efficiency, than on ensuring compliance and governance. However, FMCG is still in the process of refining its own company-specific way to practice EA.

## EA PRACTICE AT FMCG

In this section I will describe FCMG's architecture function, documents, and processes.

### Architecture Function

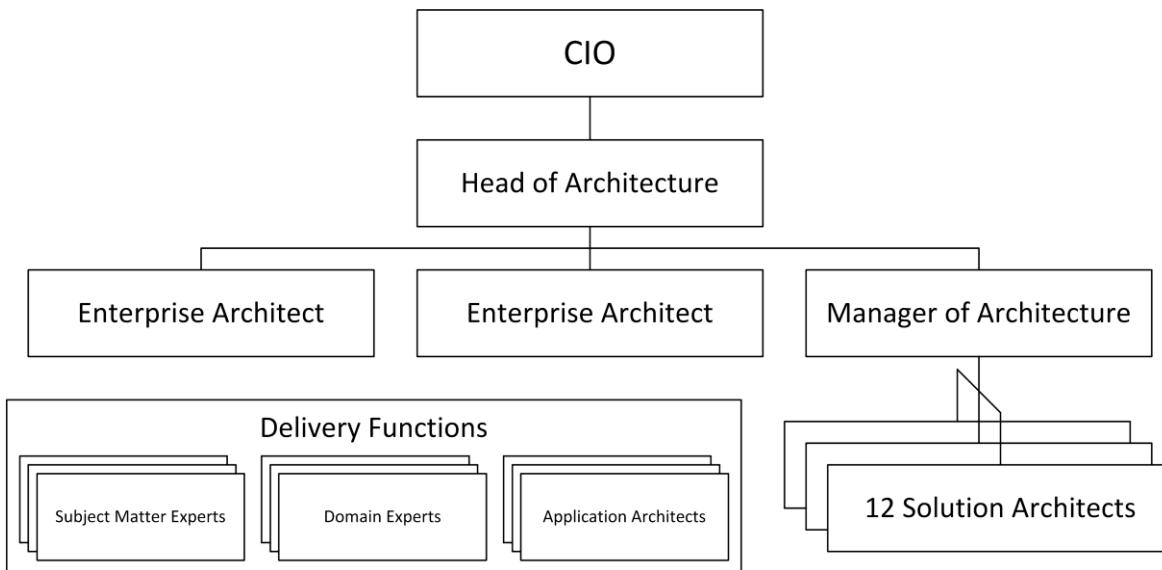
Currently, FMCG has a centralized architecture function for the whole organization that includes enterprise and solution architects and is managed by the head of architecture, who reports directly to the CIO. The EA team is responsible for company-wide strategic architecture planning and consists of two enterprise architects reporting to the head of architecture. The solution architecture team is responsible for project-level architecture planning and consists of 12 solution architects reporting to the manager of architecture, who also reports to the head of architecture. Additionally, apart from the central architecture function, IT delivery functions of different lines of business have independent teams of application architects, domain and subject matter experts responsible for detailed technical designs of ongoing IT projects. The structure of the architecture function at FMCG is shown in Figure 1.

### Architecture Documents

The EA practice at FMCG is based on 12 distinct types of documents produced by architects with the necessary involvement of other relevant stakeholders. Architecture documents used at FMCG with their brief description, meaning, developers, users, and purpose are described in Table 1.

FMCG does not use any specific software tools for developing, storing, and managing architecture documents. All documents are developed with the standard Microsoft® Office suite (PowerPoint®, Word, and Visio®) and stored in the central SharePoint® repository with the exception of inventories that were initially stored as Excel® spreadsheets, but eventually migrated into a ServiceNow™ Configuration Management Database (CMDB).

FMCG also does not have any standards on the use of different architecture modeling languages. The ArchiMate® modeling language is occasionally used by some architects for high-level technical diagrams and UML® is occasionally used for more detailed drawings, while the majority of architecture documents do not adhere to any specific modeling notations.



**Figure 1: Structure of the Architecture Function**

**Table 1: List of Architecture Documents**

Documents	Description
Strategic Papers	Strategic papers are very high-level analytical documents discussing the potential influence and impact of disruptive technical trends on the company's business. Essentially, they represent the results of a SWOT (strengths, weaknesses, opportunities, and threats) analysis from the technology perspective. Strategic papers are produced collaboratively by enterprise architects and senior business managers and communicated to a wide circle of business and IT stakeholders to inform their decision-making.
Principles	Principles are abstract global architecture maxims relevant for all IT solutions in the organization. Principles range from common IT policies found in many organizations, such as "reuse before buy, buy before build", to highly company-specific policies, such as "all store solutions should be robust to intermittent connectivity and network failure". Principles are formulated by enterprise architects and approved by senior business stakeholders. All project-level architectures developed by solution architects should be aligned with principles.
Business Capability Model	The business capability model is a one-page diagram describing business capabilities of the whole organization up to two or three nested levels of abstraction. The business capability model is maintained by enterprise architects and used primarily to facilitate a conversation with business stakeholders and prioritize IT investments. However, it is also used by solution architects and project managers for identifying the stakeholders, impact, and potential disruption of a solution.
Business Reference Architectures	The business reference architectures describes the desired ideal organization of business processes according to recognized industry best practices in certain important business capabilities. Business reference architectures are developed collaboratively by business stakeholders and enterprise architects and then used for identifying best opportunities for improvement and IT investments.
Roadmaps	Roadmaps are business-focused documents describing desired future IT investments and their impact in certain important areas for three years ahead. Roadmaps are written in business language and aimed at answering core questions of relevant stakeholders. Roadmaps describe planned IT investments through different "lenses", including financial, value, capability, structure, and other lenses. Roadmaps are developed collaboratively by enterprise architects and business stakeholders and used for making decisions on future IT investments and prioritizing them.

Documents	Description
Technical Reference Architectures	Technical reference architectures are high-level descriptions of the current and ideal target states of the IT landscapes supporting certain business capabilities. They are purely technical and IT-specific in nature. Technical reference architectures exist for 60-70% of business capabilities, but only 20-30% of business capabilities have their ideal future states described. They are developed by enterprise architects and used by solution architects to facilitate detailed project planning by providing a description of the current state as well as a description of the desired state that their projects should be aiming to achieve.
Inventories	Application, infrastructure, and information inventories are catalogs of the corresponding entities available in the organization. Application and infrastructure inventories are fully populated, while an information inventory list is still incomplete. Inventories are maintained collaboratively by enterprise and solution architects and used mostly as reference materials by solution architects to facilitate the project-level architecture planning.
Standards	Standards are specific technical recommendations relevant for all IT solutions in the organization; for instance, that all solutions should be based on the Microsoft .NET platform or that all customer-facing mobile apps should support both iOS® and Android™ platforms with native applications. Standards are set collaboratively by enterprise and solution architects, typically in a bottom-up manner as a result of a particular project introducing a new technology or specific need. All project-level architectures developed by solution architects should be compliant with standards.
Solution Overviews	Solution overviews are high-level documents describing specific IT solutions. The level of detail in solution overviews is abstract enough to be understandable for business stakeholders, but is specific enough for obtaining approximate estimates of time, cost, and risk. Solution overviews are developed for each project by solution architects with an input from domain and subject matter experts. Solution overviews are typically used by business stakeholders and architects for initial project discussions and approvals. Solution overviews also provide estimates for informing formal project business cases and serve as a basis for detailed project architectures.
Business Cases (not architecture documents, but important for the EA practice at FMCG)	Business cases are formal financial documents for specific IT solutions. Business cases specify anticipated quantitative measurable benefits, costs, and return on investment (ROI) for particular projects. Business cases are prepared collaboratively by business stakeholders and solution architects based on the estimates derived from solution overviews of the corresponding projects. Business cases are the main project-level documents used by business stakeholders to approve all IT solutions.
Solution Architecture Documents (SADs)	Solution Architecture Documents (SADs) are detailed technical descriptions of specific IT solutions. SADs are developed for each project by solution architects with an input from domain and subject matter experts after the solution overview and business case for this project have been approved. SADs are used predominantly by project teams, including application architects, domain and subject matter experts, for producing detailed designs and delivering projects.
Key Design Decisions (KDDs)	Key Design Decisions (KDDs) are summary documents describing significant architectural decisions taken for specific IT solutions, the reasoning behind them, their justifications, and pros and cons. For instance, KDDs should explain any deviations of a solution from established principles, standards, roadmaps, or technical reference architectures. KDDs are extracted from solution overviews and SADs by solution architects and used by enterprise architects and business stakeholders as main points of discussion, review, and approval for all IT solutions.

## Architecture Processes

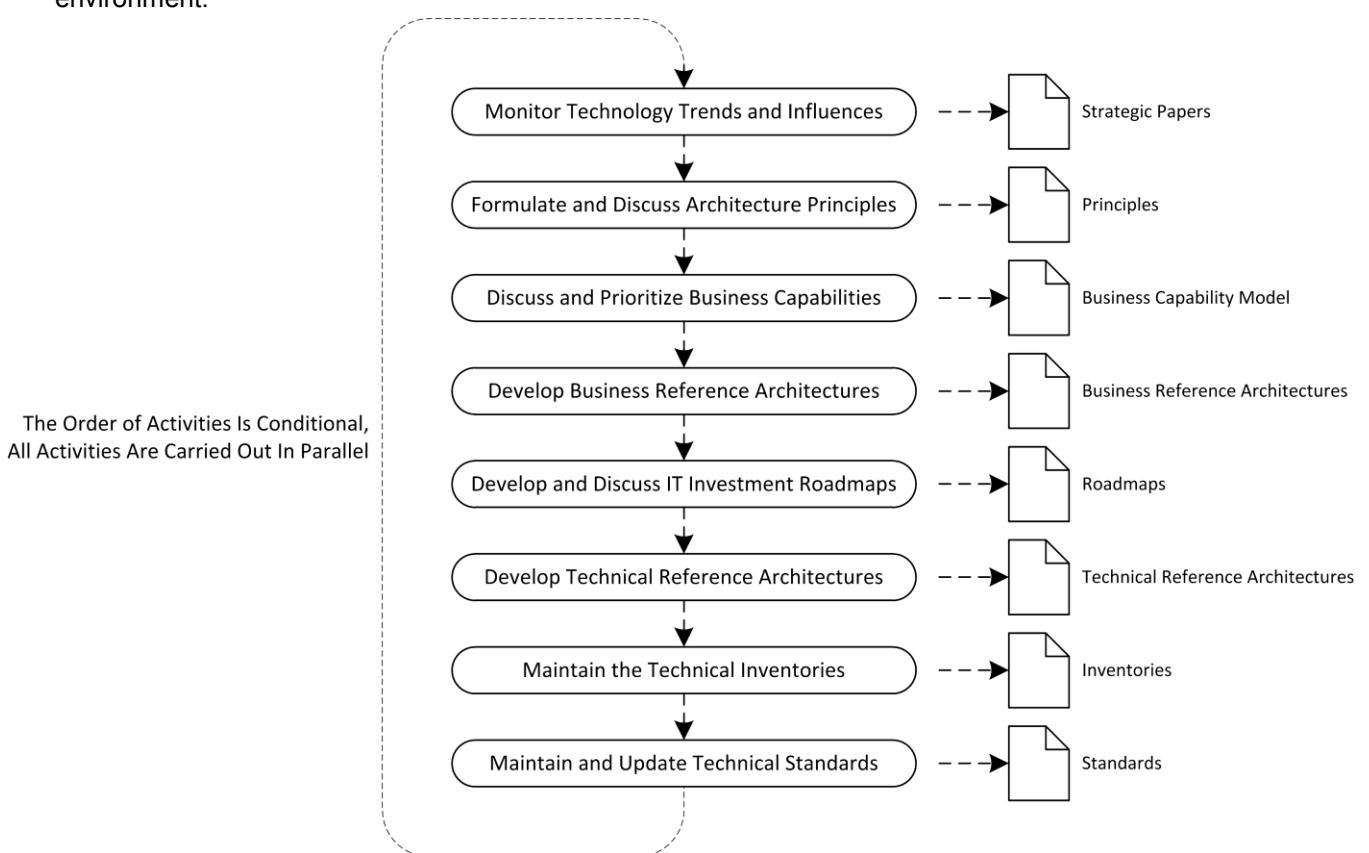
Architecture processes constituting the EA practice at FMCG can be roughly separated into enterprise-level processes and project-level processes. Enterprise architects are the main actors of enterprise-level processes, while project-level processes are carried out largely by solution architects.

## Enterprise-Level Processes

Enterprise-level architecture processes at FMCG are mostly unstructured and not formalized. They consist of eight distinct activities of enterprise architects. These activities are largely independent of each other and can be carried out in parallel without any particular predefined order. Therefore, they are discussed starting from more “generic” activities and ending with more “specific” ones:

1. Enterprise architects monitor relevant technology trends in the external environment, communicate with senior business stakeholders, and periodically produce strategic papers with the analysis of the possible impact and influence of these trends on the organization.
2. Enterprise architects formulate architecture principles for the whole organization and discuss them with senior business stakeholders.
3. Enterprise architects maintain the business capability model and use it for discussions with senior business stakeholders in order to understand in which capabilities the IT investments should go.
4. Enterprise architects together with senior business stakeholders develop business reference architectures for important business capabilities by means of adapting established industry best practices to the FMCG's environment.
5. For the most important business capabilities enterprise architects develop IT investment roadmaps agreed with the relevant business stakeholders.
6. Enterprise architects develop and maintain technical reference architectures for important business capabilities according to their best understanding of the business needs and direction.
7. Enterprise architects maintain the technical inventories to adequately reflect the currently available IT assets.
8. Enterprise architects together with solution architects maintain and update enterprise-wide technical standards for IT project implementation.

Enterprise-level architecture processes at FMCG are shown in Figure 2.



**Figure 2: Enterprise-Level Architecture Processes**

## **Project-Level Processes**

Project-level architecture processes at FMCG are well-structured and largely revolve around two distinct governance bodies: the Innovation Forum and the Architecture Review Forum (ARF). The Innovation Forum is a governance body for testing and approving ideas for projects. It meets every two weeks and engages senior business and IT leaders, including finance officers responsible for the budgeting process. All IT projects are presented at the Innovation Forum where business and IT leaders evaluate the viability of each project from the business perspective based on its estimated cost, value, benefits, maintainability, risk, and other factors. Only worthwhile projects are given approval and necessary funding. However, the most significant projects requiring substantial resources need additional approvals directly from the executive committee.

The Architecture Review Forum is an IT-focused governance body engaging senior IT managers, enterprise, and solution architects. Participants of the ARF scrutinize the architectures of all proposed IT projects and assess their viability from the technology perspective. For instance, they review the main technical decisions taken by projects, validate them against the established standards and ideal future states described in technical reference architectures (when they exist), discuss potential deviations, and ensure that their architectures are as strategic as possible. Additionally, the Community Architecture Forum presents an opportunity for information sharing, idea dissemination, and communication to all architects. It has optional attendance and no formal governance authority.

FMCG has a flexible budgeting cycle that allows initiating and funding projects continuously over the year. Each project starts its life as an idea proposed by business stakeholders. These ideas can be either spontaneous or derived from the broader strategic direction defined by FMCG's executives. After an initial informal discussion and approval of the "seed" funding this idea is elaborated into a solution overview of the potential future IT project by an assigned solution architect. The solution architect engages relevant domain and subject matter experts and develops the solution overview based on the established standards and principles. Inventories providing the descriptions of currently available entities help solution architects reuse and leverage existing IT assets. For most areas technical reference architectures provide high-level descriptions of the current IT landscapes in these areas to facilitate the solution planning. Additionally, if the relevant technical reference architecture provides a

description of the desired future state for the business capability that the project aims to enhance, then the solution architect aligns the solution overview to this ideal target state.

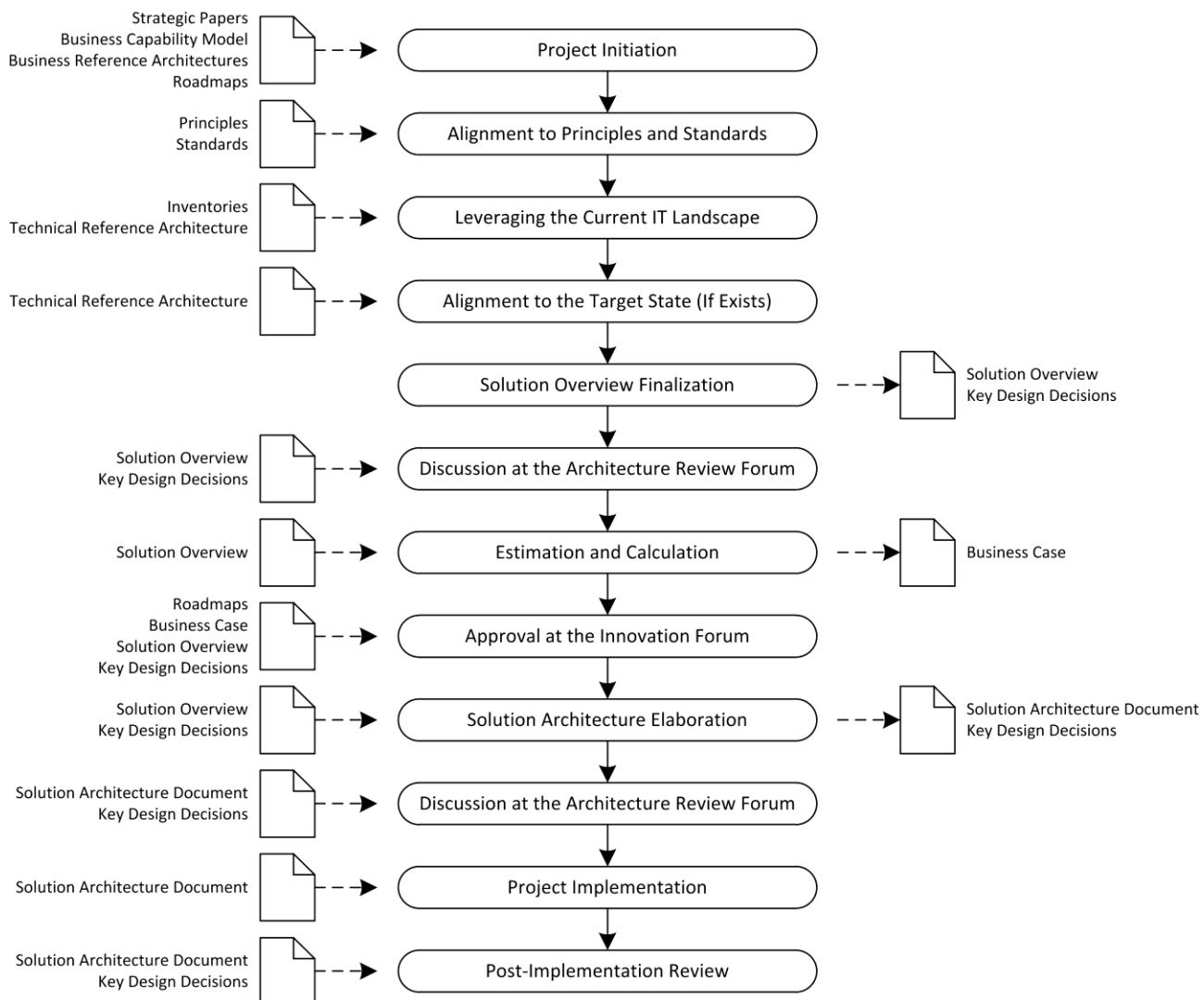
When the solution overview is ready, the solution architect prepares Key Design Decisions (KDDs) for the project and presents the solution overview together with its KDDs at the Architecture Review Forum (ARF) for discussion and consideration. The ARF reviews the solution overview and KDDs to ensure that the project is aligned to established principles, standards, and the target state defined in the technical reference architecture (if it is defined for the corresponding business capability), as well as to ensure that all potential deviations are justified. As a result of this review, the ARF concludes whether the project is desirable or feasible from the technical perspective.

After the solution overview is reviewed by the ARF, the business case for the project is prepared. A high-level description of the project provided by the solution overview is used as a basis for estimating its value, benefits, time, cost, and ROI that shape the business case. Then the business case, KDDs, and other documentation for the project are presented at the Innovation Forum where senior business and IT leaders make the ultimate investment decision on the project. Participants of the innovation forum consider three main factors when approving projects:

1. Financial considerations described in the business case
2. Alignment to the agreed IT investment roadmaps
3. Conclusions of the ARF on the technical desirability of the project

In certain cases the Innovation Forum can approve a project even if it deviates from the roadmaps or if it is not endorsed by the ARF; for example, when the project has compelling financial benefits, strict time limitations, or satisfies urgent legislative requirements. If the project is approved, then the business sponsor who initiated the project takes accountability for the benefits and outcomes estimated in the business case.

When the project is approved and funded, the solution architect with relevant domain and subject matter experts, develops a more detailed Solution Architecture Document (SAD) for the project and refines its KDDs. The SAD and KDDs are again reviewed by the ARF and then the SAD is passed either to an internal project implementation team or to a vendor in order to actually deliver the project. After the project is implemented, the solution architect conducts a post-implementation review in order to validate the delivery and verify the compliance to the KDDs and SAD. Project-level architecture processes at FMCG are shown in Figure 3.



**Figure 3: Project-Level Architecture Processes**

## PROBLEMS AND SOLUTIONS

As was discussed above, FMCG operates in the fast-moving consumer goods industry, which is very fast-paced, cost-sensitive, reactive, competitive, and rapidly changing. These specific features of the industry significantly influence the organization of the EA practice at FMCG. In this section I will discuss a number of industry-specific problems experienced by FMCG as well as their potential solutions, and mitigation strategies followed by FMCG. However, these solutions should not be considered as best possible, perfect, or final since the company is still looking for better ways of organizing its EA practice and alleviating these problems.

### ***Unstable Business Strategy***

Due to the rapidly changing external environment, the business strategy of FMCG is unstable and often shifts. This circumstance makes long-term architecture planning at FMCG problematic and poses a significant challenge for the EA practice. As described by a solution architect:

*"In the traditional EA cycle with a plan for say three to five years, they [enterprise architects] posit a target state and perhaps an interim state, they'll create a roadmap for three to five years and they may spend 12 months getting that view, creating that view of the target and the roadmap. The problem with an organization like this is that in 12 months the organization has changed direction three or four times. So, you're not going to get that kind of stability that fits those timeframes. [...] An insurance company or a bank may have*

*the stability to be able to look five years ahead. In this industry things change, [...] it's constantly changing, it's very different."*

FMCG follows a number of coping strategies to mitigate the negative effects of an unstable business strategy on the EA practice.

#### **Long-Term Planning Is Focused on Essential Capabilities**

Since the business strategy of FMCG is subject to constant change, the long-term architecture planning is focused on the key business capabilities essential for the organization regardless of any particular business strategy. As explained by an enterprise architect:

*"We are operating at the capabilities that will always stay the same. For example, the ability to manage a product, we'll always need to do that. [...] But sometimes what happens is the priorities change. Well, today we were talking about the product information management, but now because something's happened with one of our products, they might change the focus and now we are introducing supply chains [...]. But the capabilities don't change, it's just a focus changes."*

This approach largely resonates with the recommendation of Ross (2005) to "forget strategy" and focus architecture planning on the operating model, which reflects permanent business capabilities required by the organization and provides a more stable basis for planning than a business strategy (Ross et al. 2006; Weill & Ross 2009).

#### **Shortened Planning Horizon**

Due to the unstable organizational environment, the architecture planning horizon at FMCG is reduced from the typical horizon of five years to three years. According to an enterprise architect:

*"Traditionally it'll be a five years roadmap, but because our industry works up so quickly, things change so quickly, it's a three years [roadmap] and it's working to try to understand how technology will disrupt our market and what are the impacts of technology on some of the key factors that impact FMCG as a business."*

#### **Differentiated Planning**

Since the long-term architecture planning at FMCG is troublesome, far from all business areas have their future states planned and the quality of these plans varies. For instance, more or less detailed roadmaps and business reference architectures exist only for a small number of the most essential capabilities, while tentative target technical reference architectures are planned for a wider scope of 20-30% most important business capabilities. Therefore, IT projects implemented in a certain business area tend to align to

the best available description of the desired future state for this area, if any. As a solution architect described:

*"In the absence of a formal roadmap each project will look at the business capability, will look at the reference architecture, will look at the target state to determine if we know in this particular domain where we're trying to go. Do we know the destination? Do we know the direction? If we do, to what extent is that direction and destination correct given what we now know about this particular project. And if it's fit for purpose, then the project will execute towards it. [...] We have a very patchy reference architecture, a very patchy view of what the target state is. In the absence of a known target state principles will organically guide the direction."*

#### **REACTIVE NATURE OF THE BUSINESS**

FMCG's business is very reactive and fast-paced in nature. FMCG has to quickly respond to the monthly sales statistics, unanticipated competitors' moves, and recently legislated changes. These compelling factors often urge FMCG to implement "quick and dirty" IT solutions, which is problematic for the EA practice and even contradicts its general idea. As explained by a solution architect:

*"As a general observation the fast-moving consumer goods industry [...] is a very reactive industry, things change very quickly. They report on a monthly basis, and depending on how things are going on a monthly basis funding [for projects] gets contracted or expanded. Therefore, it's very hard to fit that in with a traditional EA cycle."*

According to the Manager of Architecture:

*"Because FMCG and I'm sure all retail organizations are very fast-paced, they move very quickly, there isn't enough time to actually do a proper EA, there is no time. Business has moved even before you can say "go". They need something done very quickly. So, it's an interesting challenge."*

As described by an enterprise architect:

*"Sometimes what we get in this field is, for example, [a competitor] will do something or the government will introduce a new legislation, and then we need to do something to respond to that. Usually we just throw a solution architect [at it] and they'll sort that out."*

FMCG employs several approaches to adapt its EA practice to the reactive nature of its business.

#### **Future States are Implemented Opportunistically**

Since FMCG is often forced to implement IT solutions addressing some urgent short-term needs, these solutions are typically considered as opportunities to get a step closer to the desired long-term target state. As explained by an enterprise architect:

*"We're developing future states as we go. So, what we do is using the projects to fund future state creation. [...] Then a project will come along to deliver some new capability or enhance an existing capability and part of the solution architect's role is to [understand] what the future state will be."*

*They'll have a conversation with [enterprise architects], and [...] we will give them a view of what we are looking at doing X, Y and Z."*

As described by a solution architect:

*"[Technical] reference architecture is primarily used by the solution architects to basically guide their decisions. Ideally, when the target state is known, as we execute solutions or execute projects and develop solutions we are opportunistically trying to get towards the target state."*

### **Bottom-Up Approach to Architecture**

A multitude of relatively small but unexpected and important initiatives prevent FMCG from doing detailed top-down architecture planning. Instead, significant portions of FMCG's IT landscape are planned "just enough, just in time" with the significant involvement of solution architects, architecture emerges in a bottom-up manner.

As described by a solution architect:

*"We're not good at doing top-down architecture. [...] The heavy lifting of architectural thinking is done by the solution architecture team. Therefore, things are done on a piecemeal basis, be it here or there. And we're trying to create the pieces of the puzzle individually and then hope that they all fit together, or try to make them fit together. ... We have to do EA differently in this organization, we're doing it organically, so to speak. That rises out of solution architecture."*

### **Dispensations are Common**

Due to a large number of IT projects of high tactical importance, architectural governance at FMCG is relatively loose and many solutions are allowed to deviate from agreed strategic roadmaps and planned long-term technical reference architectures. Important tactical projects are often given a "dispensation" by enterprise architects and proceed to implementation even when they are not fully aligned with the strategic vision.

As explained by an enterprise architect:

*"[If a project is not aligned with the roadmap] we give the project a dispensation, [...] we're trying to be very pragmatic, we don't wanna be bureaucratic. The dispensation we give to the project would be based on ... that will have to demonstrate a reason why they have to go tactical. And mostly the reasons are that there is a business imperative; i.e., we need to do this because the governance said "we have to put labels to show a country of origin" and doing it in a strategic way [is a poor option] if we wanna meet the timelines. It's usually about timing. So, we just let it go ahead. But in other cases we would stop projects. ... I wouldn't say [the target technical reference architecture] is strictly adhered to, it's used as guidance and there might be reasons, and they are usually financial or due to compliance, where we might issue a dispensation meaning that that project can go off the plans or*

*become not referred to the reference architecture because of the need for specific domain or business requirements."*

### **FOCUS ON A SHORT-TERM PAYOFF**

FMCG's dynamic industry forces the company to focus more on getting tangible short-term returns on investment (ROI), rather than on uncertain longer-term benefits. In this "here and now" oriented culture the FMCG's EA team struggles to demonstrate short-term benefits and deliver the true strategic value for the organization.

As described by the Manager of Architecture:

*"The organization is very much looking at what do we need to do today. So, for architecture there's a huge challenge to actually do something more strategic, more long-term, getting funding. You got to be clever in the way you actually look at strategic architecture."*

FMCG uses a number of techniques to secure short-term benefits from all IT projects.

### **Large Projects are Split into Multiple Smaller Projects**

Since FMCG is primarily looking for short-term payoffs, large IT projects are typically split into a number of smaller projects delivering some quick and tangible benefits. Each small project has its own solution architecture documentation and is approved individually. Ideally all IT projects should have an immediate payoff and still help to achieve certain strategic benefits at the same time. According to the Manager of Architecture:

*"Usually [large projects] get delivered within the phases [...] and then we integrate them. [...] It's approved phase by phase."*

### **Careful Estimation of Expected Short-Term Project Benefits**

Due to its focus on getting short-term payoffs and benefits from IT projects, FMCG has a well developed capability of estimating these benefits and payoffs. Business cases for all projects should contain specific, quantitative, and measurable benefits that could be achieved in a reasonable timeframe. As a solution architect explained:

*"What FMCG insists on, much more than other businesses, is when you make a business case you specify the benefits that you are likely to get out of this particular idea. Here there is an insistence on quantitative benefits. So, you need to actually show that it will increase sales by 1% in a particular channel or on a particular line of product or whatever. [...] Whatever you're claiming, you have to make it quantitative [...]. [And these benefits should be achieved] very soon, not after 5 years."*

According to the Manager of Architecture:

*"Each project should actually pay off. There's very few projects we've got where there's no commercial benefits."*

### **Personal Accountability for Claimed Project Outcomes**

Because of the importance of tangible short-term financial returns on investment (ROI), project sponsors at FMCG typically held personal accountability for the claimed benefits and outcomes of their projects. As described by a solution architect:

*"Whatever you're claiming, you have to make it quantitative and someone in the business has to own the outcome. And if the project is approved on a basis of the benefits and costs that you've identified, then that business owner who owns that outcome will actually be held accountable for that outcome. If that benefit is not realized, they will be held accountable. So, it actually sharpens everyone's minds a little bit and focuses everyone. Because in a lot of other organizations benefits are very much hand-waving, "oh, yes, it will improve productivity, will do this, will do that". [...] But no one afterwards is actually saying "did we achieve that?" Here it's in more focus."*

### **DRIVE TO REDUCE COSTS**

Intense competition in the Australian fast-moving consumer goods industry creates a constant pressure for companies to reduce the costs required to run the business and makes cost-effectiveness one of the key objectives for FMCG. A continuous drive to lower the costs forces the EA practice at FMCG to maximize its benefits/costs ratio. As described by the Manager of Architecture:

*"There's a lot of competition at the moment. [Competitor A] is coming, their prices are lower than ours. [Competitor B] is not doing very well at the moment, but they're trying to get there and don't give up. [Competitor C] is also coming to the market. So, it's all about keeping our costs down in terms of surviving as an organization. You can only keep your costs down if you lower your costs to run the organization. ...It's commercializing architecture, I think that's what it is. If we've got a commercial lens on architecture I think it'll be very successful in an organization which is very conscious of cost."*

FMCG adheres to two rules helping improve the cost-effectiveness of the EA practice.

#### **Lean Architecture Function**

In order to minimize the architectural overhead, FMCG tries not to inflate its architecture function beyond the necessary minimal size which is sufficient to deliver reasonable benefits for the organization. For instance, the manager of architecture admits that two enterprise architects currently employed by FMCG are focused mostly on the key critical areas and cannot handle the whole potential scope of architecture work. However, there are no plans to hire any additional enterprise architects. Therefore, the architecture function at FMCG is lean and essentially deliberately understaffed to maximize the value of each enterprise architect and

avoid the effect of diminishing "marginal utility" of enterprise architects.

#### **Pragmatism and 80/20 Rule**

Driven by the desire to gain more with less, architects at FMCG tend to be pragmatic and follow an 80/20 approach towards architecture documents; i.e., develop and maintain only 20% of potentially desirable documents providing 80% of all potential benefits of using architecture. For instance, current technical reference architectures are not maintained for all areas, target technical reference architectures are planned only for important areas, while roadmaps exists only for the most critical areas. According to a solution architect:

*"We do have a business capability model. Is it 100% accurate or current? Probably not, but it's fit enough for purpose. [...] I'm a great believer in the 80/20 rule, near enough is good enough for most purposes. And in business that's a general principle here. ... You will find that organizations like FMCG in this particular industry are very pragmatic. It's all about what makes a difference in terms of cost and revenue. It's less about aesthetic purity or architectural purity or consistency than about just getting the job done."*

#### **SHORTAGE OF ARCHITECTS WITH RELEVANT EXPERIENCE**

Due to a number of industry-specific features of the EA practice at FMCG described above, the company experiences problems with finding architects acquainted with the specifics of the fast-moving consumer goods industry on the job market. This problem does not have any specific solutions at FMCG. As explained by a solution architect:

*"Because people are coming from other more traditional organizations, they're trying to plan ahead too far and take too long to do it."*

#### **CONCLUSIONS**

In this article I discussed the EA practice in a large Australian retail chain operating in the fast-moving consumer goods business and the impact of industry on this EA practice. The analysis provided above clearly suggests that specific features of a particular industry can significantly influence the approaches to an EA practice followed by the organizations operating in that industry. As described by a solution architect:

*"I think really what is required here is that people have to move away from heavy EA, there's just no space for it here. [...] The timeframes here are so short and a funding cycle is quite fluid and fluctuates a lot. You don't have the luxury of being able to spend 6 or 12 or 18 months to come up with a five year roadmap, that's never going to work here, ever. [...] EA needs to show much more direct value. For example, if you think about traditional EA with five year periods, that return on investment will never be realized here."*

According to the Manager of Architecture:

*"Other organizations, like banks, they're little more regulated, they're more slow-paced. So, I think EA at FMCG and at retail is gonna take a very different flavor [...]. [The] TOGAF® [framework] doesn't quite fit in here."*

As explained by a solution architect:

*"It's not that [the architects] don't understand how to do [EA] properly, it's that the definition of properly in terms of the broader industry is not fit for purpose here."*

The fast-moving consumer goods industry is very fast-paced, competitive, cost-sensitive, and reactive. These industry-specific factors profoundly shaped the EA practice at FMCG, which has undergone a long evolutionary process striving to adapt to the nature of industry. The resultant EA practice can be described as "lean", "loose", and "agile", favoring efficiency over effectiveness. However, the evolution of the EA practice at FMCG is far from finished and the company is still looking for better ways to position and leverage EA. As explained by a solution architect:

*"We had discussions around what does EA mean for FMCG, how could an EA practice work here. And I guess an EA practice here would have to be far more responsive, more agile, and more tuned to the nature of industry. In other words, the approach taken for EA can't be one-size-fits-all across all industries."*

According to the Manager of Architecture:

*"We've got to redefine what EA means at FMCG. It's got to be more fit for purpose."*

And as described by a solution architect:

*"We're reassessing what EA means and how we do EA. How do we have a roadmap for an organization that's constantly changing direction? What does having a roadmap mean?"*

Unfortunately, the current EA theory and popular approaches to EA do not provide any meaningful answers to the questions discussed in this article. Therefore, the gaps in our knowledge regarding the specifics of an EA practice in different industries open fruitful directions for future EA research of high potential importance to both EA theory and practice.

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