



# Archi Banking Group

**Combining the BIAN Reference Model,  
ArchiMate® Modeling Notation, and the  
TOGAF® Framework**

*A Case Study by:*

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March 2020

## **Archi Banking Group**

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Document No.: Y201

Published by The Open Group, March 2020.

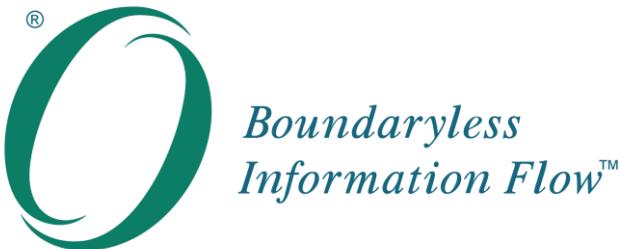
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*Boundaryless Information Flow™  
achieved through global interoperability  
in a secure, reliable, and timely manner*

## **Executive Summary**

The Archi Banking Group Case Study is a fictitious example developed to illustrate the combined use of the Banking Industry Architecture Network (BIAN) Reference Model with the ArchiMate® modeling notation and the TOGAF® framework (both of which are standards of The Open Group).

The Case Study concerns the Archi Banking Group, the result of the acquisition of several banks in different countries. It describes the elaboration of a new Group strategy and Enterprise Architecture direction. Its describes the implementation of that enterprise strategy and architecture in the elaboration of a strategy and architecture for the Payments capability of the Clearing & Settlement segment.

The ArchiMate and TOGAF concepts used in this Case Study can be applied to different situations. The use of the BIAN Reference Model supports addressing typical financial industry concerns.

The work supports The Open Group vision of Boundaryless Information Flow™ and BIAN objective to establish, promote, and provide a common framework for banking interoperability issues and to become and to be recognized as a world-class reference point for interoperability in the banking industry.

## Introduction

This fictitious Case Study illustrates the realistic use of the BIAN Financial Industry Reference Model in the different phases of the TOGAF Architecture Development Method (ADM), expressed in the ArchiMate notation.

The Case Study shows the application of the BIAN reference material in the ADM phases at the enterprise level, in support of the elaboration of a new Group strategy and architecture direction.

It shows the application of the BIAN reference material in support of developing a strategy and architecture at the segment and capability level, illustrating the iterative nature of the ADM.

The BIAN reference material, where used in architecture viewpoints, is expressed in the ArchiMate 3.0.1 notation. This illustrates the leverage this notation creates for use of BIAN as an industry architecture in the TOGAF ADM. It also illustrates the power of the BIAN Reference Model in the ArchiMate language in facilitating the communication of requirements and solutions within the Banking Group and with external partners and service providers.

Several architecture diagrams are presented, expressed in the ArchiMate language. These diagrams present the Business, Application, and Technology Architecture, using the Core elements of the ArchiMate 3.0.1 Specification. Examples of the use of Motivation, Strategy, and Implementation and Migration elements are also included.

### **The Banking Industry Architecture Network (BIAN)**

The Banking Industry Architecture Network (BIAN) is a collaborative not-for-profit ecosystem formed of leading banks, technology providers, consultants, and academics from all over the globe.

BIAN is created to establish, promote, and provide a common framework for banking interoperability issues. It aspires to be recognized as a world-class reference point for interoperability in the banking industry.

The BIAN Financial Industry Reference Model (BIAN Reference Model) is also called the BIAN Service Landscape, because it consists of discrete non-overlapping business functional capacity building blocks that exchange services. Such a building block is called a service domain. A service domain is atomic in scope. Service domains are mutually-exclusive and collectively exhaustive. A service domain offers its services to other service domains. The interactions between the service domains realize the business activities that make a bank a bank.

For more information refer to [www.bian.org](http://www.bian.org).

### **The TOGAF® Framework**

The TOGAF framework, a standard of The Open Group, is a detailed method and a set of supporting tools for developing an architecture. It is developed and maintained by members of The Open Group, working within the Architecture Forum.

For more information, refer to [www.opengroup.org/architecture-forum](http://www.opengroup.org/architecture-forum).

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### **The ArchiMate® Specification**

The ArchiMate specification, a standard of The Open Group, is a modeling notation. It has been developed and approved by The Open Group.

The ArchiMate Enterprise Architecture modeling language is a visual language with a set of default iconography for describing, analyzing, and communicating many concerns of Enterprise Architectures as they change over time. The standard provides a set of entities and relationships with their corresponding iconography for the representation of architecture descriptions.

For more information, refer to [www.opengroup.org/archimate](http://www.opengroup.org/archimate).

## **Archi Banking Group**

# **Applying BIAN and the ArchiMate and TOGAF Standards at the Enterprise Level**

This section applies BIAN, the ArchiMate modeling notation, and the TOGAF framework at the enterprise level.

### **Background: The Archi Banking Group**

The Archi Banking Group is a medium-sized European bank group. It was gradually built over the last 25 years through acquisitions and mergers. The origin of the group lies in Homeland, with Archi Bank as Head of the Group. This bank, itself the result of a merger, acquired two other banks in Homeland thus creating the Homeland Group. This was the starting point for the Archi Banking Group.

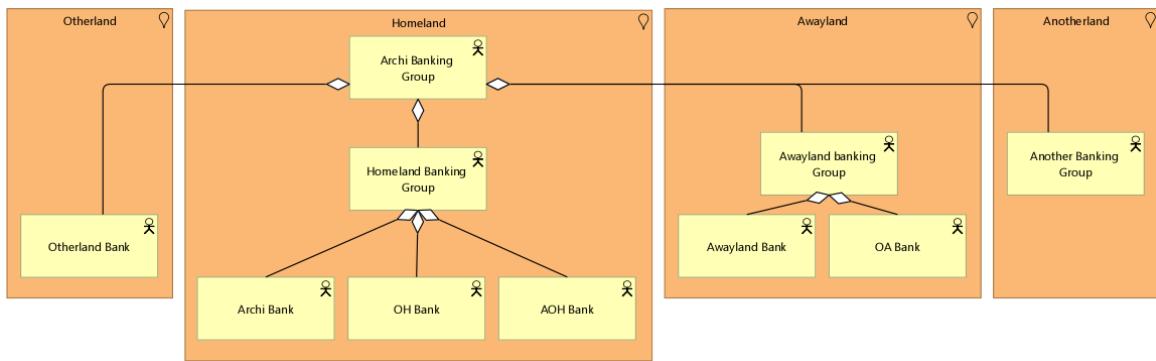


Figure 1: The Archi Banking Group

The strategy of the Archi Banking Group is focused on growth by expansion. In Homeland the common Archi IT platform that was created at the merger also accommodates the two other Homeland banks. The business organizations of the three Homeland banks, however, remain separate. In the other countries, the institutions that were acquired all over Europe retained their own business organization and IT platform(s).

Concerned about future profitability and conflicting information, the Archi Banking Group Board (BoD) ordered an assessment. This confirmed that the cost/income ratio was rising.

The Group has satisfied and loyal customers, who appreciate the product and service portfolio that is adapted to each local market. Nevertheless, income growth is stagnating, due to increasing market saturation.

Costs, on the other hand, keep rising. Increasing regulatory standardization and reporting demands apply pressure on the organization and its IT platforms. The related costs are greatly increased by the fact that functionalities are multiplicated in every institution. This multiplication also results in fragmented information. Lacking consistency, reliability, and completeness of the information that is provided at institution and Group level, fragmented information is becoming a risk for compliance. The challenges of “open banking” will be difficult to meet.

## Archi Banking Group

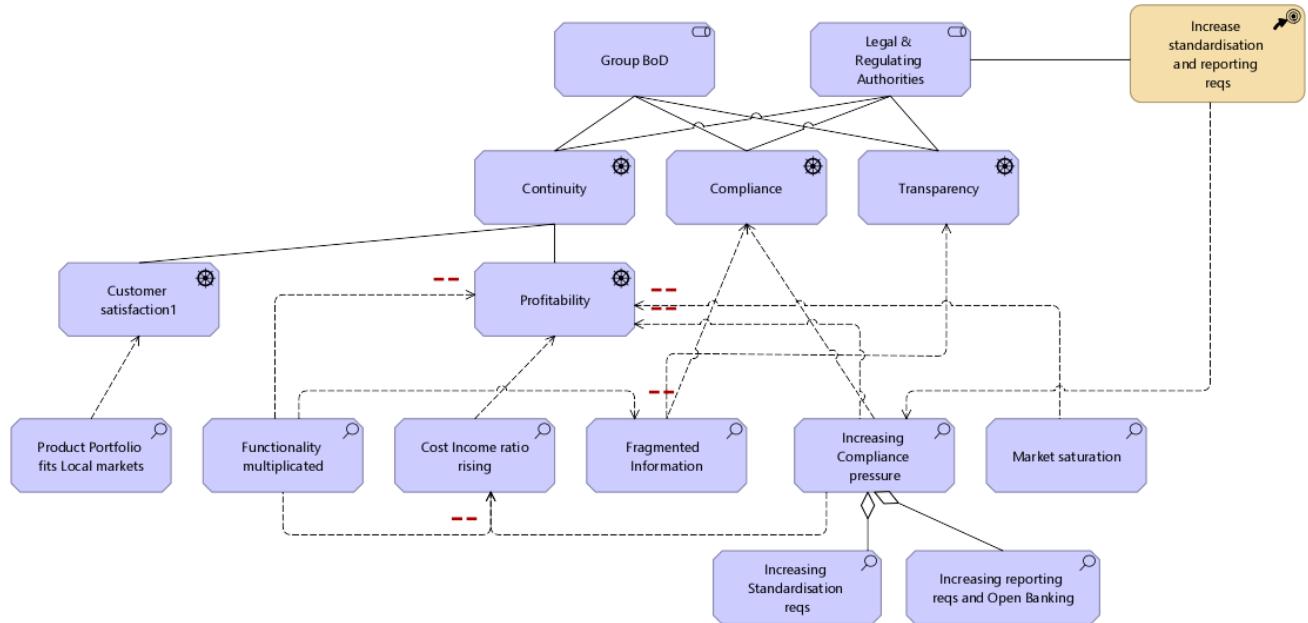


Figure 2: Assessment of the Archi Banking Group Board and Regulatory Authority Drivers

As a result of this assessment, the BoD renewed the Archi Banking Group strategy.

“Specific Local Customer and Market Approach” remains a strategic objective, as this is a definite strength. The focus is no longer on income growth by growth, but on (long-term) cost saving by consolidation: “Group Synergy” is the new strategic objective.

The BoD realizes that in the age of open banking, not only “Uniform and Complete Information” but also “Open Information” needs to be a strategic objective.

Each institution retains full responsibility for and autonomy on its commercial identity. However, every activity that is not customer or market-facing is a candidate for integration; i.e., uniformization or even centralization.

The principles that should lead the Group in the new strategic direction are represented in Figure 3.

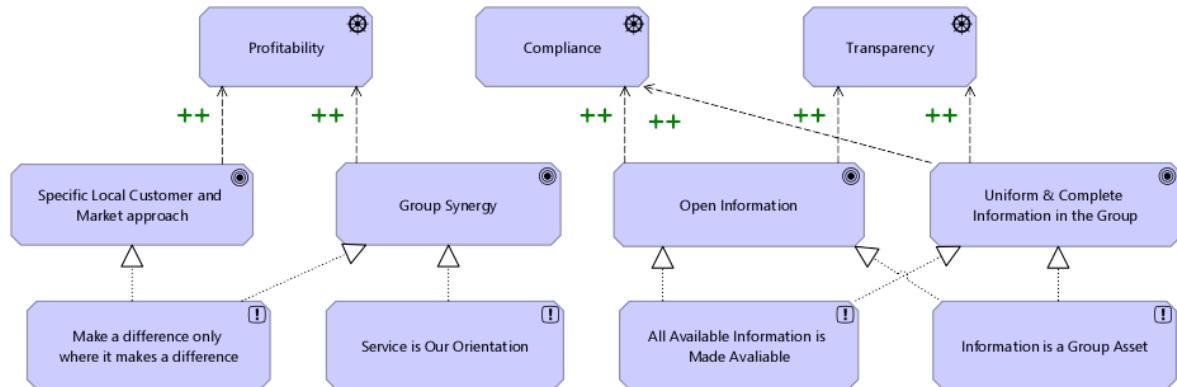


Figure 3: Archi Banking Group Renewed Strategic Goals and Principles

## **Archi Banking Group**

To make this new strategy operational, the BoD commissions a consultancy firm to elaborate a roadmap towards “Group Synergy” and “Open, Uniform, and Complete Information”. The BoD is willing to act as Steering Committee for this exercise. The Chairman of the BoD herself is the sponsor.

### **Phase A: Preparing for the Assignment**

The consultancy firm’s first activity is to establish a multi-disciplinary and multi-institution Architecture Team, while searching for information about the Group architecture(s) and architecture principles.

It turns out that only Homeland is capable of providing an overview of the “fundamental organization” of the institution and its ICT platforms: “embodied in its components and relationships among them and with the environment”. The other institutions lack an Architecture Capability – only “local heroes” can shed more light.

In view of this situation, the consultancy firm returns to the BoD and proposes to define the assignment scope as follows.

A high-level Architecture Vision will be defined for the entire Group. Recommendations will be made to create the preconditions for Group Synergy and for the first steps towards it, based on high opportunity and low risk.

### **Preliminary Phase: A First Iteration**

To prepare for this assignment, the TOGAF ADM first iteration of the Preliminary Phase is executed. The team already knows that establishing an Architecture Capability will be a high-priority recommendation to the Group BoD.

Homeland’s Enterprise Architects will be part of the Architecture Team. The other members are chosen based on their knowledge and competencies, but also in view of their representative and “influencer” capabilities. Managers of the organization departments are likely candidates.

To prepare the decisions that will be proposed to the Group BoD, a tactical “Steering Committee” is installed. These high-ranking managers will act as a preliminary Group Architecture Board.

The BIAN standards are selected as the reference model, to avoid re-inventing the wheel.<sup>1</sup> The “M4<sup>2</sup> Bank on a Page” representation notation is chosen, as this is more appealing to the BoD.

<sup>1</sup> Actually, there is a pretty decent “wheel” in Homeland. However, this is based on the specific Homeland situation.

<sup>2</sup> M4: Multiple products: the enterprise supports a range of products and services; Multiple channels: products and services are accessed through many channels and devices; Multiple lines of business: the enterprise spans business segments/markets; Multiple levels of management: the enterprise has global, regional, and local management levels.

## Archi Banking Group

### BIAN and the “Bank on a Page” View is used for Enterprise Decisioning

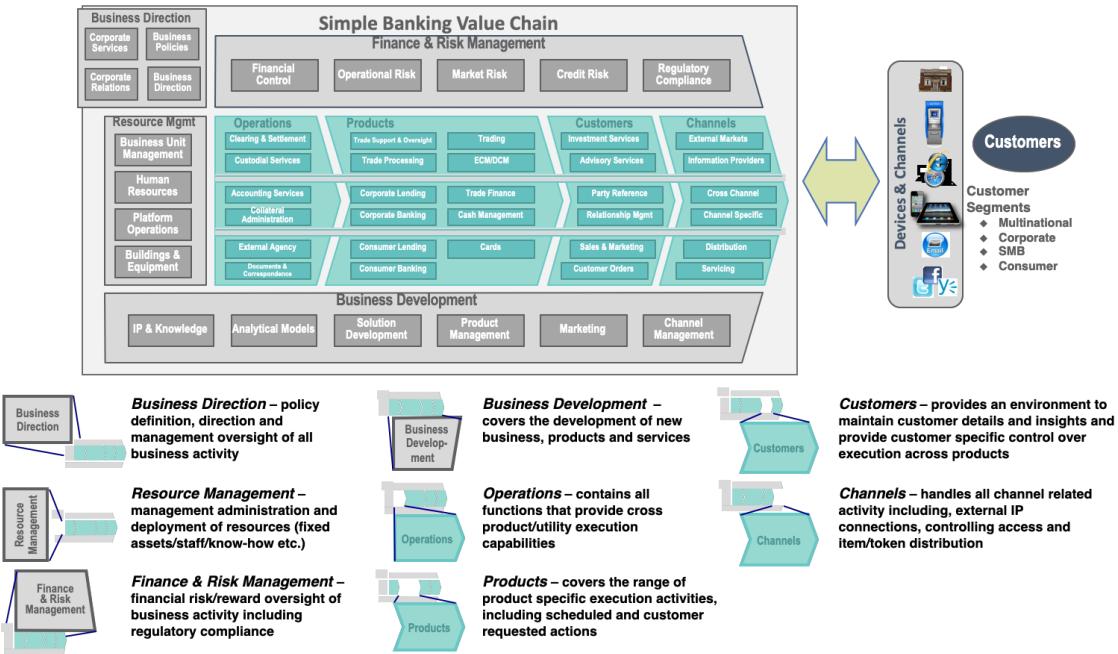


Figure 4: BIAN is Chosen as the Reference Model for the Archi Banking Group

In this mixed team, each member has his or her specific reference framework. BIAN will offer the team members a common vocabulary for sharing their knowledge and insights. It will provide them with a fresh, challenging, and shared viewpoint on their own institution's organization and systems and on a future Group architecture.

## Archi Banking Group

### BIAN provides a Common Vocabulary and a Common Reference Framework

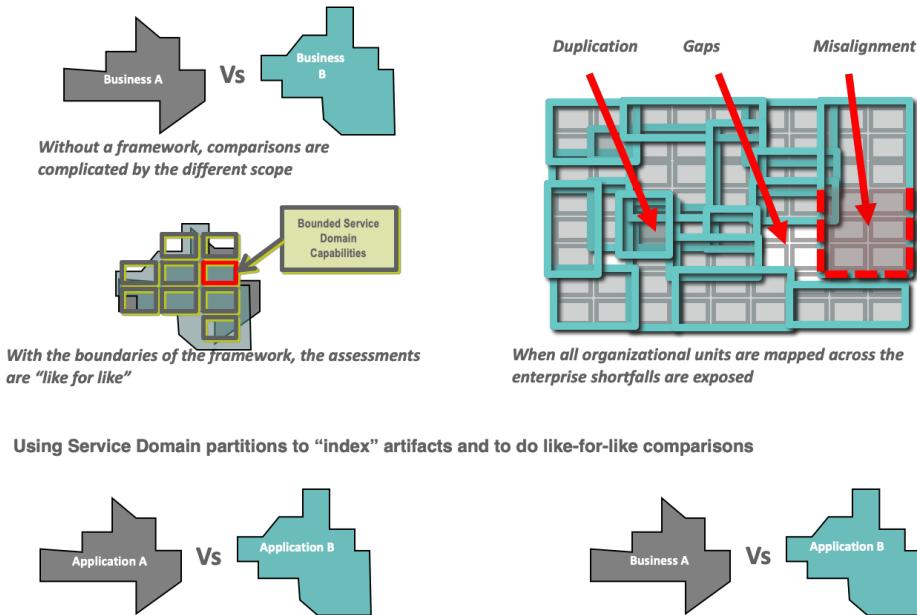


Figure 5: BIAN Provides a Common Vocabulary and Reference Framework

The results of the strategic exercise will be documented in the Homeland Repository. BIAN will be used as a canvas to document the evaluations and conclusions of the strategic exercise.

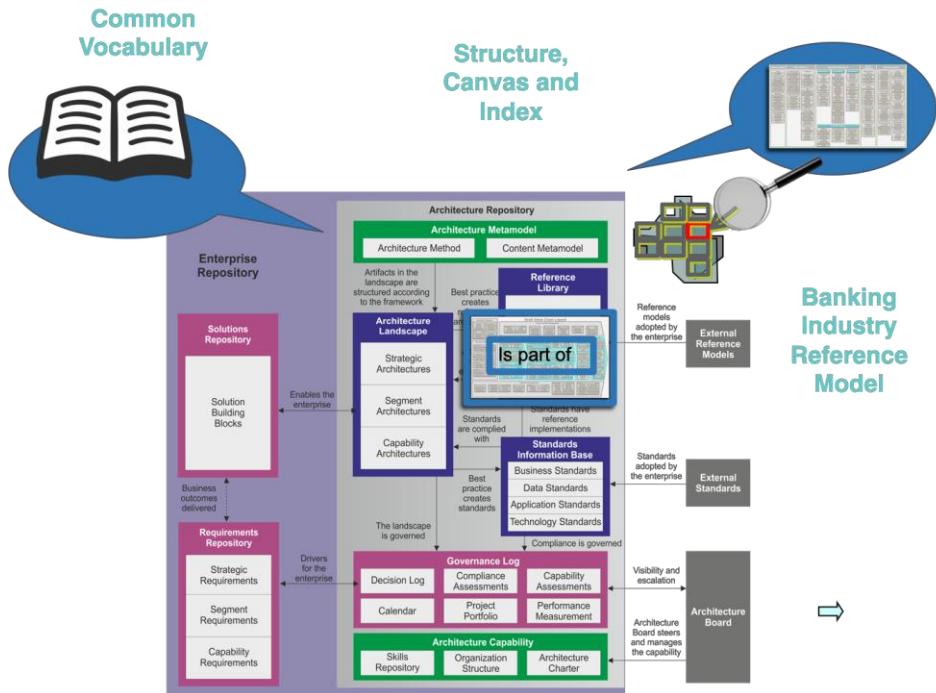


Figure 6: BIAN's Role in the Enterprise Repository

## Archi Banking Group

### Phase A: Architecture Vision

The architecture scope is clear: the entire enterprise (all BIAN service domains for the entire Group) and all TOGAF architecture domains.

The multi-disciplinary, multi-institution Architecture Team develops criteria to evaluate the eligibility of a “functionality” – to be “integrated” (i.e., harmonized or even centralized) *versus* local autonomy – as a pilot for Group Synergy and/or Open Information.

Criteria include, for example, impact on customer intimacy, but also potential return (RoI) of integration, expected RoI of increased ICT support, compliance pressure, experience with Group cooperation, etc.

**Each BIAN Service Domain (or a higher aggregation level) can be attributed with several evaluations and measures**

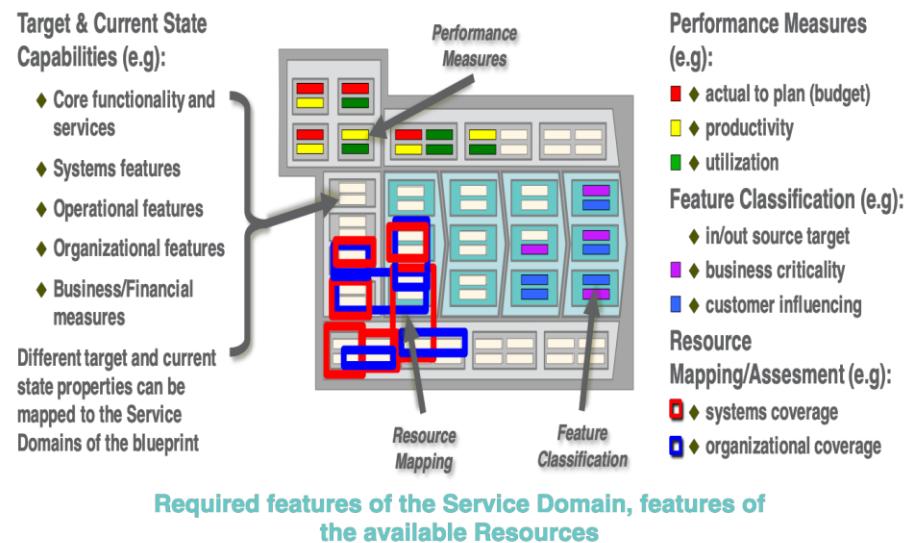


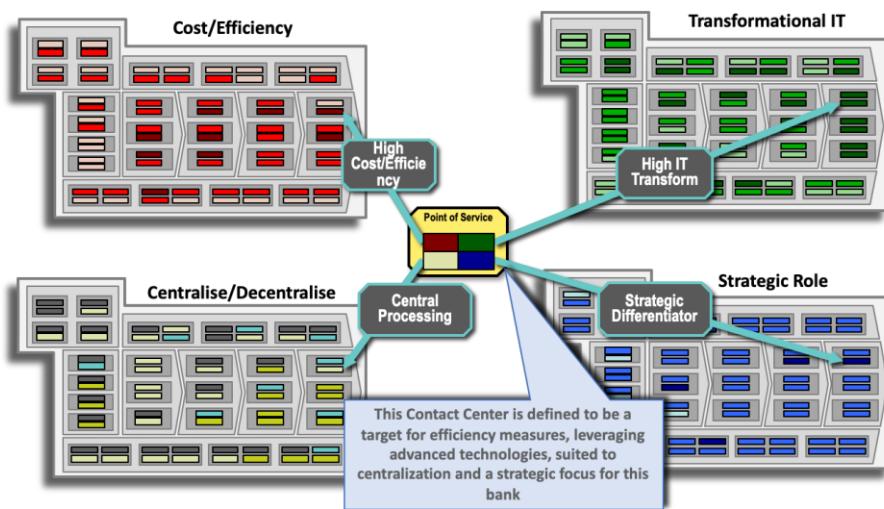
Figure 7: Assessments and Measurements can be Documented at BIAN Service Domain Level

The evaluations are made and documented at the BIAN service domain level. Available measures are mapped to the service domains.

The service domain level of detail is – for this first high-level investigation – too low for reliable conclusions. These are formulated at business domain level. More accurate evaluations will be made during the project programs realizing the strategy.

## A Combination of Attributions feeds Conclusions

Each Service Domain can be assessed in terms of current and target state



### The Attributions are Selected and Defined to Match the Decisions

Figure 8: Uniformly Documented Assessments and Measurements Contribute to Informed Decisions

The Architecture Team presents its Architecture Vision to the Group BoD.

Business areas are assigned an “eligibility for integration” level, depicted as a “heat map” on BIAN’s “Bank on a Page” (see Figure 9):

- Centralize: align business framework, execute once in one business organization
- Harmonize: align business framework, execute locally
- Differentiate: allow each relevant legal/organizational structure to define its own approach

## Archi Banking Group

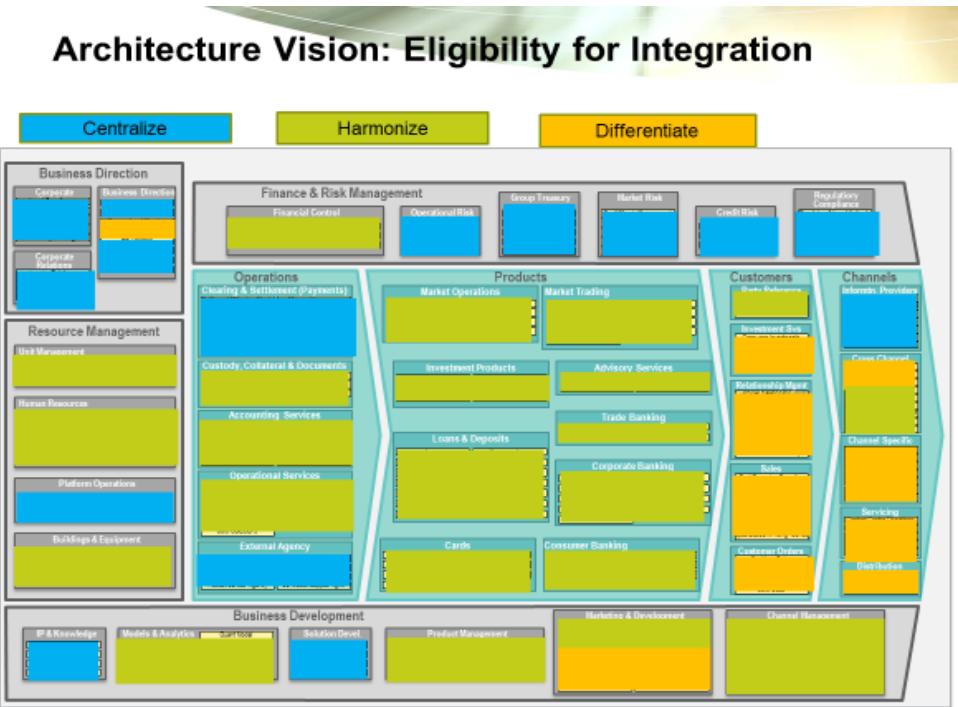


Figure 9: BIAN's "Bank on a Page" as a Canvas for Enterprise Architecture Decisions

To support the orchestration between centralized and harmonized or differentiated business areas, service-orientation should be introduced at the Business, Application, and Technology levels. This is stated in the principle "Service is our Orientation".

Centralized and harmonized business areas should be supported by common applications. For differentiated business areas, synergy at the application level should be investigated.

A common technology platform should be created.

The evolution should be step-by-step, not a "big bang". The team recommends to move towards synergy at the occasion of change – imposed or desired. This becomes a new principle: "Each Business Case Carries Architecture; Architecture is Carried by a Business Case".

## Archi Banking Group

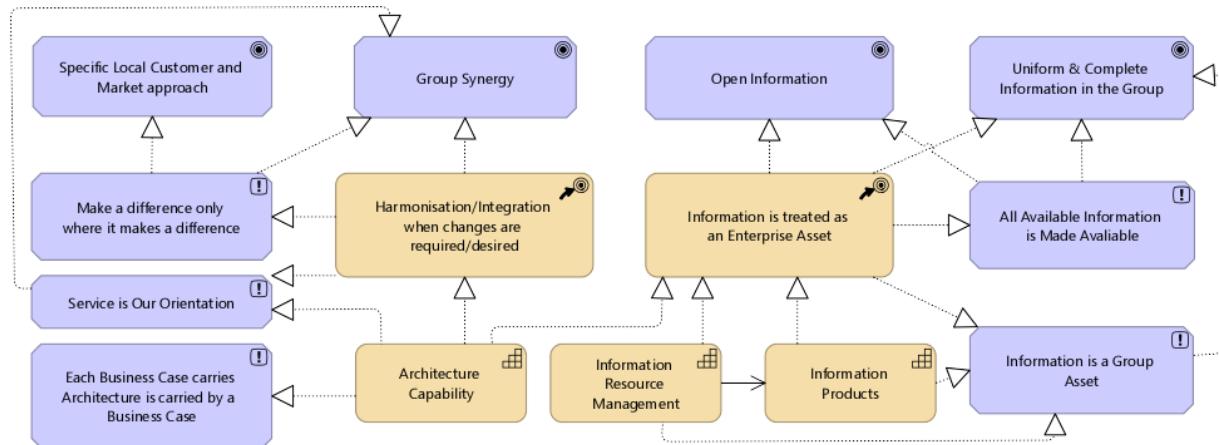


Figure 10: Objectives and Principles Lead to a New Enterprise Strategic Course of Action, which Leads to New Enterprise Principles

The Architecture Team makes a number of recommendations to make a start with Group Synergy and Open Information:

### ***Establish an Architecture Capability***

This capability is a prerequisite for Group Synergy and Open Information.

It should provide sufficient insight into the “fundamental organization” of the Group and its ICT platforms, embodied in their components and relationships, manage the “governing principles”, and guide “their design and evolution over time” towards Group Synergy and Open Information.

A Group Architecture Budget should be entrusted to the Architecture Board. This should be used to supply extra funding for projects/programs that are part of the architecture.<sup>3</sup>

### ***Establish an Information Resource Management Capability***

This capability is a prerequisite for Open, Uniform, and Complete Information.

This capability should govern the Group’s Common Vocabulary and the Business Information Model,<sup>4</sup> as well as the information services catalog. An Enterprise Data Warehouse<sup>5</sup> is an indispensable resource for this capability.

To leverage this capability, the Team also recommends the Architecture Board to consider the creation of an “Information Product” capability, that manages (and sells) information as a product for customers and partners.

<sup>3</sup> Doing things the architecture way (for long-lasting investments) is cheaper in the long run. Making solutions reusable is profitable if more than two users are found. But this is the mid to long run and the profits are not (directly) for the party that provides the investment funds – and is rewarded for its short-term RoI. Architecture Governance should be embraced by Enterprise Portfolio Governance.

<sup>4</sup> The model depicting the business information objects and their relationships. This is a fundamental element of the Business Information Architecture.

<sup>5</sup> An Enterprise Data Warehouse is a type of ICT solution that provides access to all available data at the enterprise level.

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### ***Centralize the Business Domain “Finance & Risk Management” at Group Level***

The shared regulatory pressure and increasing demand for Group reporting have already created common ground.

This should be a pilot for Group Synergy, as well as Open Information. It should create the first enterprise building blocks for the new architecture: Finance & Risk Management services and a layered and compartmented Enterprise Data Warehouse.

### ***Centralize ICT Vendor Relationship Management, Supported by ICT Technology Architecture***

Renegotiating vendor contracts with Group leverage should ensure short-term cost savings. Harmonizing the Technology Architecture should lead to significant medium-term cost savings.

### ***Ingrain the New Strategy in the Group’s Values***

A promotion campaign should be launched.

International management consultation structures should be installed per line of business, to enable management to share their insights and concerns.

## **Phase E: Opportunities and Solutions**

Each recommendation should be implemented through a program (or project).

The Architecture Team identified work packages and deliverables for each “work stream” and suggested a transition and migration approach.<sup>6</sup>

<sup>6</sup> The Program Managers should elaborate the final program roadmaps and planning (in Phase F, which we will not cover in this document).

## Archi Banking Group

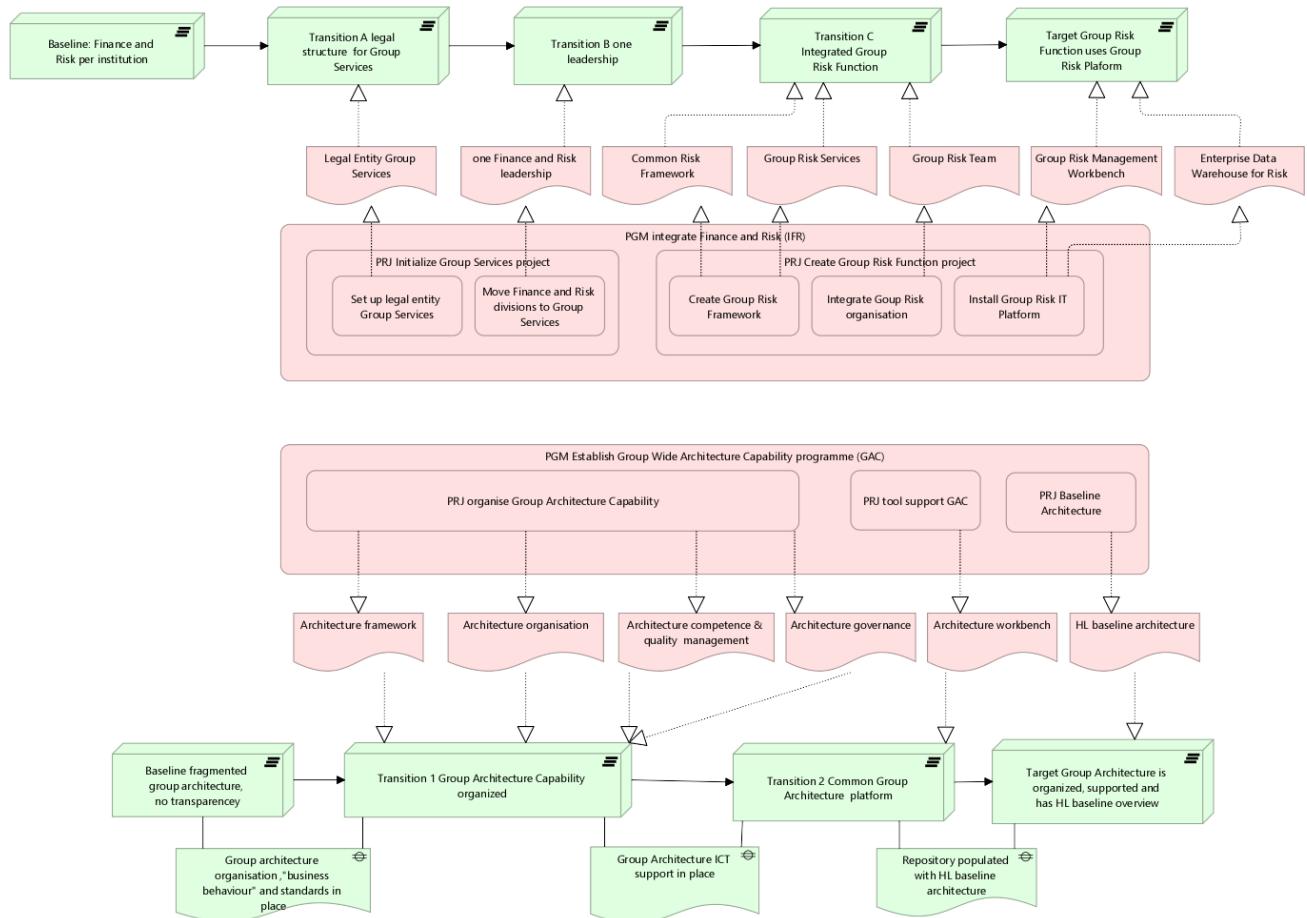


Figure 11: Implementation View for Two Strategic Initiatives

Special attention is paid to architecture requirements and inter-dependencies between the work streams. The “Integrate Finance & Risk” (IFR) program has to meet several architecture requirements and constraints:

- It has to create architecture and solution building blocks according to the standards and guidelines of and fitting into the Enterprise Architecture model
- It has to create its common Finance & Risk vocabulary as part of the Group’s Common Vocabulary
- Its Enterprise Data Warehouse needs to be built according to the enterprise Business Information Model

In other words, it needs to architect, design, and deliver according to standards, guidelines, and models that need to be delivered by the Establish Group Architecture Capability (GAC) program and the Establish Information Resource Management (IRM) Capability programs.

Which means there are major timing issues, and therefore quality risks.

## Archi Banking Group

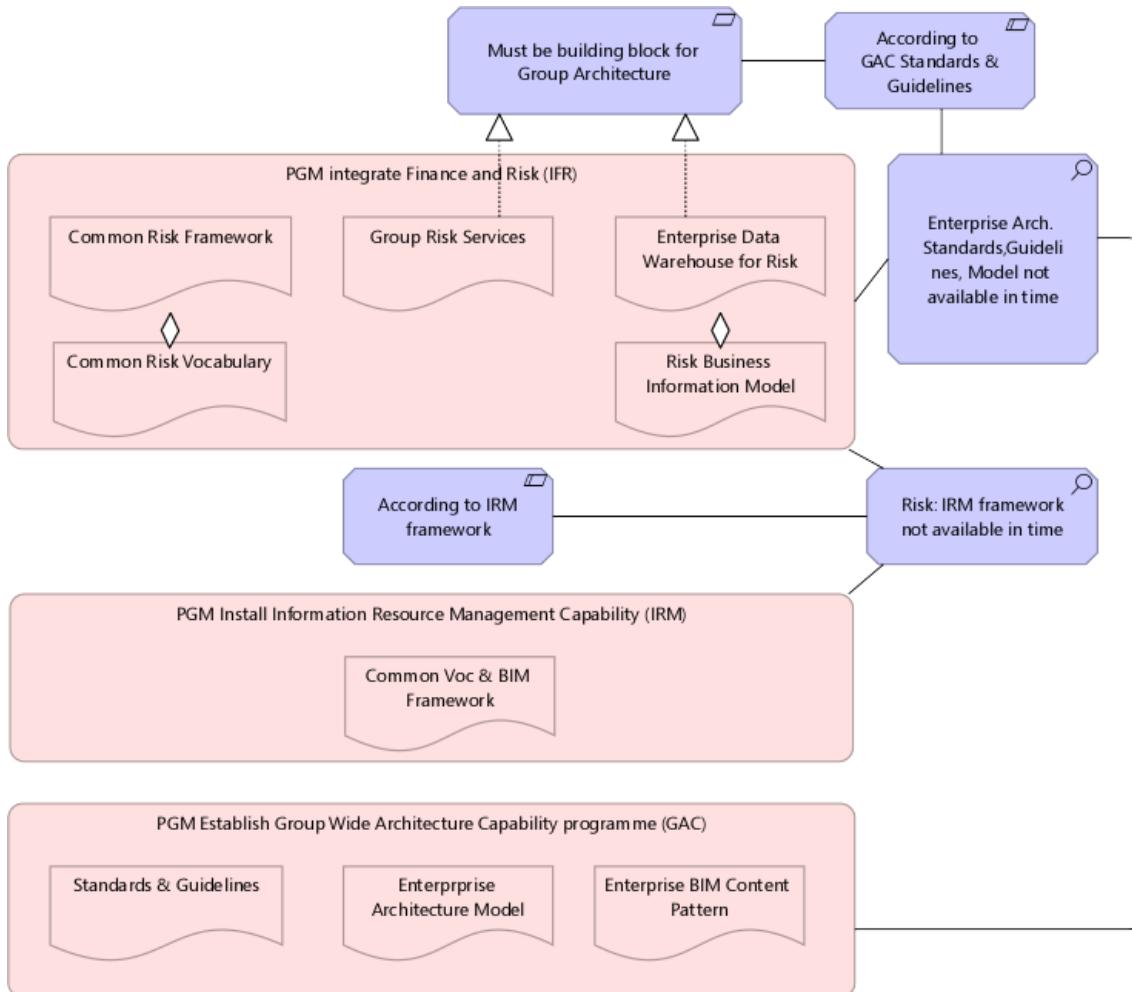


Figure 12: Timing Issues with Inter-Dependencies Create Quality Risks for the IFR Program

For I, the risk of Integrate Finance & Risk not delivering according to the Integrate Finance & Risk framework is easily solved. Integrate Finance & Risk will become the pilot during which IRM will elaborate its framework. This should work, given the resource synergy. IRM becomes a subcontractor of Integrate Finance & Risk, which will have to be stated in both programs' Statement of Architecture Work (SoW), the contract created in Phase A.

The solution for the inter-dependencies between Integrate Finance & Risk and IRM creates an extra timing constraint for the GAC. The “Business Information Model content pattern” (the Enterprise Information Architecture pattern) has to be delivered early. This will be resolved by priority shifting (which is stated in the GAC SoW). However, the deliverables required by Integrate Finance & Risk cannot be produced in time.

The solution lies in Phase A of Integrate Finance & Risk.

The Lead Architect for the Integrate Finance & Risk program will be Homeland's most experienced Enterprise Architect. She will liaise with the GAC program.

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The Integrate Finance & Risk SoW will state that the delivery of architecture building blocks in question is a high-priority goal. It will also mention that the Group Architecture Board provides – under its own governance – a contingency budget, in case architecture rework is required due to progressing insights from the GAC program.

The Architecture Board already makes provisions for similar terms and conditions in the Architecture Contracts of the projects that will deliver the solution building blocks. Special attention (and extra manpower) will be paid to their Implementation Governance.

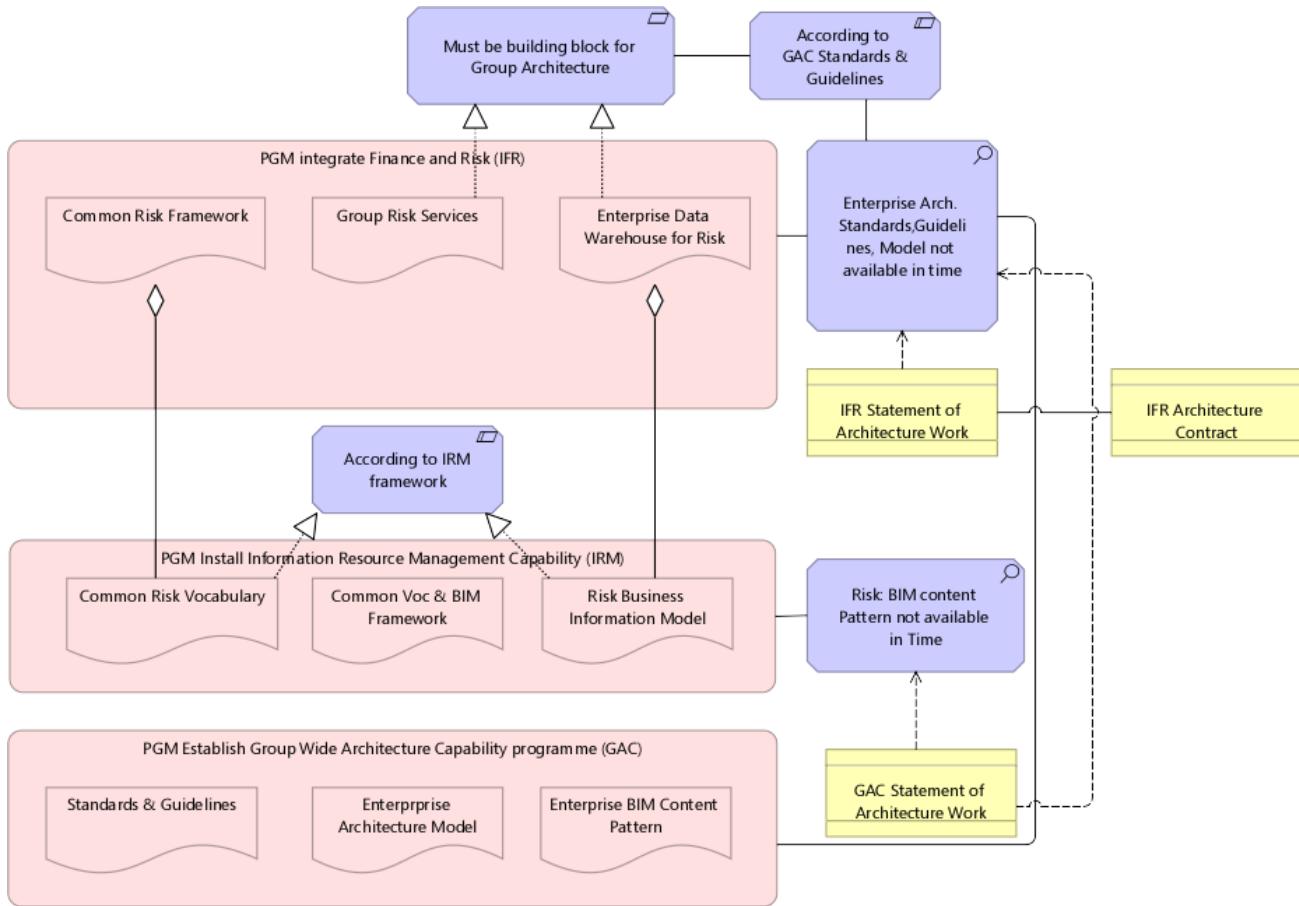


Figure 13: Risk Mitigation by Priority Shifting and Agreements Between Programs

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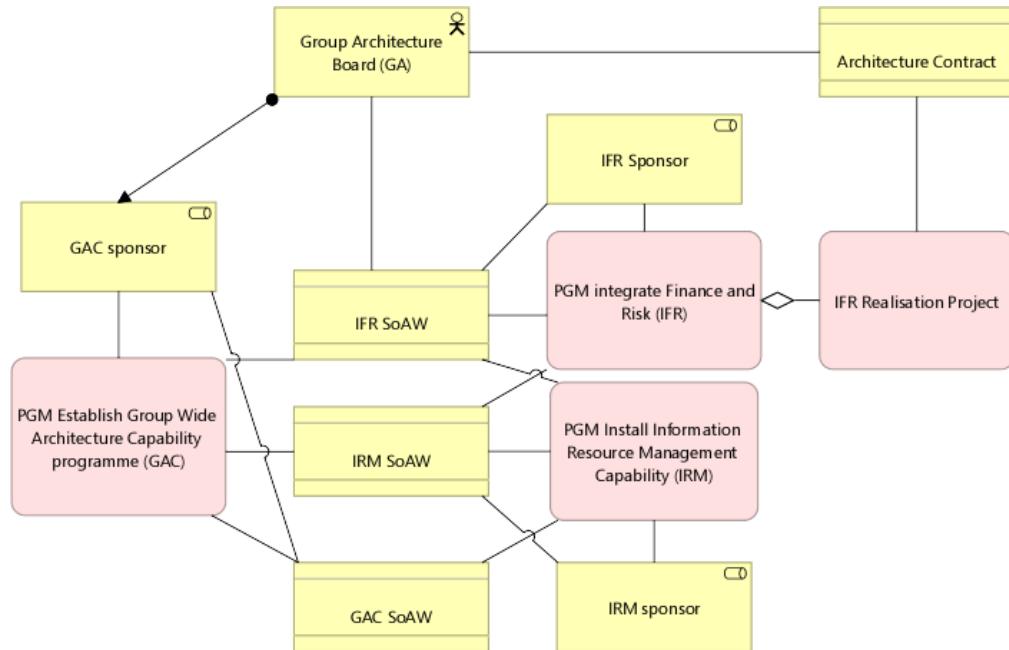


Figure 14: Architecture Engagements are Stated in Contracts

## Establishing the Architecture Capability: A New Iteration of the Preliminary Phase

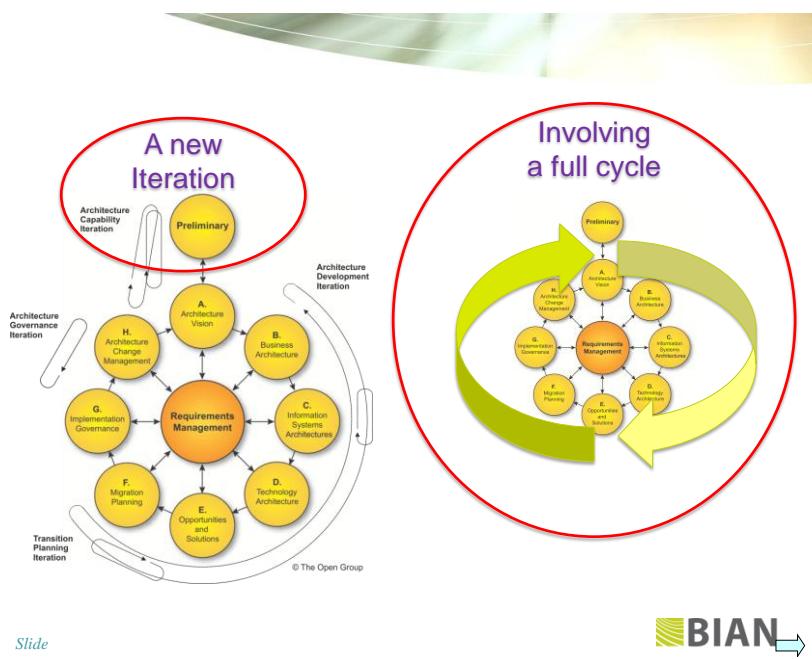


Figure 15: Preliminary Phase Iteration

The GAC program is started, to establish the Architecture Capability.

This is a new and, this time, more lasting iteration of the Preliminary Phase.



## **Archi Banking Group**

Establishing an Architecture Capability requires full use of the TOGAF standard.<sup>7</sup>

The first activity of the Architecture Team is to ask the tactical Steering Committee of the Group Strategy exercise to stay on as its Steering Committee and preliminary Group Architecture Board.

Some of its members have become so enthusiastic<sup>8</sup> they volunteer to stay on as permanent members.

The direction chosen during the strategic Preliminary Phase is confirmed in the GAC program (ADM Phase A: Architecture Vision).

BIAN will stay in use as the Reference Model. The Homeland Repository will be rolled out for the Group enterprise and local Architecture Teams, with BIAN as the common language, canvas for documenting architectures, assessments, and measurements, and as the “primary search index”.

The TOGAF standard will be used as the architecture method. The ArchiMate modeling notation will continue as the architecture language.

Homeland’s tool supports this language. Apart from it already containing a substantial amount of architecture documentation, this is one of the arguments in favor of the tool.

Choosing the Architecture Team structure is difficult. On the one hand, the (lack of) maturity level of the organizations and the fragmented and badly documented architectures require “physically” close attention. This makes the case for local teams. The lack of maturity and experience and the need to quickly evolve to integration, on the other hand, require (physically) close monitoring and coaching. This makes the case for a centrally-placed team. The first argument is deemed stronger and a federated organization will be established.

The Architecture Team will stay in Homeland, and each country will have its own Segment Architecture Teams.

Segmenting, very important for Architecture Governance (divide and conquer), is the next challenge.

BIAN’s “Bank on a Page” business domains are chosen to define the Group’s Business Architecture segments. Which segments a local architect specializes in will be decided locally, to stay as close as possible to the local bank organization and portfolio governance structures.

<sup>7</sup> Another illustration of the “fractal” character of the TOGAF standard – which is in fact a basic reality for architecture and design practices: there is always a level below.

<sup>8</sup> Or they realized such organizational structure as a prerequisite for their own success – such as Homeland’s CIO, who sees her platform as the embryo of the Group and the CFO, who will lead the first Group service. They also know a tactical Architecture Board will be installed that will alleviate their task in the future.

## Archi Banking Group

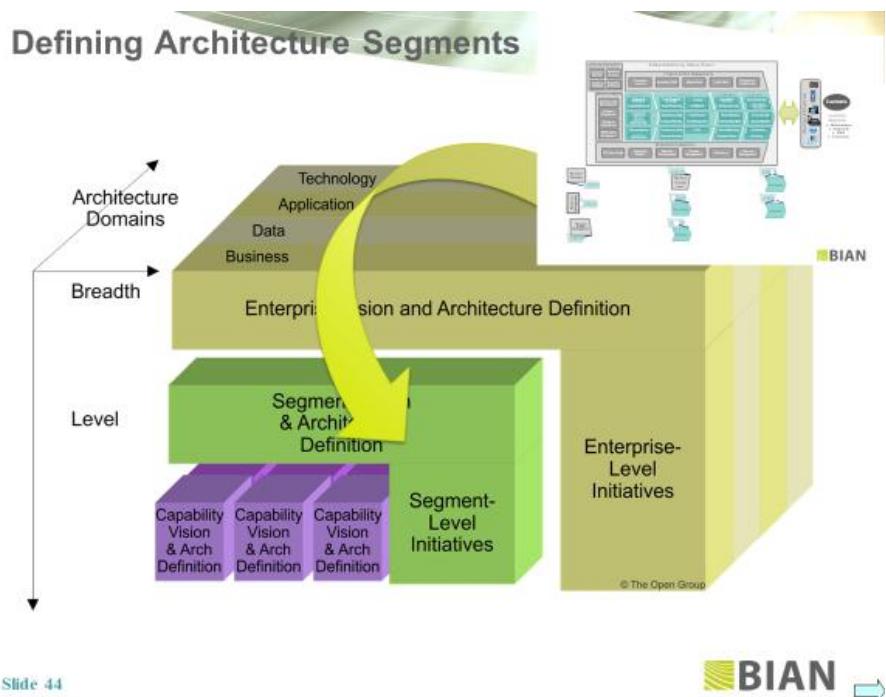


Figure 16: Architecture Segments Definition

In Phase B: Business Architecture the Architecture Framework (process, techniques, procedures, relationships to other frameworks, etc.) is architected.

Attention is given to the link with Portfolio Management, to consolidate the principle “Each Business Case Carries Architecture; Architecture is Carried by a Business Case”. A “continuous flow” relationship to the system development framework is needed to ensure continuity between the architecture and design deliverables and ensure architecture quality management.

The link between architecture “version” management and development change and release management is a challenge.

In Phase C: Application Architecture the configuration of the distributed Repository is architected. Consistency between the distributed Repository directories is a concern that requires a (limited) Business Architecture iteration.

The links to other repositories (such as the Group Dictionary) and the design and development tools are architected. The link between the Business Information Model and the Logical Data Model<sup>9</sup> is supported with Master Data Management (MDM)<sup>10</sup> techniques, as this creates a full “information realization” stream.

<sup>9</sup> A strength in the design and development workbench: databases are generated from design documentation.

<sup>10</sup> MDM supports the distributed management of data.

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The last project in this program, and the first assignment of the newly-appointed and (barely) trained local Architecture Teams, is the Baseline Architecture. The as-is architecture(s) are described at an overview level. The teams will use BIAN; i.e., map the existing business processes and ICT systems to the BIAN service domains. They will document results in the Enterprise Repository, and thus not only deliver the much-needed insight into the Group's Baseline Architecture (be it very high level) but also become acquainted with the new method and tools.<sup>11</sup>

<sup>11</sup> The work of the Technology Architects results in short-term wins: they discover lots of opportunities to harmonize the technology choices and even resources. This is great input for the newly-created ICT vendor management team.

## Applying BIAN and the ArchiMate and TOGAF Standards at the Segment and Capability Level

This section applies BIAN, the ArchiMate modeling notation, and the TOGAF standard at the segment and capability level.

It illustrates that “change initiatives” (projects and programs, overarching several projects) carrying architecture initiatives are not necessarily confined to one architecture segment or capability.

### The Integrate Finance & Risk Program

The Integrate Finance & Risk program will produce a Segment Architecture and several Capability Architectures. This is another example of the “fractal” nature of the TOGAF framework, consistent with the fractal nature of an enterprise and its architecture.

The Integrate Finance & Risk architecture elaborates on the (very high-level) Group Enterprise Architecture, created by the new strategy exercise and to be elaborated further by the GAC.

The Integrate Finance & Risk program will launch projects that will elaborate Capability Architectures, such as risk management. It will also overarch a project that will elaborate the architecture for an enterprise capability: the Enterprise Data Warehouse.

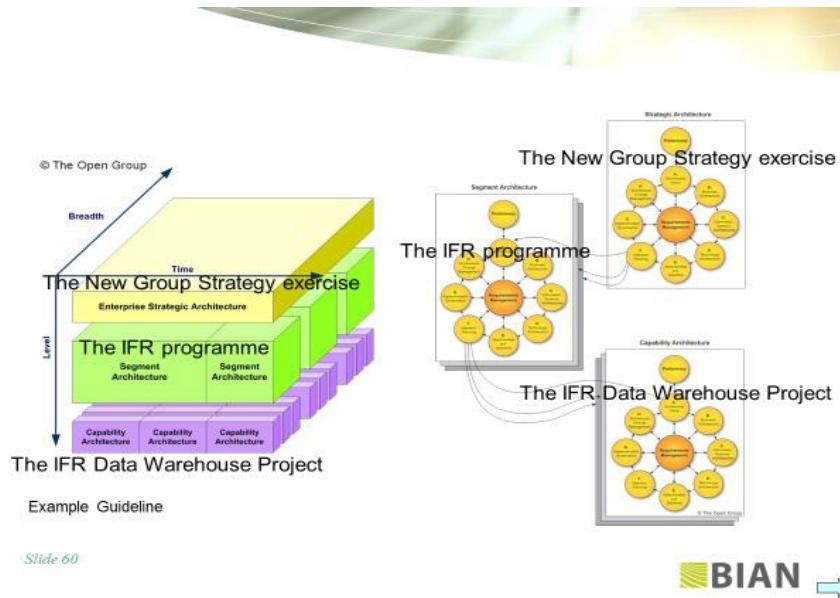


Figure 17: Integrate Finance & Risk: an Example of the Fractal Nature of Architecture

## Archi Banking Group

### The Payments Initiative

The Payments initiative is sponsored by the Clearing & Settlement segment. However, given our “Service is our Orientation” principle,<sup>12</sup> the utmost will be done to leverage (or create) enterprise services. Their architectures are at “Capability Architecture” level. They reside under several Segment Architectures, other than “Clearing & Settlement”, which is exactly what our principle advocates. The conclusions of the Payments architecture project will be “summarized” in the Enterprise Architecture. Architecture segmentation is there as a governance instrument, not for architecture fencing.

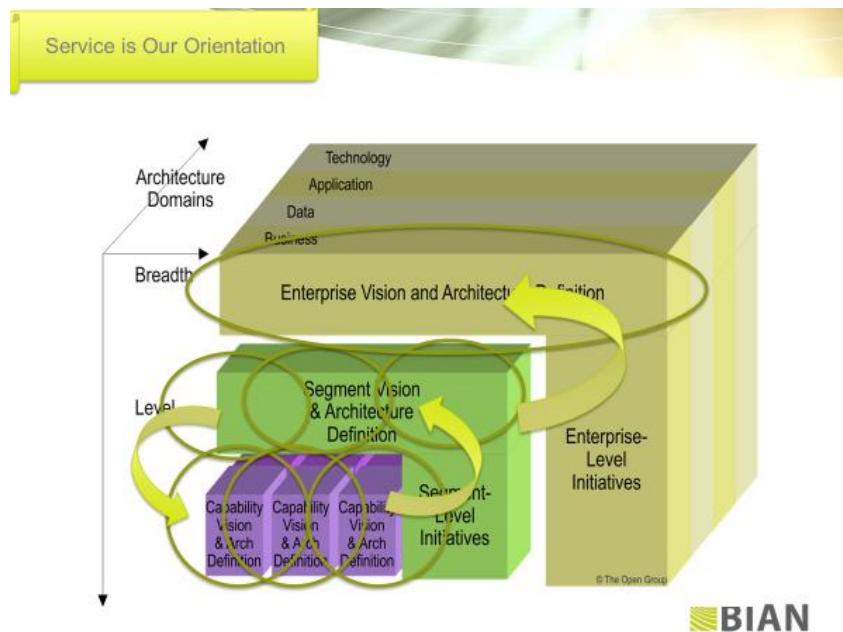


Figure 18: Each Architecture Project Travels (should travel) through the Architecture Levels and Segments

#### **Background: Payments in the Archi Banking Group**

A few years have passed since the new “Group Synergy” and “Open Information” objectives were introduced in the Archi Banking Group.

The Architecture Capability is firmly installed. Thanks to the Architecture Budget, funded by the Group, the Architecture Board is able to enforce the principle “Each Business Case Carries Architecture; Architecture is Carried by a Business Case” and “upgrade” projects into creating building blocks for the Enterprise Architecture.

Thanks to intensive use during the project “Baseline Architecture”, all members of the local and enterprise Architecture Teams are well acquainted with the BIAN Reference Model. They use the Common Vocabulary in cross-segment and cross-institution communication. They experiment with the ArchiMate modeling

<sup>12</sup> And even without such a principle, what banking process can do without “party management” or does not need the current account? Architectures that duplicate party data are common; even those that duplicate current account data exist.

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language while documenting in and searching in the Enterprise Repository, combining it with the BIAN index. BIAN has become more than reference material. It is an “enterprise blueprint” that provides a pattern for “plugging in” new products in the organization. The architects can use the TOGAF standard easily; iterating through (and customizing) its phases comes naturally.

The Payments domain has been in great turmoil over the last decade. Standardization and regulatory pressure have been a constant challenge. Fintech competition is growing and new channels and devices keep appearing.

Unfortunately, the domain has had to react to these challenges in the short term. There was no time nor budget for proactivity. In spite of its BIAN service domains being labeled as “Centralize” in the Target Enterprise Architecture, all these changes have been implemented by the existing (distributed) organization, in the existing systems.<sup>13</sup>

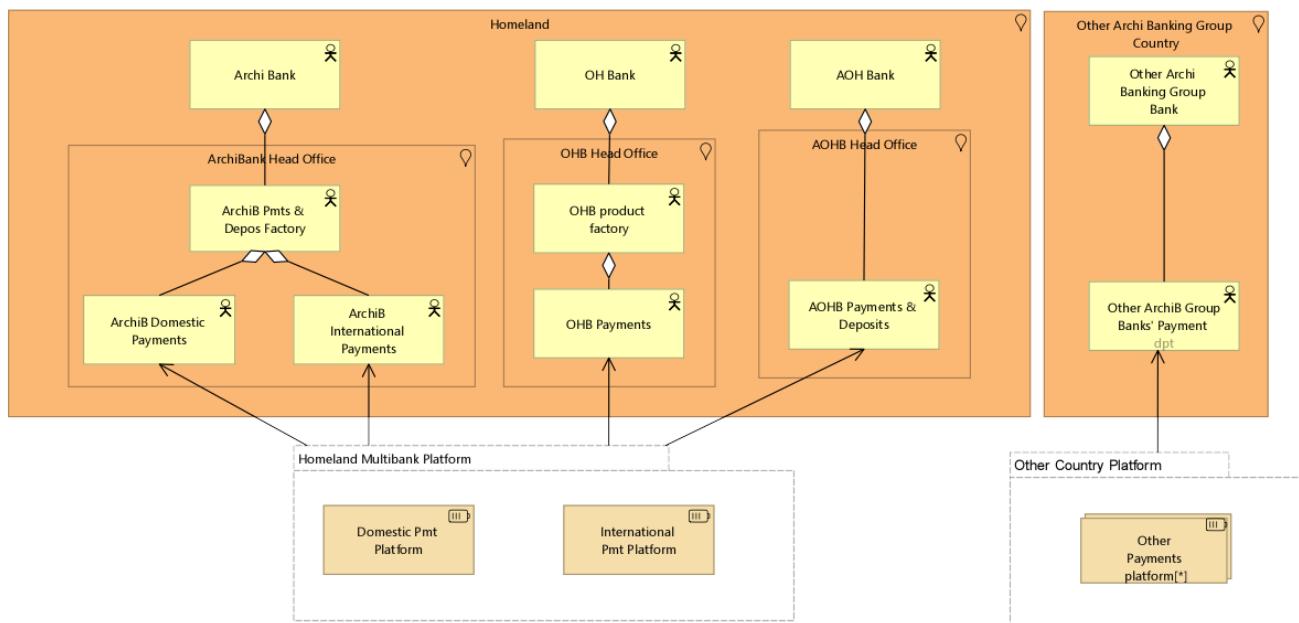


Figure 19: Archi Banking Group's Payments Organization and ICT Resources are Still Distributed

It is, however, not all bad news. The domain has been able to keep up. Customers are satisfied with the product offering, which contributes to their loyalty. Regulatory authorities are satisfied with its compliance.

<sup>13</sup> Actually, the Architecture Board itself recommended that each institution implement the Single Euro Payments Area (SEPA) in its own Payments systems at minimal cost. SEPA is made up of the Eurozone, countries within the EU, and a few other countries which also support Euro bank transfers.

## Archi Banking Group

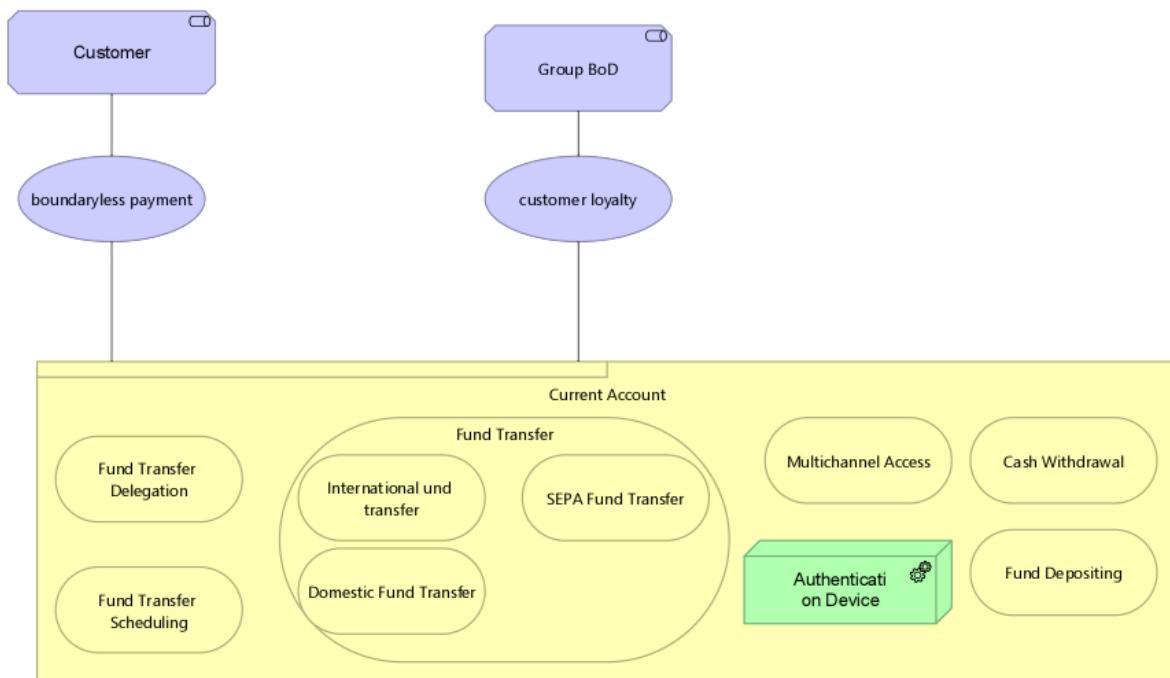


Figure 20: (One of) Payment's Product Offerings

Payment's management, however, is less satisfied. The head of Homeland's Archi Bank Payments & Deposits product factory orders an assessment.

Apart from compliance and customer satisfaction, profitability is a major driver for her and her management team. The assessment showed that there are no problems with current compliance. Customer satisfaction is excellent, thanks to the multi-channel accessibility and the instant current account balance.

Profitability, however, is suffering from the unit cost for processing payments. This is much higher than average, while the price needs to stay around average in order to keep the customer satisfied and loyal. This exaggerated unit cost is mainly a personnel cost, as the international SEPA payments are not supported by a Straight Through Processing (STP) system.

Compliance pressure on Payments is increasing, posing a threat for both compliance and profitability. It requires continuous system changes. Standardization reduces the possibilities for charging. Increasing reporting requirements up until "open banking" increase competitor stress and require considerable investments.

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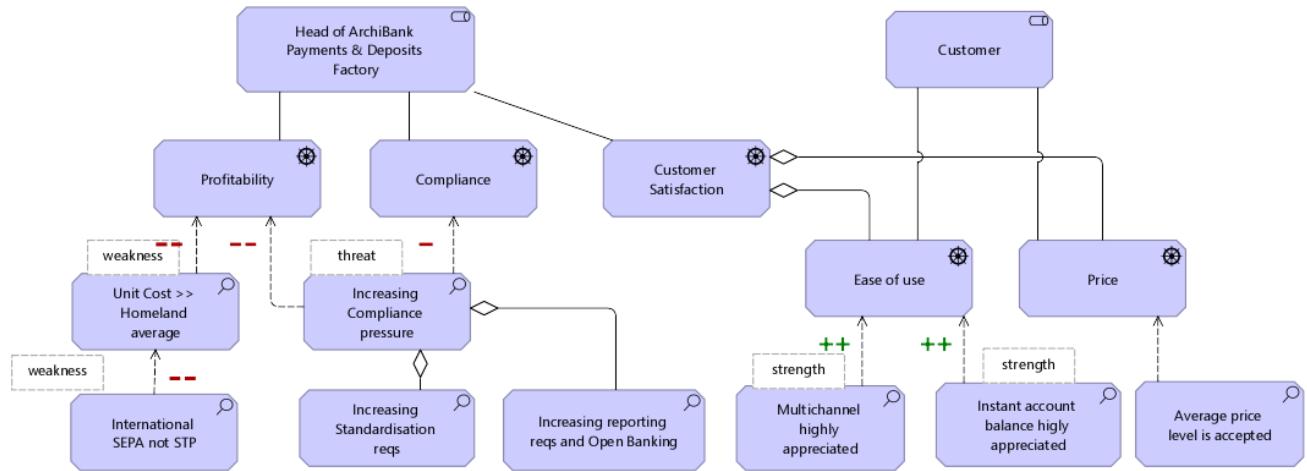


Figure 21: Assessment of Archi Bank's Payments Product Factory

Management of Archi Bank's Payments & Deposits department decides it is time to act.

New goals and objectives are set. A course of action, suitable for Homeland, is defined. As they share the same ICT platform, a Request for Architecture Work is discussed with the other Homeland banks at Homeland's monthly portfolio meeting. The course of action is to lower costs by creating an STP payment process and platform and exposing information in view of the creation of information products. This should leverage the "open banking" compliance requirements.<sup>14</sup>

<sup>14</sup> "Turn Compliance into a Business Case" was an enterprise principle proposal that did not make it, but was adopted as a payment philosophy nevertheless.

## Archi Banking Group

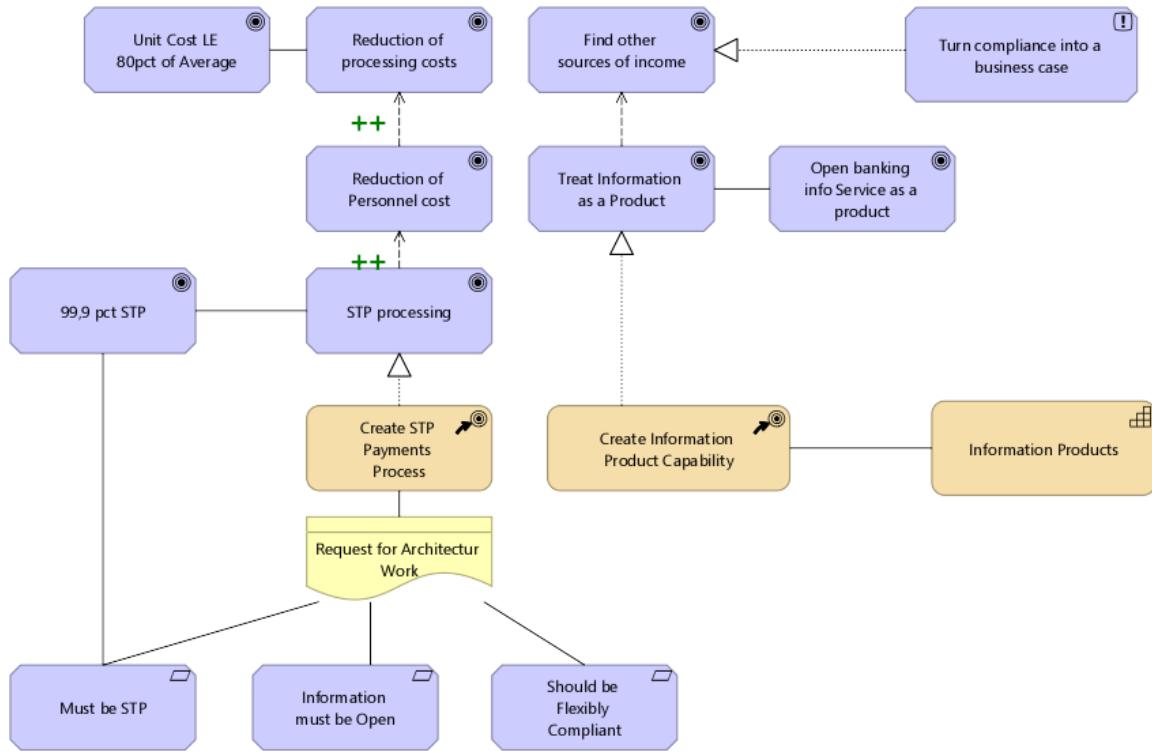


Figure 22: Homeland's Original Payments Strategy and Request for Architecture Work

The Business Architect for Homeland's "Clearing & Settlement" segment, who participates in the monthly Portfolio Governance meetings, sees the Enterprise Architecture opportunities. Supported by the strategic principles, she convinces Homeland's Payments & Deposits management team to launch a more ambitious Request for Architecture Work.

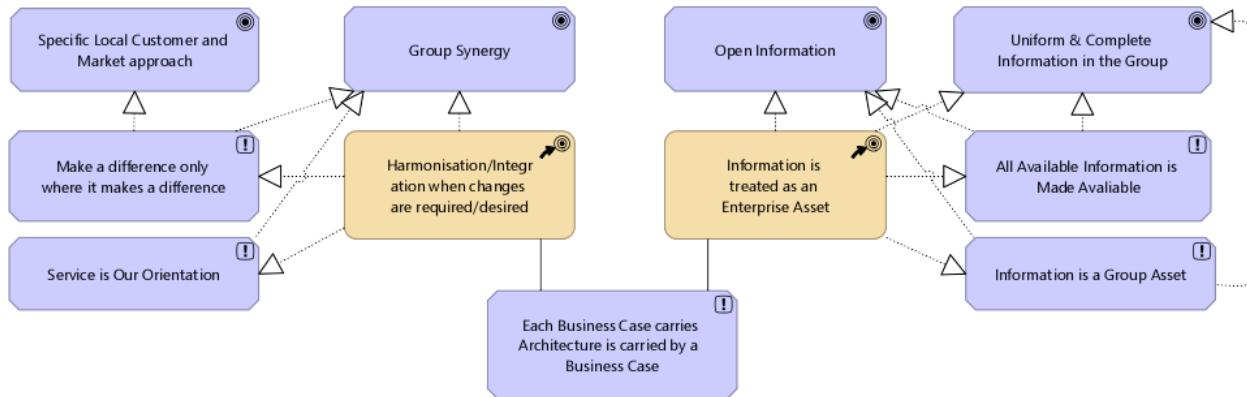


Figure 23: Input: Group Strategy and Principles

The Homeland Groups requirements for the solution were STP, flexibly-compliant (ability to not only be but stay compliant in a cost-effective way), and open (able to share all available information). The requirement "Must be in-sourcing-ready" (i.e., able to support a Group service) is added. Finally, "Feed instant customer

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position” is also added. This principle is self-evident on the Homeland platform, but needs to be made explicit at Group level, in order to anticipate upcoming regulations and the challenges of open banking.

The Chief takes this proposal to the bi-monthly international Archi Banking Group meeting. With the agreement of the international management team, the proposal is discussed at the Group Architecture Board. The Board agrees on the value of the proposal and is ready to contribute to the funding of the architecture study.<sup>15</sup>

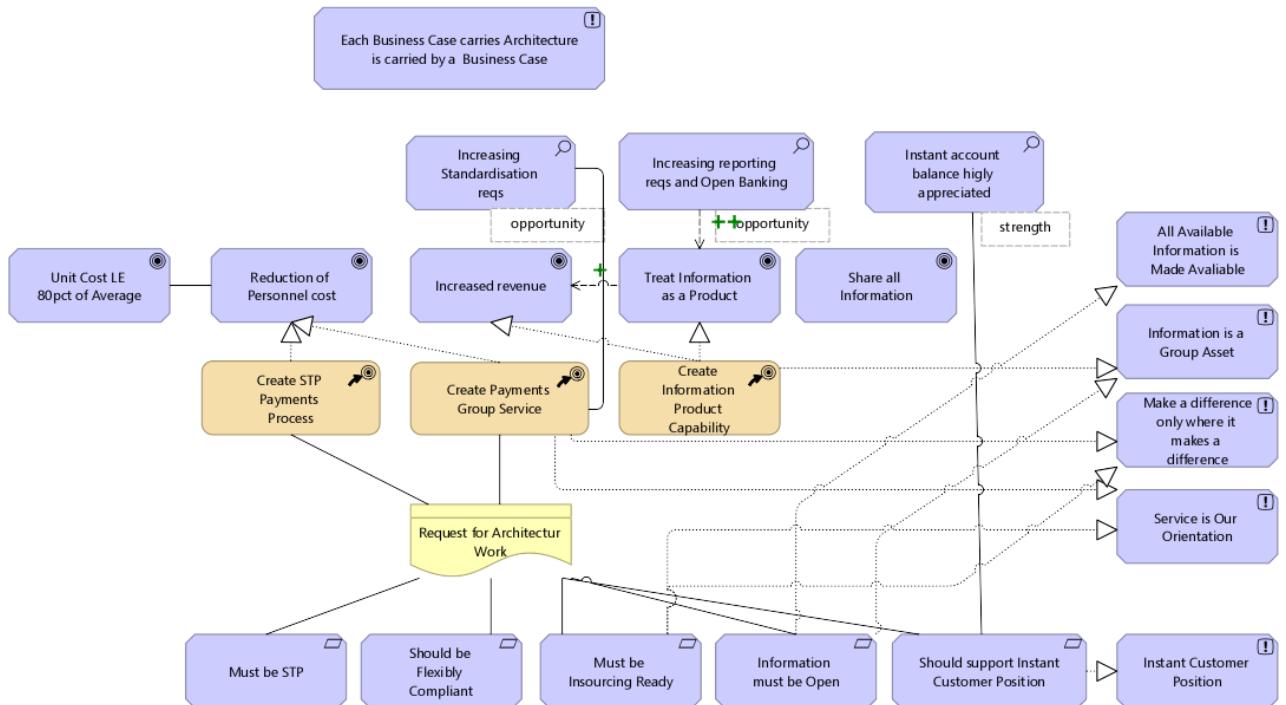


Figure 24: Common Archi Banking Group Payments Request for Architecture Work

### Phase A: Architecture Vision for a Payments Group Service

Architecture management decided to start two architecture projects: the first (which we will discuss here) focuses on creating an STP payments process and installing a Payments Group service. The other investigates the creation of payment information products. The Request for Architecture Work is split accordingly.

An Architecture Vision exercise for an “STP payments process and installing a Payments Group service” is started.

A multi-disciplinary core team is established, led by an Enterprise Architect. It will be supported by a more extended team which should ensure that every institution is represented. It is also responsible for liaison with local organizations.

<sup>15</sup> Decisions about funding the actual projects will be made by all parties when cost and return are estimated.

## Archi Banking Group

No discussions about the framework or the reference material and tools are deemed necessary.

In order to confirm the architecture assignment's scope and objectives, the team makes a root cause analysis of the issues that triggered the Request for Architecture Work. Not just for Homeland, but for the entire Group.

The earlier conclusions are confirmed, but the assessment that a high correspondent cost is also a factor in the high unit cost is new. Each institution has its own correspondent network and negotiates from a weak position.

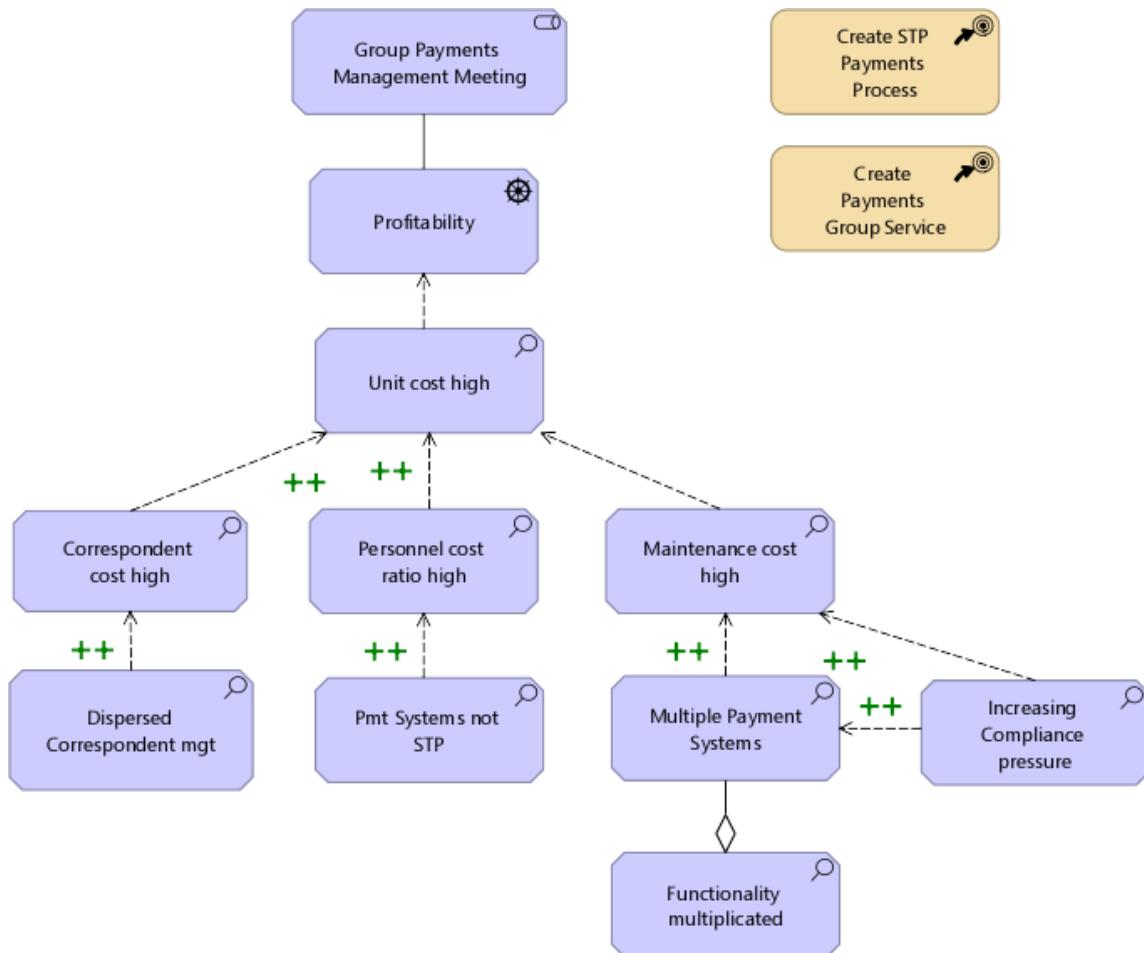


Figure 25: Root Cause Analysis of High Payments Processing Unit Cost

The team sets the “goal tree” alongside the “root cause tree”. New goals are proposed: it can be expected that optimizing the correspondent network will have a positive impact on the correspondent cost (hence the unit

## Archi Banking Group

cost), especially if an internal correspondent network<sup>16</sup> is organized. This is an almost purely organizational operation with a high potential ROI.

Notice the two “objectives”: “Cost LE 80 pct of average” and “99,9 pct STP” are SMART<sup>17</sup> goals. Making goals measurable is a requirement for project and system performance management.

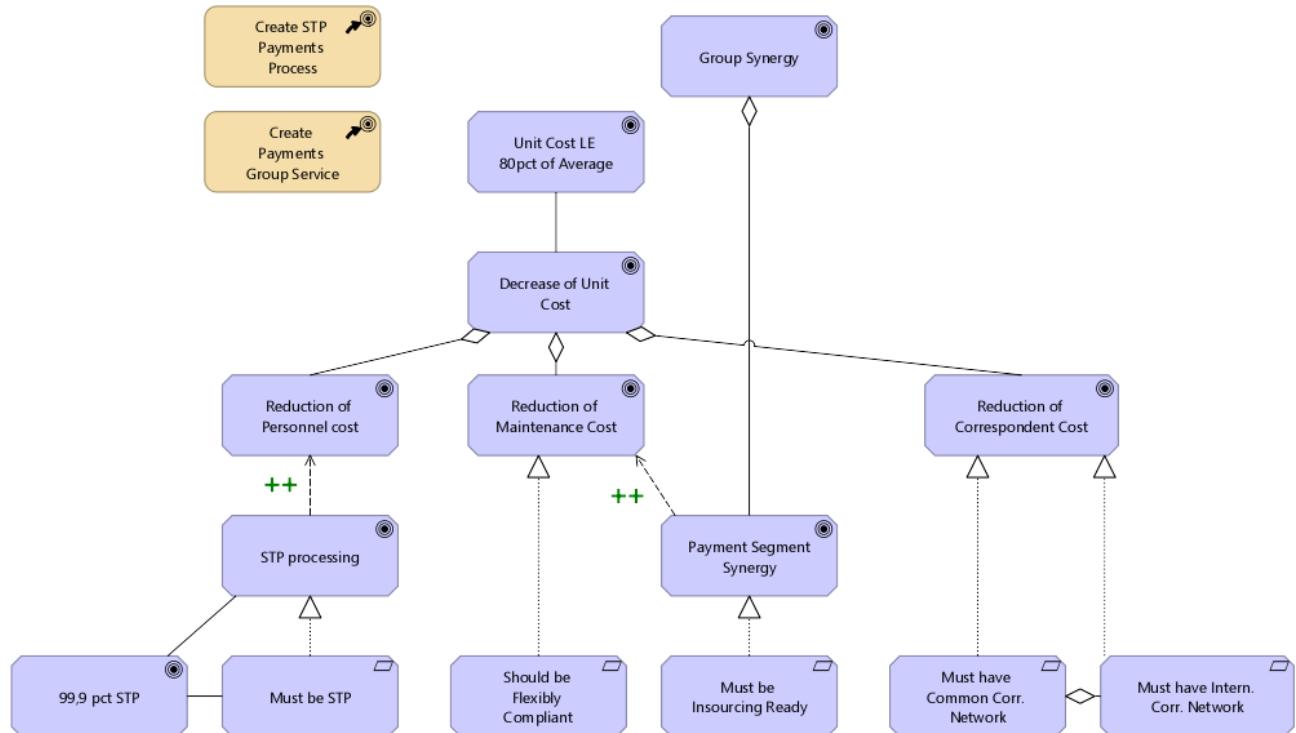


Figure 26: Requirements to the Architecture and Resulting Solution

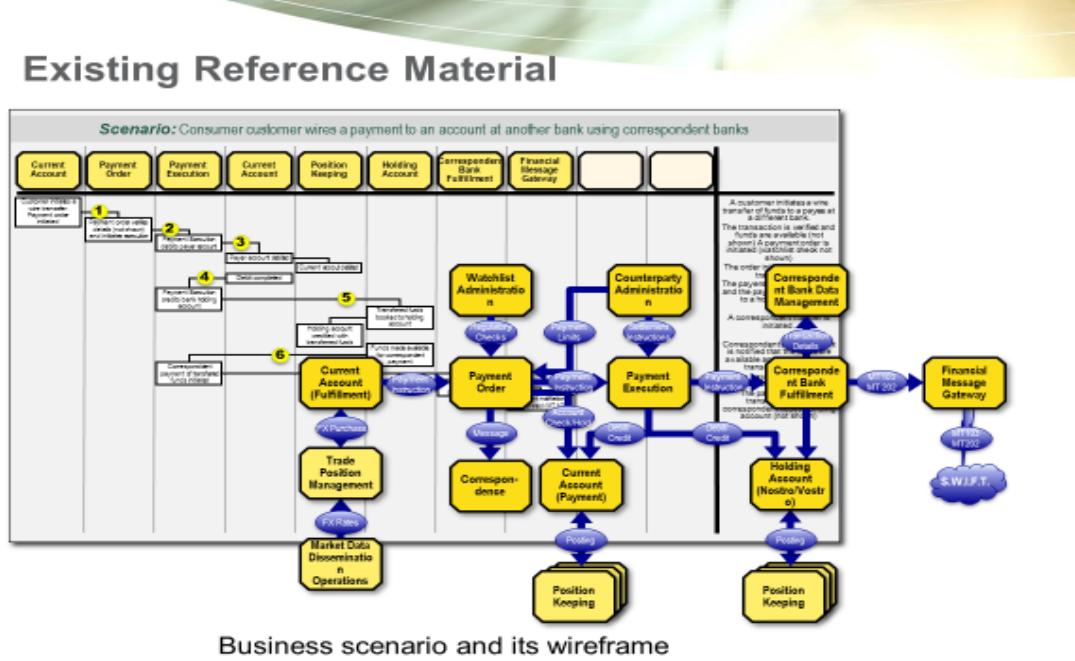
The Steering Committee accepts the reformulated scope and objectives and the team sets to work.

The Architecture Team decides the following approach: a Request For Proposal (RFP) will be launched to select candidate solutions. BIAN will be used as the “common language” for this RFP.

To prepare the RFP, the team searches for relevant business scenarios and wireframes in BIAN’s material.

<sup>16</sup> Using a member of the Group as a local correspondent.

<sup>17</sup> SMART: Specific, Measurable, Accepted, Realistic, Time-defined.



**BIAN**

Figure 27: BIAN Business Scenarios and Wireframes are Available as Reference Material

They elaborate their own business scenarios based on the practices in the Group's institutions.

This results in the selection of a range of service domains involved in the required solution.<sup>18</sup> BIAN's service domains are represented as ArchiMate capabilities. Two strategic Group's capabilities are added: IRM and Service Management.

Faithful to the “Service is our Orientation” principle, the Team takes care to distinguish the “Core Functionality” from the “Enterprise Services”. The Core Functionality needs to be provided by the new system. The Enterprise Services contribute to the end-to-end solution for the “Fund Transfer” service. However, they are reusable services the new system needs to “plug into”.

The ability to plug into these services is an important selection criterion for the new system.

The new system also needs to provide information services to a range of service domains, of which only those required for the end-to-end process are mentioned explicitly. The IRM capability will provide access to the Payments information to all service domains who require it. It will feed the Enterprise Data Warehouse resource.

<sup>18</sup> And, thanks to the mapping of all activities to the BIAN service domains, a fairly good impression of which practices will probably need to be re-engineered. This is important input for stakeholder and change management.

## Archi Banking Group

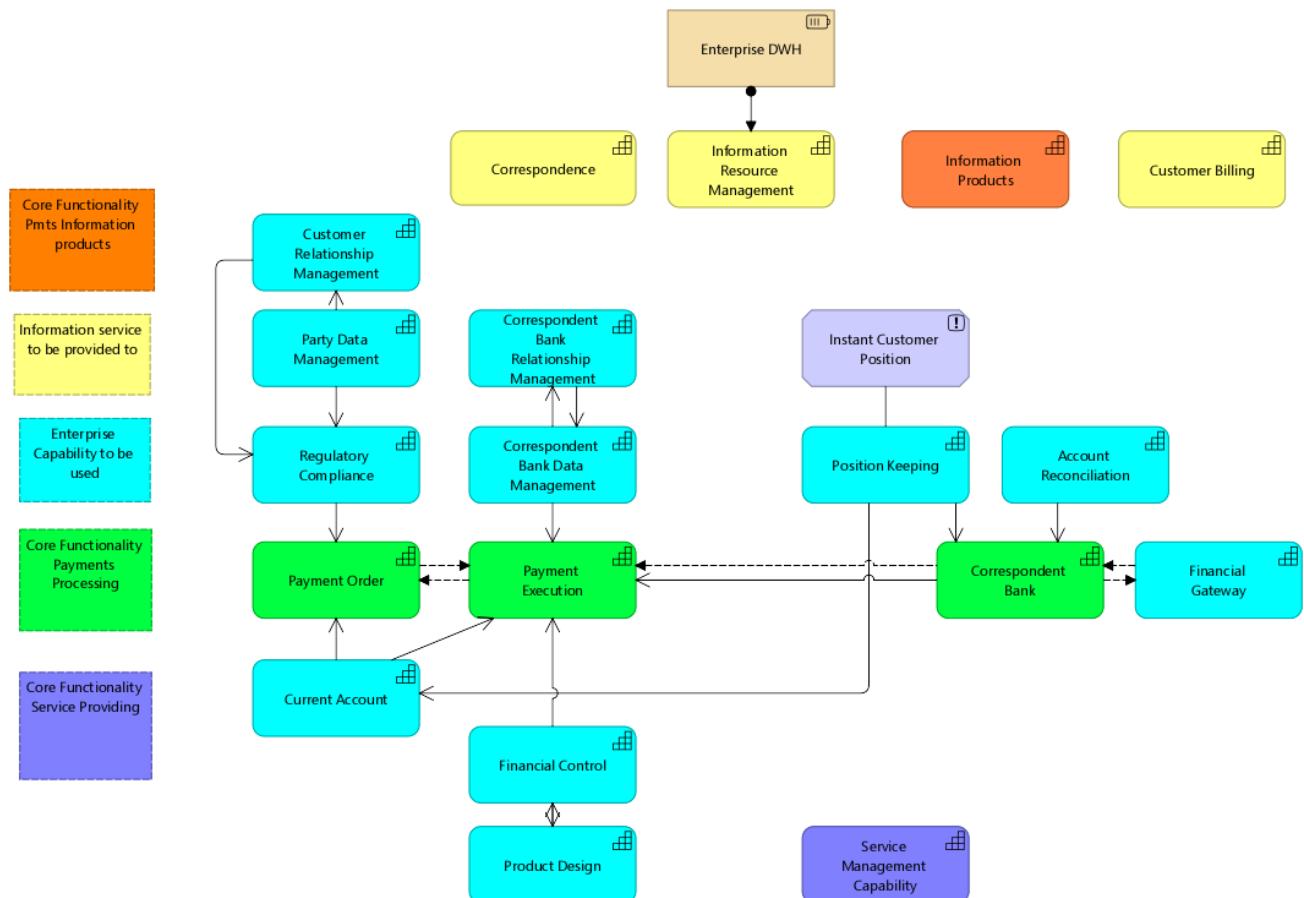
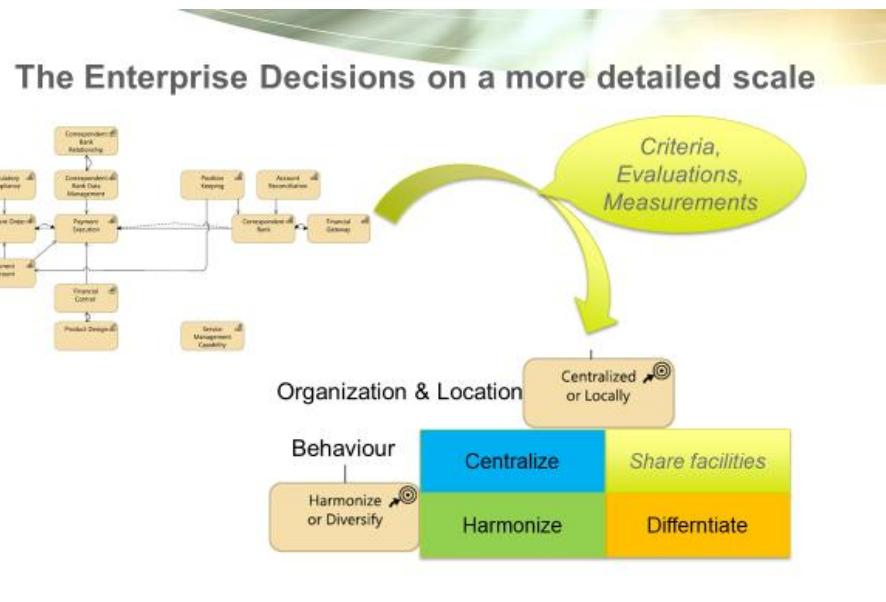


Figure 28: Capabilities Involved in the Payments Architecture and their Roles

The strategy Enterprise Architecture exercise is repeated (improved and extended thanks to the architect's experience) and customized to Payments.



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Figure 29: Zooming in on Enterprise Decisions

The service domains that are involved belong to several architecture segments, which means many architects will have to contribute to the architecture project. The parties responsible for (or in other stakeholder relationships with) these service domains are found all over the organization. All stakeholders are possibly impacted by the upcoming change. This is important input for the stakeholder and change management activities.

How do we know this? Because we found the existing business and application solutions mapping to the impacted BIAN service domains in the Repository ...

## Archi Banking Group

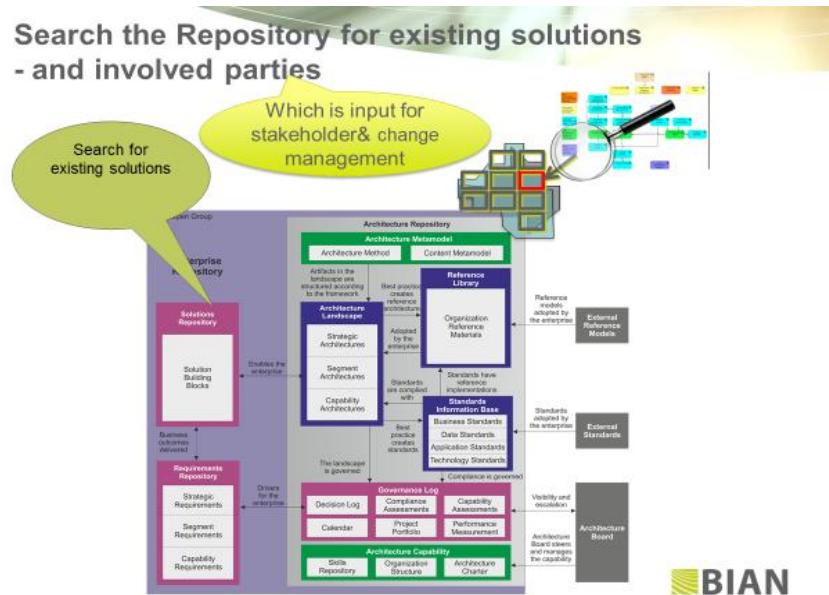


Figure 30: Searching the Repository for Solutions Mapping the Impacted Service Domains and Finding their Stakeholders

Inspired by the Request for Architecture Work and general Architecture Requirements, the Architecture Team describes the RFP requirements, at the business and ICT level. It prepares the evaluation criteria for the RFP, the latter also based on cost considerations.

The RFP is sent to external payment service providers and to payment segment architects within the Group.

The internal contenders were found by searching the Repository. Clarity for external contenders is created by using BIAN's Common Vocabulary and reference framework and expressing the architecture diagrams in the ArchiMate language.

## Archi Banking Group

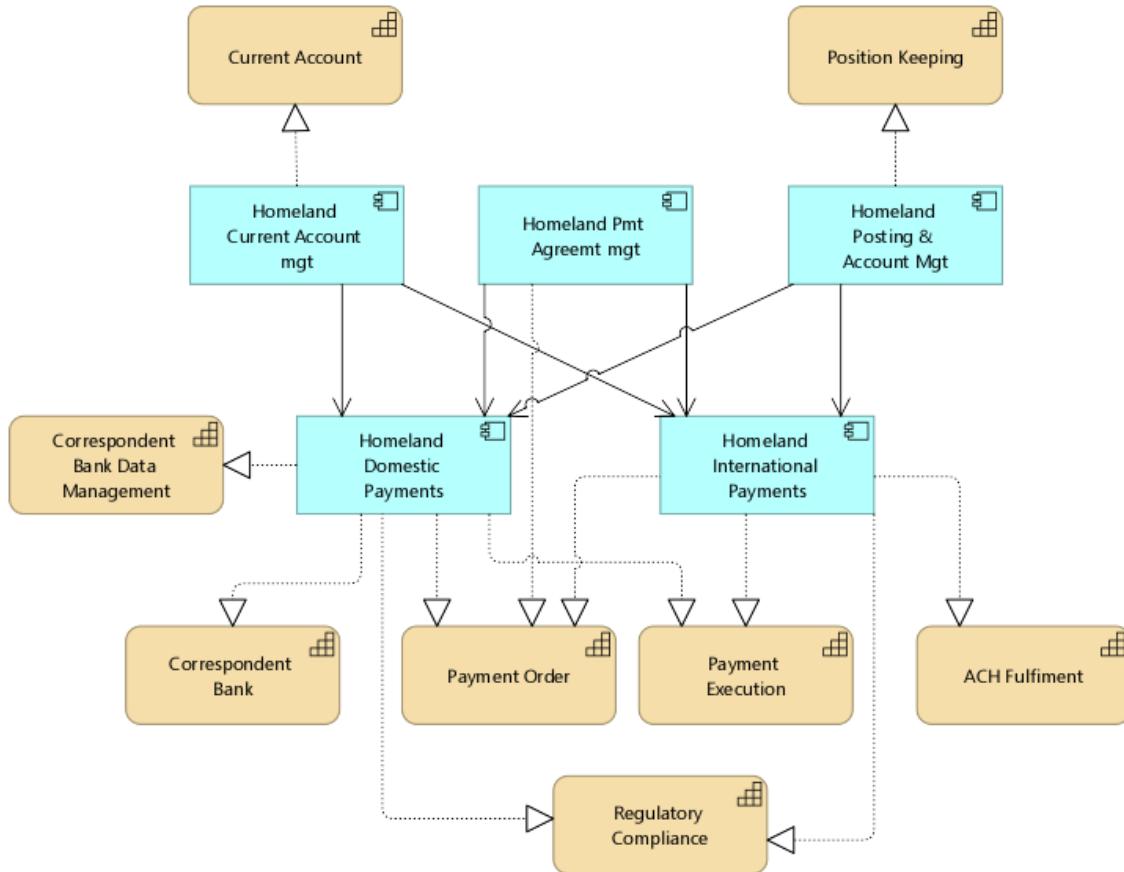


Figure 31 Example of the Mapping of Available Solutions on the Involved BIAN Service Domains

The shortlist revealed three viable candidates. All contenders have their weak and strong points.

The external service provider is (evidently) strong on “in-sourcing readiness”. However, he is not strong on criteria that are strategically important for the Group/Payments. The ability to integrate with the enterprise services is weak (data duplication is required and cannot be implemented on a real-time basis). As a result, he is not able to ensure instant customer position. Opening up the information managed by the service provider would require significant customization cost.

Homeland’s Domestic Payments system is weak on “functionality” (support for the required service domain operations), which means that the costs to implement these gaps would be too high.

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RFI Comparison	Solution		
Requirement	M4 Bank International Payments	M4 Bank Domestic Payments	External Service Provider
Straight Through Processing			
Flexible Compliance			
Functionality			
Interoperability			
Instant Customer Position			
Openness			
Readyness for In-sourcing			
Technology Fit			
Implementation & Gap Cost			
Recurring Cost			

Figure 32: Evaluation Criteria and Comparison of RFP Responses

The winner is: Homeland's International Payments system.<sup>19</sup>

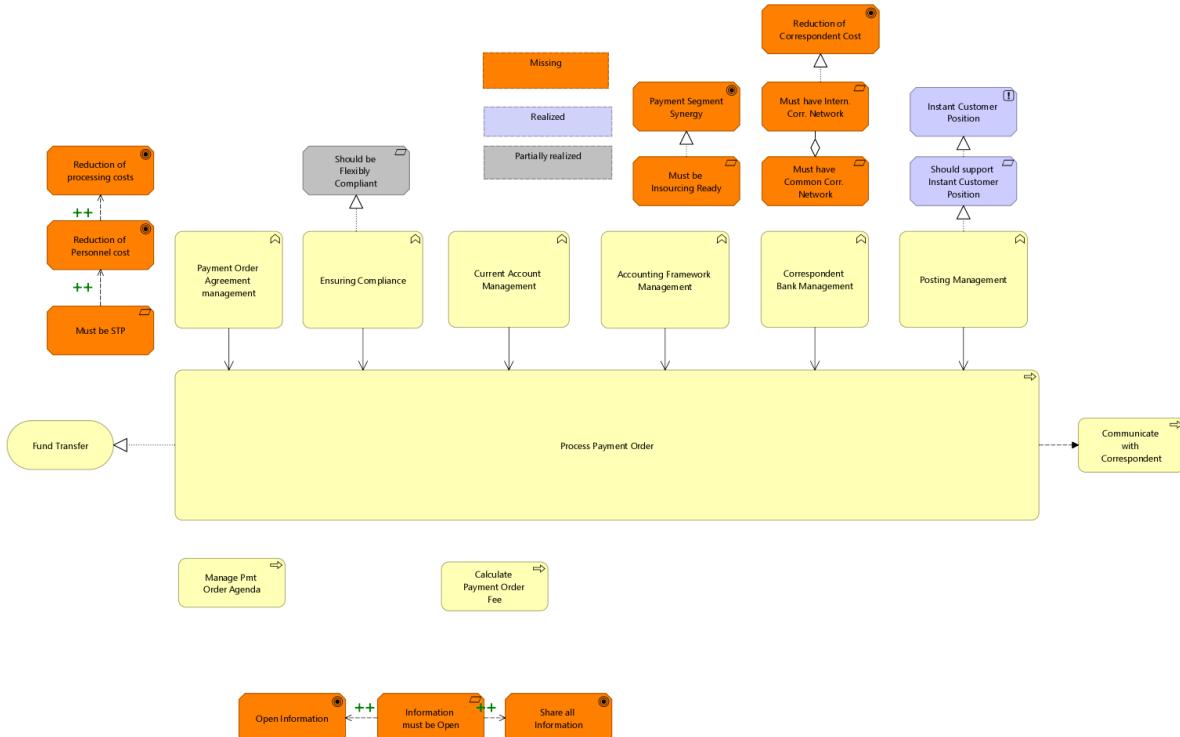


Figure 33: Baseline (Lack of) Requirements Realization

<sup>19</sup> “System” not as in “IT system”, but as in a cohesive conglomeration of inter-related and inter-dependent parts, on all architecture layers.

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The baseline requirement realization picture of the chosen solution doesn't look good – a lot of change is required. But the required changes are manageable: functionality is or will be isolated in stable services. No big bang is required. The services can be leveraged in other projects.

The Architecture Team sets to work to elaborate a vision of the Target Architecture for the selected system.

The “Must be service-oriented” requirement<sup>20</sup> is already ingrained in the structure of the system. The question is, given the “Must be in-sourcing-ready” requirement, who will provide the services?

The actual responsibilities will be refined during Phase B: Business Architecture.<sup>21</sup> For the purposes of our Architecture Vision, we distinguish “provided by a service provider” and “provided by the payment service receiver”. These decisions depict the implantation in the enterprise services landscape. Services by the “service receiver” are not available or will not be promoted to enterprise level. The decisions are based on the assessed impact: isolating these functionalities from the service receiver’s bank platform would be close to impossible.

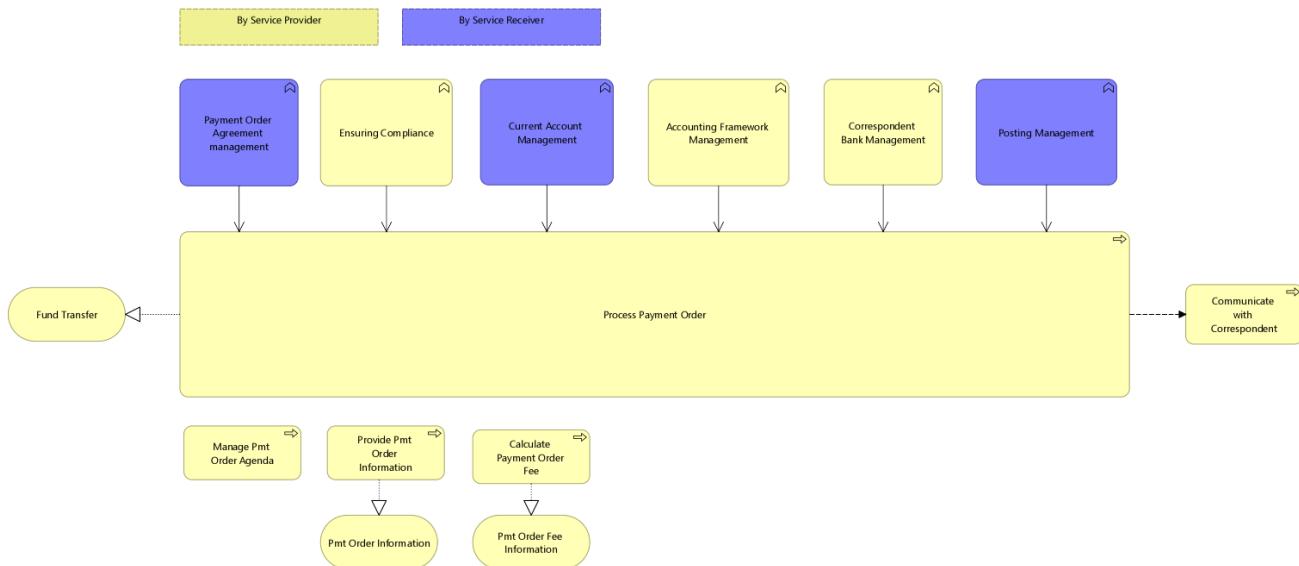


Figure 34: Payments Solution: An Orchestration of Services, by “Service Providers” or by the “Service Receiver”

This Service Landscape requires interoperability with not just services on different IT platforms, but – in the case of services the service receiver has to provide – in “different dialects”. The services need to be “instant”, in view of the requirement to have STP.

<sup>20</sup> This is an inherited Enterprise Architecture requirement.

<sup>21</sup> BIAN’s service domains will help us to map the centralized “target” responsibilities to the dispersed as-is responsibilities, in view of change management. Each time a new service receiver is on-boarded, this exercise will have to be done and a (small) change project will have to be executed.

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The Application and Technology Architects recommend the introduction of a full blown Enterprise Service Bus on a dedicated technology platform.<sup>22</sup>

The reason why the requirement to have STP is lacking in Homeland's International Payments system (the "baseline") is the complex nature of the decisions that have to be made; for example, in the areas of regulatory compliance evaluation, payment exception handling.

The Application and Technology Architects recommend the introduction of a rule management system.

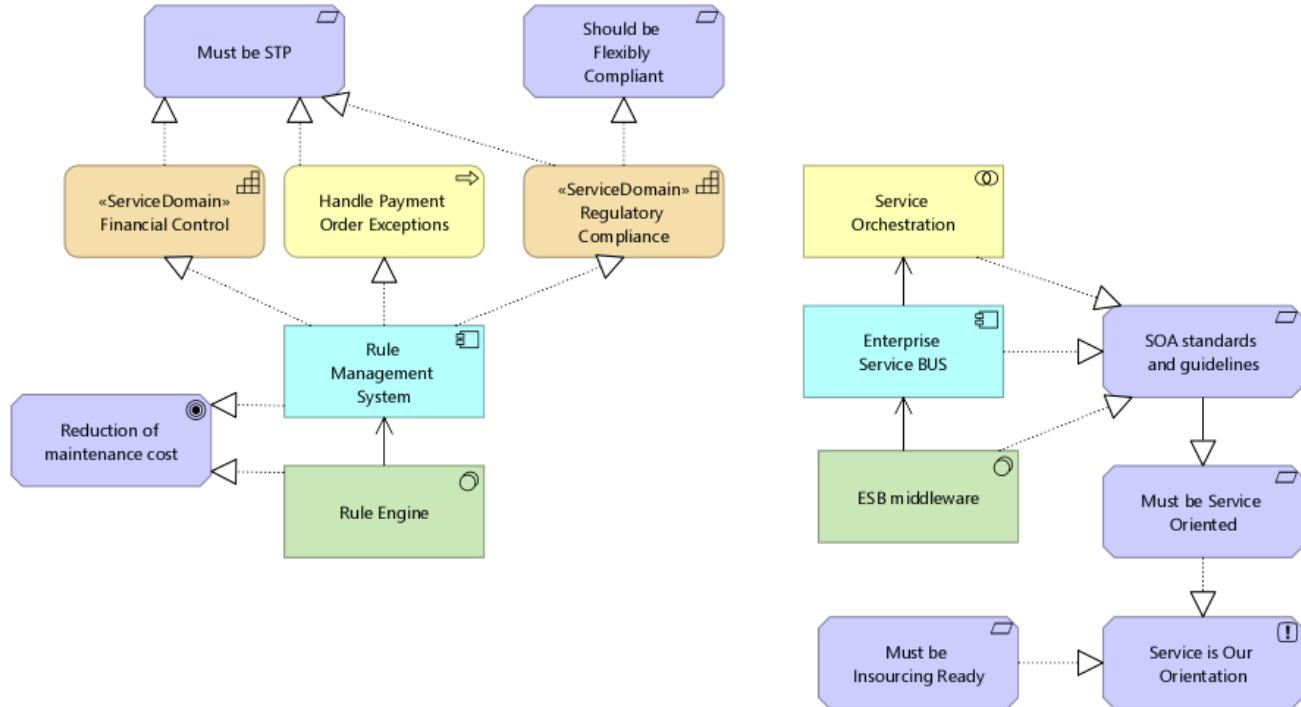


Figure 35: Proposed New ICT Systems to Support Complex STP, Flexibility, and Interoperability

There are two target groups for this Group service: service receivers who are capable of providing the expected services interactively and those who are not.

For the latter, the business has elaborated a solution with "dummy data" that would be imported in the Homeland systems. This is rather invasive for those systems, as they would have to take the artificial nature of this information into account in every service they provide.

The Application Architects, for whom the Application Architecture "Information Consistency Comes First" principle has become their deepest conviction, argue that this old-fashioned idea should be abandoned.

<sup>22</sup> A type of ICT solution that provides interoperability between applications. Actually, this was on the Application and Technology Architects' wish list (in the enterprise requirement catalog, waiting for implementation opportunities). The home-made application using "naked" communication middleware has already overstepped its limits.

## **Archi Banking Group**

Instead, two “service entry points” should be offered. Interactive service receivers will be provided with “accept payment order” services, while the others will go straight to execution.

The Business Architect is willing to investigate this option. He concludes the development cost is significantly lower, and the recurrent cost is lower. The risk of unjustified execution of the Payments order (which was the main argument for the dummy data solution) does indeed exist, but this is also the case in the current receiver systems that also work in “island *modus*”. It is an easy decision to include the “two entry points” in the Architecture Vision.<sup>23</sup>

The “Must have a common correspondent network” requirement will be implemented by promoting correspondent management to an enterprise service.

This completes the vision on the Target Architecture.

The Architecture Team summarizes its vision in a three-layer view.

The most important elements of the vision are graphically illustrated:

- Two entry points to the service, depending on the interoperability capabilities of the service receiver – this will facilitate the migration to this Group service
- Flexibility and STP through a rule-based business approach supported by technology
- Transparent logical and technical interoperability thanks to the Enterprise Service Bus; an investment that will pay off in future service implementations<sup>24</sup>

<sup>23</sup> Based on this experience, the Business Architect makes a change proposal to the Architecture Team to “upgrade” the “Information Consistency Comes First” principle to “general” level. This team decides to rephrase the proposal into an Architecture Change Request and take it to the Architecture Change Board. It is accepted and T-shirts with the new principle will be handed out.

<sup>24</sup> Actually, the “Open Information” requirement is not demonstrated on this picture. The Steering Committee will want to see this too; another three-layer view will have to depict this.

## Archi Banking Group

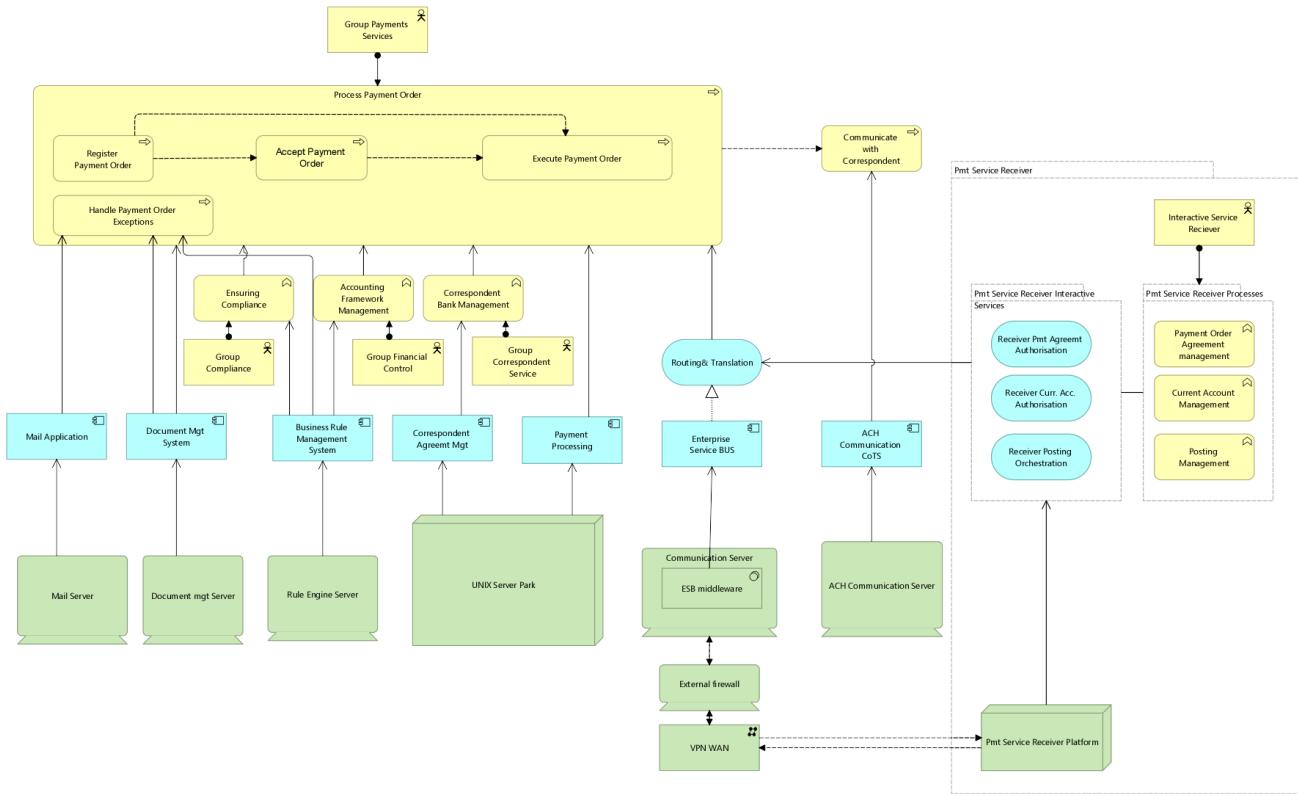


Figure 36: Target Architecture Vision

All requirements will be realized.

The goals have been detailed into objectives. This will allow evaluation of the success of the architecture effort and implementation project. It provides input for performance management of the target system.<sup>25</sup>

<sup>25</sup> “Performance management” is part of every service domain and should not be forgotten in a system’s architecture. This is why we did not include it in our examples.

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Figure 37: Target Requirement Realization and Change Heat Map

The change heat map on the actual systems is input for the next phases of this architecture project, which will focus (mainly) on the change areas.

The change heat map is also represented in BIAN service domain language to support impact analysis and opportunity management.<sup>26</sup> This in turn feeds stakeholder and change management.

A first version of the change heat map included only the changes in “business behavior” and in application and/or technology support. The published version also mentions the organizational changes.

<sup>26</sup> This representation would not be necessary if the change impact was limited to one platform with a managed architecture (Homeland). Impact and opportunity analysis could (more) easily be done on the actual (business and ICT) systems heat map. But here we are looking for impact – or opportunities – on many platforms all over the Group. A common language is needed.

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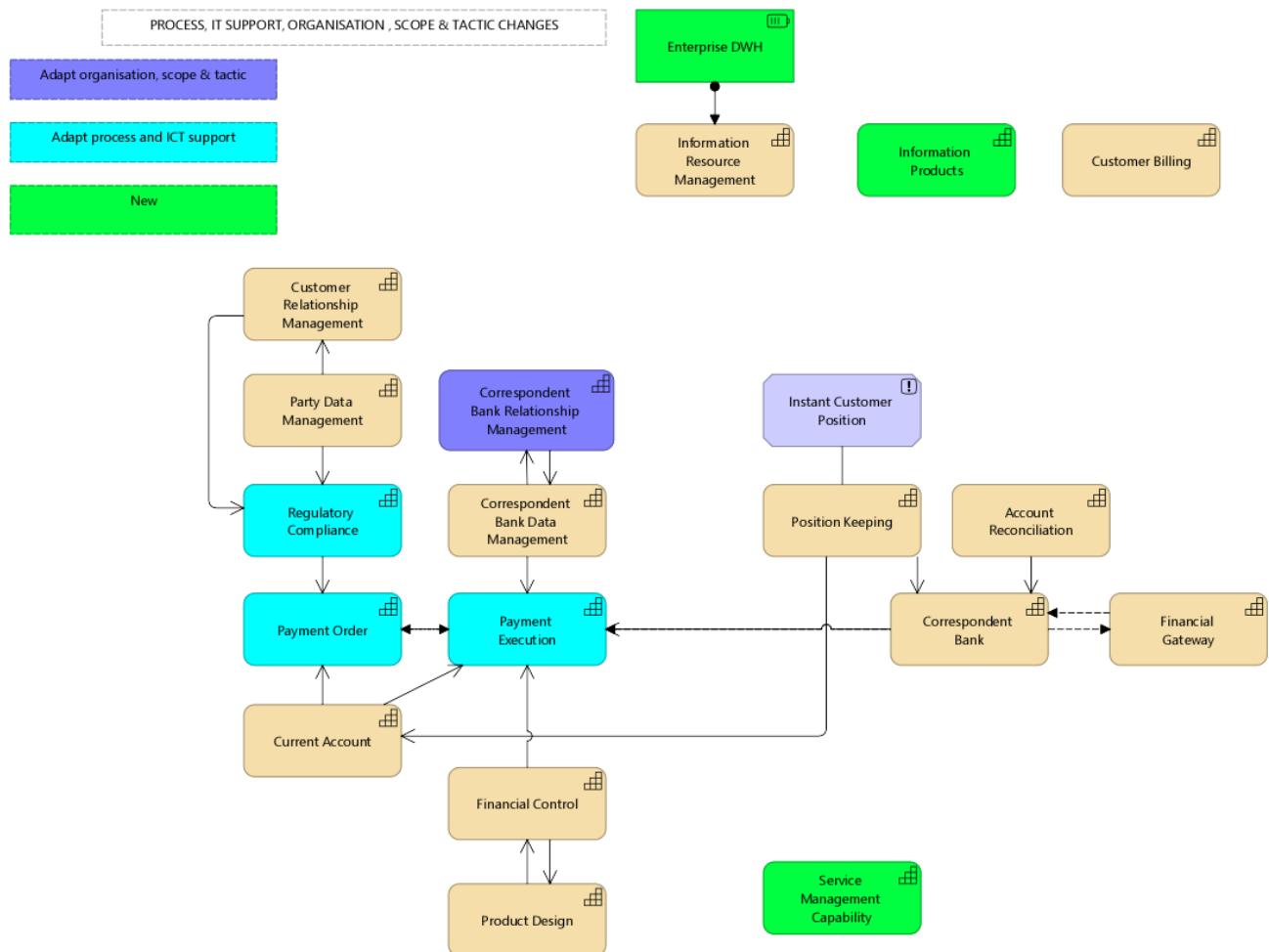


Figure 38: Service Domain Change Heat Map, Including Organizational Changes

It is this second version that is most useful: service content and value can change only by changing the responsibility scope and the “tactics” of a service without (or very limited) impact on process design or ICT support.

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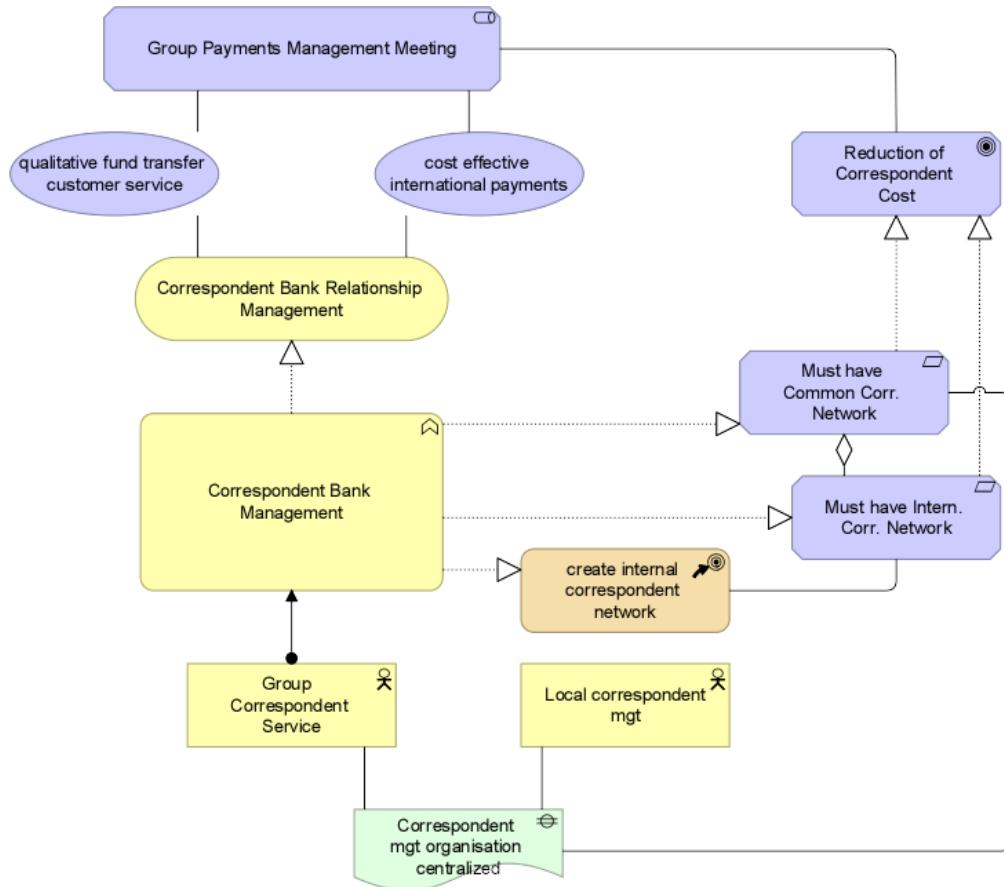


Figure 39: Strategy can be Realized without Business Behavior or ICT Changes

A preliminary implementation plan is proposed.

A first step is to bring the Payments processing organizations in Homeland under one roof and management. This should provide improved insight into current practices, create some synergy savings, and prepare for the upcoming change.

The second transition is the one hoped for by Homeland management: the STP process and platform are available. Homeland's goals of maintenance and personnel savings are fulfilled. In the mean time, Homeland is building an internal correspondent network. Other institutions are invited to join in.

The “goal realization” of the third transition might be a little exaggerated. It is better to say “the potential for ...” is created by the delivery of the service-enabled platform and the Group service organization. It is, however, the intention to attract service receivers as soon as possible.

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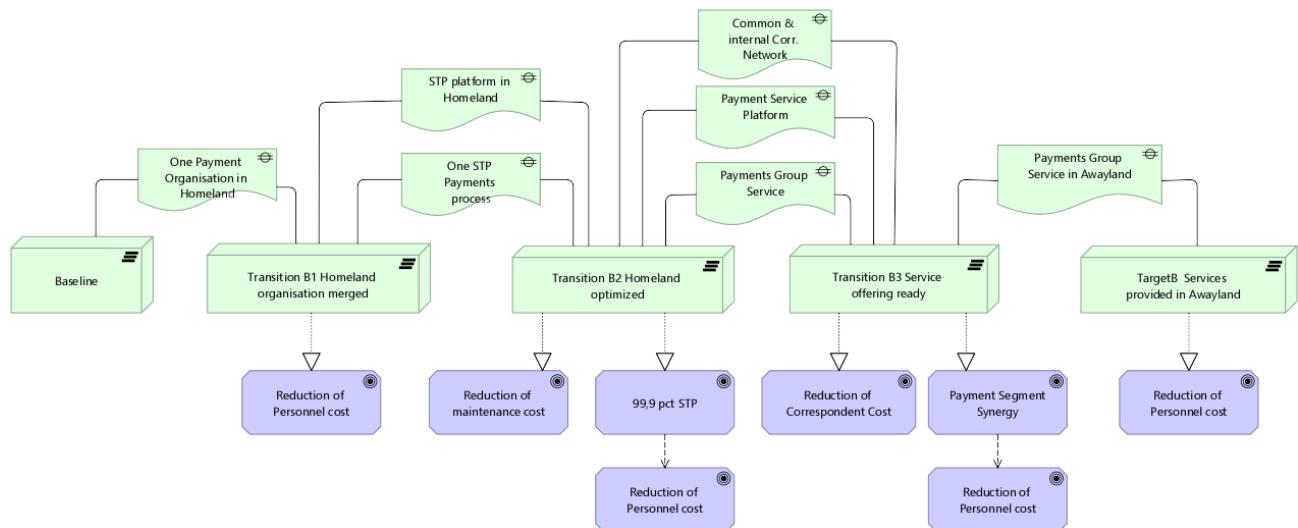


Figure 40: Preliminary Implementation Plan

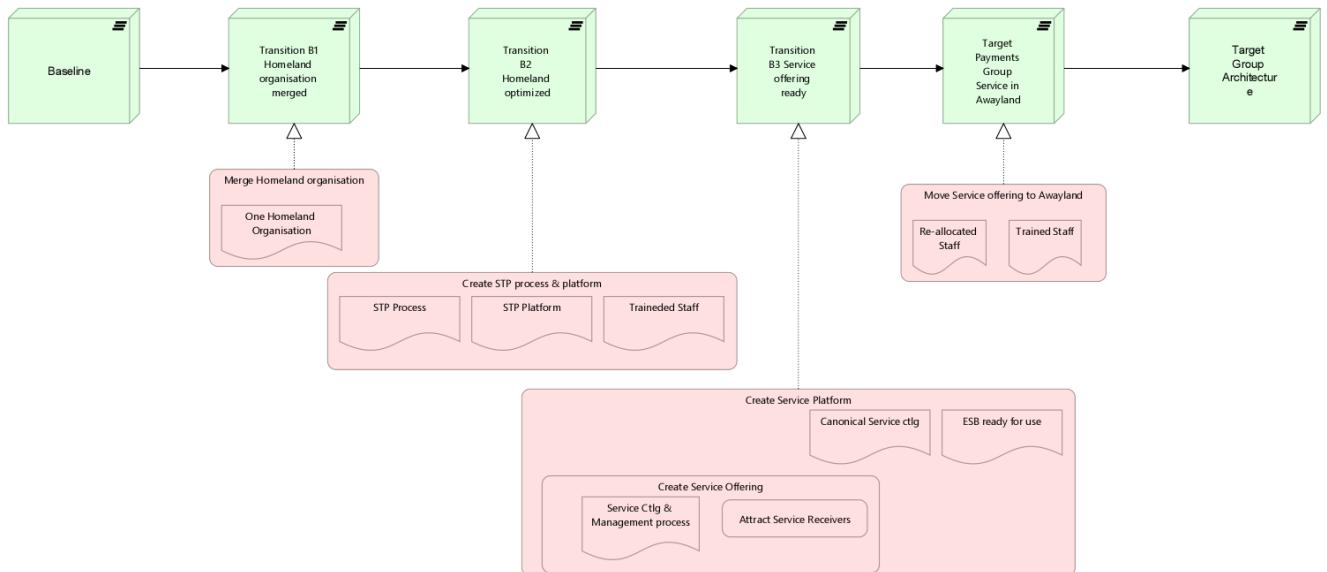


Figure 41: Roadmap towards Payments Group Service Target

## Archi Banking Group

### Phase B: Business Architecture

The Archi Banking Group's Payments organization needs to be brought from a distributed organization with several ICT platforms to an organization that "plugs in" to a Group Payments service for the operational tasks. Each institution, however, must retain its own commercial autonomy, and hence be able to design its own Payments products. An Enterprise Correspondent Management service needs to be created alongside the Payments service.

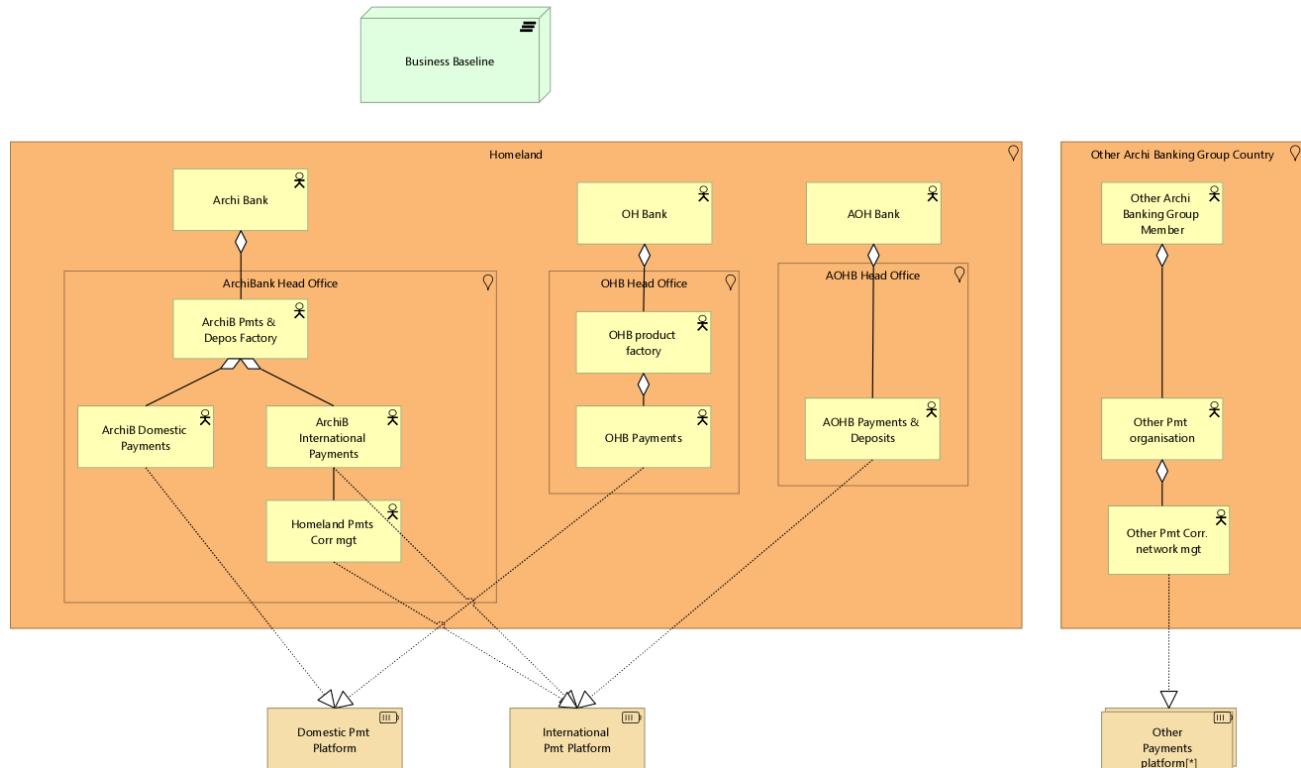


Figure 42: Business Organization and Resources Baseline

The target plateau only mentions the Payments organization of Homeland's three banks. This is because the migration of the other institutions is not part of the envisioned create Payments Group service program.

A general migration strategy for service receivers will be elaborated, but the actual migration approach will have to be elaborated during the individual migration projects of each service receiver. It will differ depending on the baseline situation in each institution.

Some items in the migration script are:

- Create separate Payments product responsibility
- Install outsourcing management capability
- Involve customer contact channels in view of exception handling changes
- Consider impact of payment correspondent outsourcing on correspondent relationships

## Archi Banking Group

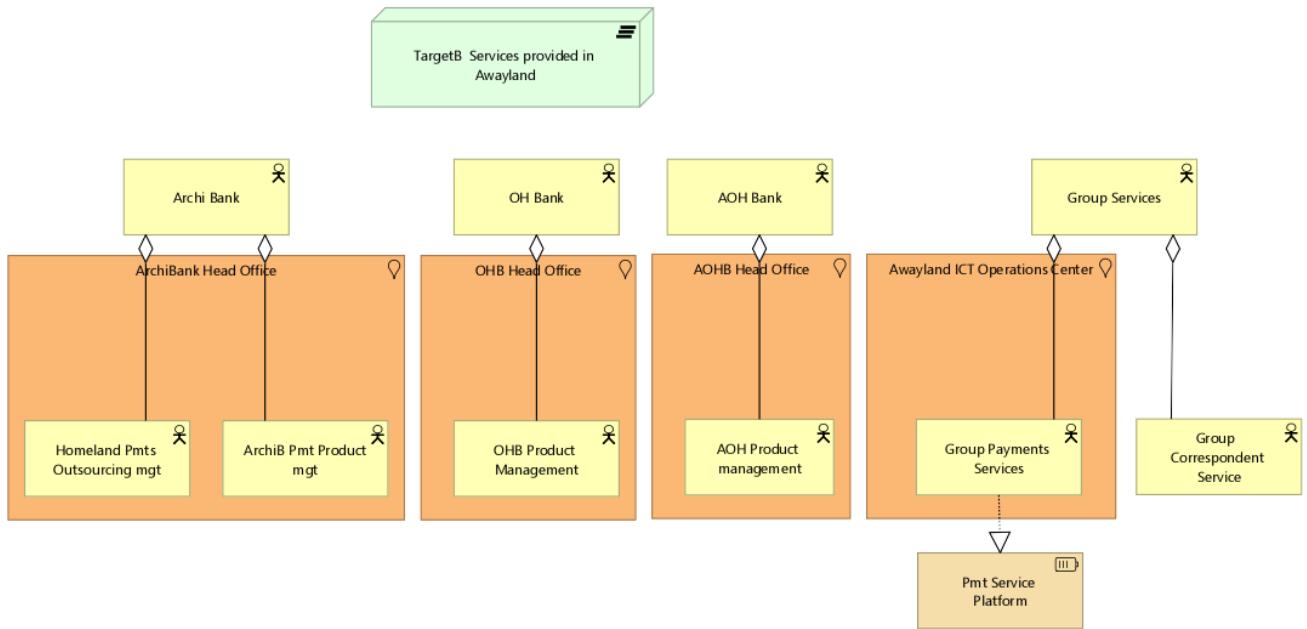


Figure 43: Business Organization and Resources Target

The business process flow is detailed.

Attention is paid to the customer interaction, required for customer exception handling. This is what makes a difference. Application and Technology Architects should not forget that the “multi-platform” interaction with the service receiver should extend to its customer-facing channels.

A view is made to show the core Payments service and the other services that are called upon to render this service. Service is indeed our orientation.

The change heat map shows where business process and service changes are required.

## Archi Banking Group

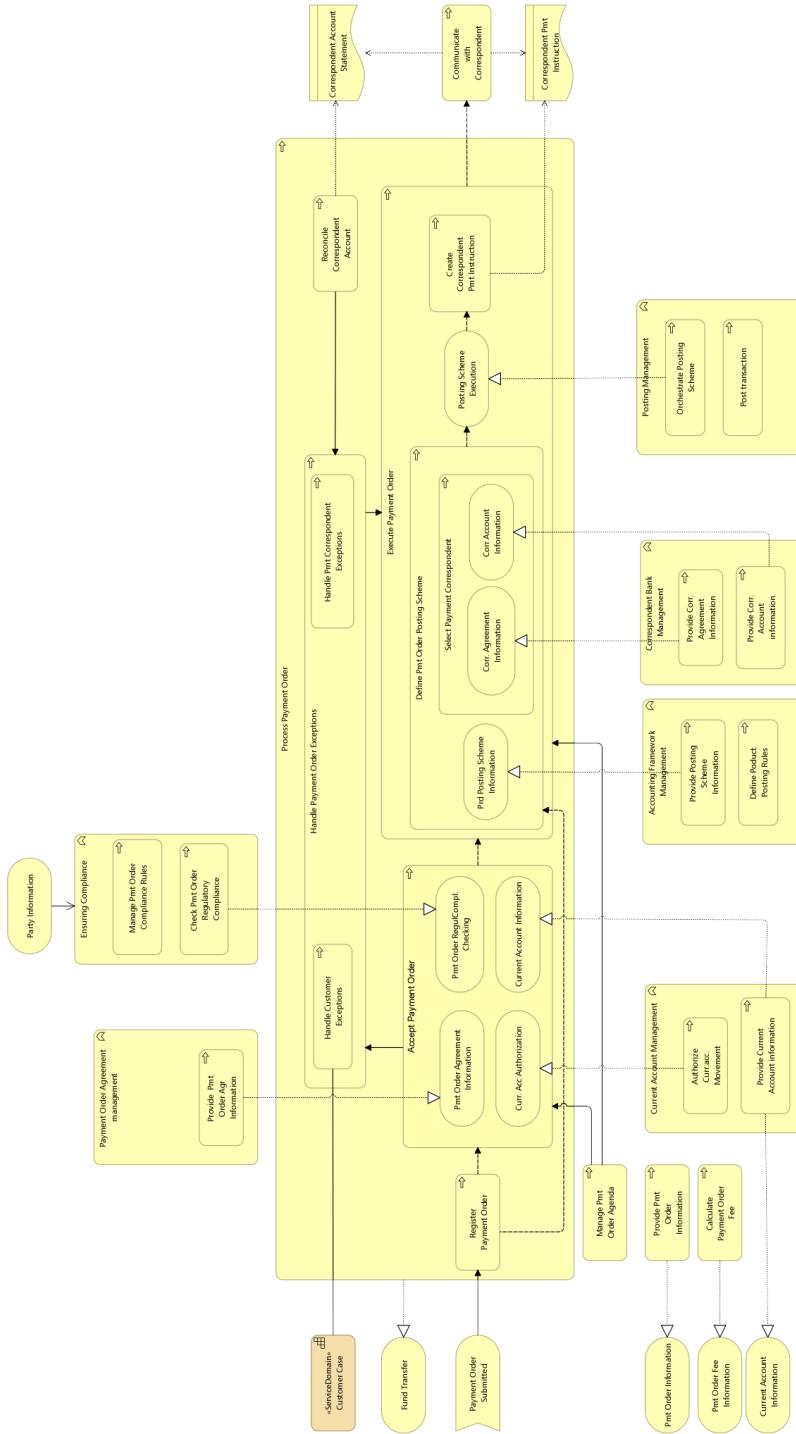


Figure 44: Business Process Flow

## Archi Banking Group

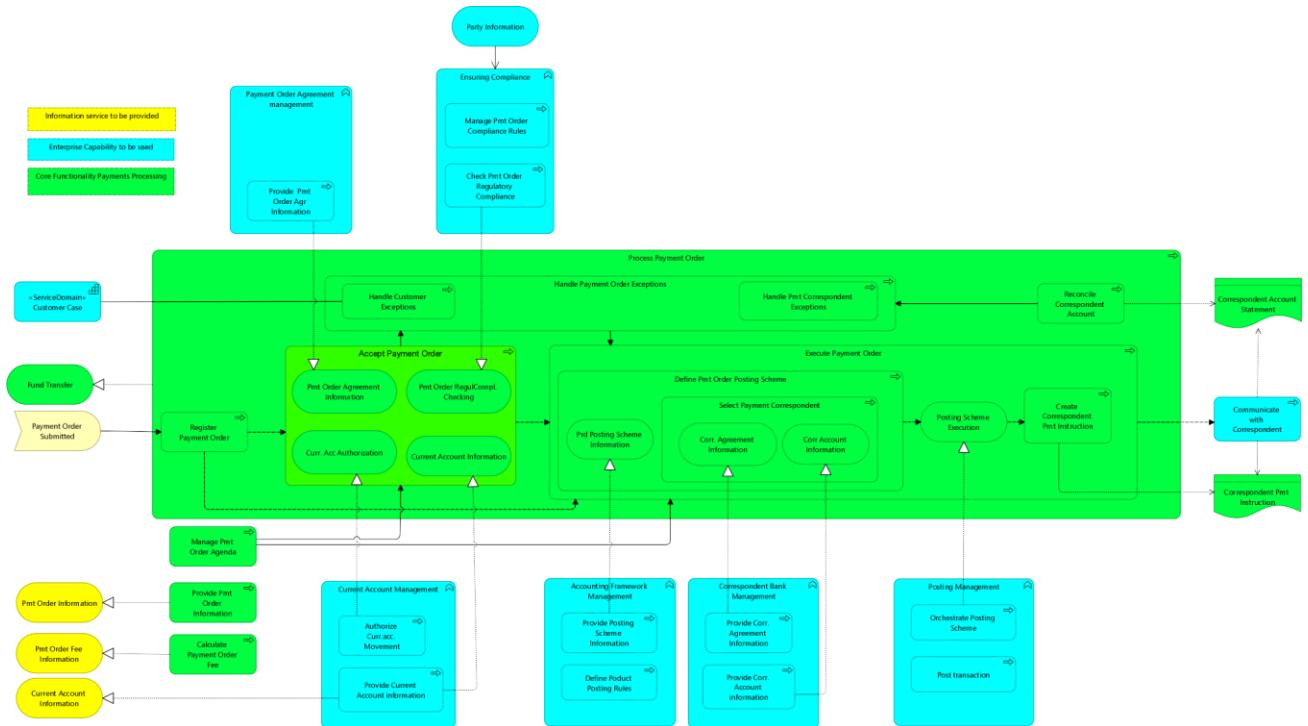


Figure 45: Core Payments Service and the Enterprise Services Contributing to its Service

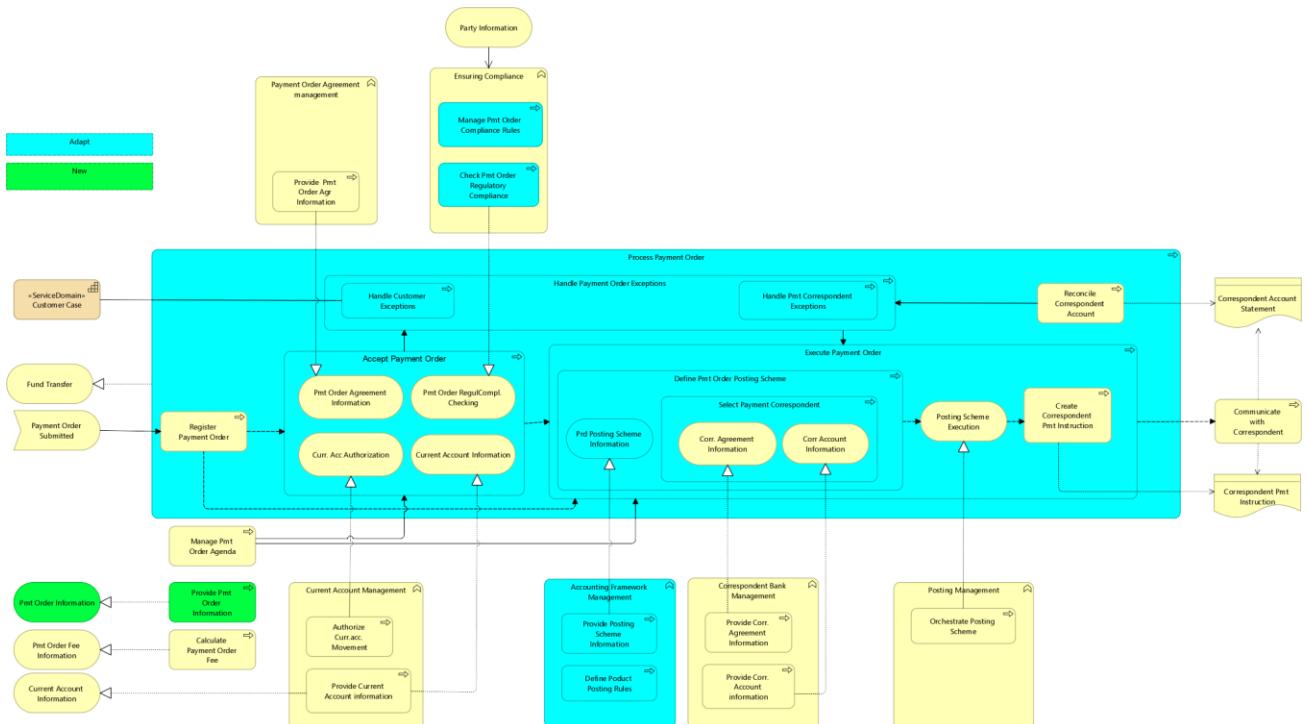


Figure 46: Business Process Flow Change Heat Map

## Archi Banking Group

The responsibilities for the business services are assigned to organizational units (as far as possible, as only the Homeland banks as service receivers are in scope). Archi Bank, OH Bank, and AOH Bank decided to merge their current account and payment order agreement management back-offices at the occasion of the outsourcing of Payments Order Processing. This is part of another project, but its results can be shown in the Target Architecture: “Homeland” organizational units will be available when the Payments service goes live.

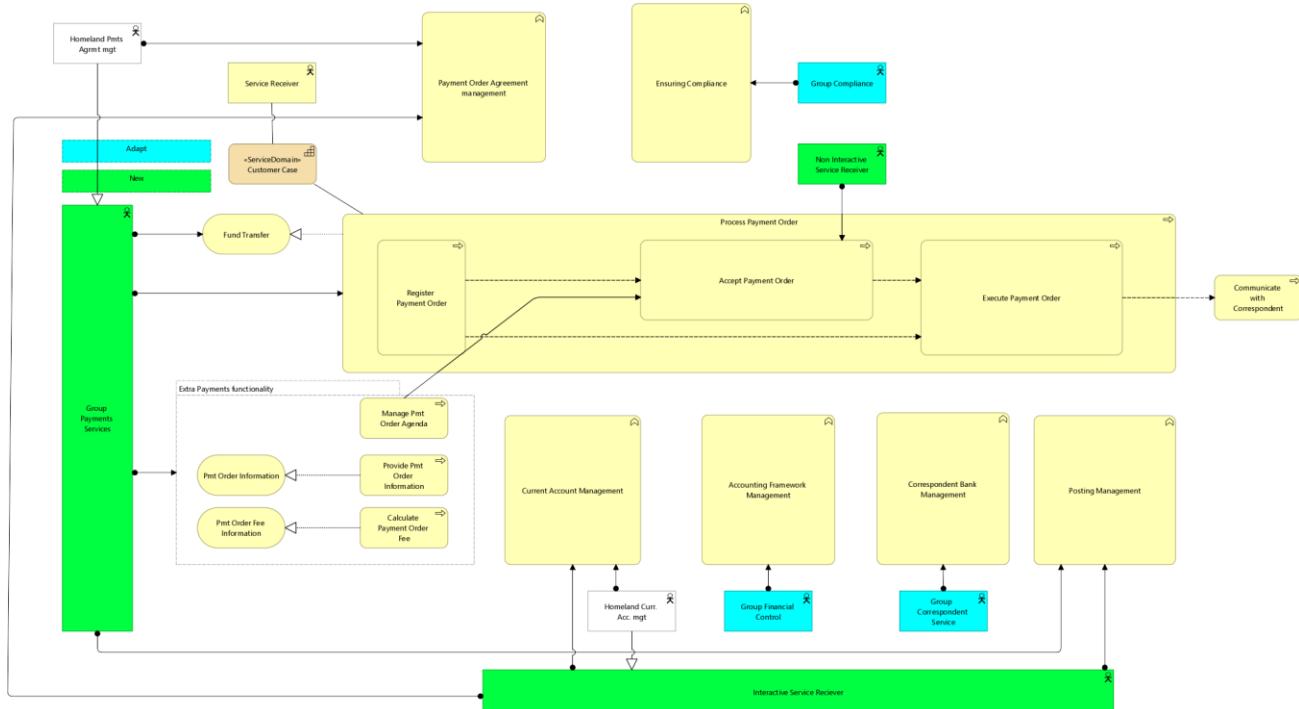


Figure 47: Responsibilities for Business Services: Mutual Service Providing

The information required to provide all those services, created during service providing, is architected in the Business Information Model. This reflects BIAN’s Business Object Model content pattern, that was adopted as Archi Banking Group’s pattern during a joint GAC and IRM effort.<sup>27</sup> The elaboration of the Business Information Model is done in close cooperation with the IRM capability, in view of consistency with the Common Vocabulary and the completion of the Enterprise Business Information Model.

The information services will be designed during the design phase. Information delivery to the Enterprise Data Warehouse will encompass all available detail, and be designed according to the standards and guidelines issued by the IRM – which are included in the architecture standards and guidelines.

The services required by the Information Product capability will be designed in cooperation with the project implementing it. Surprises in terms of missing information are not expected.

<sup>27</sup> This pattern is not just to support the Business Architect. The Application Architects were inspired by it too. They created an enterprise building block: account management that serves all customer agreement types.

## Archi Banking Group

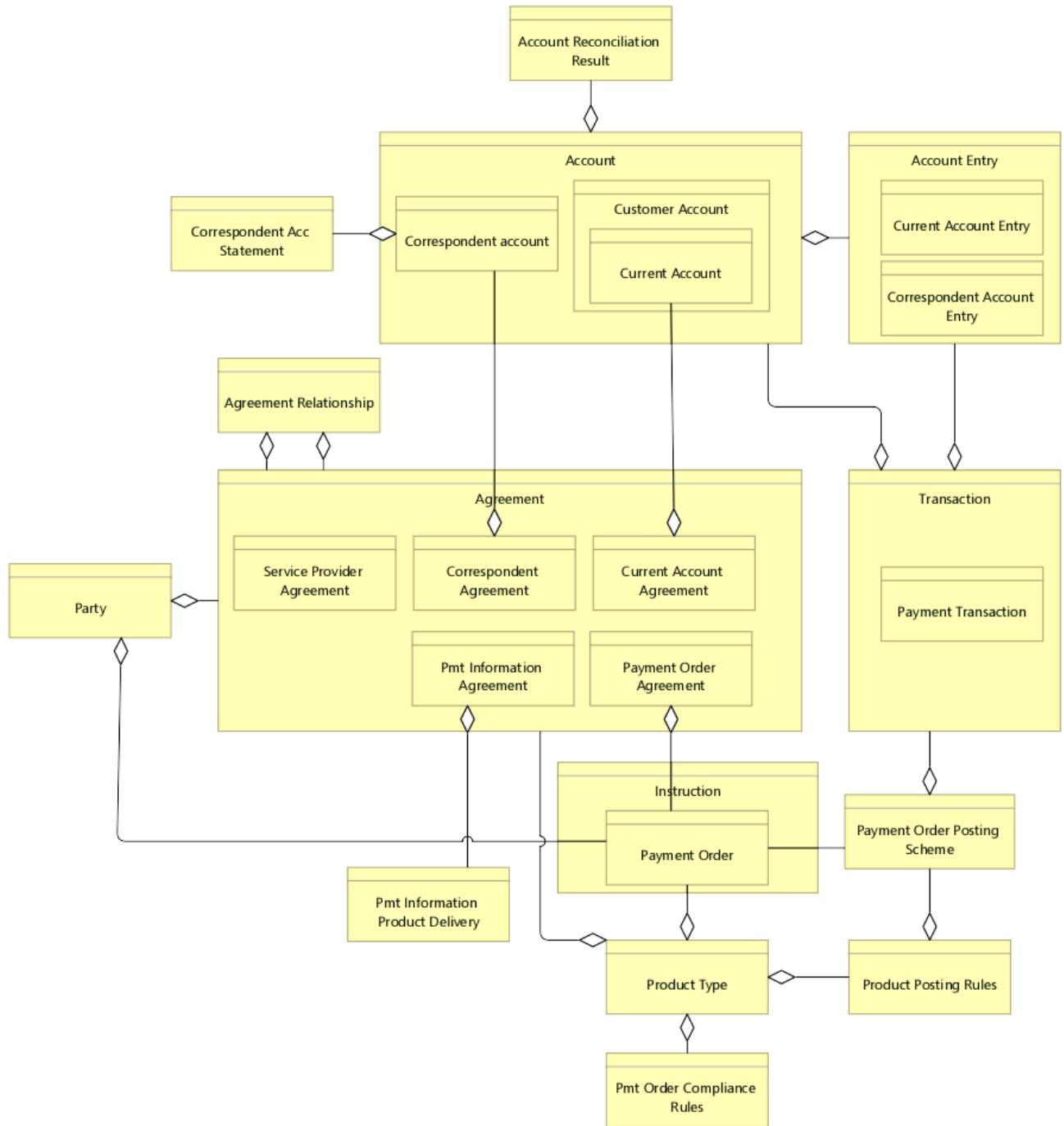


Figure 48: Business Information Model

The information is already entrusted to “guardian functions”; i.e., the responsibility for creating and maintaining the quality of the information is uniquely assigned. The principle “Information Consistency Comes First” might not yet be a general principle, but it is already adhered to in Homeland’s Business Architecture.

## Archi Banking Group

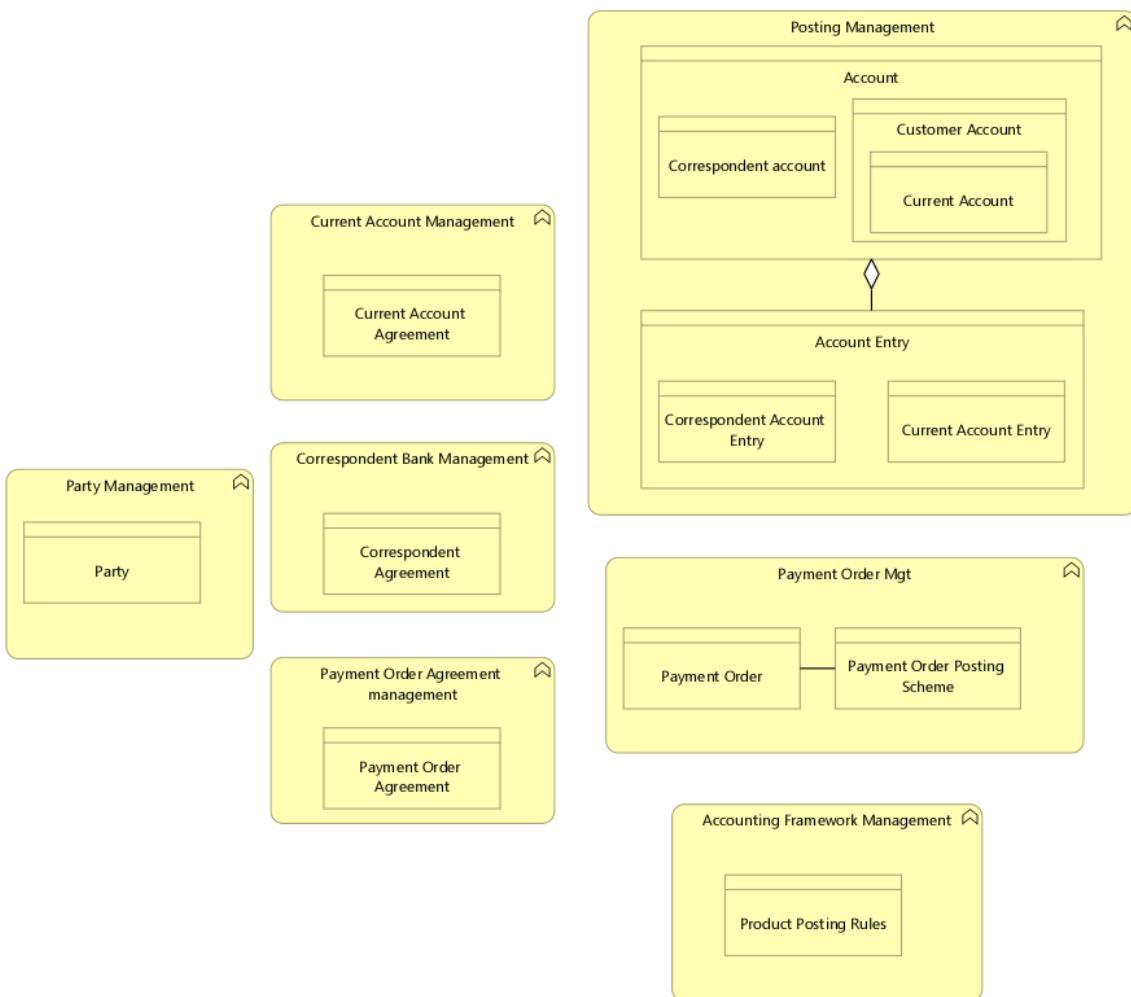


Figure 49: Information Objects and their “Guardian Business Function”

The implementation plan is adapted slightly in view of the new Group’s Correspondent Management service that will be delivered alongside the Group Payments service. What makes the sponsor happy is that the benefits of an optimized correspondent network are brought forward by focusing on Homeland’s network first.

The performance objectives are refined.

## Archi Banking Group

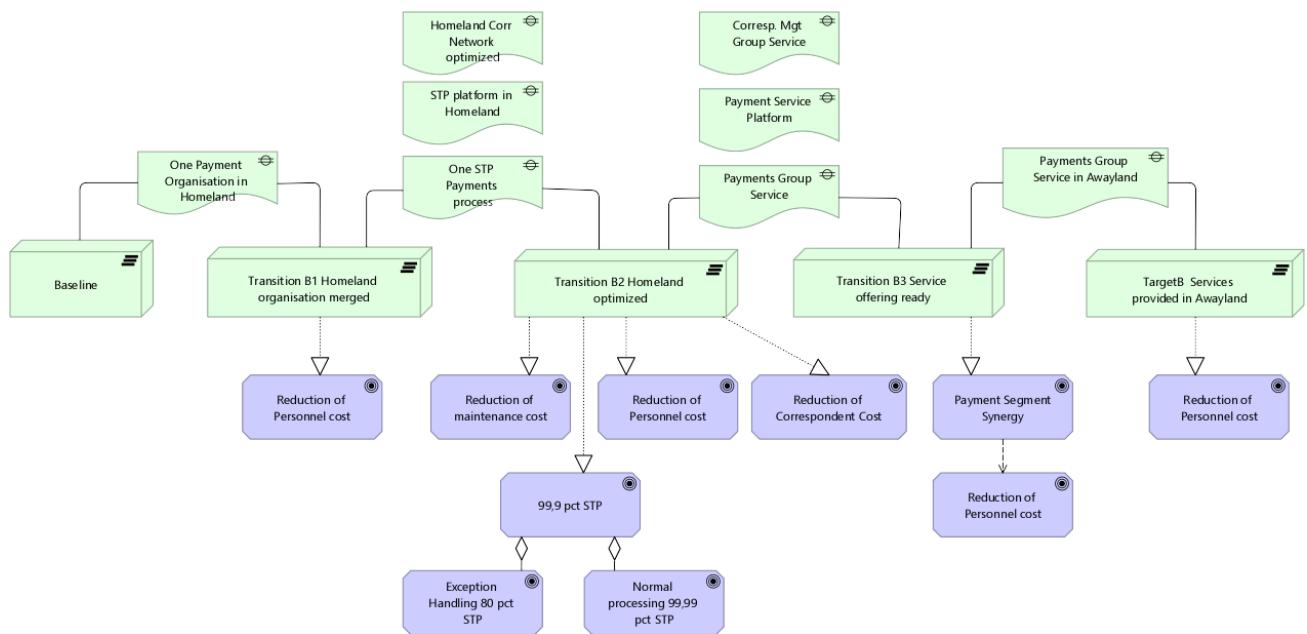


Figure 50: Transition Roadmap with Performance Objectives

These are not just pretty pictures, since the architecture workbench is capable of supporting “architecture version management”. By carefully “attaching” the “ArchiMate core icons to plateaus and gaps, views can be made that represent versions of the architecture. Change matrices can be generated. Less impressive than heat maps, but more effective for architecture change management and the link with ITIL® change and release management.<sup>28</sup>

<sup>28</sup> Note that this is not a particularly useful view for ICT change and release management. The same technique for ICT solution building blocks is another matter. We just wanted to illustrate the technique.

## Archi Banking Group

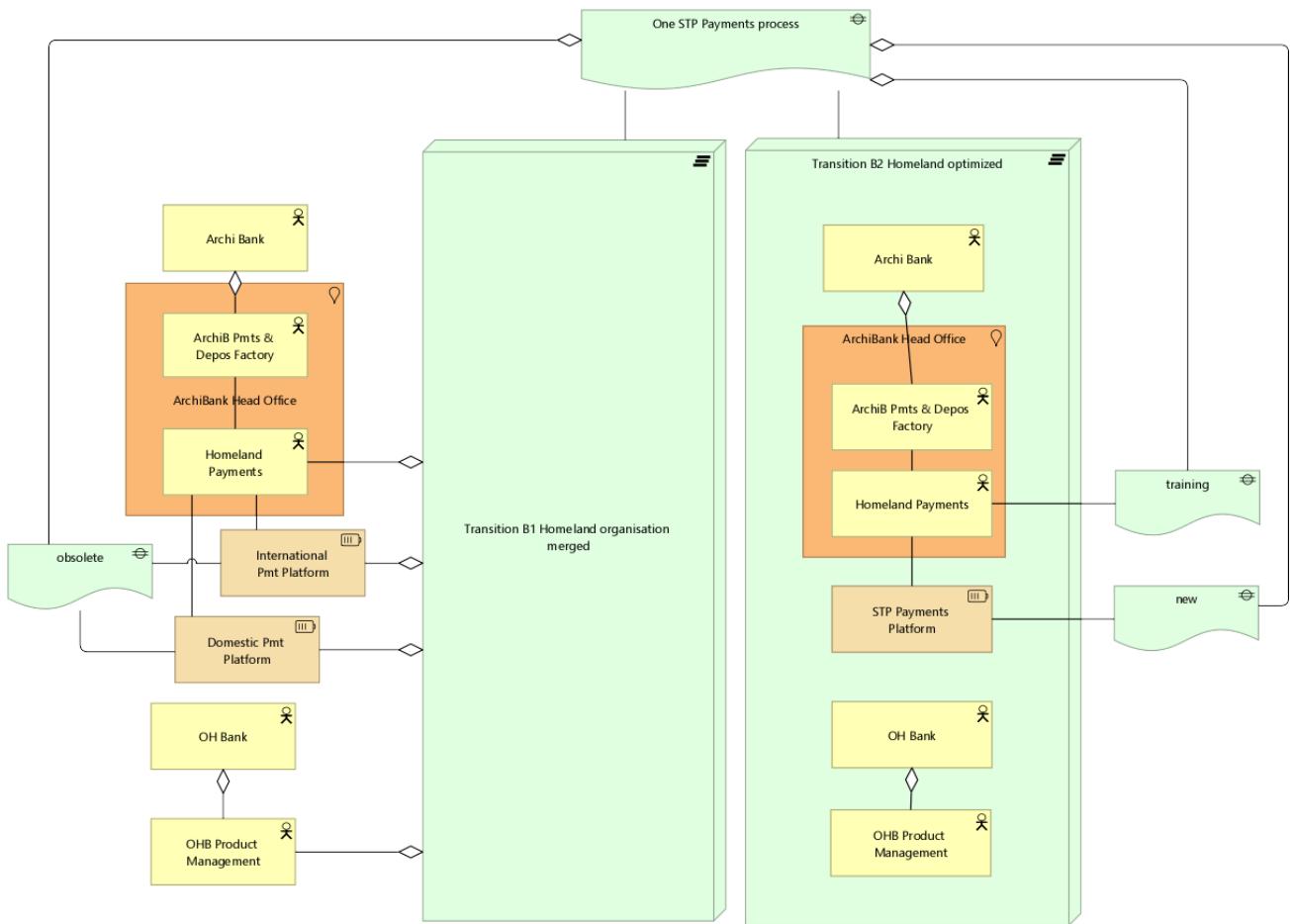


Figure 51: Attaching Core Concepts to Implementation Concepts

## Archi Banking Group

	Baseline	Transition 1	Transition 2	Transition 3	Target
<b>Organization</b>					
M4B Domestic Payments					
M4B International Payments		Merged			
Homeland Correspondent Management				Merged	
Homeland Payments		New	Trained	Transformed	
M4B Payment Product Management				Split-off	
Homeland Payments Outsourcing Management				New	
OHB Payments	Merged				
OHB Product Management		Split off			
Correspondent Management Group Services				New	
Group Payments Services				New	
<b>Resources</b>					
International Payments Platform			Obsolete		
Domestic Payments Platform			Obsolete		
STP Payments Platform			New	Upgraded	
Payments Service Platform				New	

Figure 52: Matrix Representation of Business Organization Transitions

BIAN's service domains are made.

Although often not a favorite pastime for architects, they know documenting these links will benefit them – and their colleagues – in future architecture projects. When completed by the Application and Technology Architects, it will serve impact and opportunity management. And, last but not least, it means system delimitation decisions are questioned.

Architecture quality management is strict in these matters.

## Archi Banking Group

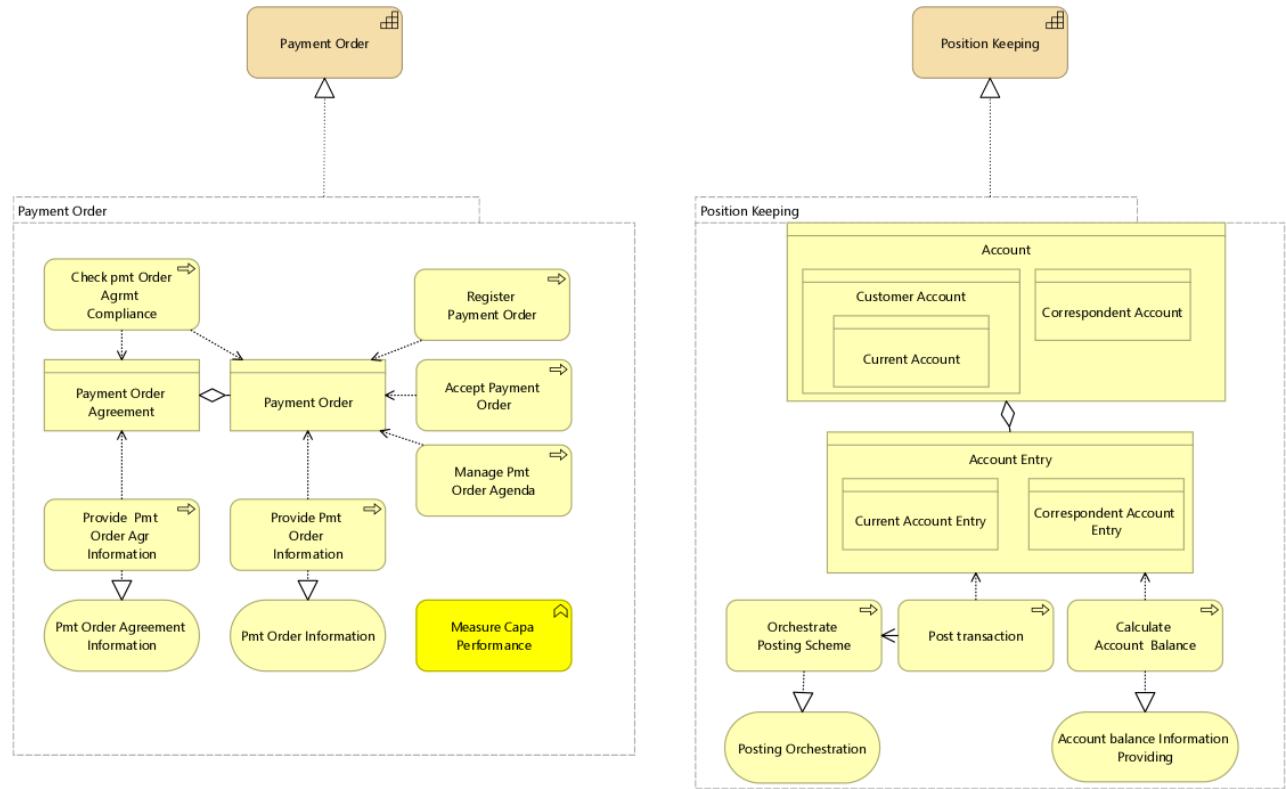


Figure 53: Business Resources for the New Group Payments Service Mapped to BIAN Service Domains

In order to enter the architecture deliverables in the Architecture Repository, a mapping to Phase C: Application and Data Architecture is realized.

The Baseline Architecture of the International Payments application – and the applications providing services to it – was used to answer the RFP that led to its selection as a solution for the Group Payments service.

The main issues with “Must be STP” are located in the lack of support for exception handling, the fact that compliance checks are hard-coded in the Payments processing application and sometimes require human decisions, and in the selection of the correspondent – which in some cases needs to be confirmed manually.

The hard-coding of the compliance rules requires frequent maintenance. The application is not “flexibly-compliant”.

The issues with the requirement “Must be in-sourcing-ready” are two-fold. First, there is no application support for managing posting scheme<sup>29</sup> rules. These are hard-coded and will require maintenance each time a new service receiver is on-boarded. Secondly, there is no flexible interoperability infrastructure with other application (and technology) platforms.

<sup>29</sup> Rules for and accounts involved in the registration of events in the books of the bank.

## Archi Banking Group

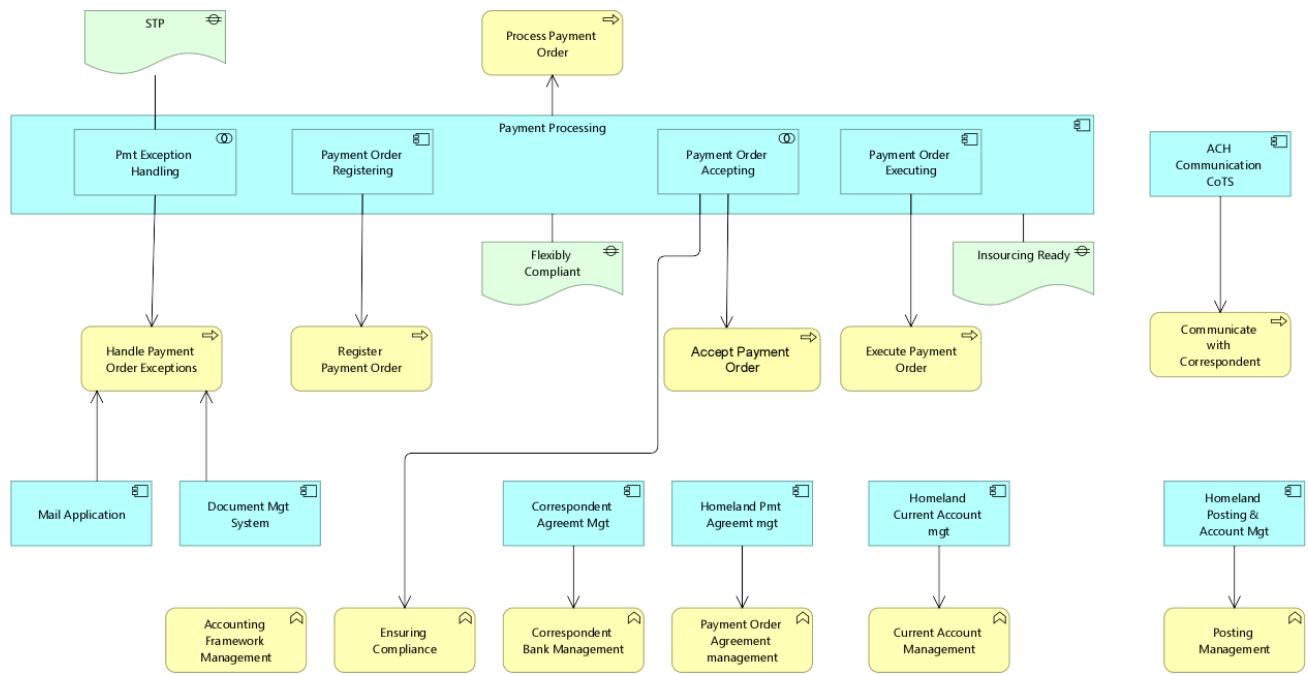


Figure 54: Baseline Application Architecture – Application Usage

The main introduction of a rule management system to support exception handling must enable the reduction of manual interventions to the objective of 20%. The same system will enable automated support for compliance rule management, which then can provide STP services – and flexible compliance. It will enable the creation of a “posting scheme rule base” that eliminates the need for hard-coding and provides the required in-sourcing readiness.

And last but not least, the Enterprise Service Bus will provide interoperability with any service receiver.

## Archi Banking Group

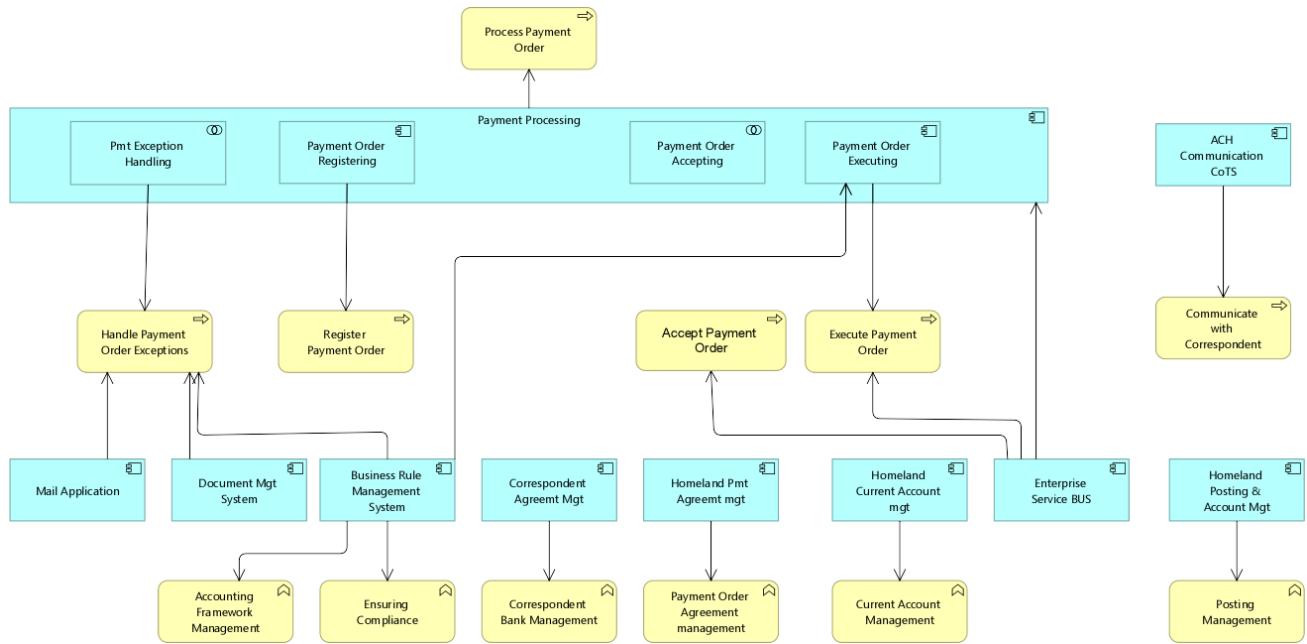


Figure 55: Target Application Architecture – Application Usage

A change heat map shows what needs to be changed. By adding requirement realization, the stakeholders can see the benefit of the changes.

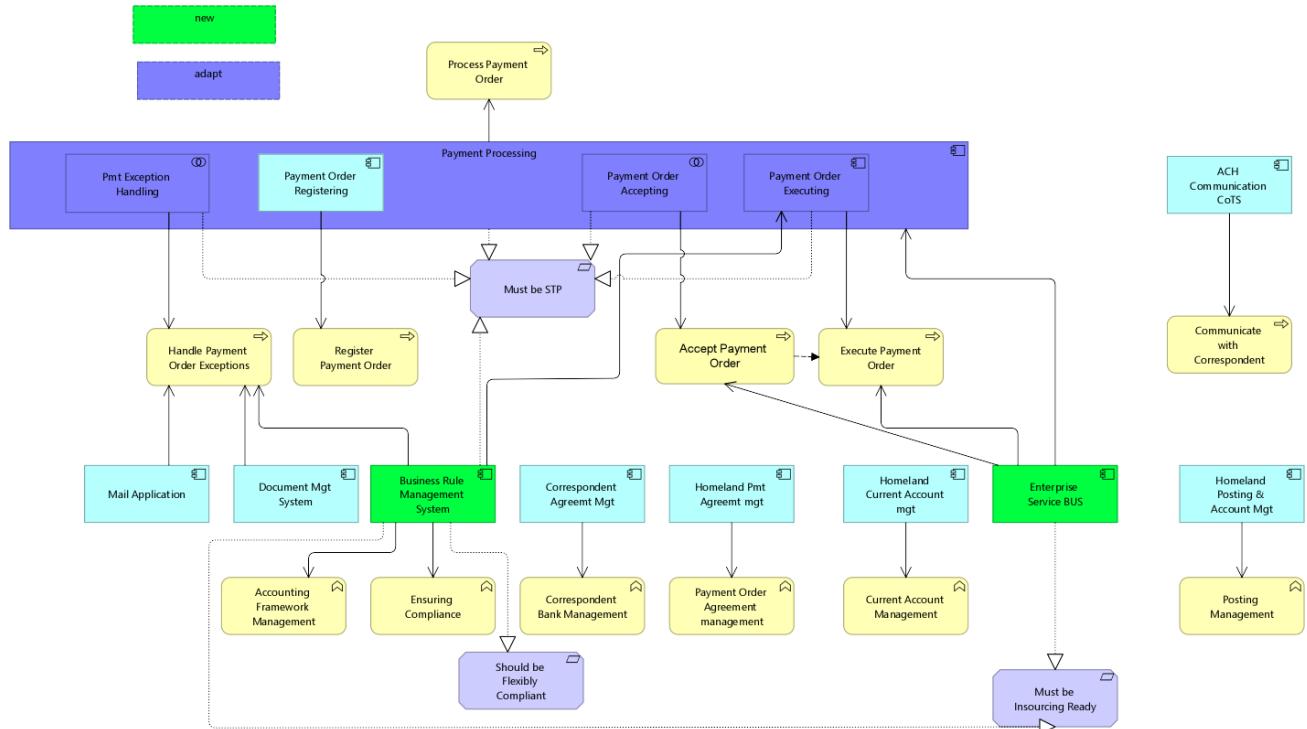


Figure 56: Change Heat Map on Target Application Usage View, with Goal Realization

## Archi Banking Group

The application interaction view demonstrates the central and critical role of the new Enterprise Service Bus. The Application Architect works in close cooperation with the Technology Architect, to take maximal advantage of the services the technology can offer.

As this is an infrastructure that will be very valuable at the Group level, an Architecture Change Request is discussed on the Architecture Change Board (i.e., Phase H: Architecture Change Management is “invoked”).

The changes to the Enterprise Architecture target model are made. A migration strategy for all systems to this new interoperability infrastructure is elaborated, supplemented with guidelines. These guidelines will be put to the test in this program.

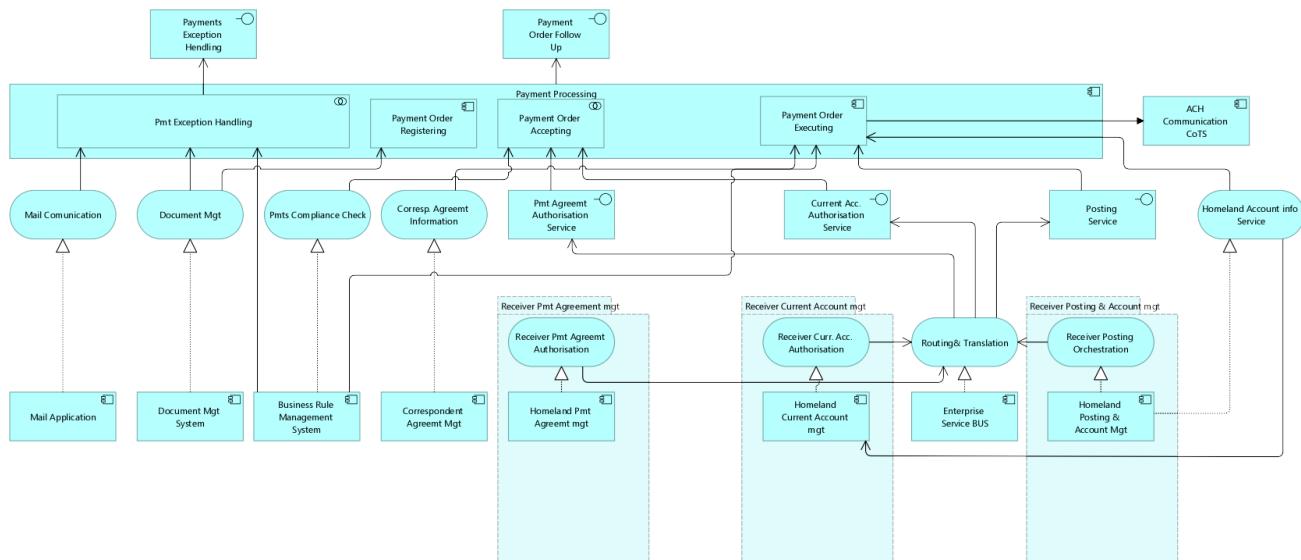


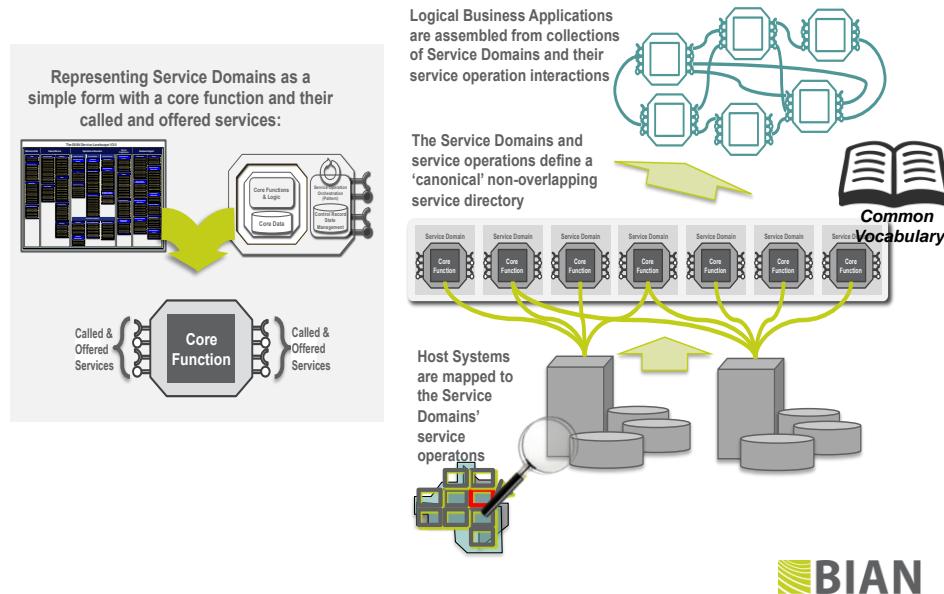
Figure 57: Application Interaction, Target

There is also a “Common Vocabulary” challenge in the Enterprise Service Bus. To enable interoperability between systems that “speak different languages”, a “canonical service directory” needs to be developed. The Business Architect and IRM are involved in the discussions on the Architecture Change Board (see also Triggering Phase H: Architecture Change Management).

It is too soon for this program to align with BIAN’s API Initiative. This opportunity will be investigated in a separate architecture project. Payments services will align its canonical service interfaces with the ISO 20022 standard.<sup>30</sup> Evidently, the services will be “assigned” to a BIAN service domain. The service catalog will be organized according to service domains and architecture segments.

<sup>30</sup> Refer to: [https://www.iso20022.org/about\\_iso20022.page](https://www.iso20022.org/about_iso20022.page).

## BIANs Service Domains support Service Definition



**BIAN**

Figure 58: BIAN's API Initiative Aspires to Provide a Canonical Service Catalog

The Information Structure view shows the realization of the business information objects in logical data stores, and the data storage technology used by these stores. This is a clean and clear picture.

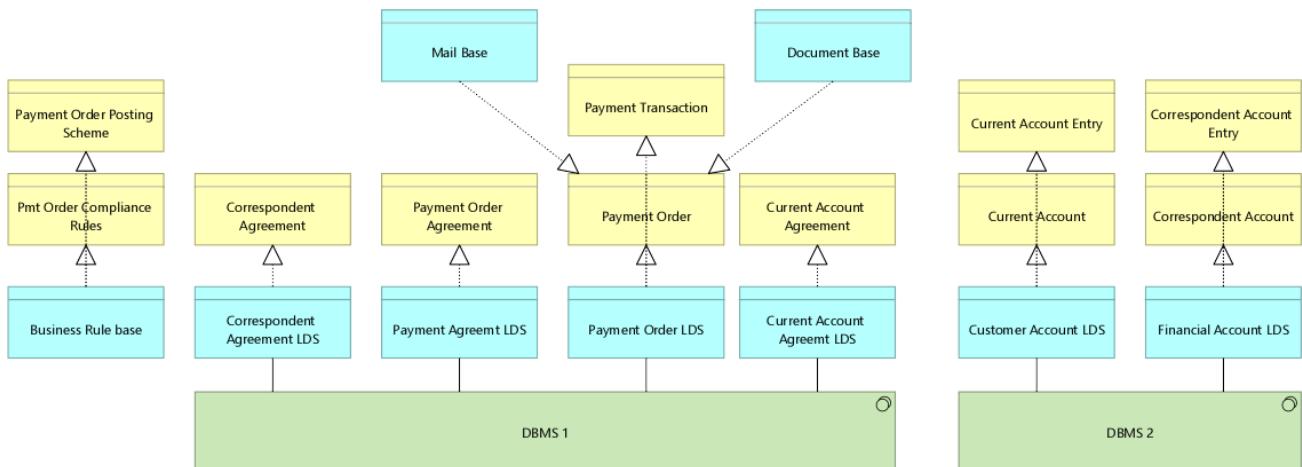


Figure 59: Information Structure View; Information Persisted in Data

The authority to Create, Update, and Delete on each data store is also neatly assigned. The preconditions for consistent information are there. The information services towards the Enterprise Data Warehouse should be straightforward.

## Archi Banking Group

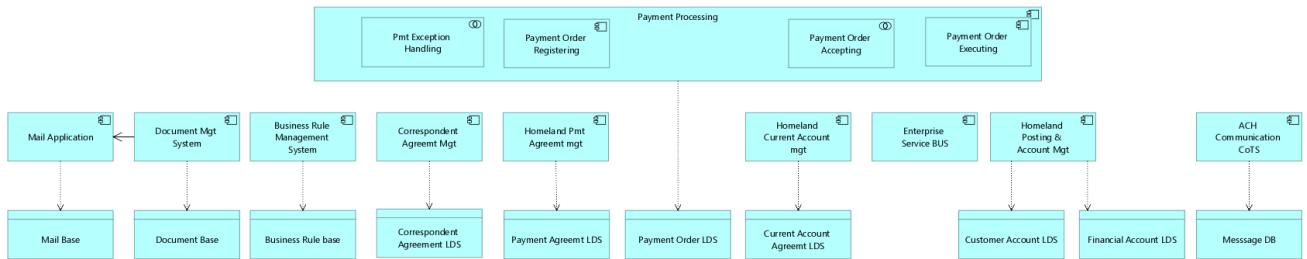


Figure 60: “Guardian Applications”: Create, Update, Delete Authority on Data

No data store migration or reorganization will be required. The new rule base will be filled manually by the business.

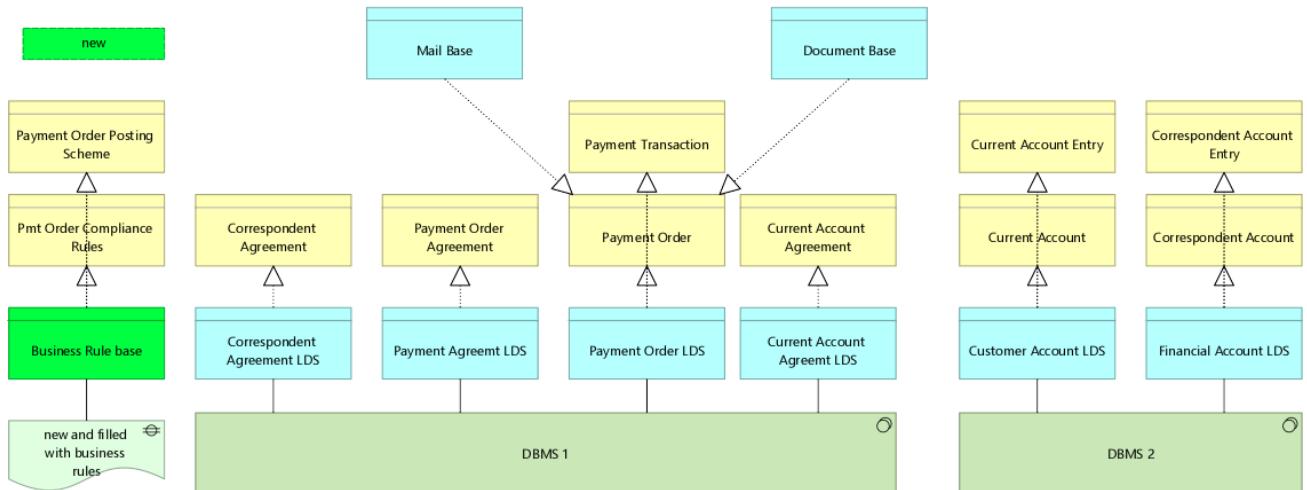


Figure 61: Information Realization Change Heat Map

The transition view from the Application Architecture is simpler than that of the business, but entirely aligned.

The detailed picture, attaching “building blocks” to the transition plateaus, is a lot more complicated. This should be well maintained, as it is input for (high-level, enterprise-wide) impact analysis and (ITIL) change and release management.

## Archi Banking Group

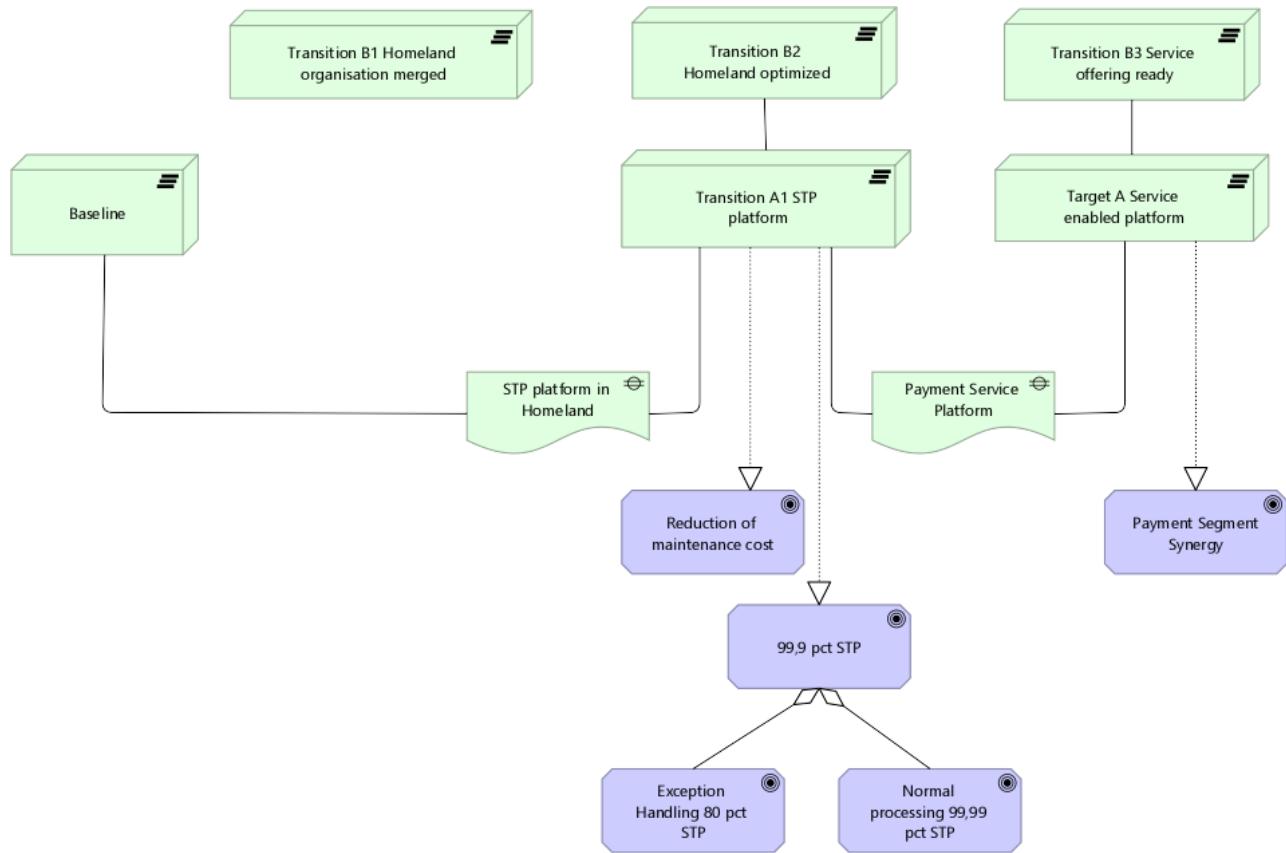


Figure 62: Application Architecture Transition Plateaus and Goal Realization

## Phase D: Technology Architecture

The Technology Architect meets an internal auditor at the coffee machine in Archi Banking Group's Head Office. It has been a long time since they have seen each other, so they chat a little.<sup>31</sup> Discussing the move of the Group's Payments service organization to Awayland, a new requirement is discovered. An audit recommendation to the Group's Payments & Deposits management states that Homeland's main and back-up ICT operations centers are too close to one another. In case of a disaster with widespread geographical impact, both centers could be impacted. Given the very high business criticality of the Payments service, Group Audit has recommended to move Homeland's back-up center to one of the other countries. This recommendation dates from a while back but has never reached the Requirements Repository.<sup>32</sup>

<sup>31</sup> In real life, which has been a while for the Technology Architect.

<sup>32</sup> Out of her “root cause analysis”, the internal auditor searches for the cause of this flagrant omission. Group Audit neglected to align its framework with the portfolio governance and architecture frameworks while establishing its Group Service. So did Group Architecture Capability. They decide it is time to catch up.

## Archi Banking Group

Centralizing the Payments service on the Homeland platform (which is the plan) would increase this business continuity risk dramatically.

This is the opportunity to create the long-awaited new back-up center in Awayland.

Payments management is not very happy with such a scope extension. The Architecture Board argues that the continuity risk is indeed too high. The Group BoD and Group Service Management agree and are willing to provide the budget for a new exploitation center in Awayland. However, this will not be part of the Payments architecture project, nor of the implementation program. A new program will be launched, with a timing constraint “Should be ready when first payment service receiver on-boards”.

The technology usage does not show for what broader purpose the new technologies are being introduced, at the occasion of the Payments service program.

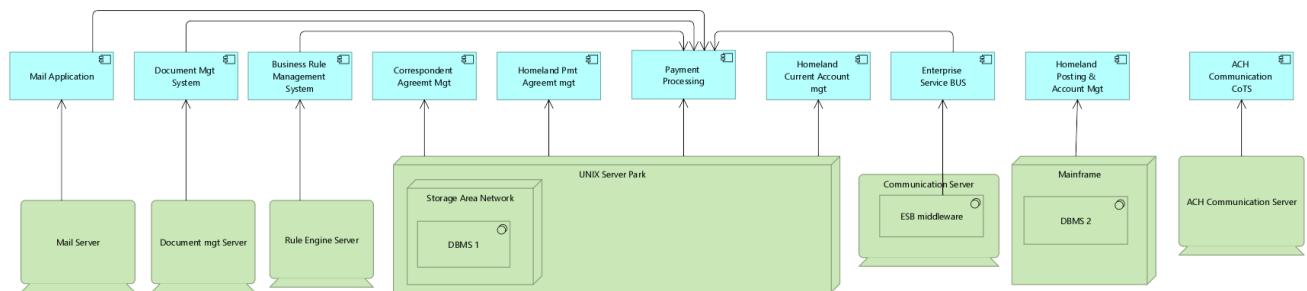


Figure 63: Technology Usage Target

The business value of the new technology capabilities is much broader than what they contribute to the payment business. The real value is the opportunities they open for the entire Group.

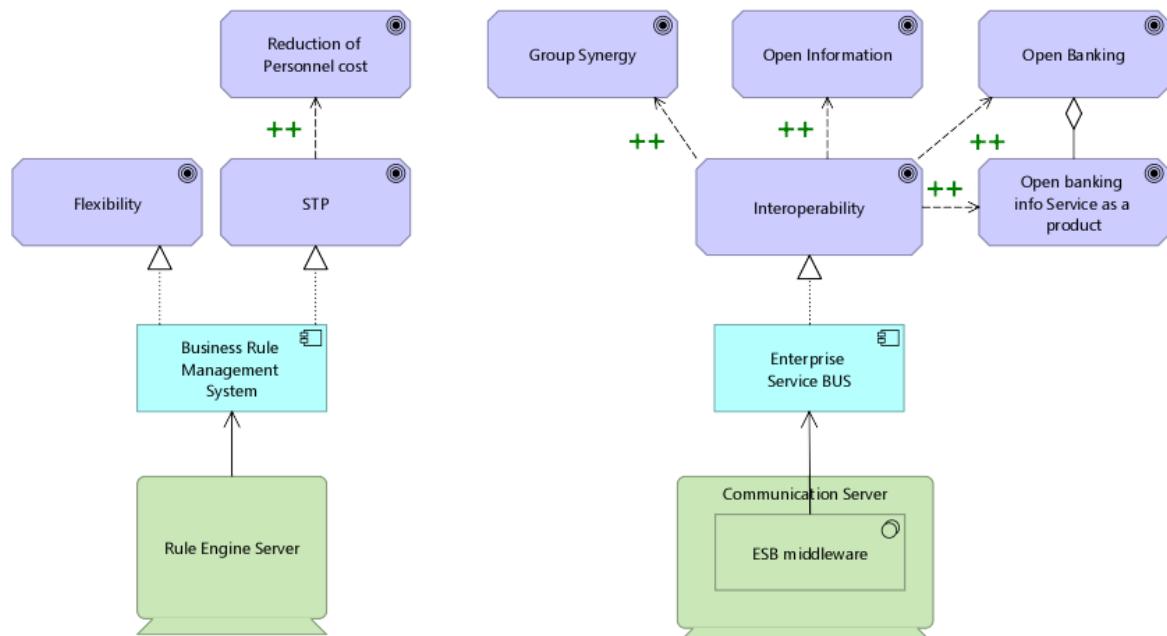


Figure 64: Technology Architecture Serves the Entire Enterprise

## Archi Banking Group

There are only two changes in the Technology Architecture: the introduction of a Rule Engine and the Enterprise Service Bus. Both will be installed in a separate technology transition in the development/technology test environment. This is a prerequisite for testing of the application transition.

The second technology transition is the promotion of these technologies to production, which requires extra security infrastructure.

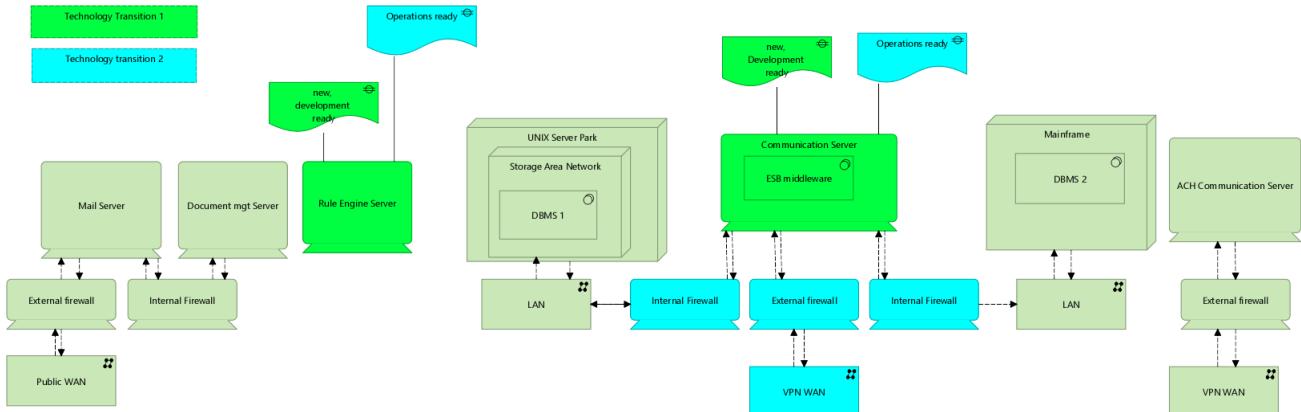


Figure 65: Technology Transitions Heat Map

The target state has nothing to do with the Payments program as such, but with the enterprise business continuity risk that program introduces. As it is unknown when the first service receiver will be on-boarded, the deadline for a (much) more remote back-up center has been set to the move of the business service organization to Awayland. This will be imposed as a timing constraint on the related program. This move does have a business value: the business continuity risk is mitigated.

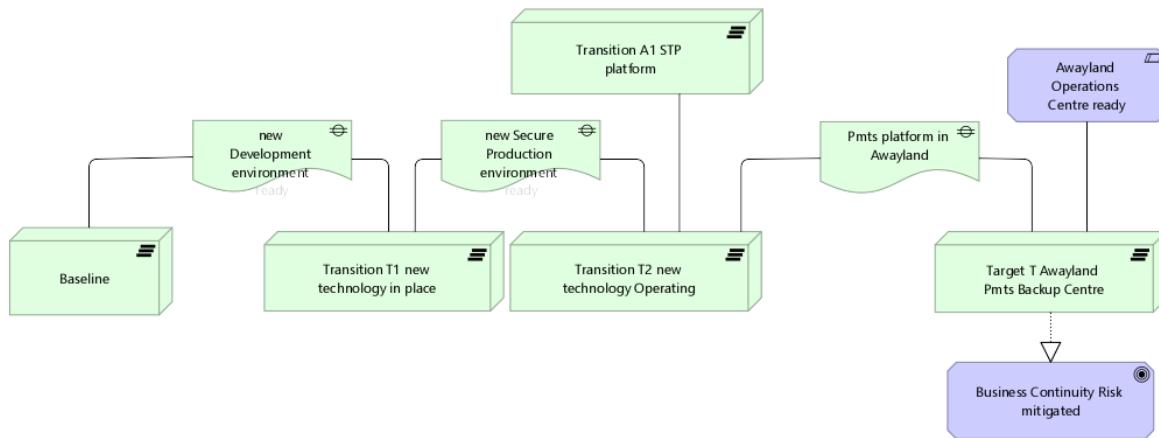


Figure 66: Technology Transitions with Specific Technology Goal Realization

## Archi Banking Group

The Technology Architecture is documented in the Repository. It is linked to the applications it supports.<sup>33</sup> As these are mapped to BIAN's service domains, we are able to create a full “capability realization view”. This is interesting for impact and opportunity analysis.

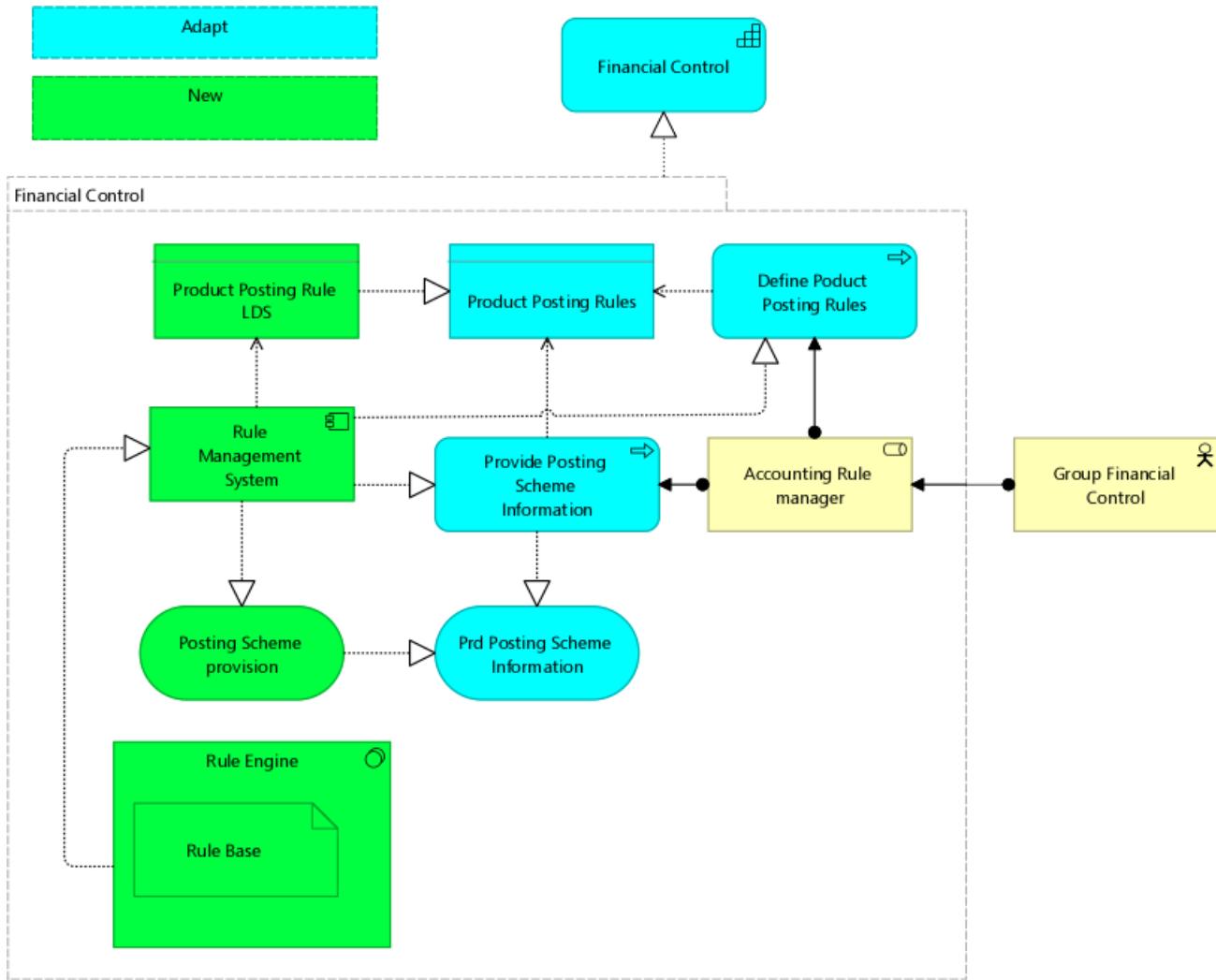


Figure 67: The Capability Resource View Heat Map for Accounting Rule Management Shows Interesting New Possibilities

## Phase E: Opportunities and Solutions

There are no surprises when consolidating the roadmap. We are ready to send the RFP for implementation. It is up to the selected candidate's program management to actually plan this program in Phase F: Migration Planning.

<sup>33</sup> This link should be useful for pro-active (ITIL) capacity and performance management.

## Archi Banking Group

As the architects are rather enthusiastic about the new challenges this program entails for them, they are very willing to participate in Phase G: Implementation Governance. An Architecture Contract should be concluded in Phase F.

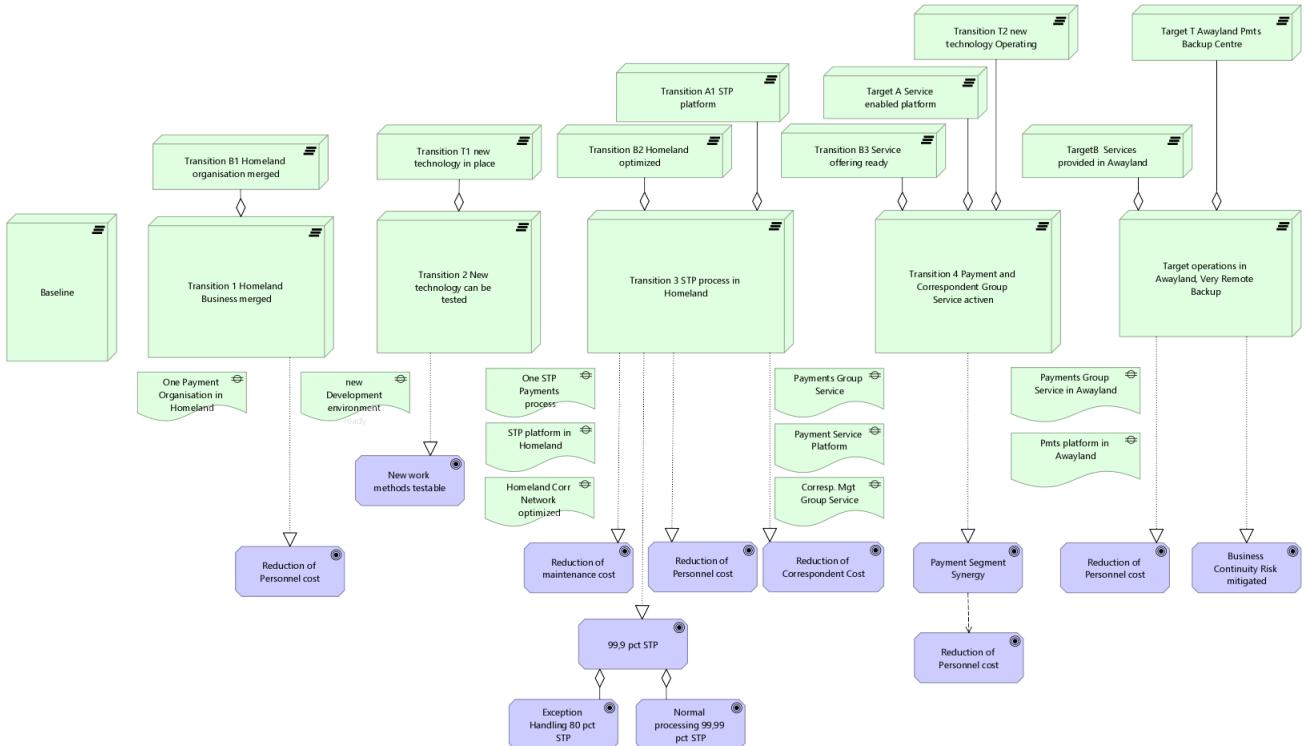


Figure 68: Consolidated Roadmap and Goal Realization

## Triggering Phase H: Architecture Change Management

Our architecture project has kept the Architecture Change Board quite busy.

The introduction of a Payments Group service is a major architecture change in itself.

The change to the Enterprise Architecture model and the migration strategy of the Group's institutions to this new enterprise service is elaborated by the architecture project but discussed and ratified by the Architecture Change Board.

The introduction of the new Enterprise Service Bus technology can be treated as a change that is not visible for the business organization. Our Payments service architecture project made the changes to the enterprise Application and Technology Architecture. The Architecture Change Board approved this, but decided to do more.

The Architecture Change should not be limited to an ICT platform optimization. There is a need for enterprise-wide canonical service specifications with a link to the Group's Common Vocabulary and Business Information Model. The opportunity to link into BIAN's API Initiative will be investigated. This could lead to additional standards and guidelines, preparing the Group for the open banking challenges and supporting the ever-evolving Group integration.

## Archi Banking Group

Using the ISO 20022 standard as a base for the canonical service catalog required for the Payments program is the next best thing, awaiting the results of this evaluation.

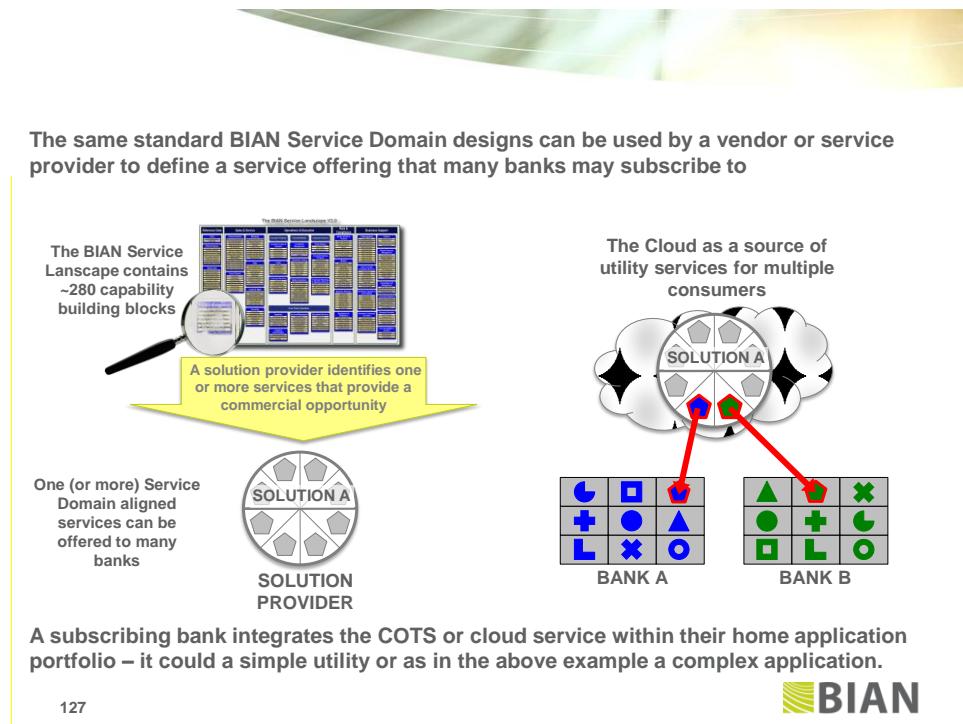


Figure 69: BIAN could Provide the Canonical Service Catalog for Boundaryless Interoperability

The progress towards the new architecture will be part of the quarterly change progress report for the Architecture Change Board.

## **Security and Non-Functional Requirements**

Security and “non-functional requirements” – such as availability, capacity, performance, business continuity concerns – are only, and only slightly, mentioned under phase D (Technology Architecture). It must be stressed that this is due to the scope of this document. These concerns need to be taken into account throughout the ADM cycle and should be made explicit in all architecture layers.

## References

(Please note that the links below are good at the time of writing but cannot be guaranteed for the future.)

- ArchiMate® 3.1 Specification, a standard of The Open Group (C197), November 2019, published by The Open Group; refer to: [www.opengroup.org/library/c197](http://www.opengroup.org/library/c197)
- ArchiMate® Modeling Notation for the Financial Industry Reference Model: Banking Industry Architecture Network (BIAN), The Open Group Guide (G205), March 2020, published by The Open Group; refer to: [www.opengroup.org/library/g205](http://www.opengroup.org/library/g205)
- BIAN Metamodel Specification, Version 7.0, BIAN Architectural Framework and Foundation Working Group, Version: 7.0, 2018; refer to: [www.bian.org](http://www.bian.org)
- ISO 20022: Financial Services – Universal Financial Industry Message Scheme; refer to: [www.iso20022.org/the\\_iso20022\\_standard.page](http://www.iso20022.org/the_iso20022_standard.page)
- The TOGAF® Standard, Version 9.2, a standard of The Open Group (C182), April 2018, published by The Open Group; refer to: [www.opengroup.org/library/c182](http://www.opengroup.org/library/c182)

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- Working with suppliers, consortia, and standards bodies to develop consensus and facilitate interoperability, to evolve and integrate specifications and open source technologies
- Offering a comprehensive set of services to enhance the operational efficiency of consortia
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