Assignment II
Architectural Change of J.D.H. Insurance

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1 Introduction

This report intends to overview the J.D.H. Insurance's, a fictive company, enterprise architecture as it is today, and subsequently describe models, suggestions for improvements and plan the transition from the as-is architecture to the to-be. The scope has been limited to the section in the organisation where the external customer plays an active role, including business processes such as when a customer orders an insurance, reports a claim, needs support, and also internal processes supporting these main processes.

1.1 J.D.H. Insurance

J.D.H. Insurance is an insurance company with focus on private persons. The company has, during some years, increased their number of customers constantly, making the company one of the leading insurance companies in the country. This has lead to many changes throughout the years and the CEO and other managers has during the last years experienced that the informations systems does not support the business enough to deliver value to the business and customers along with increasing cost for the systems. The company is now in need of, and want to transform the architecture into a more efficient and standardized enterprise architecture. This they believe could be reached by analyzing their current architecture and develop it into an architecture more supporting, more standardized and more cost-efficient.

1.2 Vision Statement

J.D.H. Insurance's intention is to become the greatest company providing insurance to customers in terms of products, support, and value. It shall be pleasurable to become a customer through each of the company's sale channels. It shall be satisfying to be a customer, with tremendous support and service.

1.3 Goals

The goal with this paper is to analyze the processes included in the above mentioned scope to approach the visioned stated. J.D.H Insurance can become a leading company by having high accuracy in their processes including crucial information exchange with customers which supports the decision making of the internal employees. By ensuring availability of provided services, J.D.H insurance can improve the customers perceived view of the company and increase the customers satisfaction and by reducing the cost of important processes which remains in the company throughout it's lifetime J.D.H Insurance could exploit these savings in compensations to customers and become more competitive.

1.4 EA Utilities

The work of this architectural change uses two distinct utilities for executing the analyze and finding an architecture aligning with the requirements of the CEO and the other stakeholders. The first utility is the Multi Attribute Prediction metamodel (MAP, 1.4.2 on the following page) which is capable of assigning values to attributes of the modeled entities to be able to analyze the models with specific attributes in mind. The second is the Enterprise Architecture Analysis Tool (EAAT, 1.4.3 on the next page) which is an application capable of modeling using the MAP metamodel and is capable of running analyzes. These utilities are further explained in the coming sections.

1.4.1 ArchiMate

ArchiMate, a modelling language specified by The Open Group [1], offers a common way to model an enterprise architecture. It is based on three layers - business, application, and technology - providing the possibility to unambiguously describe, analyze, and visualize complex structures within an organization. Each layer consists of objects describing a certain element within a specific layer.

1.4.2 MAP Metamodel

The Multi Attribute Prediction model (MAP) is based on the ArchiMate language and can be described as an extension to it, enabling further analysis of an enterprise architecture [2]. The tool uses the same concept with layers and services and adds the functionality of assigning attribute values to elements. These attributes are application modifiability, data accuracy, application usage, service availability, interoperability, cost, and utility.

Application modifiability is of great interest when analyzing IT-system architecture as the metric determines how complex it is to modify and replace existing modules and/or systems. For example, several systems may probably be interconnected, if we replace one of them - how much work will be needed to make the new structure operational? The Application modifiability attribute seeks to answer this question and in general help decision makers in similar situations. The value is based on three metrics for an application: complexity, size, and coupling.

Data accuracy refers to the quality of data in terms of correctness and error. Low data accuracy may be the result of the human factor, when it was manually inputted to a system. As data flow through the enterprise, it is important to define data accuracy to be able to analyze the impact certain data have to the whole system.

As the portfolio of systems within an organization grows, the likelihood of having redundant applications increases. At the same time, it can be difficult to understand the importance of a system. A tool to analyze this issue is to calculate the Application usage, which (not surprisingly) indicate the usage for an application. Roughly, the value is calculated based on how a user perceive a technology to fulfill a work task.

Service availability refers to the attribute value describing the availability for a service. This value is determined by statistics regarding the fail-ratio/down-time and time consumed on maintenance on a system. The availability attribute is often rated very highly by IT-system executive since the costs are often of serious magnitude when a system is failing.

Interoperability refers to the the communication between different systems. The attribute is used to display which systems that are interoperable. If they "speak" the same language, they can exchange information and thus are interoperable, otherwise not.

The attribute **Cost** is, straightforwardly, important and useful information in an enterprise architecture. In MAP, the cost consists of the initial cost and the yearly cost, which refers to maintenance and support etc.

The **Utility** attribute belongs to a stakeholder and it is a function dependent on a stakeholder's requirements for a service or an application. The value is useful to view the impact a system and its properties has, in terms of utility, for a stakeholder.

1.4.3 EAAT tool

The Enterprise Architecture Analysis Tool (EAAT) is developed by the school of Electrical Engineering at the Royal Institute of Technology and is capable of modelling and calculating analyzes of an enterprise and the enterprise's information systems. The analysis done in EAAT can be used to support decision making in reaching the target architecture from the vision of the enterprise. The analysis focuses on attributes in the metamodel, and by using MAP as metamodel and EAAT for modelling and analyzing J.D.H. Insurance's enterprise, their vision can be reached by analyzing scenarios to find the most suitable target architecture.

1.5 IT-systems

Supporting the business processes within the enterprise are a set of IT-systems addressing a certain needs of the company. Next, the IT-systems used by J.D.H. Insurance are presented briefly.

1.5.1 Customer Relationship Management

Customer Relationship Management (CRM) is a system for analyzing and managing the interaction with existing and potential customers. Through the different capabilities commonly offered by these systems companies can build a more personal relations with the customer and thereby achieve a higher degree of customer satisfaction. In the context of J.D.H. Insurance the CRM system provides means of identifying potential customer needs based on observed customer behaviour.

1.5.2 Enterprise Resource Planning

In the scope of this report the Enterprise Resource Planning (ERP) is a system used for maintaining various information flows within the boundaries of the organization. In J.D.H. Insurance the ERP is used for registering the different compensation claims.

1.5.3 Claim Management System

The Claim Management System (CMS) is a system within J.D.H. Insurance that handles all claim related inquiries; the functionality of the CMS include, but are not limited to: providing a digitized form for claim reporting, providing claim information connected to a specific customer, customer compensation payment etc. This system in turn collaborates with other systems for performing certain tasks (this is depicted in the models below).

1.5.4 Mail Support System

The Mail Support System (MSS) used in J.D.H. Insurance is a system that utilizes a help desk DB and a mail server in order to offer functionality for: handling of in- and outgoing issue mail as well as providing the help desk worker with a set of tools to ease the work of problem solving.

1.5.5 Order Management System

The Order Management System (OMS) is the entity within the order flow responsible for handling insurance orders. It uses an independent database for order storage and also collaborates with a CRM system for retrieval of customer information as well as coupling order(s) to customer.

2 As-Is

The As-Is architecture of J.D.H. Insurance is derived based on their most important processes. From these processes the information systems, information objects and technical infrastructure can be identified. The following sections will present each of these important processes and analyze the architecture on different attributes in the MAP metamodel. The full As-Is architecture can be viewed in Appendix A, divided into 4 views; the Business layer, Application layer, Infrastructure layer and the information layer. The attached iEaat file JDHInsuranceAsIs also contains the full As-Is model.

2.1 J.D.H. Insurance's most core processes

The models presented in this section considers the As-Is state of the enterprise architecture. The following subsections will describe the important functions in J.D.H. Insurance and each function will be followed by a model explaining the business layer of the process.

2.1.1 The Ordering of an Insurance

To order an insurance the customer is able to browse J.D.H. Insurance's website for the insurance they would like to apply for. The customer is then able to download a paper application form and send it to J.D.H. Insurance by mail for the company's order managers to register the order and to send an order status response back to the customer before the order of an insurance is completed. Figure 1 shows the business services available for the customer and what processes they are realised by.

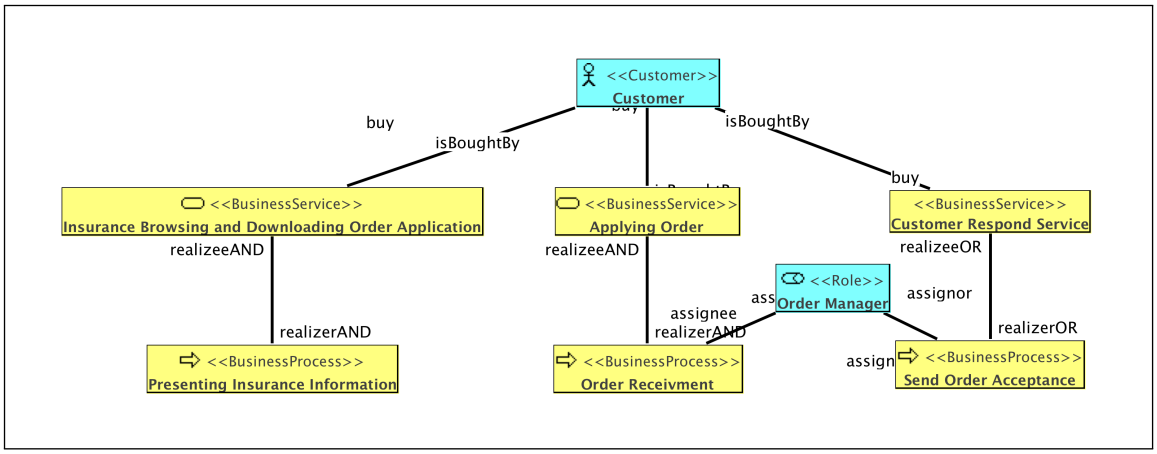

Figure 1: Ordering an insurance

2.1.2 The Process of Claim Registration

To claim compensation, the customer are able to download a paper claim application from the website. The application, including customer information and claim description, is sent to J.D.H Insurance by mail which is received by a claim administrator which registers it in the Claim management system by hand. A Claim Evaluator evaluates the claim application and compensates the customer in case of valid claim. Either way the claim evaluator notifies the customer by sending a letter with his answer to the claim. Figure 2 on the next page displays the services available to the customer and the underlying process. It also shows the processes which the evaluator and administrator executes.

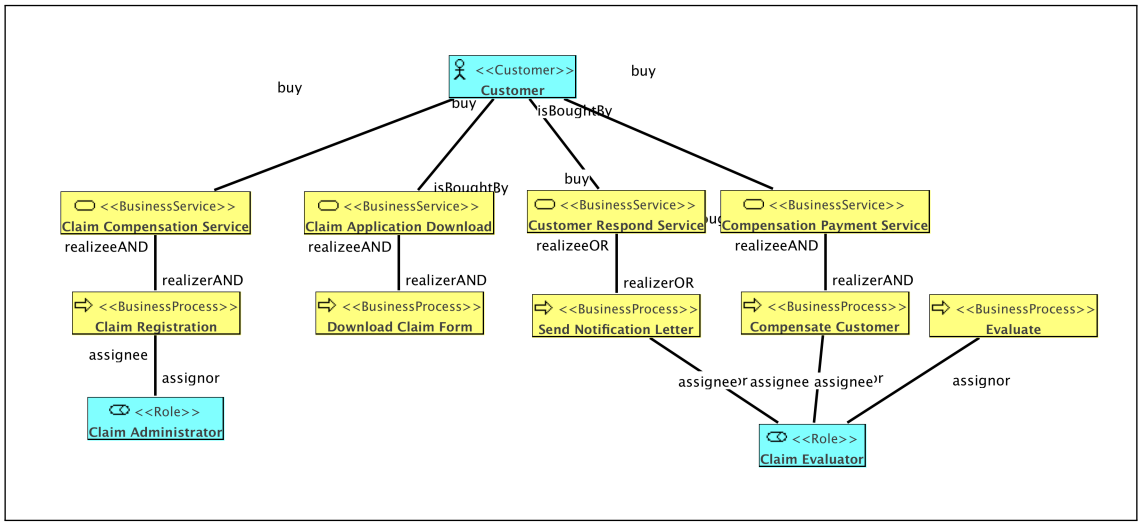

Figure 2: Claim registration

2.1.3 Support Processes

J.D.H. Insurance provides various support services for their customers and possible customers, which includes support by phone or e-mail. Each support service are described in the following subsections.

2.1.3.1 Phone Support The customer has the option to call in to J.D.H. Insurance for support. The process is displayed in figure 3 and works like following: the customer makes a call, whereupon this call gets registered by the phone support system and then placed in a stack by the phone dispatcher. The call then gets handled by someone in the support team which will try to solve the problem over the phone. While trying to solve the problem at hand, the supporter is provided with a FAQ service that will help in the problem solving. The results of the solving process is directly reported back to the customer in the call.

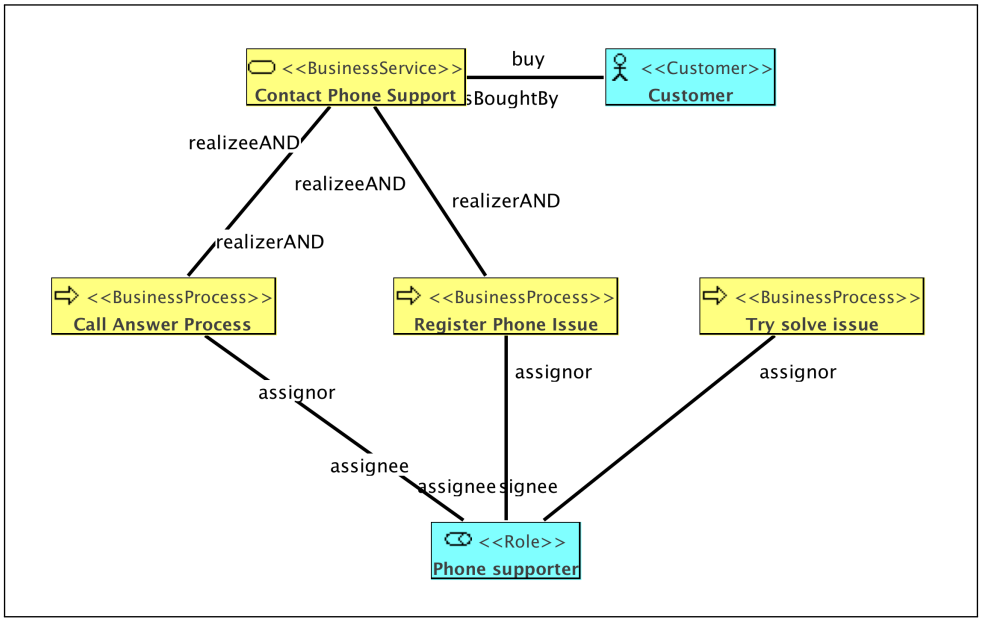

Figure 3: Customer support via telephone

2.1.3.2 E-Mail Support The customer is able to send an e-mail to get support from J.D.H. Insurance's support team. The e-mail sent to the support team gets registered in the mail support system for help desk team to try solve. When the issue is handled the employee handling the issue sends an e-mail back to the customer including the results from the investigation. Figure 4 shows the services available to the customer and what processes the support team executes to enable e-mail support.

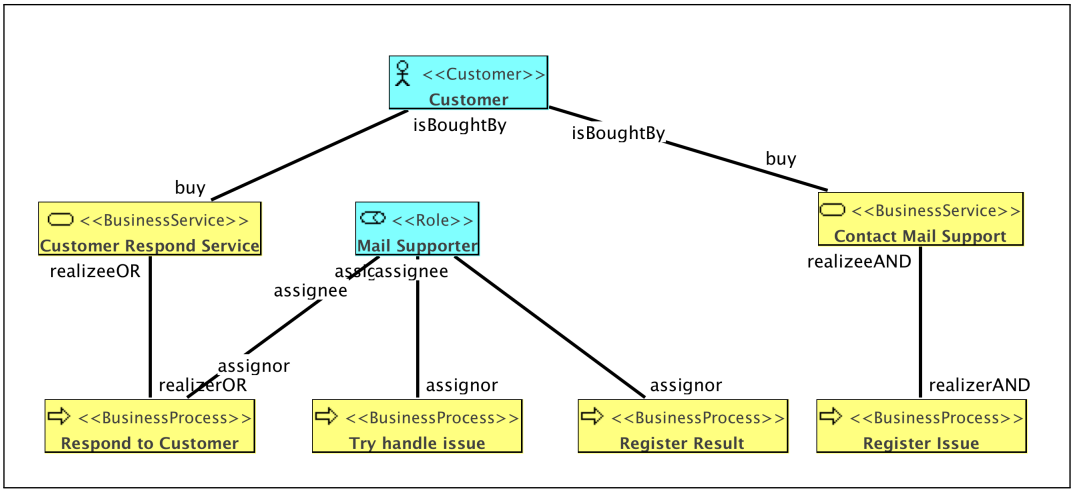

Figure 4: Customer support via e-mail

2.2 MAP Analysis

This section contains analysis of segments of the As-Is MAP model, with respect to MAP attributes, where potential change could be made to reach the vision of the company.

2.2.1 Order Registration - Cost

The registration of order application and sending the order acceptance letter as response are two processes which uses several systems and a role in the company. The role is an Order manager registering and sending acceptance letters. The systems he uses are order management systems, the order management database and the customer relation database. All this systems and the role seems quite costly for such a simple process, and to reach the vision of the company a more cost efficient architecture of these processes would help J.D.H. Insurance to provide better services and insurances. This architecture is interesting to analyze since it would be possible to replace the manager with an automated system and improve the usage of the order management system. The following view, figure 5 on the following page, shows the view analyzed for finding cost in the processes which includes the manager.

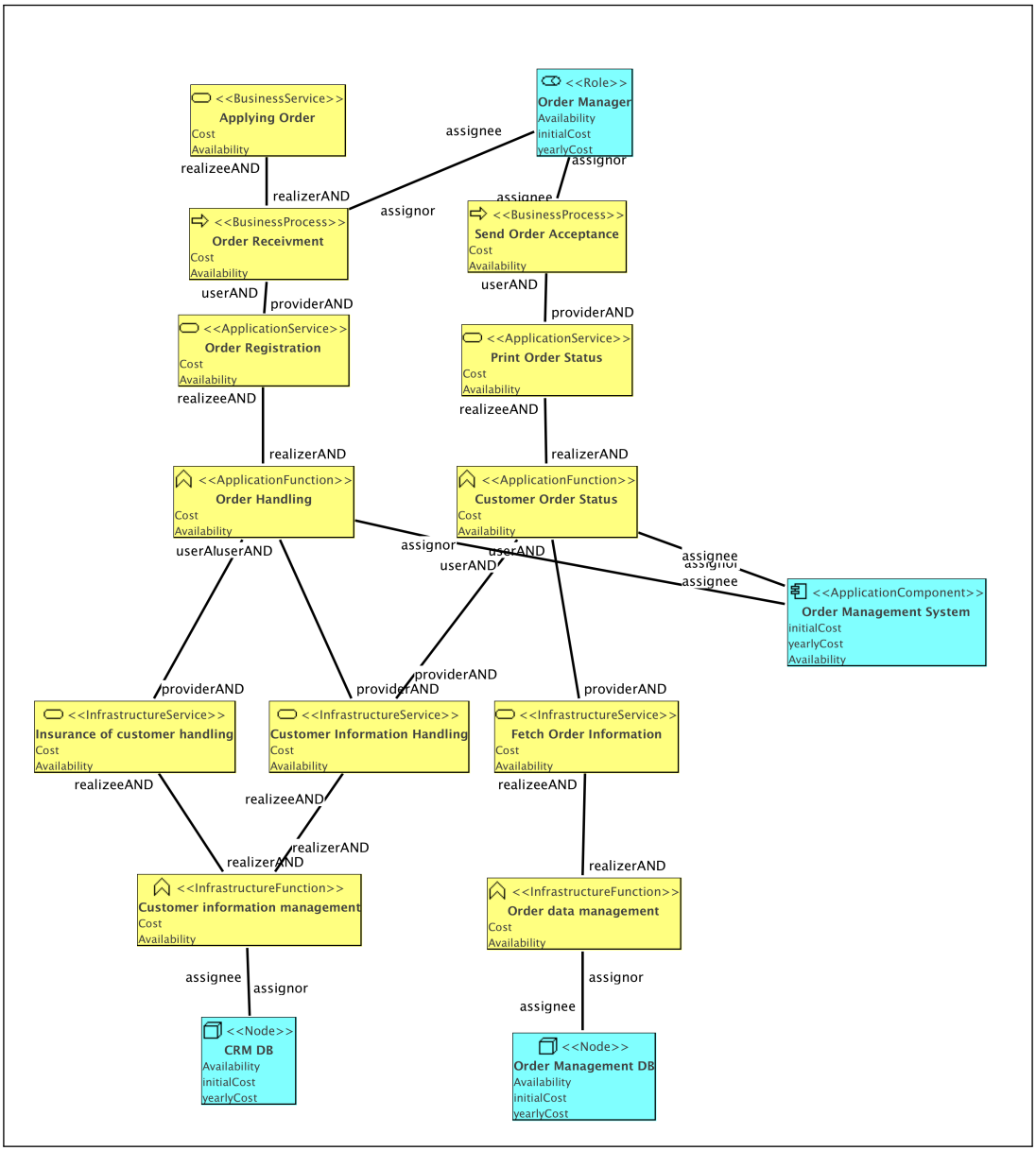

Figure 5: Cost of the processes *Order Receivement Process* and *Send Order Acceptance Process*

The manager is a yearly cost for the company of 500 000 SEK, that includes salary and recruitment costs etc. The Order Management System had an initial cost of 1 500 000 SEK since its a large and complex system and a yearly cost of 300 000 SEK. The Order Management database had an initial cost of 400 000 SEK and an yearly cost of 100 000 SEK. The CRM database is the most modern of these systems and was an initial cost of 700 000 SEK and is a yearly cost of 50 000 SEK.

The analysis resulted in a cost for the *Order Receivement Process* of 1 525 000 SEK and a cost for the *Send Order Acceptance Process* of 1 837 500 SEK. All the values is reflected in table 1 on the next page.

	Nodes	
	CRM DB	*Order Management DB*
Initial Cost	700 000	400 000
Yearly Cost	50 000	100 000

	Application Component
	Order Management System
Initial Cost	1 500 000
Yearly Cost	300 000

	Role
	Order Manager
Initial Cost	0
Yearly Cost	500 000

	Business Processes	
	Order Receivement	*Send Order Acceptance*
Cost	1 525 000	1 875 000

Table 1: Order process, *Cost* (As-Is)

2.2.2 Order Registration - Service Availability

In order to achieve maximum customer satisfaction the availability of the order registration service is crucial, as this currently is the sole entry point for customers intending to purchase an insurance. And since the current level of availability for the order registration is sufficient, consequently this means that maintaining the current order availability level, in spite of an attempt to lower the order registration cost, is of the essence. In figure 5 on the preceding page, the current As-Is situation of order registration view is depicted.

Next, in table 2, we present the current values for some entities primarily considered when assessing the availability. The resulting service availability of the Order Receivement Process and the Send Order Acceptance service are 0.92 respectively.

	Nodes	
	CRM DB	*Order Management DB*
Availability	0.99	0.99

	Application Component
	Order Management System
Availability	0.99

	Role
	Order Manager
Availability	0.95

	Business Processes	
	Order Receivement	*Send Order Acceptance*
Availability	0.92	0.92

	Business Services
	Applying Order
Availability	0.92

Table 2: Order process, *Service Availability* (As-Is)

2.2.3 Claim Registration - Data Accuracy

The claim registration service which J.D.H. Insurance provide to the customers they insure has a critical point where it is important that the accuracy of the claims application maintain, that is when the claim administrator receives the claim application from an insurant and registers it into the claim management system. For J.D.H. Insurance to ensure that no information is lost in this process it is vital to analyze the data accuracy of it to see if it can be improved by a new architecture providing higher accuracy. The analyze is done by using the following view, displayed in figure 6.

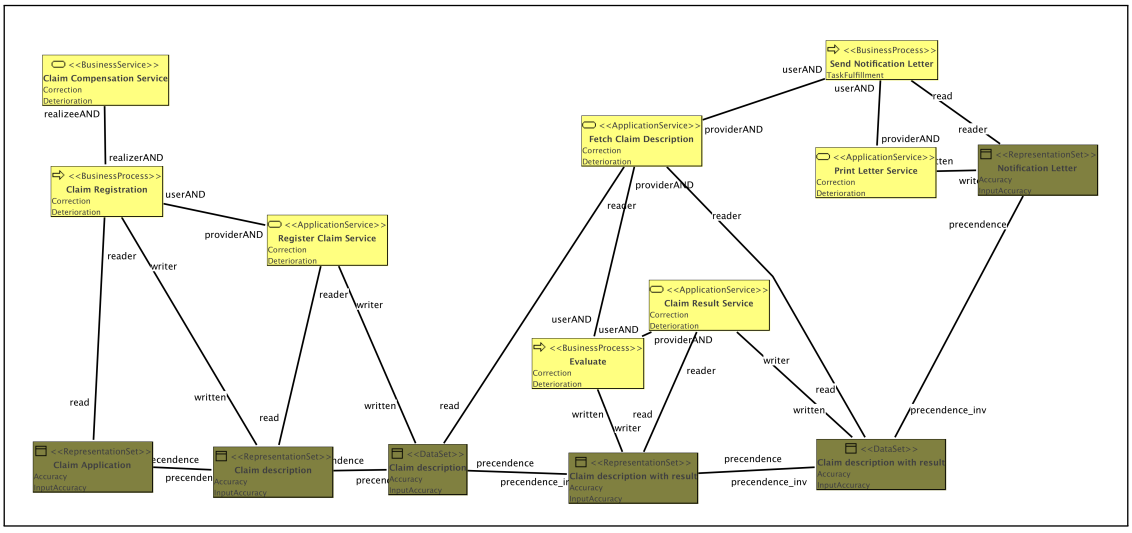

Figure 6: Data accuracy for the Claim data from received application to the evaluated claim object in the claim management system

The claim application is sent by the insurant to the company and the input accuracy of the application can be assumed to be very high, 0.99. The application is processed by the claim administrator in the claim registration process and the translation from the paper application to the digital description tend to create loss of information, the deterioration of this process is 0.1. When the evaluator writes a result to the claim there is a small loss of information. The deterioration of this process is 0.03.

This results in a accuracy after the claim registration process of 0.89, and after the evaluation process an accuracy of 0.85, which seems like a low value for a company evaluating information provided by their customers and which aim to provide competitive insurances. Table 3 on the next page shows the values and the resulting accuracies in the process.

	Application Services			
	Register Claim Service	*Fetch Claim Description*	*Claim Result Service*	*Print Letter Service*
Deterioration	0.01	0.01	0.01	0.01

	Business Processes	
	Claim Registration	*Evaluate*
Deterioration	0.10	0.03

	Representation Sets (RS) and Data Sets (DS)					
	Claim Application (RS)	*Claim Description (RS)*	*Claim Description (DS)*	*Claim Description with Result (RS)*	*Claim Description with Result (DS)*	*Notification Letter (RS)*
Input Accuracy	0.99	0.98	0.99	0.99	0.99	0.99
Accuracy	0.99	0.89	0.88	0.85	0.85	0.84

Table 3: Claim process, *Data Accuracy* (As-Is)

2.2.4 Support - Service Availability

One of J.D.H. Insurance visions is to provide the good support for their customers. One important aspect of this support is the availability of the support. Clearly the access points for the support functions need to be available to the customers if they should be able to contact J.D.H. Insurance. An analysis of the availability of the access points of both the support architectures would then be of value for J.D.H. Insurance, and to evaluate what improvements that could be done to increase the availability of these services. The following view, figure 7 on the following page, shows the service of calling to the phone support and analyzes its availability to the customers, and figure 8 on page 12 displays the access point of mail support analyzed.

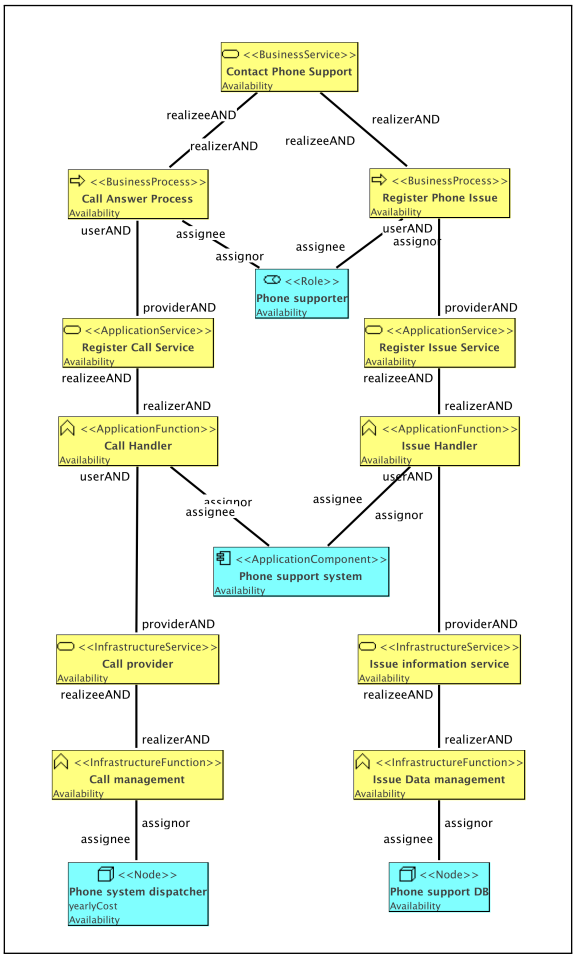

Figure 7: Service availability of the Phone support access service

Table 4 on the following page contains the values for each availability of the systems in the phone support process. The result of the analysis of these values gives an availability of 0.85 for the Contact phone support service, which is a low value for a service which should be able to compete with other companies similar services.

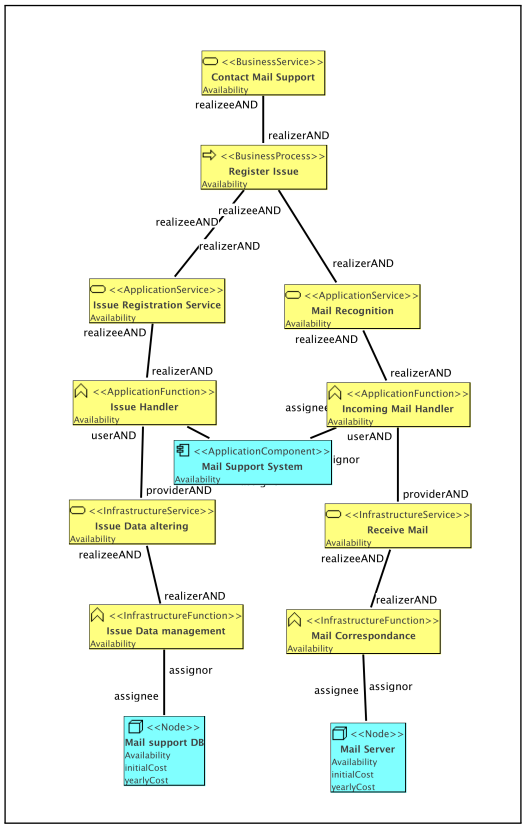

Figure 8: Service availability of the Mail support service

	Nodes			
	Phone System Dispatcher	*Phone Support DB*	*Mail Server*	*Mail DB*
Availability	0.97	0.97	0.98	0.96

	Application Components	
	Phone Support System	*Mail Support System*
Availability	0.98	0.98

	Role	
	Phone Supporter	*Mail Supporter*
Availability	0.97	0.95

	Business Services		
	Contact Phone Support	*Contact Email Support*	*Respond to Customer*
Availability	0.85	0.90	0.91

Table 4: Support process, *Service Availability* (As-Is)

Table 4 also displays the availabilities of the systems in the mail support process. The analysis results in an availability of the Contact mail support service of 0.90, which seems quite low for both being a mail service and for being an important service to customers.

Note: We experienced problems with EAAT during this analysis. EAAT did not calculate a distinct value for the Register issue process. The availability has been calculated manually, using

multiplication of the two availabilities of the application services Issue Registration Service and Mail Recognition.

2.3 Improvements

J.D.H Insurance could apply many changes to their main processes to align with the goals of this report. This section presents improvements for certain attributes in the MAP metamodel to certain processes and services.

2.3.1 Order Process (Cost/Availability)

The order process uses many different systems for fulfilling its purpose, along with an employee working for registering these orders and sending letter back to the customers about their order. These systems and the employees are quite costly and as the process is very important to J.D.H Insurance and a process which will remain in the company a reduction of these costs are motivated.

2.3.2 Claim Process (Accuracy)

As the claim process suffers of low accuracy in the processing of a claim application, a clear improvement for reaching the vision of being a leading company is to increase the accuracy of this process. As mentioned in the goals of this report, it would support the decision making of compensating the customer for her claim or not, which has an interest for both J.D.H. Insurance and their customers.

2.3.3 Support Services (Availability)

The support services are important services for the customers and its availability is an important factor in the customers satisfaction of being a customer in J.D.H Insurance. An increase of the availability of the mail support and the phone support would increase the customers satisfaction which in turn could impact the new customer stream to the company and thereby revenue.

3 To-Be

This section will focus on the To-Be architecture of J.D.H. Insurance. Changes from the As-Is architecture and models and analysis of the target architecture to align the architecture with the strategy of the company and to approach the vision stated in this report will be presented. These changes are based on the improvement areas described in the previous section. The full To-Be architecture divided in business layer, application layer, infrastructure layer and information layer can be seen in Appendix B. Furthermore, the full architecture can be seen in the attached iEaat file JDHInsuranceToBe.

3.1 Changes to core processes

The changes to the core processes are described during this section.

3.1.1 Order Process

To lower the cost of the order registration process it has been transformed to an automated service on the website which eliminates the costs of the order manager and the order management systems. As the website is already available for browsing insurances, the cost for implementing the ordering service on the website is significantly smaller to the cost of todays employees and order management systems. Since the system for customer relation management has support for storing information about customer's insurances and customer information, this system replaces the order management system. Fewer systems and the usage of the website does not impact the service availability negatively and it makes it possible for the customers to use the service even at closed-office hours of the day. The websites functionality of browsing insurances remain and the change is made to the architecture supporting the Apply Order service. The customer is now able to send an order from the website and instead of receiving an order acceptance letter, the website directly presents the order acceptance. Figure 9 shows the new underlying architecture of the Apply order service and the full architecture of the Order process can be seen in the mentioned iEaat file in the view Order.

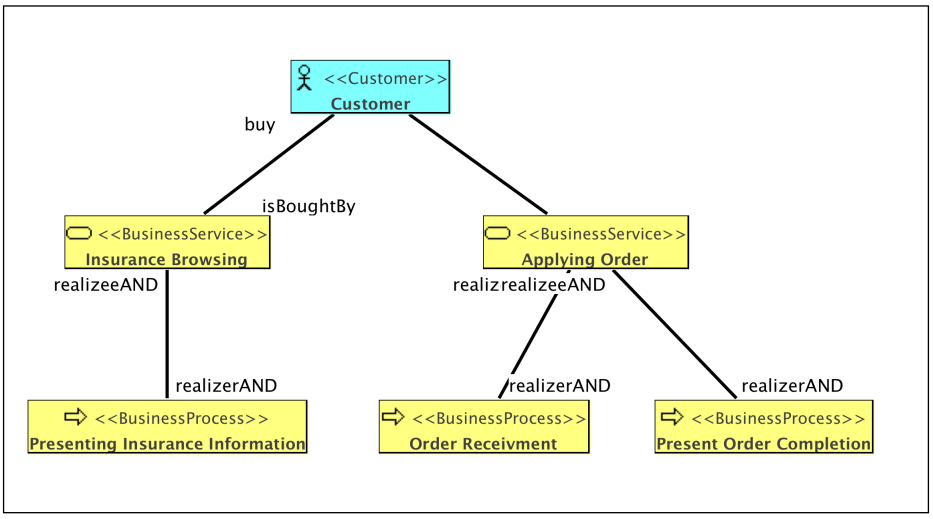

Figure 9: Ordering an insurance

3.1.2 Claim Process

To improve the accuracy of the claim registration process today's claim applications found on the website to print and send to the company is replaced by a web service. The big failure of the accuracy is the claim administrator who transforms these paper applications to a digital

format using the claim management system, due to applications written by hand or interpretations. A web service registering the claim directly into the claim management database decreases the deterioration in the claim registration process. The function of the Claim evaluator will remain and the processes executed by her will not be affected by the change. The change is made in the architecture supporting the Claim Compensation Service. Figure 10 displays the new architecture of that service and the full architecture of the Claim process can be seen in the mentioned iEaat file in the view Claim.

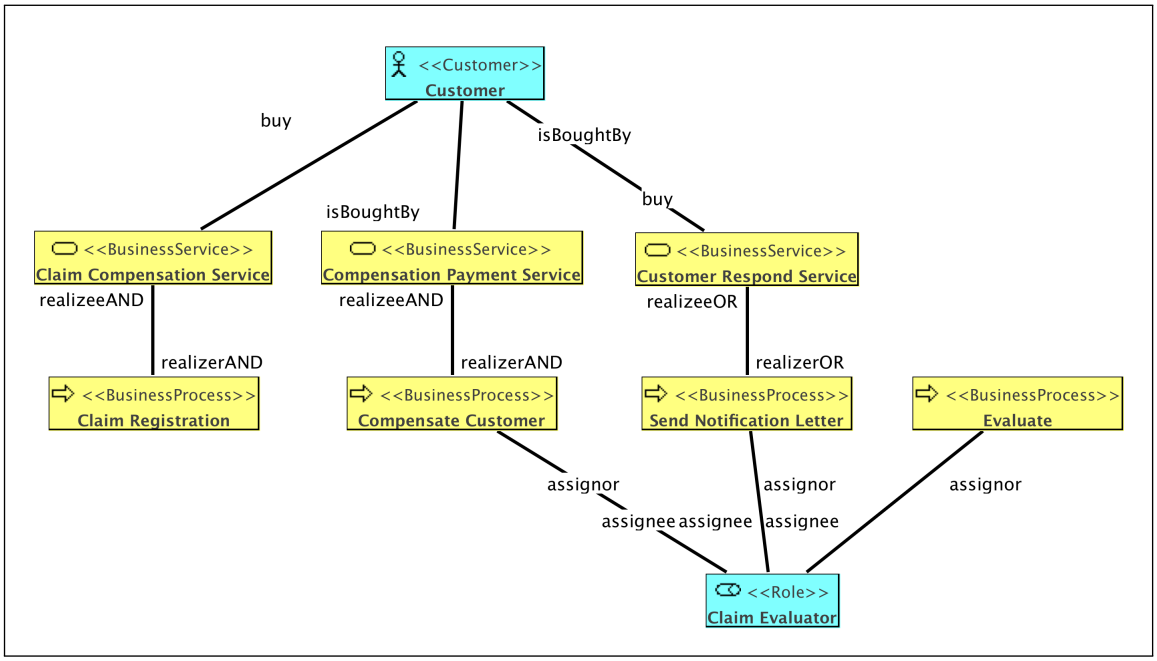

Figure 10: Claim registration

3.1.3 Support Services

As the availability of the mail support service and phone support system depend on different systems and on different employees, a aggregation of the two services increases the availability. As the phone support system is an old system and not as reliable as new systems, the new common Help desk system, handling both the phone support and the mail support will be easier to maintain and the availability will thereby increase. The phone dispatcher system and the mail server are still of use and will be integrated to this system. The Help desk system will be introduced to the current employees of both the mail and the phone support which will ensure higher flexibility of the employees, making it easier to replace them in case of absent employees. In figure 11 on the following page, the business layer of the new architecture is presented and in the mentioned iEaat file, the whole architecture for the Support service can be view in the Support view.

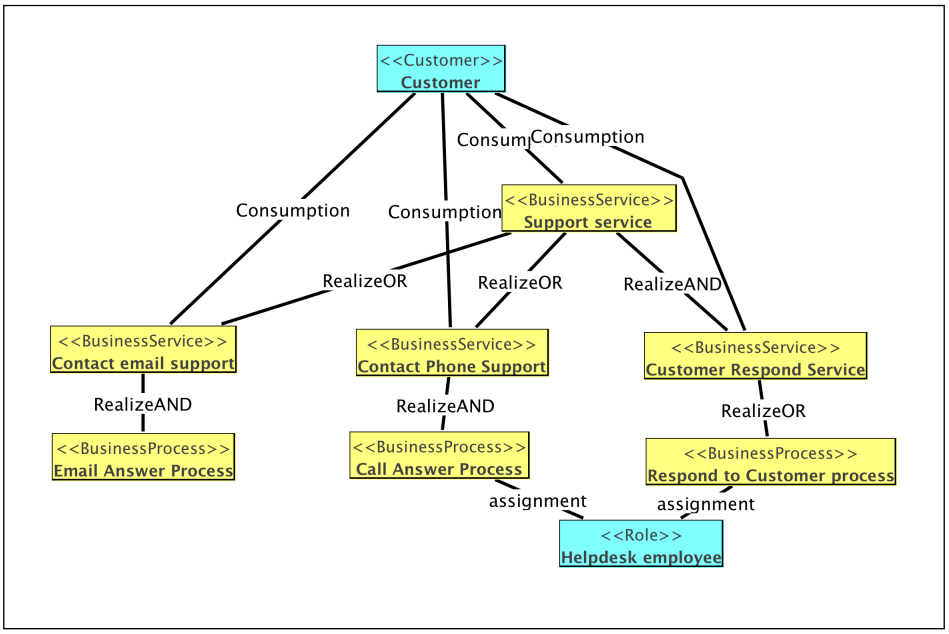

Figure 11: Support process

3.2 MAP Analysis

Analysis of the new architectural changes to the enterprise will be presented in this section.

3.2.1 Order Registration - Cost and Service Availability

The changes from today's order registration process to the new processes supported by the web site impacts the cost of the whole registration process. The corresponding processes in the new architecture, Order Recievement and Present Order Completion to be seen in figure 12 on the next page, are fully automated by the web site. Figure 12 on the following page displays the objects of the order registration process analyzed. The analysis is made on both cost and availability, to ensure that the reduction of cost do not affect the availability of the process.

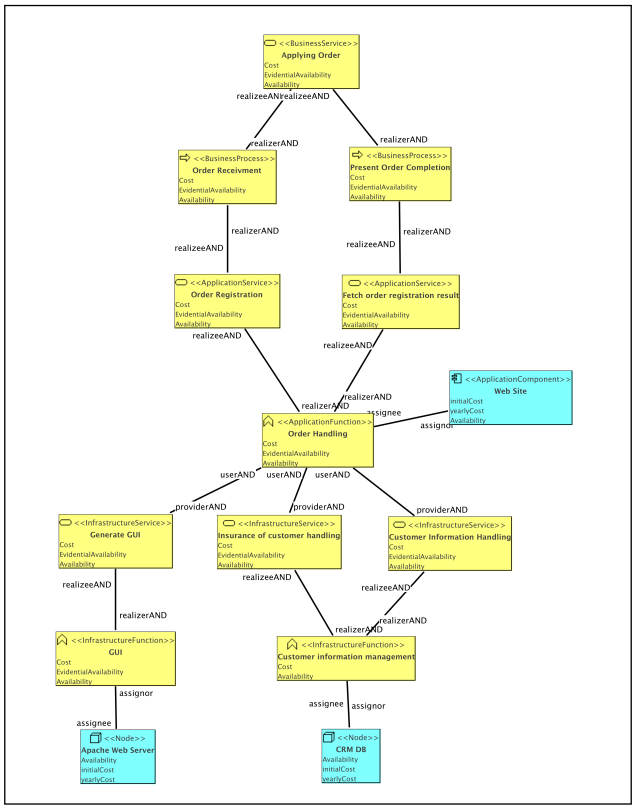

Figure 12: *Cost* and *Service Availability* of the processes "Order Receivement" and "Present Order Completion"

The costs for the web site and the new implementations to it is an initial cost of 500 000 kr and has an yearly cost of 50 000 kr. The web server was an initial cost of 200 000 kr and a yearly cost of 20 000 kr, since the web server already existed in the company, no investment of the server had to be made. The CRM DB also already exists in the company and the initial cost for it was 700 000 kr and a yearly cost of 50 000 kr. This implies that the cost for the Order Registration Service and the Fetch Order Registration Result Service has a cost of 373 750 kr each. The availability of the Applying Order service is calculated to 0.90, from the availabilities of the systems. The values for the attributes Cost and availability for all objects in the view can be seen in table 5 and in table 6 on the following page.

	Nodes	
	CRM DB	*Apache Web Server*
Initial Cost	700 000	200 000
Yearly Cost	50 000	20 000

	Application Component
	Web Site
Initial Cost	500 000
Yearly Cost	50 000

	Business Processes	
	Order Receivement	*Present Order Completion*
Cost	373 750	373 750

Table 5: Order process, *Cost* (To-Be)

Note: We experienced some problem with EAAT calculating this, the cost when calculated was 0 but for the two supporting application services the cost was calculated. As the service is supported by two processes supported by each of these services, we just added the cost for the application services as the cost for the Applying Order.

	Nodes	
	CRM DB	*Apache Web Server*
Availability	0.99	0.99

	Application Component
	Web Site
Availability	0.99

	Business Processes	
	Order Registration	*Present Order Completion*
Availability	0.96	0.96

	Business Services
	Applying Order
Availability	0.92

Table 6: Order process, *Service Availability* (To-Be)

3.2.2 Claim Registration - Data Accuracy

The changes to the claim registration process impacted the structure of the data written to the systems. The Claim registration process is now automated and the written description by the user on the website is read and written by the system in digital formats. The new write and read flow of the representation and data sets can be viewed in figure 13.

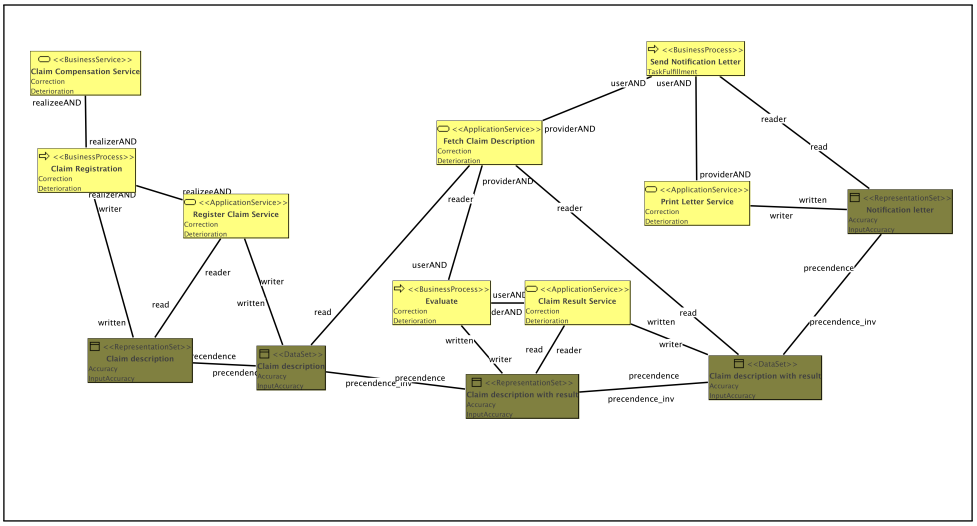

Figure 13: *Data Accuracy* for the Claim Process

The process "Claim Registration" has now a decreased value of deterioration to 0.01 since the process is automated on the website. This impact the accuracy of the stored claim description (data set) to the better, which now is 0.97. The accuracy of the Notification letter in the end of the process is calculated to 0.92. Table 7 on the following page shows the values of the involved objects and the resulting accuracy of the representation sets and the data sets.

	Application Services			
	Register Claim Service	*Fetch Claim Description*	*Claim Result Service*	*Print Letter Service*
Deterioration	0.01	0.01	0.01	0.01

	Business Processes	
	Claim Registration	*Evaluate*
Deterioration	0.01	0.03

	Representation Sets (RS) and Data Sets (DS)				
	Claim Description (RS)	*Claim Description (DS)*	*Claim Description with Result (RS)*	*Claim Description with Result (DS)*	*Notification Letter (RS)*
Input Accuracy	0.98	0.99	0.99	0.99	0.99
Accuracy	0.98	0.97	0.94	0.93	0.92

Table 7: Claim process, *Data Accuracy* (To-Be)

3.2.3 Support - Service Availability

The aggregation of the phone support service and the mail support service into one support service to increase the availability can be viewed in figure 14 on the next page. The Helpdesk System now enables the support processes and the existing phone dispatcher system and the mailserver are used by the new system. The employees executing today's processes are aggregated to a new role as Helpdesk employee.

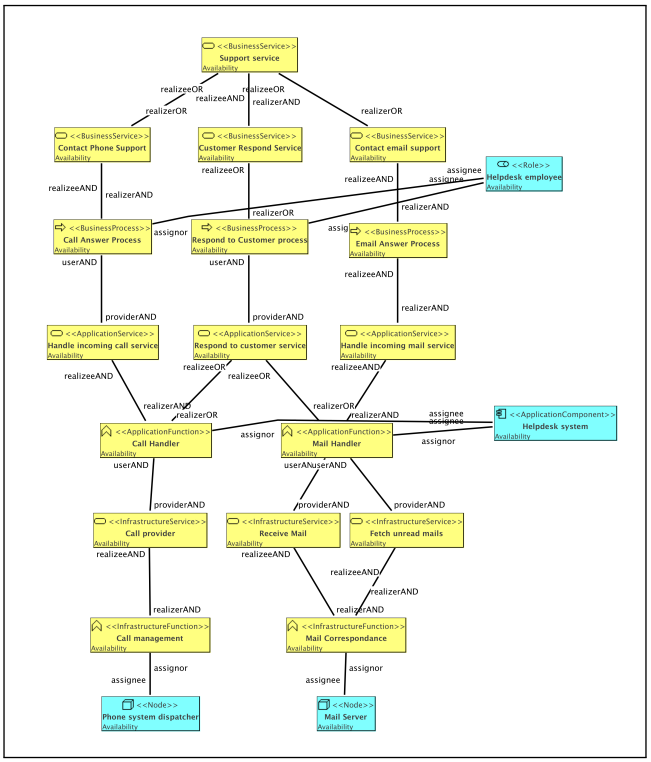

Figure 14: *Service Availability* of the new support process

The Phone system dispatcher and the Mail Server are the same as the one now operating. The new Helpdesk system would have an availability of 0.99 and the more flexible Helpdesk employees an availability of 0.97. The Contact Phone Support service then gets an availability of 0.93, the Contact Email Support service an availability of 0.95 and the Customer Respond Service an availability of 0.99. Table 8 views all the availabilities of the systems and the processes.

	Nodes	
	Phone System Dispatcher	*Mail Server*
Availability	0.97	0.98

	Application Components
	Helpdesk System
Availability	0.99

	Role
	Helpdesk employee
Availability	0.97

	Business Services		
	Contact Phone Support	*Contact Email Support*	*Respond to Customer*
Availability	0.93	0.94	0.97

Table 8: Support process, *Service Availability* (To-Be)

4 MAP Analysis Results

		Nodes		
		CRM DB	*Order Management DB*	*Apache Web Server*
Initial Cost	As-Is	700 000	400 000	-
	To-Be	700 000	-	200 000
Yearly Cost	As-Is	50 000	100 000	-
	To-Be	50 000	-	20 000

		Application Components	
		Order Management System	*Web Site*
Initial Cost	As-Is	1 500 000	-
	To-Be	-	500 000
Yearly Cost	As-Is	300 000	-
	To-Be	-	50 000

		Role
		Order Manager
Initial Cost	As-Is	0
	To-Be	-
Yearly Cost	As-Is	500 000
	To-Be	-

		Business Processes		
		Order Receivement	*Send Order Acceptance*	*Present Order Completion*
Cost	As-Is	1 525 000	1 875 000	-
	To-Be	373 750	-	373 750

Table 9: Order process, *Cost* (summarized)

		Nodes		
		CRM DB	*Order Management DB*	*Apache Web Server*
Availability	As-Is	0.99	0.99	-
	To-Be	0.99	-	0.99

		Application Components	
		Order Management System	*Web Site*
Availability	As-Is	0.99	-
	To-Be	-	0.99

		Role
		Order Manager
Availability	As-Is	0.95
	To-Be	-

		Business Processes		
		Order Registration	*Send Order Acceptance*	*Present Order Completion*
Availability	As-Is	0.92	0.92	-
	To-Be	0.96	-	0.96

		Business Services
		Applying Order
Availability	As-Is	0.92
	To-Be	0.92

Table 10: Order process, *Service Availability* (summarized)

		Application Services			
		Register Claim Service	*Fetch Claim Description*	*Claim Result Service*	*Print Letter Service*
Deterioriation	As-Is	0.01	0.01	0.01	0.01
	To-Be	0.01	0.01	0.01	0.01

		Business Processes	
		Claim Registration	*Evaluate*
Deterioriation	As-Is	0.10	0.03
	To-Be	0.01	0.03

		Representation Sets (RS) and Data Sets (DS)					
		Claim Application (RS)	*Claim Description (RS)*	*Claim Description (DS)*	*Claim Description with Result (RS)*	*Claim Description with Result (DS)*	*Notification Letter (RS)*
Input Accuracy	As-Is	0.99	0.98	0.99	0.99	0.99	0.99
	To-Be	-	0.98	0.99	0.99	0.99	0.99
Accuracy	As-Is	0.99	0.89	0.88	0.85	0.85	0.84
	To-Be	-	0.98	0.97	0.94	0.93	0.92

Table 11: Claim process, *Data Accuracy* (summarized)

		Nodes			
		Phone System Dispatcher	*Phone Support DB*	*Mail Server*	*Mail DB*
Availability	As-Is	0.97	0.97	0.98	0.96
	To-Be	0.97	-	0.98	-

		Application Components		
		Phone Support System	*Mail Support System*	*Helpdesk System*
Availability	As-Is	0.98	0.98	-
	To-Be	-	-	0.99

		Roles		
		Phone Supporter	*Mail Supporter*	*Helpdesk employee*
Availability	As-Is	0.97	0.95	-
	To-Be	-	-	0.97

		Business Services		
		Contact Phone Support	*Contact Email Support*	*Respond to Customer*
Availability	As-Is	0.85	0.90	0.91
	To-Be	0.93	0.94	0.97

Table 12: Support process, *Service Availability* (summarized)

5 Gaps

The gaps between the As-Is model and the To-Be model will be presented in this section.

	As-Is	To-Be	Gaps
Business architecture	Fig. 18	Fig. 22	– Order manager – Send Order Acceptance + Present order completion + Instant feedback through "Applying order"
Information architecture	Fig. 19	Fig. 23	– Customer order status – Order management system + Updated website including new application function
Technology architecture	Fig. 21	Fig. 25	– Fetch order information – Order data management – Order management DB

Table 13: Order Process

	As-Is	To-Be	Gaps
Business architecture	Fig. 18	Fig. 22	– Claim administrator – Claim Application Download – Download Claim Form
Information architecture	Fig. 19	Fig. 23	– Form downloading – Form presentation + Customer Claim portal + Extendended website functionality
Technology architecture	-	-	*No gaps*

Table 14: Claim Process

	As-Is	To-Be	Gaps
Business architecture	Fig. 18	Fig. 22	– Common support entry point "Support service" ± Helpdesk employee replaces mail & phone supporter
Information architecture	Fig. 19	Fig. 23	– Phone support system – Mail support system – Mail recognition + Helpdesk system including application functions + Updated Mail Handler
Technology architecture	Fig. 21	Fig. 25	– Phone support DB – Mail support DB + Helpdesk DB

Table 15: Support Process

6 Transformation Plan

With the gaps defined in section 5 on page 24, these can now be divided up and translated into key work packages essential for realising the envisioned architecture. Additionally, the work packages are then depicted in a gantt diagram; the purpose of this is twofold, to estimate the duration of each work package as well as getting a sense for the internal dependencies among them.

6.1 Activities

In the following three tables the activities associated with respective model (claim, order and support) are listed. For each table the activities are ordered by execution priority, i.e. activities are executed top-down.

#	Role	Activity
1	Developers, Project managers, Business developers	Develop the new website functionality
2	System administrator, developers	Integrate website with existing CRM DB
3	Testers, System administrator	Deploy beta version in parallel with existing system and review test run
4	System administrator, developers	Deploy production version of the new functionality of the website
5	Human Resources, System administrator	Replace the order manager with the automated order registration process. And remove Order management system

Table 16: "Order" activities

#	Role	Activity
1	CIO, System administrator, Business developer	Analyze how to proceed with the website functionality extension. Who, what and when are questions answered here
2	Developers, Project manager(s)	Proceed with development of "Customer Claim Portal" and integrate this with Claim Management system
3	Project manager, testers, business developers	Review system and ensure function and service compatibility
4	System administrator, testers	Deploy beta version to website and test run
5	System administrators	Release the new Claim portal of the website
6	HR, system administrators	Remove claim administrator as well as functions and services related to form downloading

Table 17: "Claim" activities

#	Role	Activity
1	Accountant, CIO, Project manager	Analyze benefits and drawbacks of developing or buying combined Helpdesk system
2	Developers, Project manager	Procure combined helpdesk system
3	Developers	Integrate helpdesk system, phone system dispatcher and mail server
4	Business developers, Testers	Ensure that functionality and service support are maintained
5	System administrator, Testers	Deploy support system in a test environment
6	Developers, HR	Educate staff how to use the new system
7	System administrator	Engage transition period by having both systems running in parallel
8	System administrator	Remove old Phone Support System & DB and Mail Support System & DB

Table 18: "Support" activities

6.2 Gantt Scheme

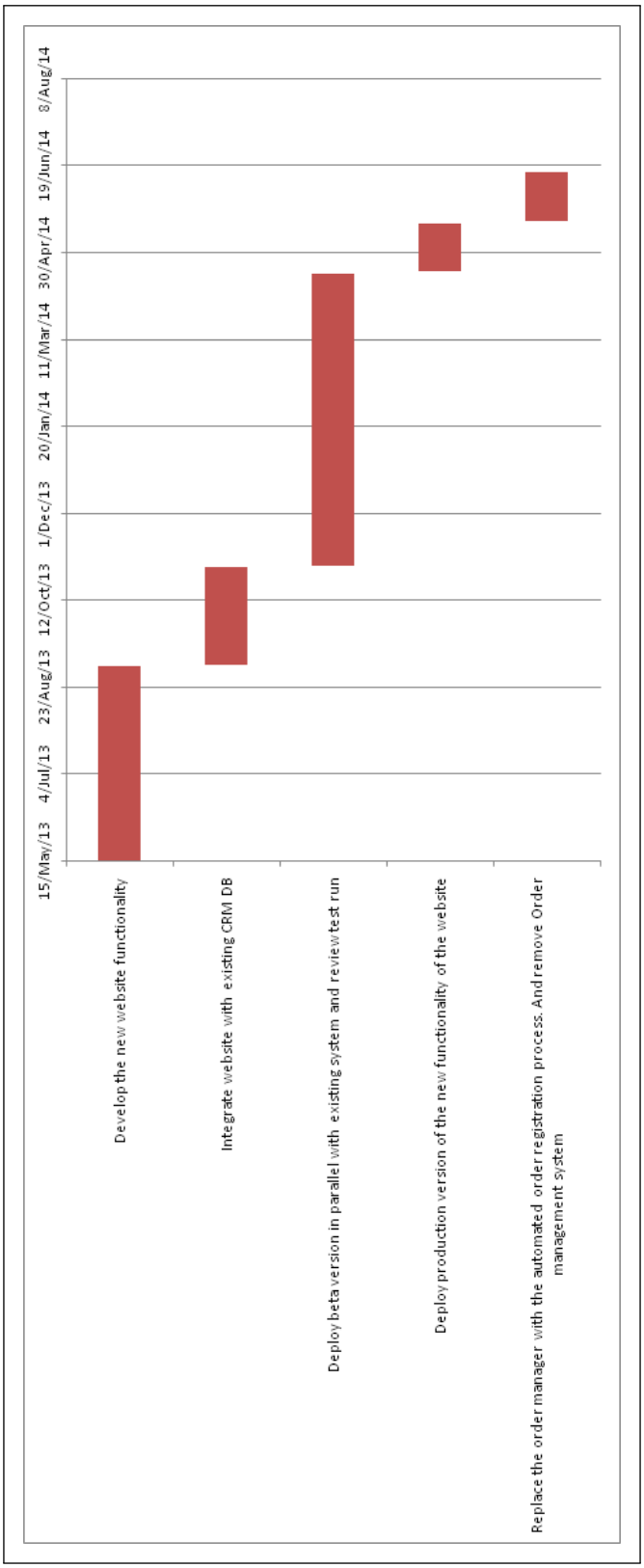

Figure 15: Gantt chart for "Order" activities

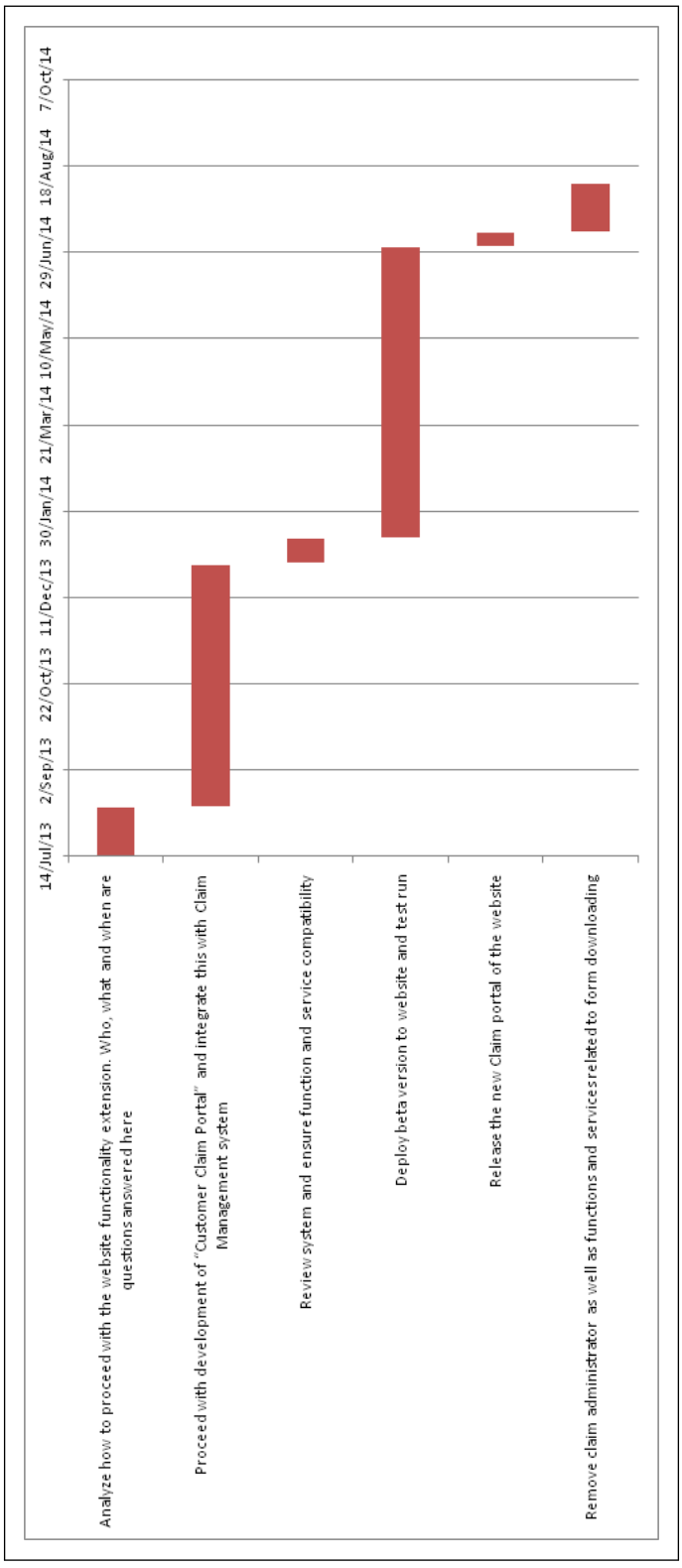

Figure 16: Gantt chart for "Claim" activities

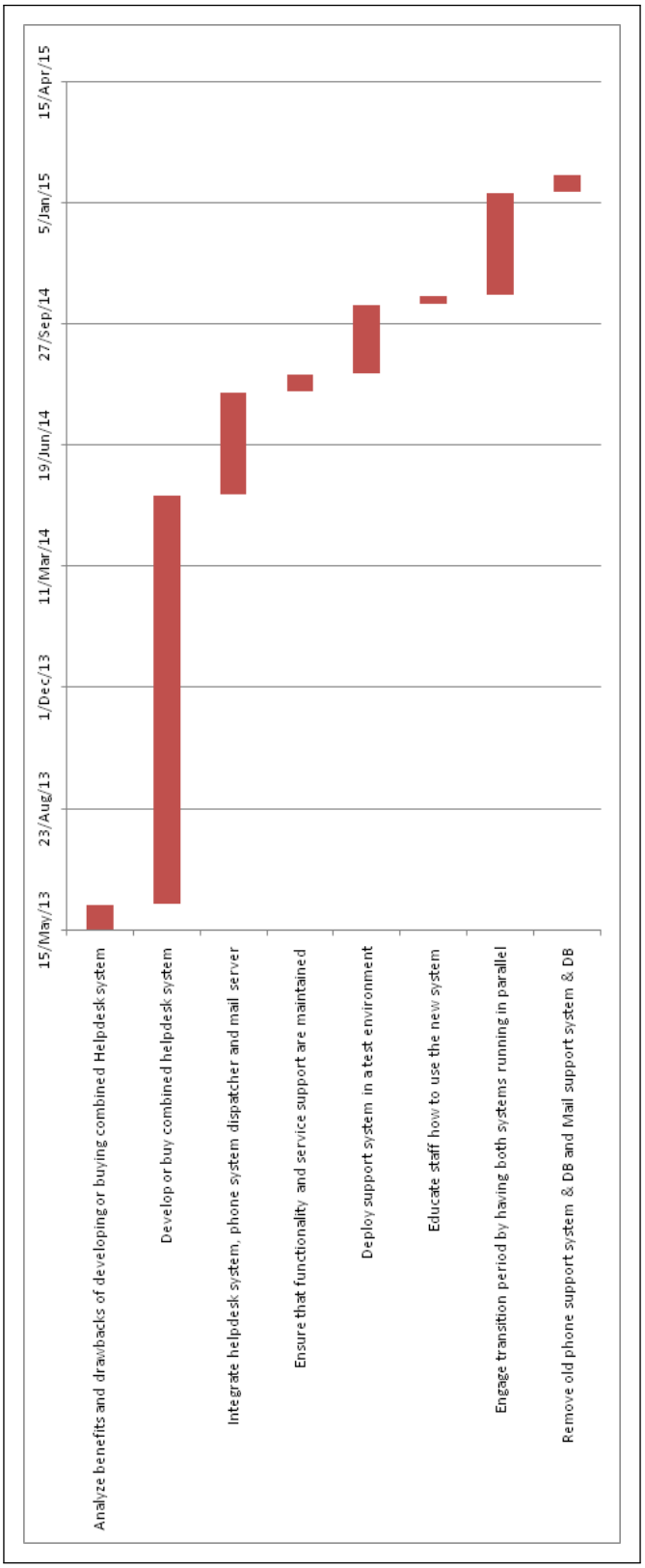

Figure 17: Gantt chart for "Support" activities

References

[1] The Open Group. About ArchiMate. [Homepage on the Internet]. [cited 23/04/13]. Available from: `http://www.opengroup.org/subjectareas/enterprise/archimate`

[2] Johnson P. Lagerström R. Ekstedt M. Österlind M. IT Management with Enterprise Architecture.

A As-Is MAP Models

A.1 Business Architecture

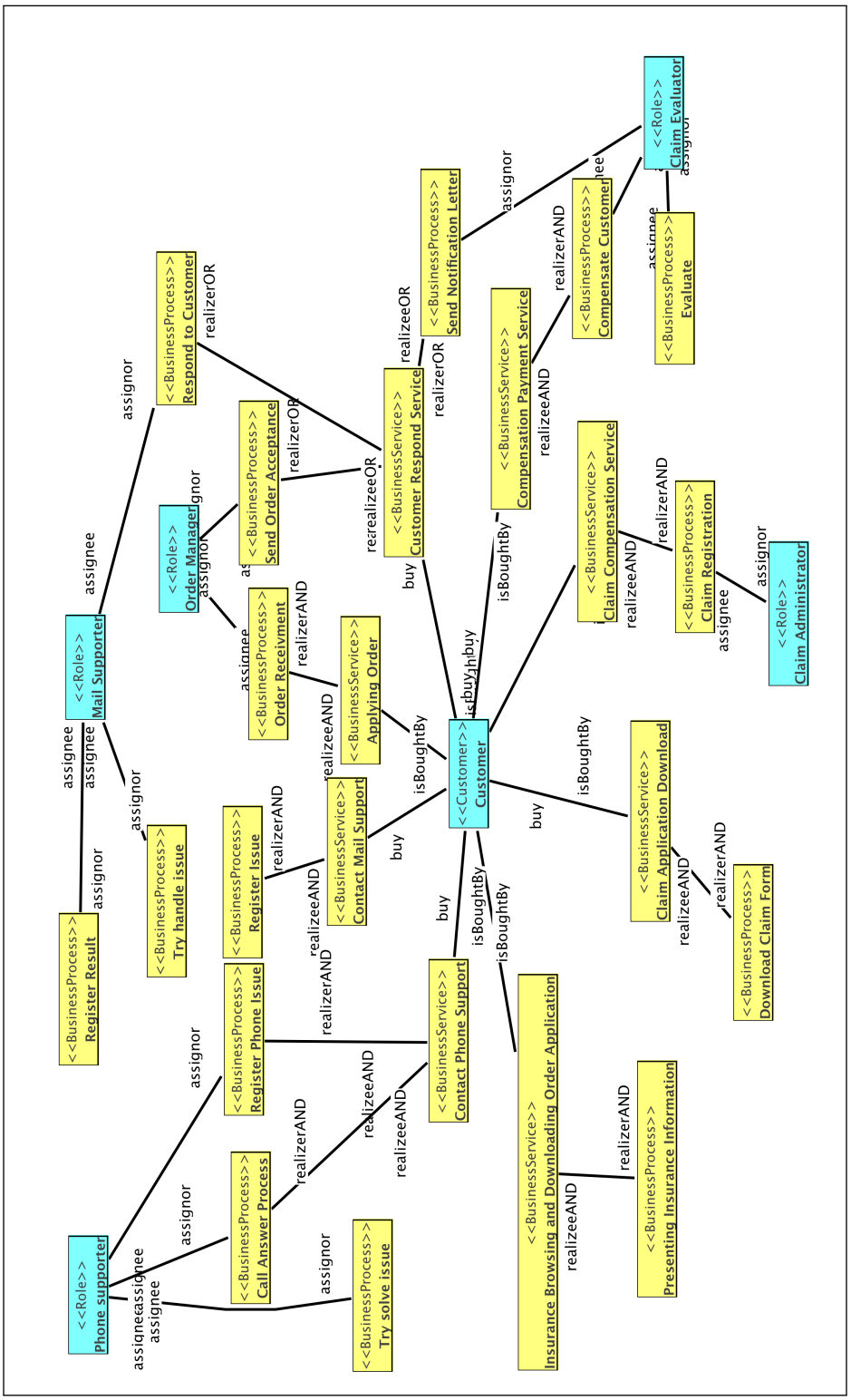

Figure 18: As-Is Business Architecture

A.2 Information Architecture

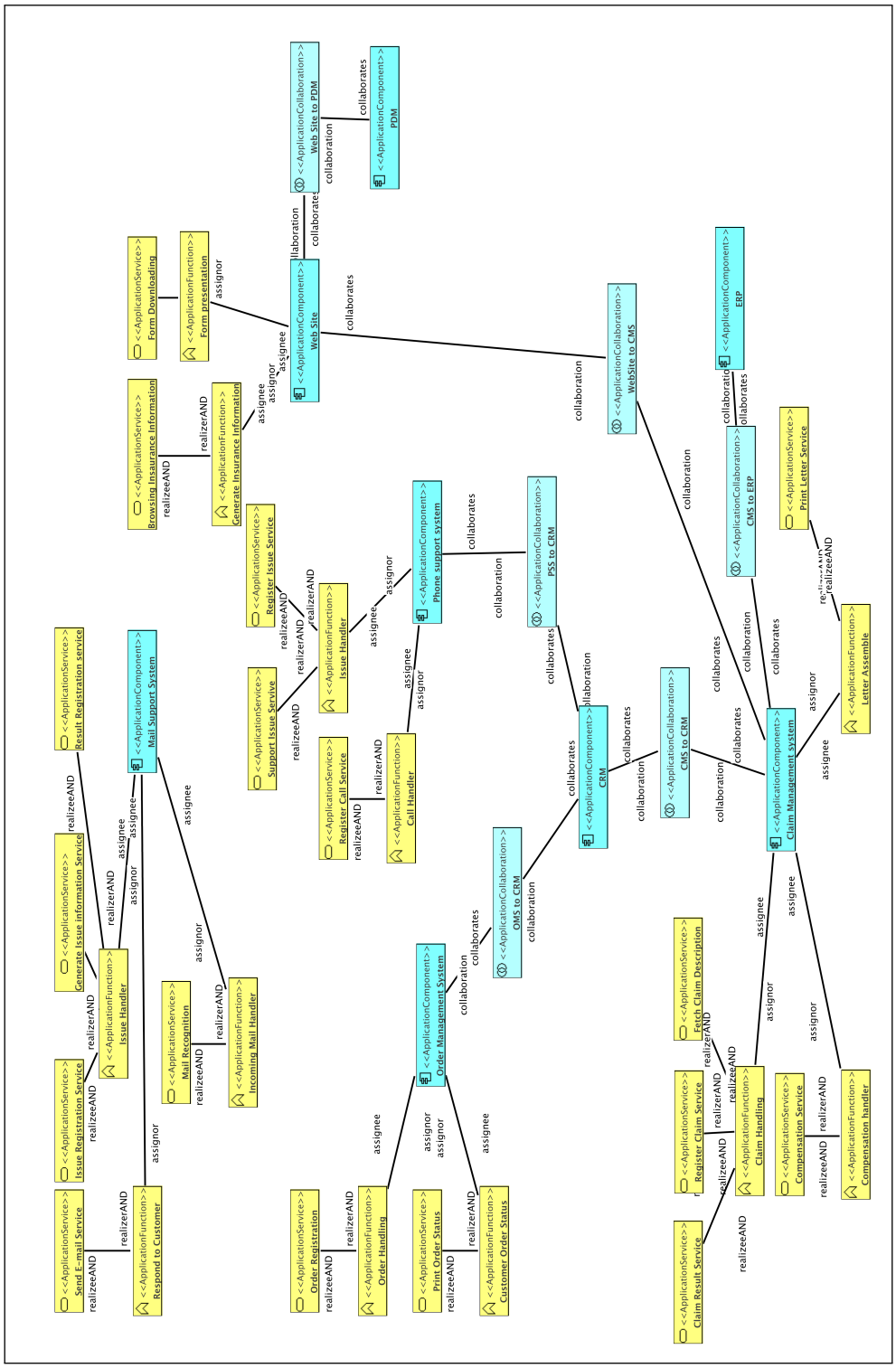

Figure 19: As-Is Information Architecture

A.3 Information System Architecture

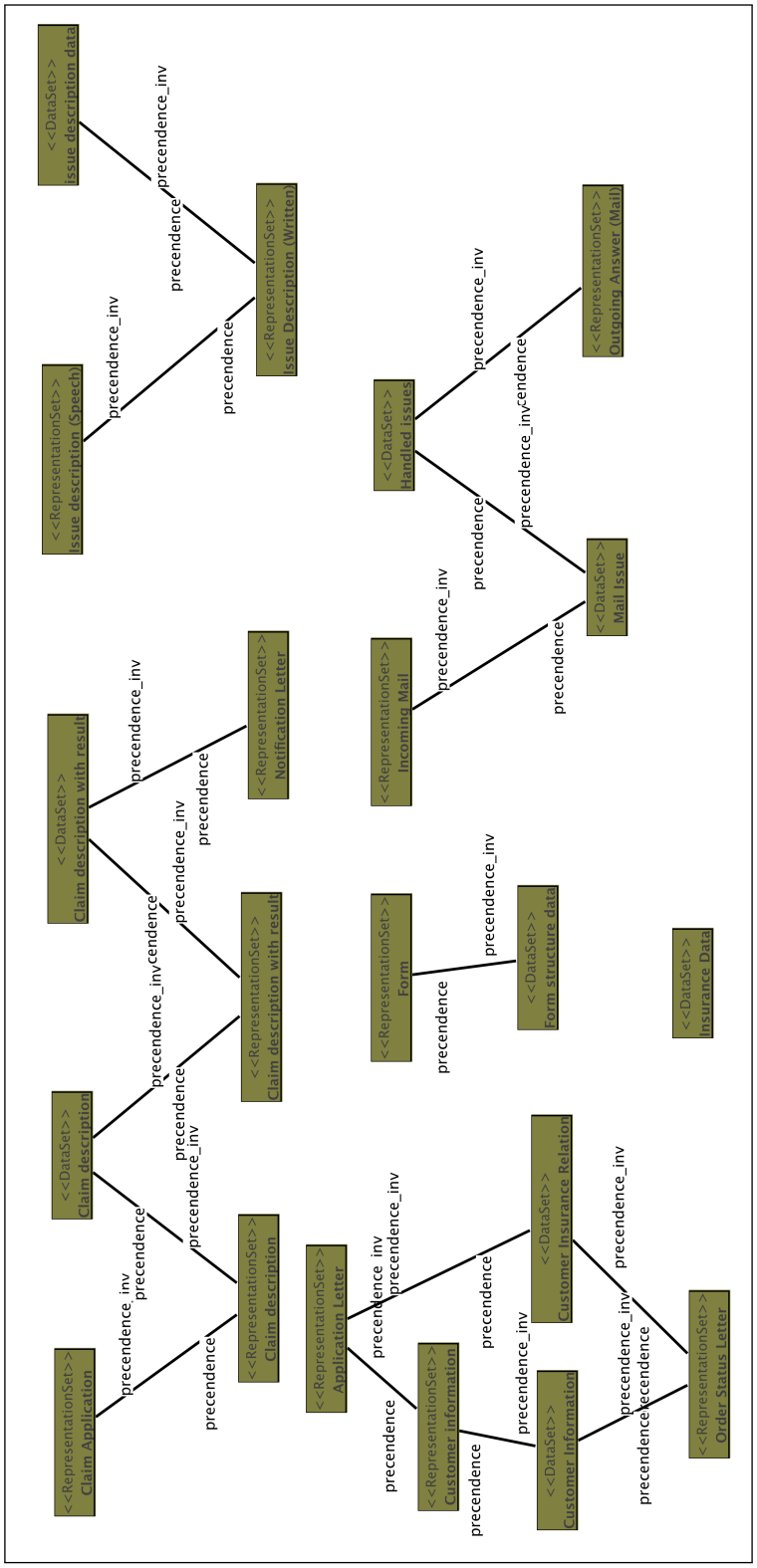

Figure 20: As-Is Information System Architecture

A.4 Infrastructure Architecture

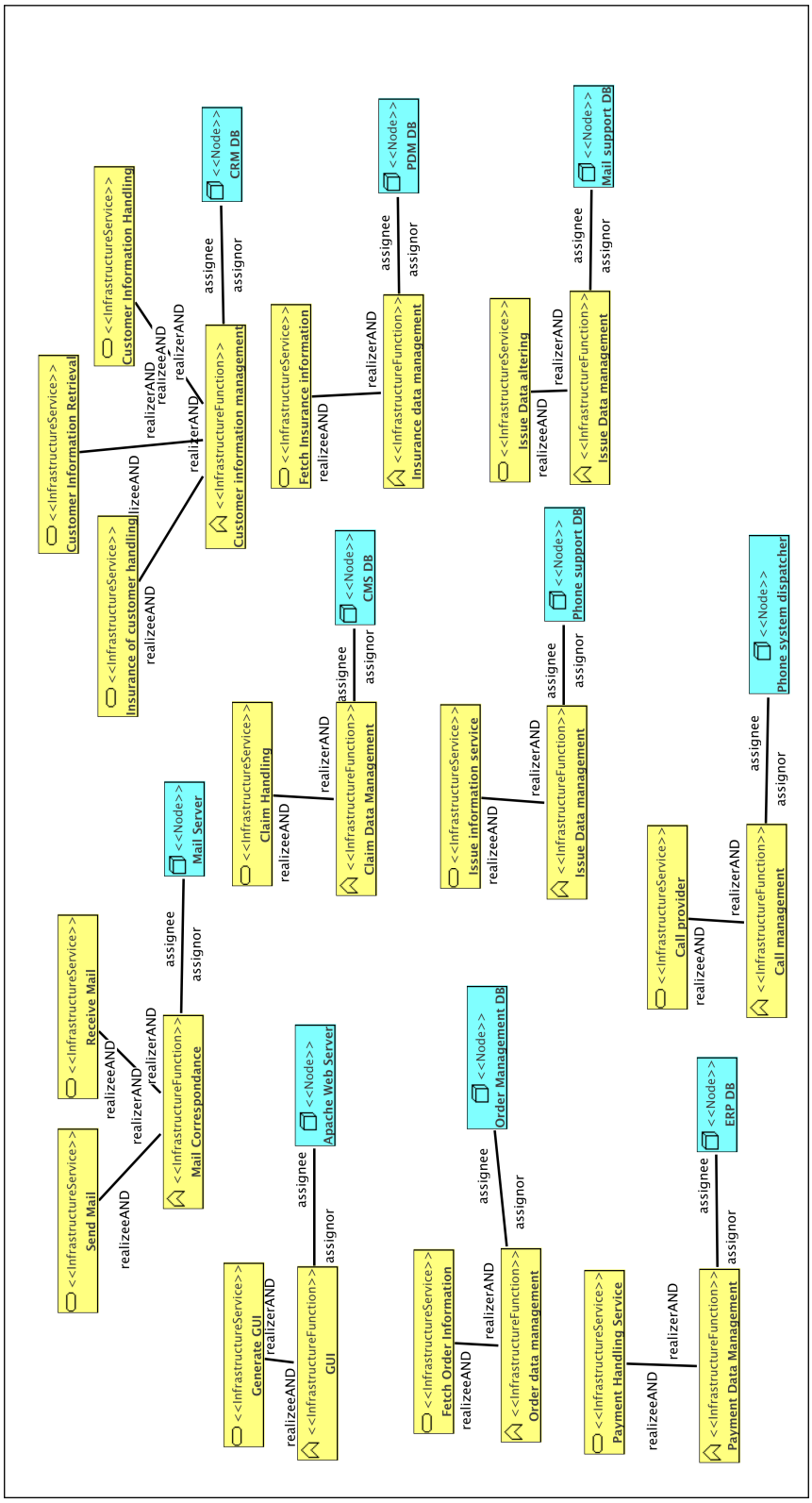

Figure 21: As-Is Infrastructre Architecture

B To-Be MAP Models

B.1 Business Architecture

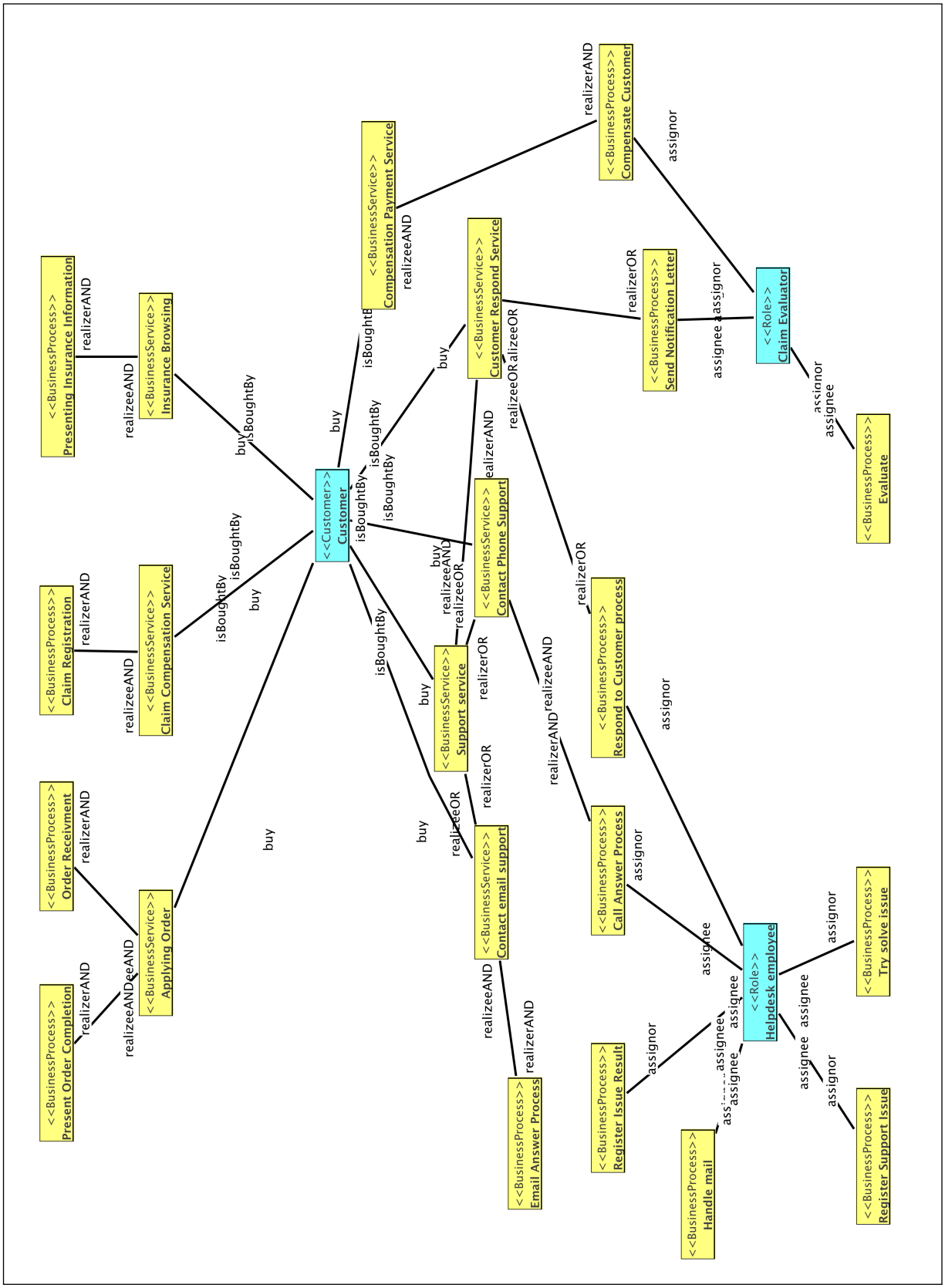

Figure 22: To-Be Business Architecture

B.2 Information Architecture

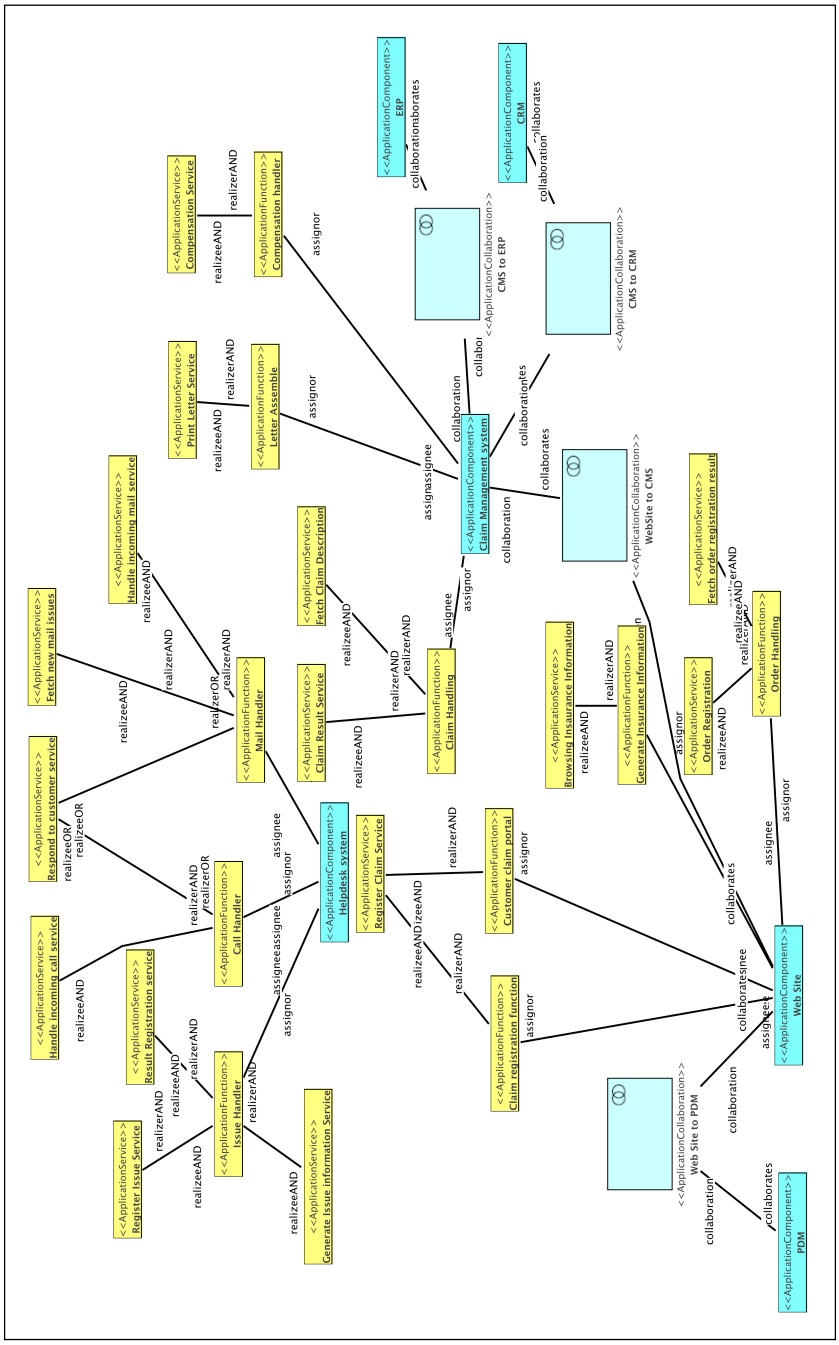

Figure 23: To-Be Information Architecture

B.3 Information System Architecture

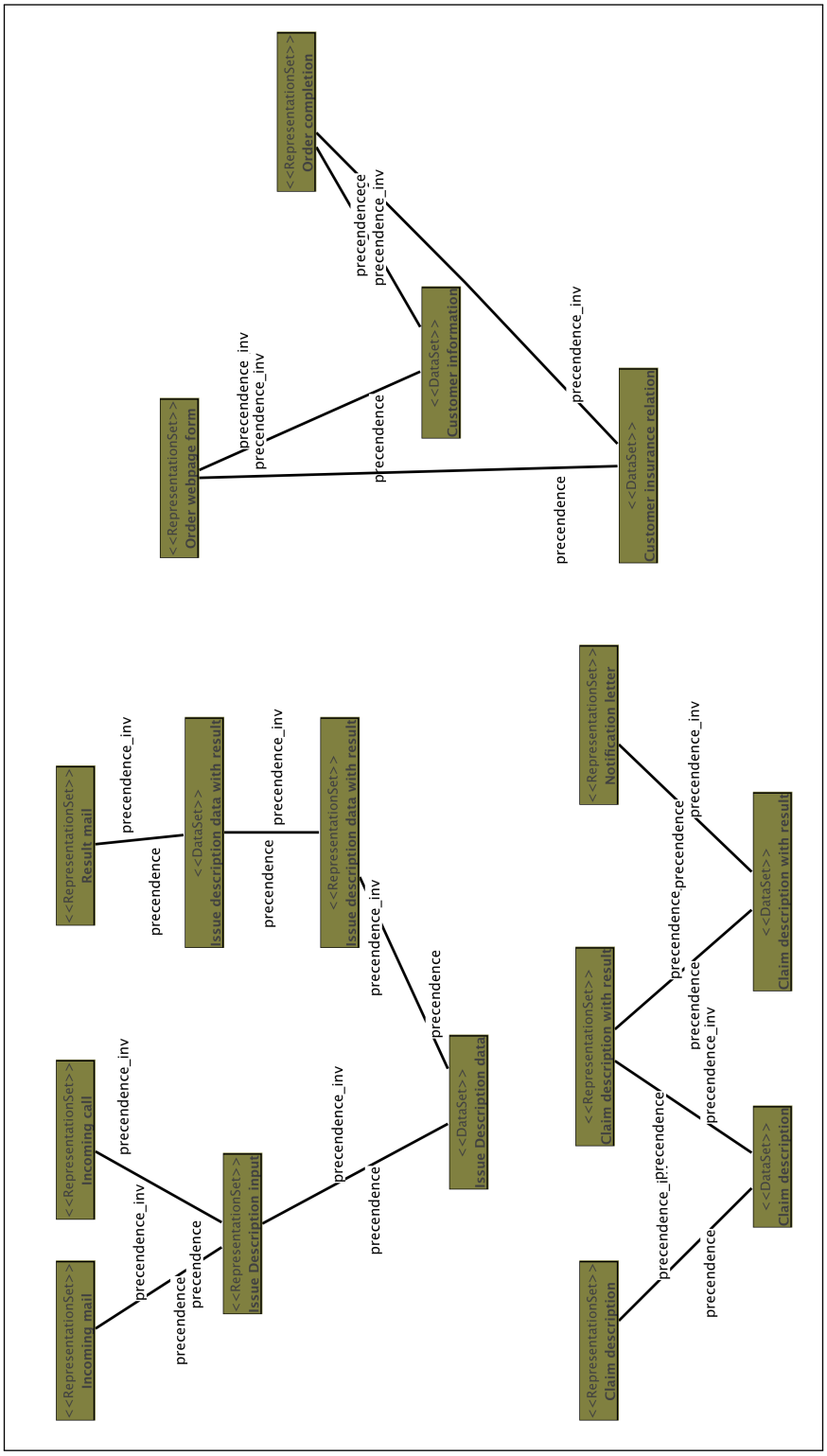

Figure 24: To-Be Information System Architecture

B.4 Infrastructure Architecture

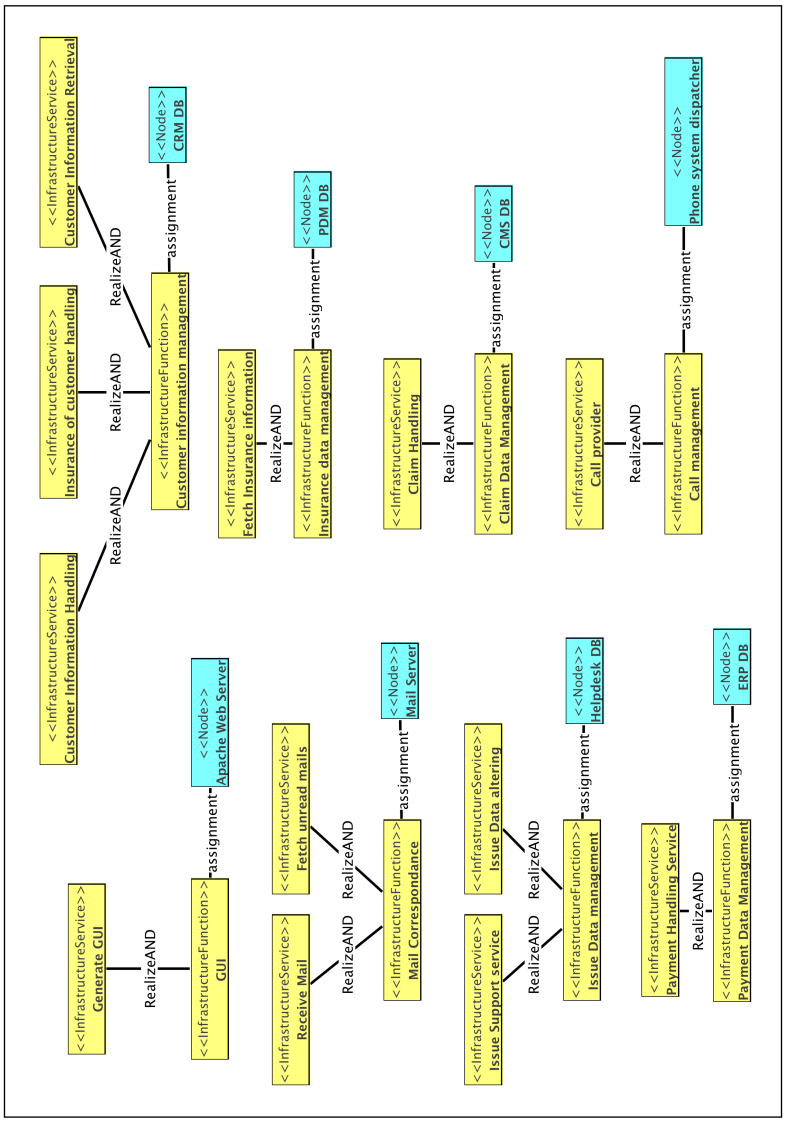

Figure 25: To-Be Infrastructre Architecture