

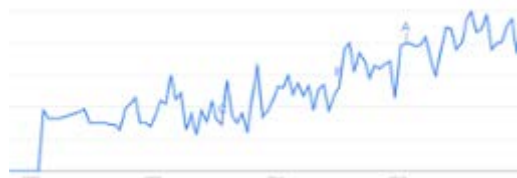
ArchiMate Modeling in Practice

This is a series of blog entries posted by Bas van Gils & Sven van Dijk, June - December 2013. I collected them in one document for ease of usage in the lecture.

Knut Hinkelmann

Introduction¹

Over the last few years, the popularity of ArchiMate has increased rapidly and steadily, especially since it got adopted by the Open Group. A quick search on google trends shows this nicely.



ArchiMate has been around for over a decade. More and more organizations use the language for their enterprise (architecture) modeling efforts. We also see that more and more tool support is available. Our flag ship tool – BiZZdesign Enterprise Studio – was the first native implementation of ArchiMate and is still the leading tool

for modeling and analysis at the enterprise level.

Earlier this year we have published a series of postings where we have captured the essence of the ArchiMate modeling language, based on many years of practical experience in the field. We have complemented this with a series of best practices. Building on these earlier blogs, we now present a series of postings where we illustrate these best practices in the context of a (fictitious) case study. This posting kicks off the series, and is intended to introduce the organization that we will be using over the next few weeks.

BriteLite - towards a brighter future



For many decades, Jansma Lichten has been one of the most successful lamp producers of The Netherlands. The company was founded in 1923 as *Lampenfabriek Jansma* and renamed in 1974 to Jansma Lichten.

The company's most successful period dates back to the period between 1960 and 1990. After the 1990s, several socio economic developments have caused for some serious threats to the company. During that period, Jansma Lichten invested large amounts of resources in new production facilities and techniques for the highly successful line of light bulb and light bulb fittings. Unfortunately, since the early 2000s, the need for incandescent light bulbs started dropping rapidly year over year and as a result, Jansma Lichten was left with diminishing turnover and high costs. This was in large part caused by new regulations that will banish the incandescent lights all together in favor of LED and other innovative lighting products.

¹ <http://blog.bizzdesign.com/archimate-modeling-in-practice-introduction-case-study>

More recently the company experienced yet another setback, due to the retreat of several key investors as a result of the financial crisis. Halfway through 2010, the company was well on its way to become bankrupt when a few new big investors were contracted, under the condition that the current board of directors would make way for a new team that could change the strategic course of Jansma Lichten and revive its business.

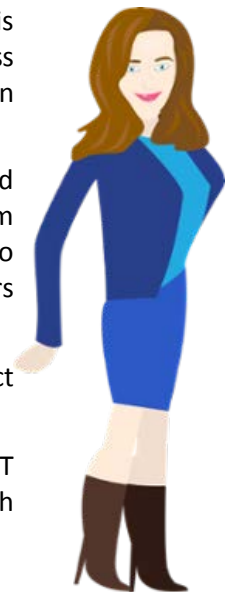
The new Board prepared a major strategic shift for the lamp manufacturer. Among other things, the company will shift its focus from the national to the international market. Therefore, the company is going by its new name since January 2011: BriteLite. Since that time a lot has happened:

- BriteLite is well on its way to making a shift to LED-products. Staff has been re-trained where necessary and plants have had a major overhaul
- A new consulting team has been added to the company. This team works with (corporate) clients to define custom lighting solutions. The team is largely successful and managed to secure over 60% of the graphic design industry and also does a lot of work for office buildings, show room and lighting solutions for events and trade shows
- On the international side, small offices and warehouses have been built in Belgium, France, Germany and the UK. Reselling partners have been recruited in the Americas, Asia, and Australia. Expansion is small but increasing steadily
- BriteLite's financial position is improving steadily. However, IT cost are sky-rocketing. This is in large part due to the fact that the board has decided to build the new business on the old *platform for execution*.

There is so much going on for the company that the constant stream of changes is becoming a problem. The company acknowledged that successful business transformation could only be achieved through a structured approach, based on Enterprise Architecture techniques and -modeling.

After some debates and advice, BriteLite decided to hire Brenda, a seasoned Enterprise Architect with many years of experience under her belt to help them face these challenges. Brenda (a.k.a. Brenda Architect) was hired some time ago and she has started her new job with a series of interviews with all the key players in the BriteLite organization. Her key challenges are:

- Quickly develop a baseline architecture that can be used to analyze impact of change and plot a direction towards a brighter future for BriteLite
- Develop a target architecture and a roadmap for overhauling the IT landscape and reduce IT cost. This should, of course, be in line with BriteLite's plans for international expansion so some flexibility is needed



The remainder of this series

In the remainder of this blog series we will share Brenda's adventures at BriteLite. Brenda is a faithful reader of the BiZZdesign blog obviously, so in her modeling strategy she will use as many of the best practices that we have discussed in the previous series as she can Stay tuned for more!

Getting Started²

Brenda the Architect has her work cut out for her: developing a baseline and target architecture for BriteLite seems like a challenging task. The organization is still in the middle of the transformation towards production of LED based lighting products for international markets and tries to get used to the new way of working with the consulting team.

There has been some tension between the sales/ consultant teams and the production department over schedules, time to market and so forth.

Brenda spends her first few weeks getting to know the lay of the land by meeting with as many people as she possibly can. This gives her some time to settle in and work on her plan. Three weeks in she is ready to get started and, after some debate with top management she gets going:



- Top management sends out a lengthy E-mail, letting staff know that Brenda will be involving them in an architecture modeling exercise to help BriteLite get to grips with the changes that are coming. This show of support is likely to make sure people will support Brenda in her efforts
- A small team with experts from business and IT is assembled. They are mainly selected for their knowledge and history with the organization. However, extra care was taken to select team members with a good network and reputation
- With the team assembled, another lengthy mail is sent out to inform every one of the plan: the small team will do most of the work, will involve experts as much as possible and all intermediate results will be published on a shared network drive. All input is welcome, so the mail ends with a warm invitation to join.

Starting with the basics: a business function model / capability map

As the first problem to tackle, Brenda gives her team a brief instruction on developing a business function model. As an inspiration, she shows high-level diagrams of Porter's value chain model, capability maps that can be found online and several smaller business function models from previous engagements. She gives her team the following guidelines for the business function model:

- The business function model is to be set up as a capability map, where capabilities are defined as “an ability or capacity that an organization may possess or exchange to achieve a specific outcome or goal”.
- The name of a capability (modeled as a function) is a noun, not a verb.
- The business function model is to be linked to the business object model.
- The model describes what the organization does with a business focus. There is no such thing as an “IT capability”, a capability is a capability.
- Capabilities will be *stratified*, distinguishing between strategic capabilities (related to the direction of the organization such as strategy management, finance management), core capabilities (adding value for customers), and supporting capabilities (such as training and HR management)

² <http://blog.bizzdesign.com/archimate-modeling-in-practice-getting-started>

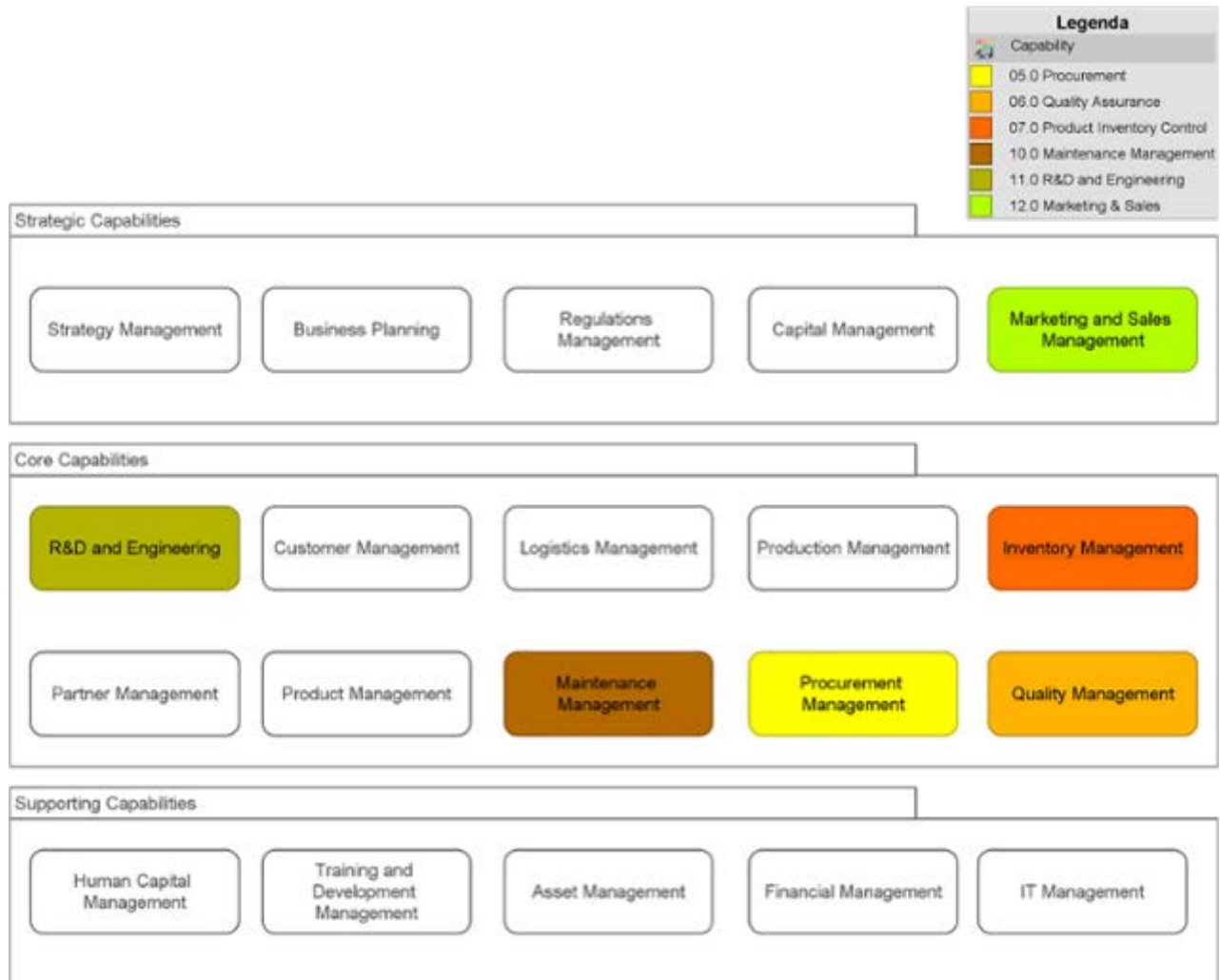
In the first round the goal is to find the top level (or: “level 0”) capabilities. This will be validated with people in the organization before moving on the adding more details. Ideally we’ll at least get to level 2 capabilities to get a consistent model for the organization.

The first draft

The first draft of the model is developed in a half day workshop by the team. Since the team has been with the company for a while, they have a fairly good grasp of what is going on. After brainstorming at the whiteboard and digitizing the results in BriteLite’s EA tool BiZZdesign Enterprise Studio (ArchiMate certified by the Open Group), they come up with the following draft high-level capability map:



While setting up this capability map, the team reused some information still available from an earlier attempt to incorporate knowledge and best-practices typically found in industry reference models, including parts of ISA-95 (see also this blog for more information on using reference models). The reference models are stored in BiZZdesign model repository, and in this way it is possible to link BriteLite’s capability map to the reference model to visualize their alignment, as shown in the diagram below:



Management agrees that this model is good enough to start with and the team proceeds with drilling down to more detailed capability models, starting with the core capabilities as these are expected to be needed the most. Brenda has set a time box of 3 weeks for the capability mapping exercise, so the team has to focus and dive in quickly.

Detailed capability maps

The team starts with planning a series of workshops, inviting experts from across the organization. To maintain consistency, Brenda will facilitate all workshops so the team can focus on the contents of the mapping exercise. Indeed, most of the capabilities have been mapped out consistently after three weeks with several validation actions still open. These will have to be resolved at a later point in time. Again, the results are documented using BiZZdesign Enterprise Studio. In this tool, it is very easy to add more detail to the high-level capabilities by in fact adding a layer behind them. The tool allows to easily navigate between the layers by double-clicking and hence drilling down into the details layer by layer (level 0, level 1, etc.). Here are some of the results:



Outlook

Once the team has finished the capability mapping exercise, Brenda confidently presents her results back to management. She is happy with progress, as the capability / function map will prove to be a big help as a starting point for impact analysis. The maps are also printed in a big format and put on display in various parts of the building with an open invitation to provide feedback.

The first iteration is finished with a 'retrospective' for capturing lessons learned, and creating an outlook for the next iteration. During a 45 minute discussion at the management meeting, it is decided that the next iteration should focus on a "product x services" mapping effort.

Where are we going?³

When work on the [business function model / capability map](#) is well underway, Brenda is confident that she can promise management a first product to be delivered in a few weeks' time. She has organized weekly meetings with the team for updates and reviews and things seem to move along at a slow, albeit steady pace.

This frees up her hands for the next topic to be addressed: where are we going?

Brenda realizes that, in order to assist management in decision making about an overhaul of the IT-landscape she needs quite a bit of information... not just about the IT landscape. Both in the baseline and the target situation she needs to understand the relation between products/services, data/information, and systems.

To start the discussion, Brenda wants to plan a series of short, focused workshops to gain a deeper understanding in questions such as:

- Who are the key stakeholders that we have to take into account?
- What products do we currently offer, and can we distinguish between different categories of products? In other words, what is our product/service architecture?
- Do we expect any major changes in this architecture? Are we going to offer more products and services that fit within this categorization, or do we expect to also add new categories? For example: lighting is often associated with interior design, are we going to offer products and services in that realm?
- Are there important developments in the external world to take under consideration, such as new types of products, technological advances in production mechanisms, legal developments etc.?
- What is our operating model (see e.g. Ross and Weill [1])? That is, to what extent do we standardize or integrate our processes?
- Do we have a product strategy? An IT strategy? A sourcing strategy?



These are big questions, and Brenda knows that (a) management time is scarce, and that (b) it will take some time to get all of these answered. That's "ok" though. Getting the information is only one reason for asking: keeping management on their toes and making sure they play an active role in the development of the target architecture are equally important.

After some discussion with her sponsor, Brenda gets the thumbs-up for a full-day kick-off session with management and their strategic advisors. She asks the management assistant of her sponsor to plan the session in 2 weeks, and makes sure her sponsor discusses the session in the next management meeting. As she had anticipated, there was some grumbling with respect to two things. First of all, the amount of time she claims did not sit too well with some, and secondly, some people suggested that it is "nonsense" to talk about these things.

Stakeholder map

In order to be well prepared for the session with management, Brenda decides to formalize the thoughts and ideas that exist in her group on the lay of the land in the "stakeholder department". She uses best practices from her own experience, but also the techniques as described in TOGAF on stakeholder management. For documenting and analyzing the stakeholder landscape the Motivation

³ <http://blog.bizzdesign.com/archimate-modeling-in-practice-where-are-we-going>

extension in ArchiMate is perfectly suitable. Following TOGAF, for each stakeholder she makes an initial assessment of their power, interest and attitude towards the initiative to transform BriteLite’s business in the proposed direction. BriteLite’s EA tool BiZZdesign Enterprise Studio allows her to capture this detail and based on that generate a stakeholder analysis view. One of her draft versions is shown below.



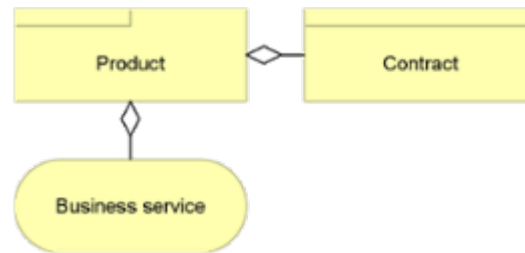
The workshop

To soothe the emotions a little, Brenda starts the sessions with some case studies about why these elements are key, illustrating each point with clear examples. She then proceeds with the stakeholder map ...which takes up most of the day! What was thought to be a “quick and easy exercise” turns out to be pretty tricky. Doing this thoroughly gives her some credit and at the end of the day she has at least achieved an action list:

- The strategic advisors will work on the product/ IT/ sourcing strategies. The architecture team will review the results, after which management will rubber stamp them.
- The architecture team is asked to map out the products and services and come up with a classification scheme.
- The management team will work on an environment analysis using the 5 forces <https://en.wikipedia.org/wiki/Porter_five_forces_analysis> + PEST <https://en.wikipedia.org/wiki/PEST_analysis> models.
- The discussion on the operating model is postponed until the capability map is completed.
- The deadline for capability map and (“0.9” versions of) the above products is set for three weeks from now.

This is a pretty good result. Brenda and her team are well under way with the capability map, which frees up time to start on the analysis of products and services.

Products and services



As before, Brenda starts with a brief introduction in the way of modeling, based on the ArchiMate specification:

- The distinction between product / services is not the same as in natural language
- Services are about what we do for the environment, about added value. E.g. ordering a bike, or making a payment
- Products group services, where a service may be part of more than one product
- A product may also have a contract, which is close to an SLA

Much to her surprise, some team members had already studied the ArchiMate specification + discussions on LinkedIn groups, so the team “gets it” rather quickly. They agree to take a three-step approach: first come up with a list of all the services and definitions, then do the bundling in products, and finally come up with a categorization.

Results

By now the team has claimed a meeting room for the duration of the project to use as a “war room”. All intermediate results that are stable enough are printed on posters and mounted on the wall for easy reference. The room is also well stocked with whiteboards, flipcharts, sticky notes, markers etcetera.

An initial brainstorm results in a preliminary list of services. Each team members takes a full copy of this list for validation with various roles and departments: marketing, product development, and sales are among the key players in this realm. After consolidation, the list of services is grouped into products by creating a matrix in the BiZZdesign Enterprise Studio:

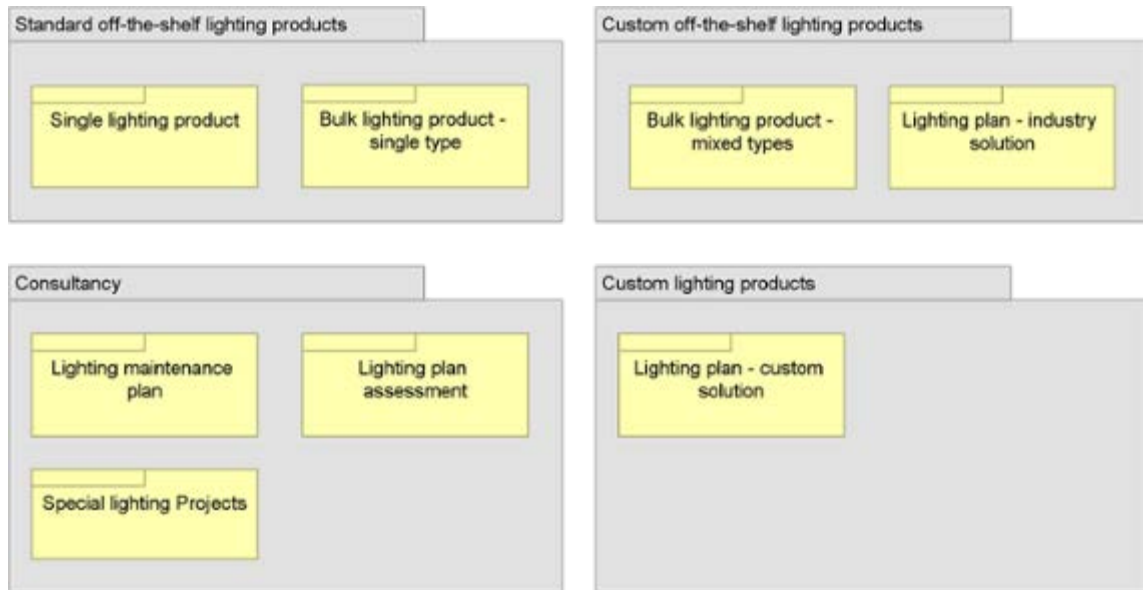
Product X Service	Service										
	Handle complaint	Light assessment	Deliver light product - bulk	Online customer portal	Local Helpdesk	Lighting product recycling	Light maintenance	Install lighting solution	Create light plan	Custom industry lighting solutions	Deliver light product - single
Product											
Lighting plan assessment	x	x									
Lighting plan - industry solution			x	x	x	x	x	x	x	x	
Lighting plan - custom solution			x	x	x	x	x	x	x		
Special Lighting Projects	x	x	x	x	x	x	x	x	x		
Single lighting product	x					x					x
Bulk lighting product - single type	x		x			x					
Bulk lighting product - mixed types	x		x			x					
Lighting maintenance plan	x		x	x	x	x	x				

The team is aware that this captures the essence of the products/services architecture, but that some additional services may have been missed. The consensus is that these will be caught only when a ‘layered view’ is created where services are linked to processes. This will reveal additional customer interactions and services that should be added to the model. After some further debate, the team agrees that this is “good enough for now”. However, Brenda reminds them that an additional product should be made: grouping the products into categories.

The team is ‘unsure’ about this area. A preliminary brainstorm on the whiteboard does not help much. They call in the cavalry by bringing in one of the ‘old timers’ from marketing which seems to do the trick. After a quick discussion about the goals of the exercise the team gets to work and comes up with the following categorization:

- Standard off-the-shelf lighting products: has all the products and services associated with mass produced standard products, both to retailers and business customers
- Custom off-the-shelf lighting products: is the one the team struggled with. It was hard to find a name for this category. The idea is that standard, mass produced products are bundled in a specific way for a specific customer for a specific price. It requires a different process with much more customer interaction.
- Consultancy: resulted in some discussions as well. With the consulting team growing, especially internationally, the team feels that this should be a separate category. The fact that the top consultants are sometimes paid for advice in itself strengthens this
- Custom lighting products: pertains to all the major deals with custom lighting solutions. There was some debate for splitting this up to retain the consulting / production / installation split, but the team decides that this is already handled by defining specific products for this category.

To wrap-up, Brenda make sure the team creates the following ArchiMate view:



References:

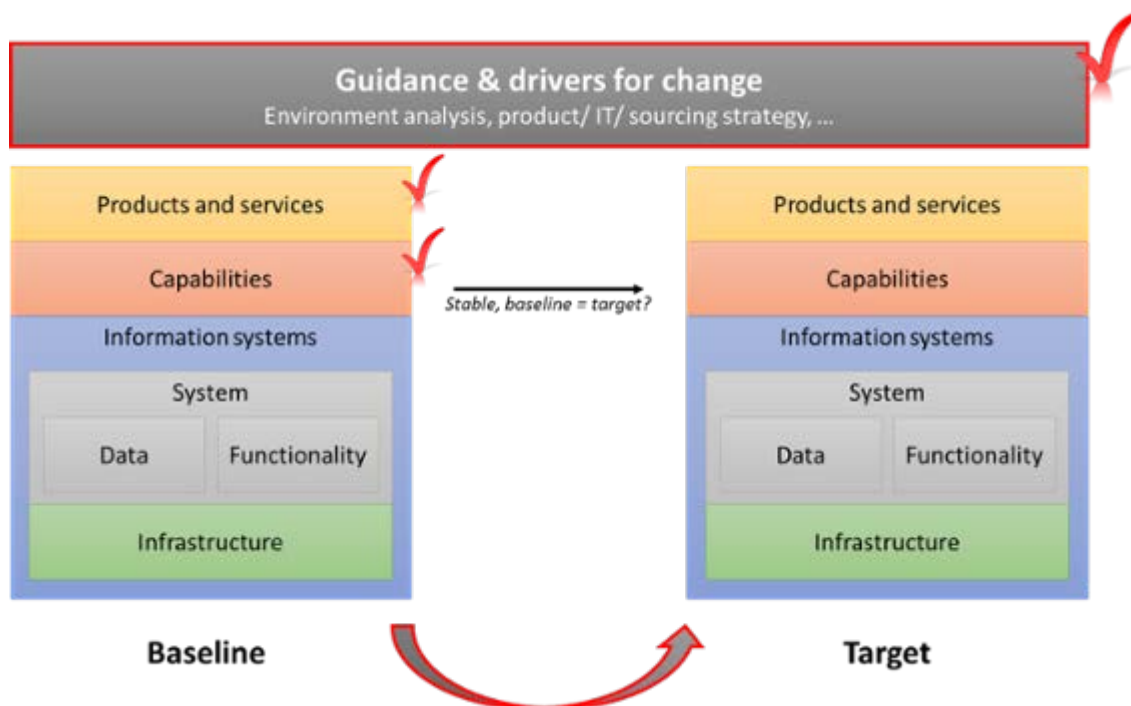
[1] J. Ross, P. Weill and D. Robertson, Enterprise Architecture as Strategy -- Creating a foundation for business execution, Harvard Business School Press, 2006.

Two Tracks⁴

The three weeks since the [sessions with management](#) are almost up, and Brenda has heard via her sponsor that the teams are well under way on the strategy work and that the expectation is that all teams will finish in time for the next workshop as agreed. As usual, Brenda is expected to handle the agenda for the workshops and she now has been assigned a management assistant for handling room reservations, meeting invitations, arranging drinks etcetera.

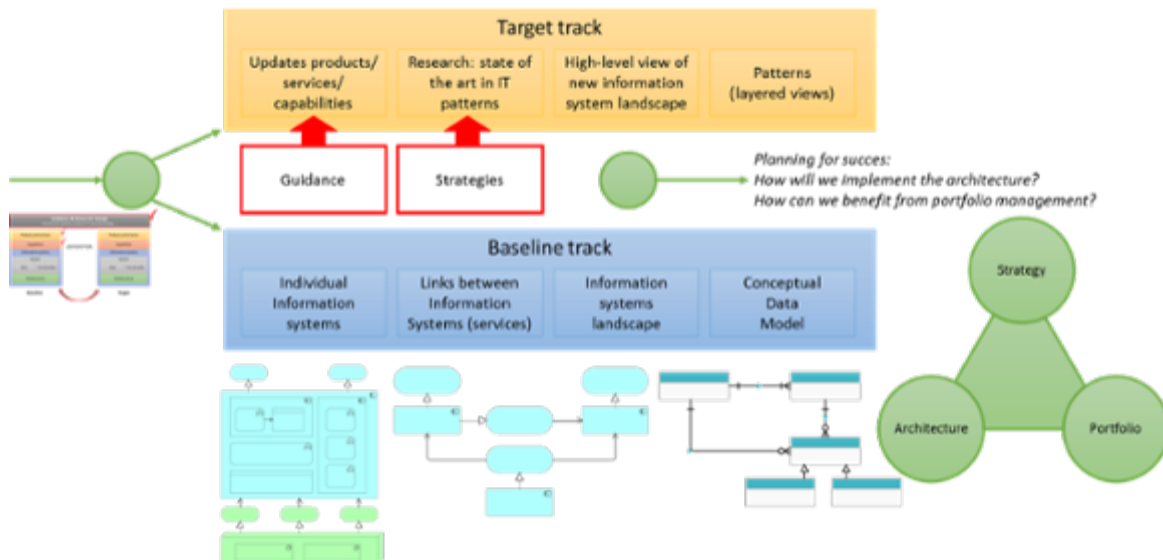


With only a few days to go to the meeting, Brenda decides that her team should get some credit, and asks them to bring the two posters with the capability map and products / services map along for presentation. She also prepares two additional posters:



This first poster is to show which architecture products have been created so far, while highlighting that a lot of work remains to be done. She spent some time to come up with a suitable name for the “top bucket”, hoping to send the message: we’re doing the Enterprise Architecture, but management has to give guidance for direction.

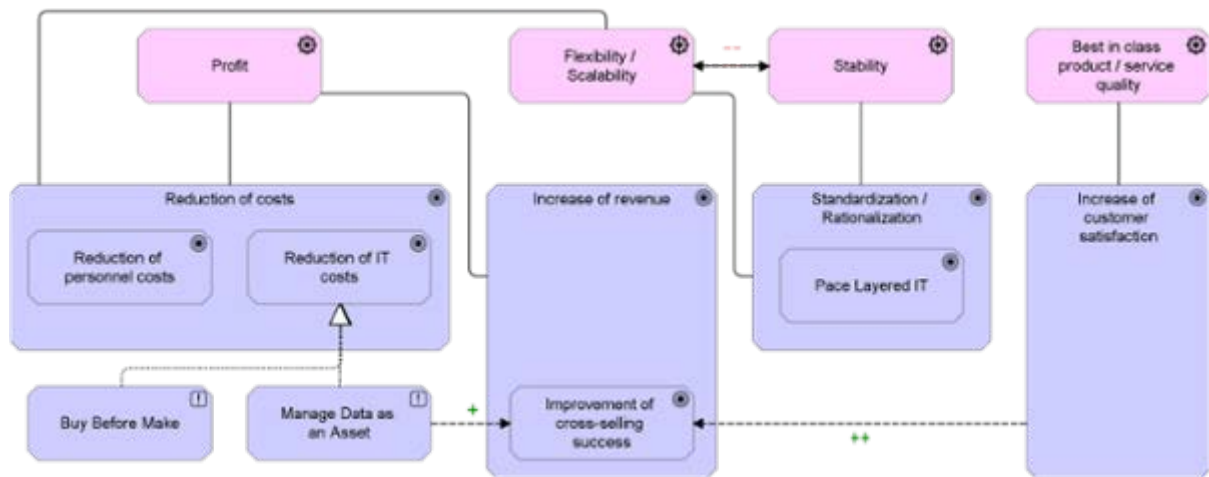
⁴ <http://blog.bizzdesign.com/archimate-modeling-in-practice-two-tracks>



In her second poster, Brenda gives a clear overview of what she intends to do going forward with her team, based on a two-pronged approach: Part of the team will worry about the information systems architecture in the baseline. This is a lot of work and requires dedication and focus, ploughing through one system after another and then connecting the dots. The second track is to start work on the target architecture, validating the business parts (products, services, capabilities) based on management guidance before diving into the information systems part and again connecting the dots. This track requires creative thinking, strategic skills, and the ability to stay away from the details. She hopes to get some additional resources to make this happen. Finally, as a reminder, she makes sure that management is aware that at one point they'd better start thinking about implementation scenario's.

The workshop

It seems that people are increasingly enthusiastic about the architecture project as the meeting is very well attended. A large group of 21 people, 4 more than expected, crowd the room. Making a mental note to discuss this with her sponsor, Brenda guides the group through the presentations. She is particularly proud when the results from her team are well received. At the same time, it clearly shows that the other teams have worked really hard to come up with the requested guidance, but some additional work will be needed to finalize the strategic documents. In a live-modeling-session using the [BiZZdesign Enterprise Studio](#) after the lunch break, Brenda uses ArchiMate's motivation extension to create a first overview of the main strategic drivers and goals that underlie BritLite's current business transformation initiative. She also takes into account some of the key architecture principles, and uses influence relationships to visualize any reinforcing and contradicting elements in the strategic landscape. Brenda manages to break down the results from the discussions in the workshop into something workable for now, as depicted below.



The workshop ends with a good discussion on how to move forward. It is quickly decided that the strategic documents will be finalized in 3-4 weeks' time after which the newly created concern/goals map will be vetted. Until then, the current map will be put up on the wall as one of the work products of the team.

Brenda's two-pronged approach draws a bit of debate. Management had not expected this call for additional resources. Given the quality of the results so far, and a desire to keep the speed up, management agrees to free up two more resources to help out with the baseline information systems architecture. Also, as a reward for all the hard work, Brenda gets the go-ahead to take her team out for dinner, recharging batteries for the next iterations!

Continuing the Baseline Models⁵

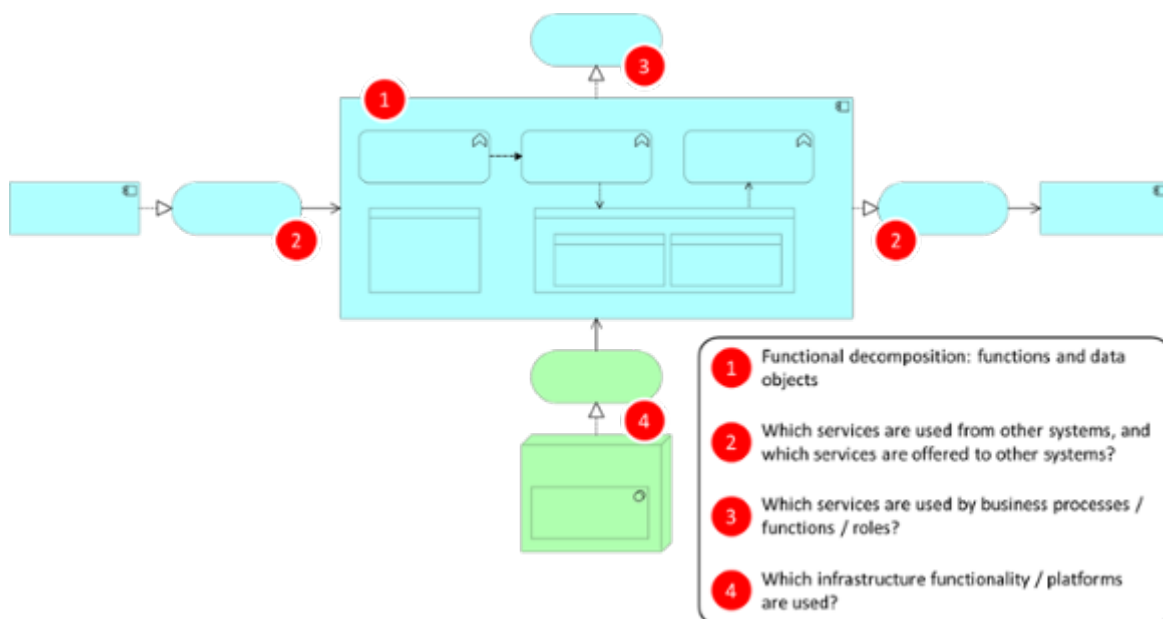
It does not take long to extend Brenda’s team: since she had such “good press” in [the last few weeks](#), people are eager to join in. Management is a bit careful though, given that:

- There appear to be several competing, informal subgroups in the organization with respect to the IS architecture, and management wants to make sure the team is balanced
- There is a group of people who will benefit from a failure of Brenda’s project as they have built up a position of informal power with specific knowledge

After some careful planning, Brenda now has two sub-groups that will work semi-independently on both topics. There are bi-weekly update meetings so that everyone will get a clear picture of the progress. Also, there are no real end-to-end plans with deadlines, as the teams feel that this is not feasible. Instead, they work with a 6-8 week plan for figuring out the next iteration.

Way of working

The baseline team of four people with mostly an IT background starts with an instruction by Brenda on the way of modeling in ArchiMate. There is a bit of resistance to deal with as this is experienced staff who claim to have seen it all. Brenda realizes that most of the team members are experienced *UML* modelers so explaining a new language should not be too hard. She makes sure to spend some extra time in explaining the *relationships* as these tend to be the hardest to grasp for UML-modelers who have seen the “lines” used in ways that are vaguely similar but precisely different.



Starting with a single diagram on a whiteboard, she talks the team through the way of modeling. Most of the concepts such as functional decomposition and the use of services are understood relatively quickly by the group. As expected, there is some debate about the relations. The pragmatic remark that “this is how it was defined so, whether we like it or not, we’d better learn to work with it” settles the debate and the group quickly goes to work.

⁵ <http://blog.bizzdesign.com/archimate-modeling-in-practice-continuing-the-baseline-models>

The plan

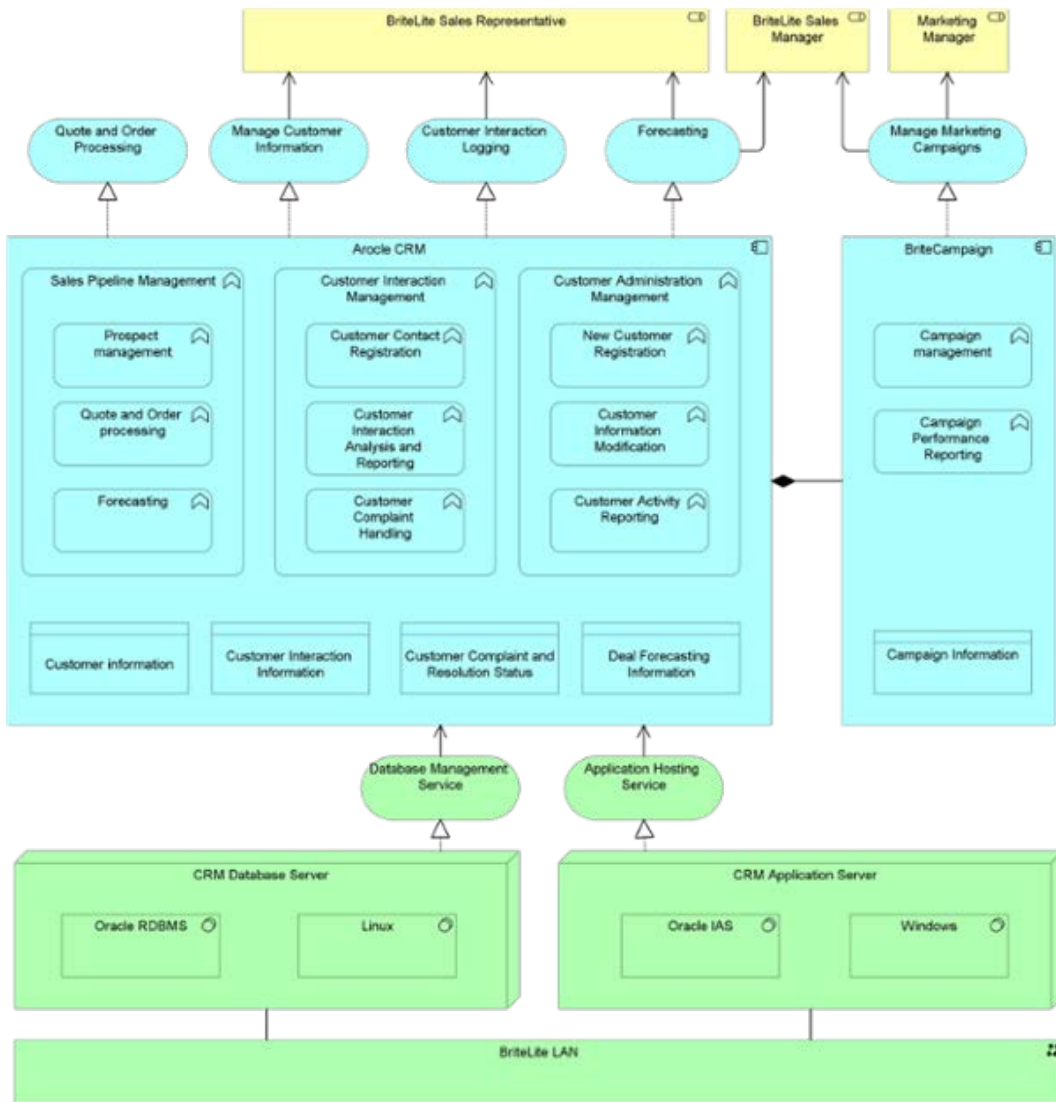
The team has decided on a simple and pragmatic approach with several workshops that all take about a half day:

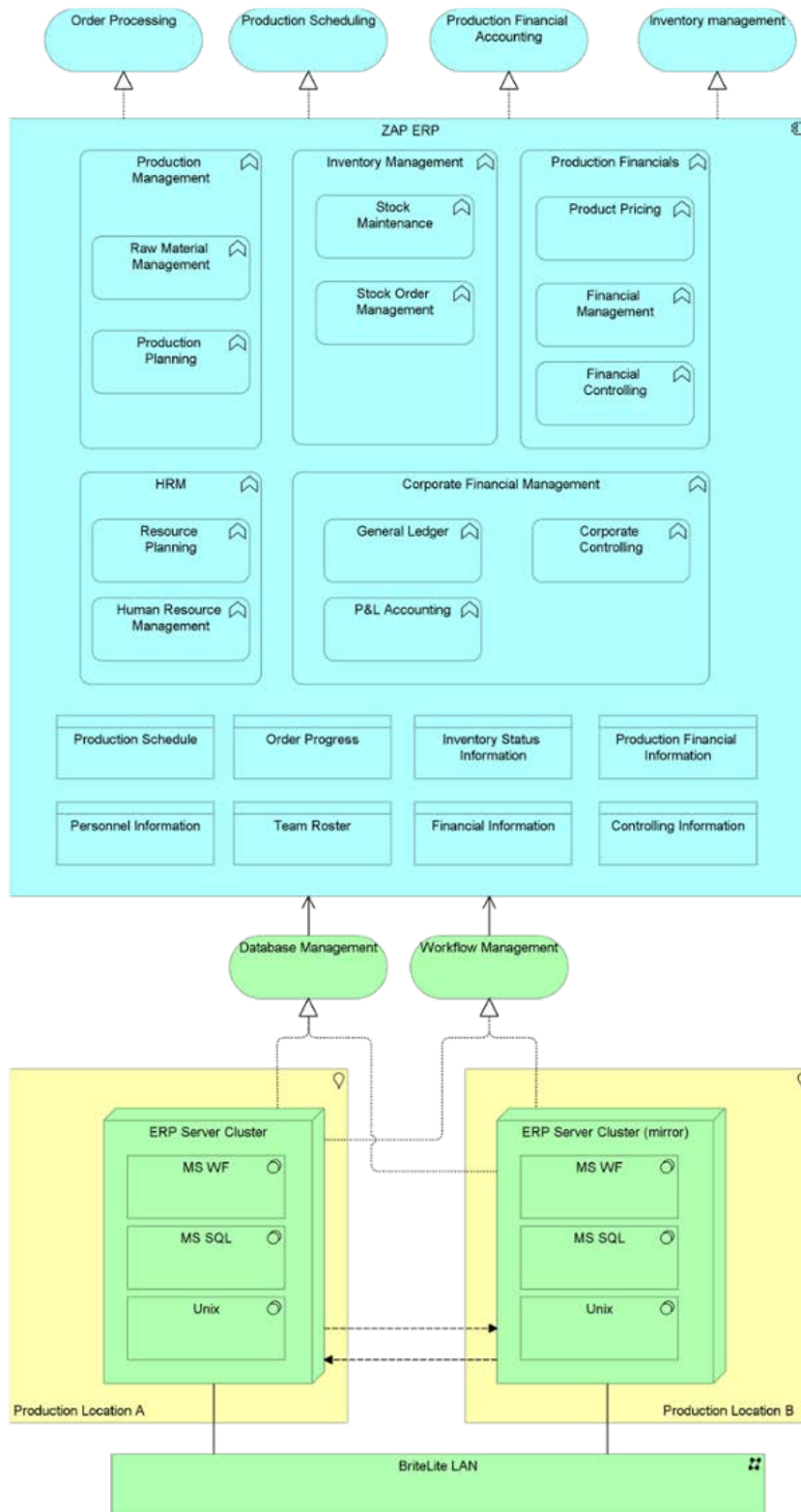
- Two workshops to get the “big picture”: what are the key systems that are in scope and do we have the expertise to model these ourselves or should we setup workshops with other stakeholders?
- After that: 1 or 2 workshops per system, depending on complexity
- Try to avoid more than two workshops for a single system: yes a system could be more complex, but ROME (Return On Modeling Effort) should be kept under consideration

The team will document everything in the baseline model package of the shared repository of the [BiZZdesign Enterprise Studio](#) and plans to create one view per system according to the structure that Brenda has laid out for them, and one total overview that only shows components, services, and nodes (i.e. the functional decomposition + platforms are left out).

Results

The team starts digging in and quickly comes up with some first results. The CRM system and the ERP system are early targets, since they are quite well-known to the group, and moreover heavily used by many stakeholders at BriteLite. This makes it easy to fill in some of the gaps that come up during the first rounds of modeling, by verifying and reiterating with subject matter experts. In the baseline models, the architects follow the guidance from Brenda as depicted above, which leads to baseline models for BriteLite’s CRM and ERP systems as shown below.





Publication

The two teams (baseline / target) have agreed to be as open and transparent as possible. The plan is to publish a new HTML-based report on intranet just before the bi-weekly update meeting. In that way the entire organization will stay up-to-date as to what is going on, which may result in extra input and acceptance of the results.

Project Interruptions⁶

In the meantime, her “target architecture team” may need an additional push to get going again. They have been researching policy documents, attending management meetings and researching modern EA strategies by industry analysts such as Gartner. The output has been minimal, but Brenda isn’t worried too much yet. They’ll get there, some extra “thinking time” might be a good thing as the most crazy ideas will have faded to the background.

A distraction?

While working on her plan, Brenda receives an unexpected visitor: James, one of the advisors of the management team comes in with a serious look on his face. Obviously he has something on his mind. After getting coffee – no meeting can start without it – and chit chat about the EA time, she comes to business: management is aware of the fact that Brenda’s team is working hard on the baseline / target architecture but there have been some challenges that must be addressed in the short run. He apologizes for the short notice, but piles these questions onto Brenda’s task list:

- One of the database vendors is pushing for an extension of the licenses. Management isn’t too comfortable in making a decision on short notice: a lot of money is involved.
- Key questions are:
 - Which products are we using from this vendor, and where? Are we using all the stuff that we pay for?
 - Do we expect to stay with this vendor in the target architecture?

Having a lot of experience, Brenda manages to keep a straight face and promises quick results on the first question. The second one might require more time. She asks for one week for the initial answer, and another to get the final answer ready: a swift answer will surely show the power of all the hard work the team is putting in.

James expected quite a fight from Brenda and is pleasantly surprised with the answer. He hadn’t expected such quick results and sees an opportunity to “score some points with the brass” so he graciously agrees.

The plan

When James has left, Brenda collects her thoughts as she sweeps the whiteboard clean. With a quick note on the *group whatsapp*, she urges the team to come over in a hurry for an impromptu meeting. With everyone in her office, the room is a bit cramped. She speaks a little softer than normal, adding to the effect of creating a situation where everyone understand that the pressure is on. She explains the situation and gives two simple instructions:

- The baseline team has nearly completed their work. They are to focus on the infrastructure layer first, complete that in a hurry and generate a cross table of information systems x platforms to see which products of the vendor are used where. It need not be perfect, it has to be here fast.
- The target architecture team has a more complex task.
 - Brenda asks them to create a deck of max 5 slides to explain *the operating model* (a concept that they have spoken about before). Her claim is that the operating model for BriteLite is *Coordination* and she wants the team to explain why

⁶ <http://blog.bizzdesign.com/archimate-modeling-in-practice-project-interruptions>

- She herself will work with the collected research (online, books, Gartner reports) to create a draft framework for the target architecture in a hurry. This will be used to answer the second question from management
- There will be daily updates via the *whatsapp group* and she expects results by the end of the week. She'll work over the weekend to integrate the results and send them to management as promised.

The execution

The team is highly motivated to dig in and get results. After a few questions and brainstorming some ideas, they fly off to do their work. The first updates via *whatsapp* are positive: it's a lot of work, but everyone is confident that they will get the job done. Three days in, Brenda meets with the sub teams separately to confirm that they are on the right track. And indeed, by the end of the week, all the results are in.

Baseline analysis

Given the fact that the Baseline team has been documenting all of their results in the shared model repository of the [BiZZdesign Enterprise Studio](#), they quickly find out that their task is actually quite easy. During the modeling work for the baseline application landscape <see [previous blog](#)>, the servers (modeled as Nodes) and platforms (modeled as System Software) were added to the models and linked to the applications they support. Using BiZZdesign Enterprise Studio's model navigation and view generation functionality, it is very easy to create the overview that is needed to do the required analysis. The team decides to have a table view generated by the tool in which they show which applications use which database platforms. In the cells, they show the node or nodes on which the database platforms run. The resulting table is depicted below:

Application x DB Platform (via Node)	MIS SQL	EnterpriseDB Open Source DBMS	Oracle RDBMS
ZAP ERP	ERP Server Cluster (mirror) ERP Server Cluster		
IPPS			General Purpose Server Cluster IPPS Server
Route planning			General Purpose Server Cluster
QPlus system			General Purpose Server Cluster
L-Info			General Purpose Server Cluster
OrderPRO			General Purpose Server Cluster
E-support			General Purpose Server Cluster
Arocle CRM			CRM Database Server
BriteCampaign			CRM Database Server
TeilPunkt DMS		TeilPunkt Server	

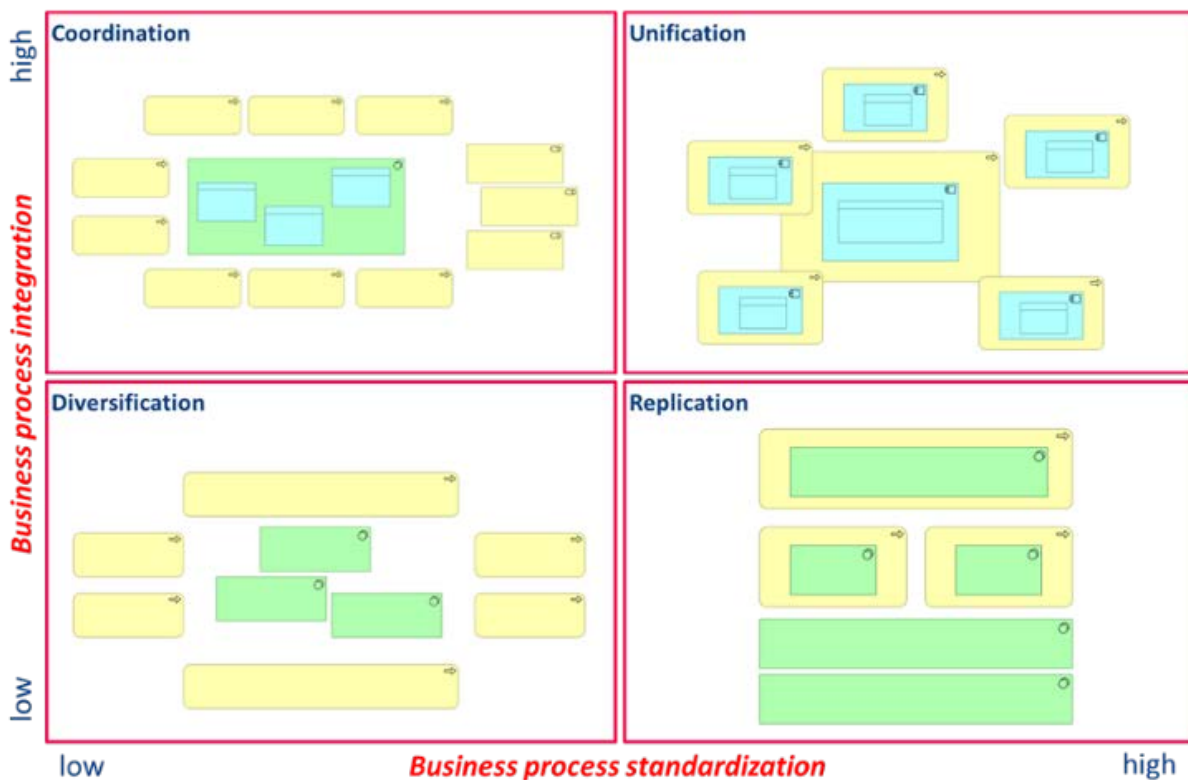
Three database platforms are in use. The IPPS application used to be a dedicated application supporting HRM functions and processes. However, during a project that was completed last year BriteLite started using the HRM functionality as part of the ZAP ERP system, and migrated the data to the ERP database, after which a new project was started with the goal to fully decommission IPPS.

Operating Model

The target architecture team had also done a good job. They came up with a simple deck with a good layout that explains:

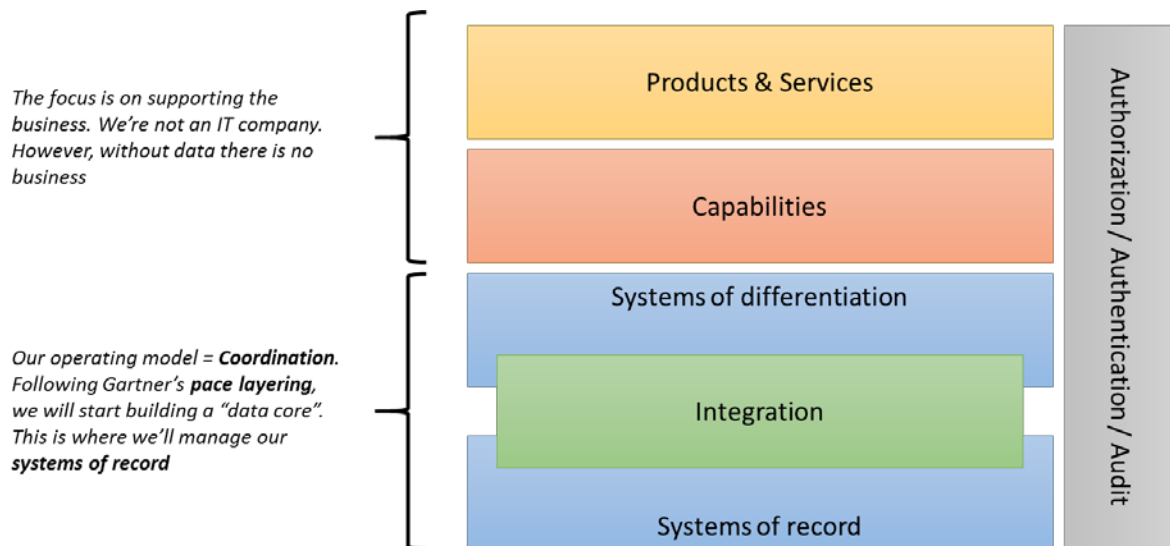
- What the operating model is and why it is important
- The main dimensions (process standardization / integration) as well as the characteristics of the 4 quadrants
- An analysis that explains that the main processes from BriteLite (consulting, production, etc.) are very different, but need to work on the same data. This suggests a Coordination model
- In the last slide, they explain that BriteLite does not have a pure coordination model, but has some aspects of Diversification and Unification as well

The figure below was included in the presentation deck of the target architecture team, in order to support and explain the points mentioned above.



Target architecture

For the target architecture Brenda has also done her homework. She has crafted a slide that outlines the layering of the target architecture which will be used to start the discussion about retaining this vendor on the list of key partners.



Based on the baseline analysis, the operating model analysis and her own framework, Brenda works on her report with a hot coffee from her favorite local coffee shop on a cloudy Saturday morning. Her final recommendation to the management team:

- We are using all the platforms that we are paying for except for one. That system was decommissioned over a year ago
- Data is one of our key assets. It will be the core of the IS part of the target architecture
- A single data platform is highly unlikely. We most likely need a single relational database platform from a strong vendor with the addition of solid open source platforms
- We should give this vendor the opportunity to make us a good offer to become that strong vendor. If not, when we move on as soon as the plans for the target architecture become more solid

After finishing her coffee, she reviews the slides one more time and sends them off with these 4 bullet points. In her e-mail she offers to present this analysis during the Monday morning management meeting. With a grin, she realizes she beat her own deadline, delivering solid results in one week.

Picking up Steam again⁷

Before and during the weekend, Brenda’s team worked hard to come up with an analysis for management.

Earlier today, Brenda presented their findings to the management team, who were more than pleased with the results. During the meeting they decided to follow the recommendations by Brenda’s team and they tasked James with the appropriate actions.

Unfortunately, success comes at a price. Management tried piling up more work on Brenda’s plate during the meeting. Knowing that a lack of focus on developing the baseline / target architecture will get her in trouble, she had pushed back and had bluntly stated that this is a bad idea as it would compromise the important initiative of building these models. She ended her short speech with a rhetorical question: are we in it for the long haul, or should the team go back to putting out small fires?

After a heated discussion, management agreed that piling more work on Brenda’s plate at this point might not be the best solution after all, so other arrangements will be made. Acknowledging the decision power, Brenda indicated that her team will of course assist when possible.

Back to business

Of course Brenda shared these discussions with her team during the joint lunch. Everybody feels that *the only way is up*, so pressing on with the work will be best.

Team “baseline”

The baseline team reports that all individual models have been crafted and proudly shows a stack of paper. They are in the process of

- Adding additional documentation to describe the various model elements
- Building an HTML report that can be published on the intranet
- Building a big poster that can be put on the wall, showing all systems and relations between systems

The team leverages functionality that is available to them in the [BiZZdesign Enterprise Studio](#). It not only allows them to create models and diagrams, but also add relevant data as attributes to components that are part of BriteLite’s Enterprise Architecture. This data can be used for presentation, e.g. in a table like in the example below:

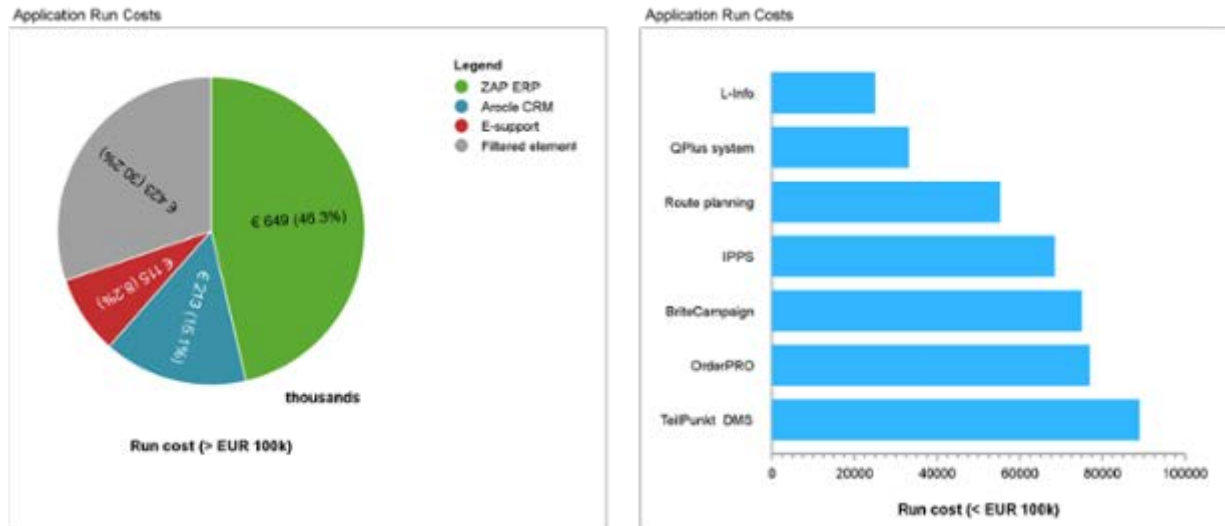
Application Catalog

Object	Operational Since	Application Type	Frequency of Use	Online or Batch
Arocle CRM	01-01-2010	primary	daily	online
BriteCampaign	01-07-2012	support	monthly	batch
E-support	01-08-2008	support	daily	batch
IPPS	01-12-1999	support	unknown	batch
L-info	31-07-2001	primary	incidental	batch
OrderPRO	15-05-2009	primary	daily	online
QPlus system	01-02-2010	support	monthly	online
Route planning	01-09-2011	support	weekly	online
TeilPunkt DMS	01-06-2012	support	daily	online
ZAP ERP	01-02-2010	primary	daily	online

Various data types can be used, including text and dates as in the table above, but also quantitative data such as money amounts. The [BiZZdesign Enterprise Studio](#) also supports running detailed

⁷ <http://blog.bizzdesign.com/archimate-modeling-in-practice-picking-up-steam-again>

analysis on the model and include attribute data in queries. Results of the analysis can be presented in many formats, including diagrams and tables, but also graphs and charts. The baseline team uses information available about the run costs of its current application and adds this to their model repository. Using this they can easily generate the following charts:



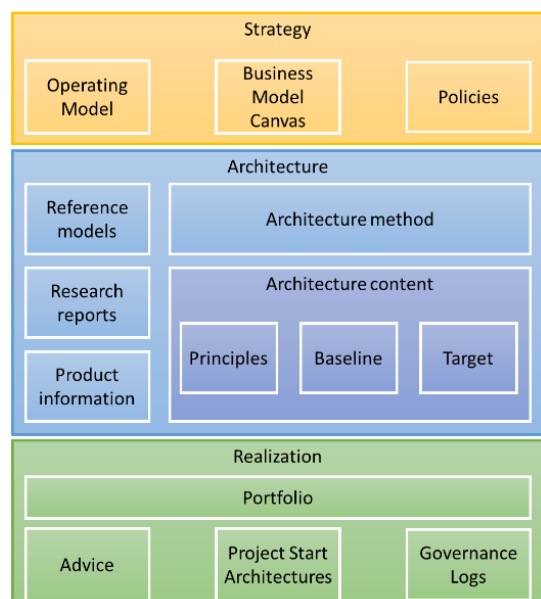
Three core applications have yearly run costs greater than 100k, shown in the pie chart on the left. The run costs of the remaining applications is shown in the bar chart on the right.

Team “target”

The team that is working on the target architecture has claimed a work space on the intranet to set up the architecture repository. The figure on the right shows the various sections for different types of architecture content.

Given all the work that has been done so far, several sections already have been populated with the relevant content: the operating model has been documented, an (older) version of the business model canvas from a strategic session has been dug up, and so on. Team baseline was invited to put their models and reports in the appropriate section so that a consistent repository can be built up one step at a time.

On the content side, team target has made some progress regarding the product/service architecture, which has been added to the new repository. For each of the product categories (see [our previous post “#3 where are we going”](#)), a ‘bucket’ has been created. Each of these buckets lists the main products. To get to the details, one has to ‘drill down’ which will lead to a presentation / document that lists the underlying services and provides further explanation.



The capability maps are also in a state where they are ready for publication. The top three levels of business capabilities have been documented and approved, but one of the team members is still busy fleshing out the detailed documentation that is required to be able to use the map. The team decides to retain the stratified presentation (see [our previous post “#2 getting started”](#)) and only show the top-level capabilities.

The team is happy to have a first ‘filling’ of the top two layers of the framework as presented by Brenda (see [our previous post “#6 project interruptions”](#)) and seems ready to continue with the subsequent, more technical layers. The team manages all the architecture content in their EA solution “BiZZdesign Enterprise Studio”, where they can drill down into the various diagrams from their Start Page, as shown in the screenshot below.



Strategies

In the meantime, the management team has kept the pressure on their advisors as well. They have been fleshing out the requested strategic direction but is still struggling with the details. Brenda has a short meeting with them, and returns with the following notes:

For manufacturing:

- The production machines come with their own software
- Any planning + manufacturing software that needs to sit on top will have to be purchased

Standard capabilities (such as CRM and ERP) are supported with standard COTS systems.

- Best of breed
- Only build these if the mismatch with target architecture will cause major issues in the future

Other systems should be built in-house

- Preference for open source tools
- Seek implementation partners for extra capacity when necessary

Do the important things first

- The production systems are (almost) in place so do *not* start there
- Work on supporting the standard capabilities first

Back in their “war room” the team discusses the outcome of this session. This is the first time that there is explicit guidance and management attention for this topic, so the team is quite happy at first. A quick analysis reveals, though, that going for *best of breed systems* means purchasing systems which may not follow the structure of the architecture too much. After all, the team wanted to split the “data” from the “logic” which might not be possible in this setup. Something to think about during the next sessions.

Brainstorm⁸

Brenda's "target team" feels like they're in a tight spot. It's great that management has given some direction for the IT/ sourcing / product strategies, but it doesn't seem to fit with what they had in mind for the target architecture. In the meantime, the pressure is on as Brenda has been asked to present her thoughts on the strategies in the light of the target architecture.

For the time being, Brenda has put a ban on modeling things for the target architecture until a common approach has been agreed upon.

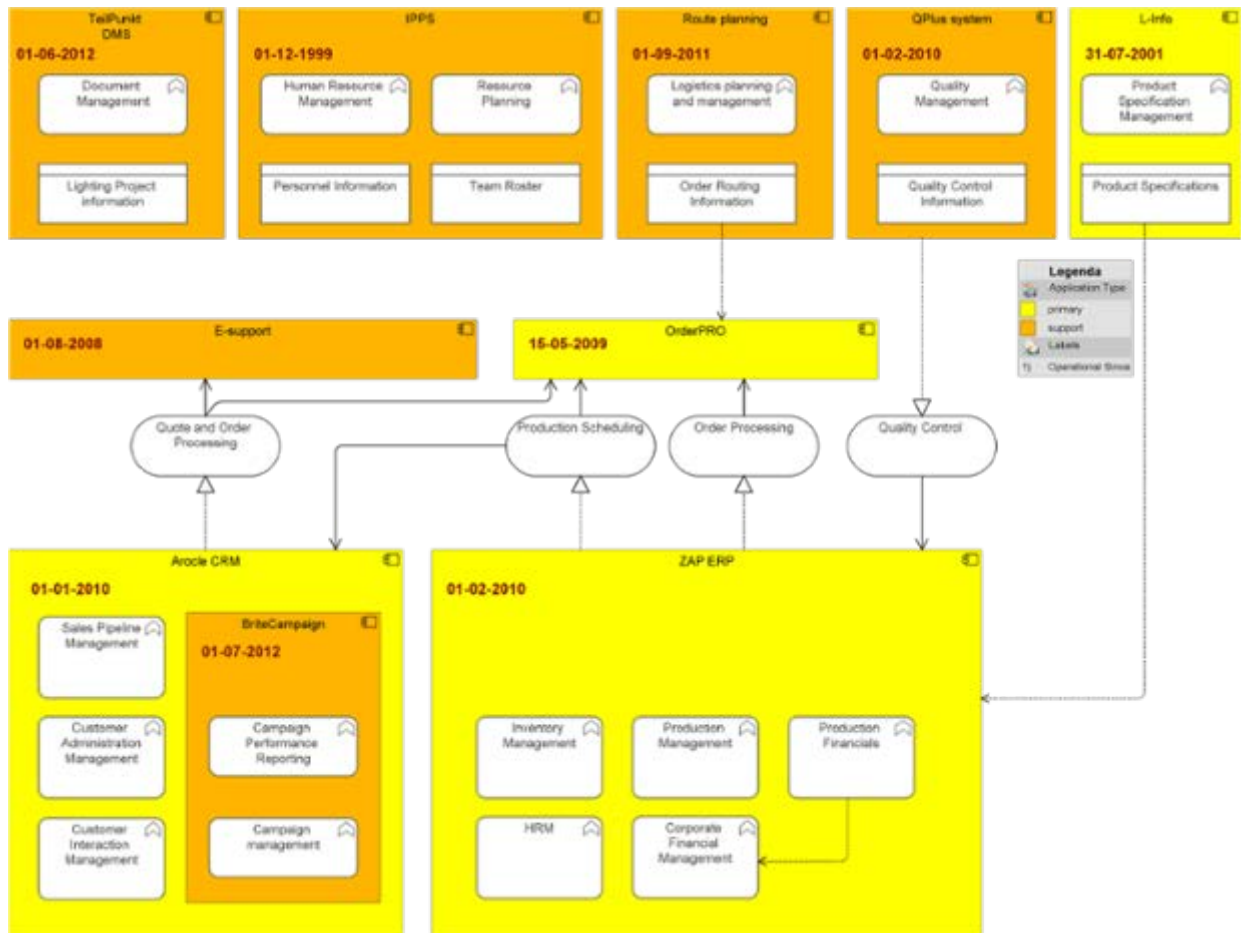
Team baseline

The baseline team therefore has full access to the repository and is working on links between the layers that they hope to present next week. Their approach is to work with cross tables and then generate some views to show how everything fits together. The cross tables they have come up with are:

- Products & services x capabilities
- Capabilities x systems
 - This should also validate the application services that have been defined
- Systems x infrastructure
 - Which should validate the infrastructure services that have been defined

Also, the baseline team finished the application landscape. Using the [BiZZdesign Enterprise Studio](#), they generated and published an HTML report for stakeholders to browse and analyze the content. The report allows readers to navigate the model and dynamically show / hide attribute information to get to the required level of detail. The example below visualizes BriteLite's application landscape, showing application type as a color, and the operational-since date as a label.

⁸ <http://blog.bizzdesign.com/archimate-modeling-in-practice-brainstorm>

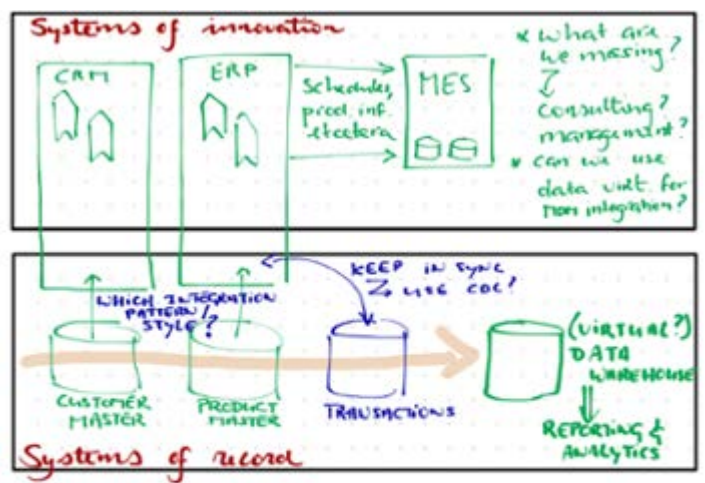


Team target

The team working on the target architecture has spent most of the day on a brainstorm in front of the whiteboard. Several approaches have been tried and the team slowly gets around to the idea that strategy and the architecture framework can be reconciled.

After yet another coffee break, one of the team members hooks up his iPad to the projector and explains what he came up with during the break.

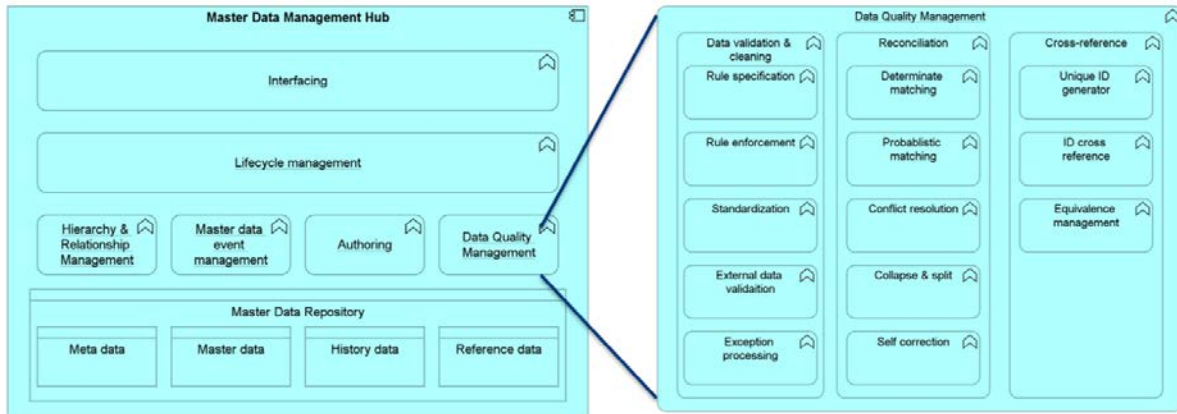
The key to solving the puzzle, in his view, is to consider a system as a collection of data and functionality. In that case, part of the system would be in the *systems of innovation* layer, another part of the *systems of record* layer. Moreover, the layer can be complemented with separate (master) data management stores for key entities such as customer and product. The reporting systems (a data warehouse) can also be in this layer.



⇒ What about data governance?
 ↳ who owns the data?

⇒ SOA still "hot" but: can we use DV or does that have too many risks?
 ↳ what do the consumers support?

The team wants to know why an MDM solution is required if we go for *best-of-breed* solutions. It is Brenda who can answer that: because several of these best-of-breed systems will require access to the *same* data! Using an MDM hub will also be a good step in getting a data management capability off the ground. She quickly pulls up a slide to show the key functionality of MDM systems to explain the line of reasoning:



Dreibelbis, Allen; Hechler, Eberhard; Milman, Ivan; Oberhofer, Martin; van Run, Paul; Wolfson, Dan (2008-06-05). Enterprise Master Data Management: An SOA Approach to Managing Core Information (IBM Press). Pearson Education.

Moving on

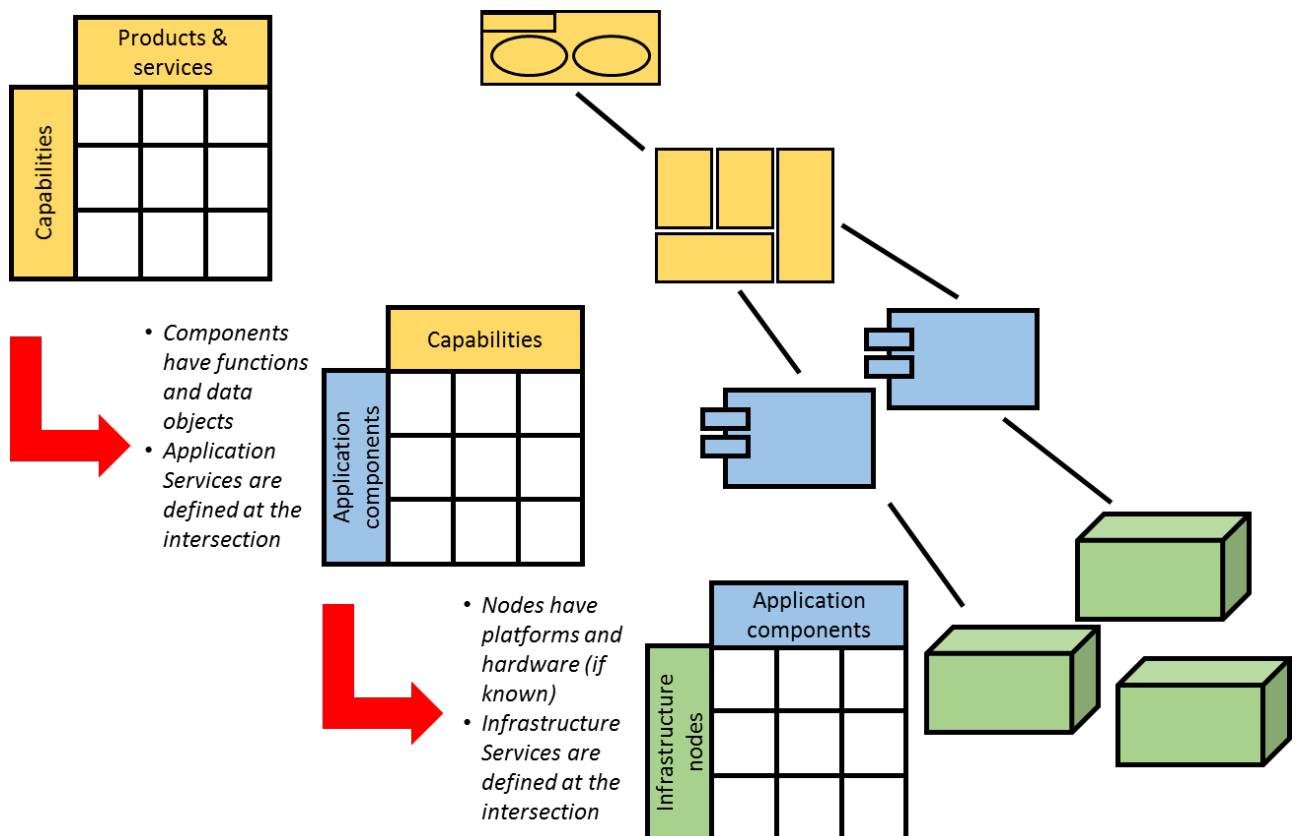
The team agrees that this approach would solve many issues, but recognizes that it would also be expensive. Still working at the whiteboard, they figure out a story line to present to management that shows:

- How the target architecture works
 - With a brief overview of BiModal IT and Pace layering
- How the new strategies and target architecture fit together
- What the consequences will be
- Illustrating the cost (ball-parking, it is too early for a detailed financial analysis)
- Illustrating benefits and risks of following this approach

Brenda will maintain the ban on modeling until management has approved this direction. While “waiting”, the team sets out to come up with a list of key applications + main functions + data objects that will most likely be used.

Wrapping up the baseline architecture⁹

Early in the week, the baseline team announces that they are almost done with their work. There are a few more points to flesh out, but overall the structure is there. The team has brought along the following diagram to illustrate their way of working:



Brenda is quite proud that her team manages to convey their approach so well, especially when the baseline team explains that they have also used the [modeling tool](#) to generate several layered views to verify insights with stakeholders in the organization. They intend to publish a small set of these layered views as posters by the end of the week, together with all the cross tables. The HTML report on the intranet site is also to be updated with the latest insights.

At the end of the team meeting, Brenda asks the baseline team if they require further assistance to make sure the deadlines are met, and encourages the team to also write a newsletter that will be distributed to all stakeholders in the organization. The team is confident that they will make the deadline so everyone can go back to their task.

The results

At the end of the week, both the baseline team and the target team are proud to announce that they have completed their task. The baseline team gets to present their findings first, and distributes big sheets of paper that show the cross tables they have made:

⁹ <http://blog.bizzdesign.com/archimate-modeling-in-practice-wrapping-up-the-baseline-architecture>

Application x Capability	Capability	Logistics Management	Quality Management	Asset Management	Procurement Management	Investment Management	Product Management	Production Management	Customer Management	Manufacturing Management	R&D and Engineering	Marketing and Sales Management	Business Planning	IT Management	Partner Management	Financial Management	Training and Development Management	Human Capital Management	Capital Management
Application																			
Route planning	X																		
QPlus system		X																	
L-Info				X	X	X	X												
OrderPRO	X							X	X										
E-support			X							X	X								
BriteCampaign									X			X	X						
TeilPunkt DMS											X			X					
Arode CRM									X			X			X				
ZAP ERP				X	X			X					X			X	X	X	X
IPPS	X												X				X	X	

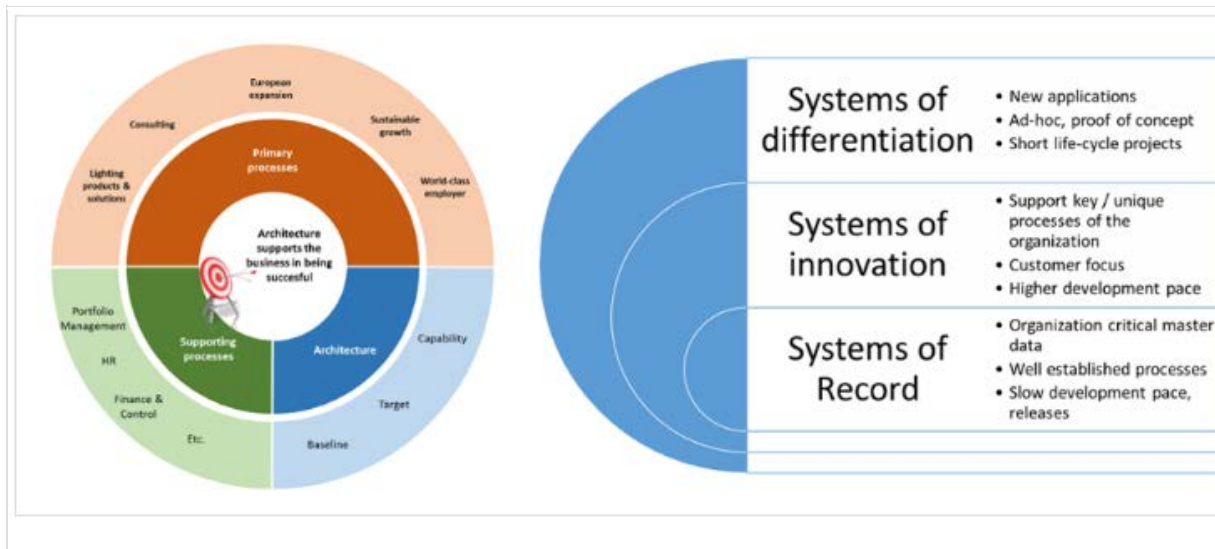
Application x Capability Matrix generated using the BiZZdesign Enterprise Studio

Node x Application	Application	ZAP ERP	E-support	OrderPRO	L-Info	QPlus system	IPPS	Route planning	TeilPunkt DMS	BriteCampaign	Arode CRM
Node											
ERP Server Cluster	X										
ERP Server Cluster (mirror)	X										
General Purpose Server Cluster			X	X	X	X	X	X			
TeilPunkt Server									X		
IPPS Server							X				
CRM Database Server										X	X
CRM Application Server										X	X

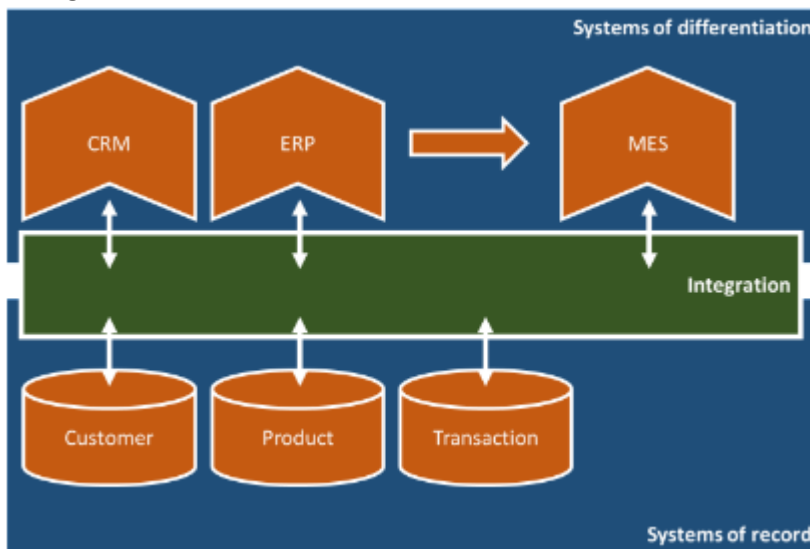
Node x Application Matrix generated using the BiZZdesign Enterprise Studio

They have also printed out several layered views, and explain that they want to do a demo for interested stakeholders to show how easy it is to do analyses on the baseline model. This idea is well received and the team will schedule this for next week.

The target team has worked on a presentation that illustrates the business-focused nature of the target architecture, and illustrates the main concepts of Pace Layering and BiModal IT, as this is the basis for the target architecture. It also shows the relation to the MDM components in the systems of record layer and explains the way this maps to the business strategies that are close to being signed off.



This (first) part of the presentation goes quite well. Especially the business focus, and the different development “paces” are well received. However, there is also some impatience and push-back: management seems to be in a “we-are-different” mood, and is not looking for “academic”



discussions on development pace. With that in mind, Brenda decides to only briefly mention the need to think ahead, to consider “smart lighting” in the context of the Internet of Things, and moves on to the architecture framework to illustrate the line of thinking for the target architecture.

She pulls up a simplified PowerPoint version of the results from the brainstorm

and sets out to explain how, in this setup, data will be the core of the architecture. The SOR layer will be built with standard, off the shelf tools, including a Master Data Management hub – and is careful not to go into detail as to what that entails: this is a discussion for next time. It will be supported with (data management) processes to make sure data will stay consistent and of high quality.

Continuing the discussion, she then explains how best-of-breed systems can be purchased to support the key capabilities of the organization. This requires strong data integration, a topic that will be discussed later. She also links back to the general notion of supporting manufacturing with a standard Manufacturing Execution System (MES), while keeping the new policies in mind. This will streamline planning and production processes while the separate “data core” (systems of record) entails control over the data.

While some people seem to “glaze over”, several of the key players seem to understand the benefits of such an approach, but sense a “catch”. After explaining that flexibility and control isn’t “free”, she argues the case for an integration layer and stresses the cost/ benefit aspects rather than the technology itself. In her presentation she tried as much as possible to make clear that the advantages of using an integration layer fit really well with the ideas of the target architecture that her team

came up with so far. But at the same time, there are arguments against adding an integration layer into the enterprise architecture, as shown in the table below:

Advantages	Disadvantages
Supports loose coupling of applications (Systems of Differentiation)	Higher cost through additional technology
Central management of data (promotes reuse of data for reporting, easier auditing)	Higher complexity because of extending the application/technology landscape
Opportunity to leverage use and analysis of integrated data that otherwise remains separated	Increased vulnerability (single point of failure)
Scalability, easy to plug in additional source and/or target systems	Requires an Enterprise Data Model that all stakeholders should agree on
Supports “think big, start small”, easy to adopt and implement in an incremental and controlled way	Requires solid and coordinated organization in terms of (data management) processes

Advantages and disadvantages of using an integration layer in the Enterprise Architecture

While, again, there is some push-back, there is also support for her approach: management appreciates being involved so early, but doesn’t understand enough of the impact to decide either way. Understanding the need for approval / guidance, the agreement is that the team can continue for now, but will have to come back with a more formal analysis later.

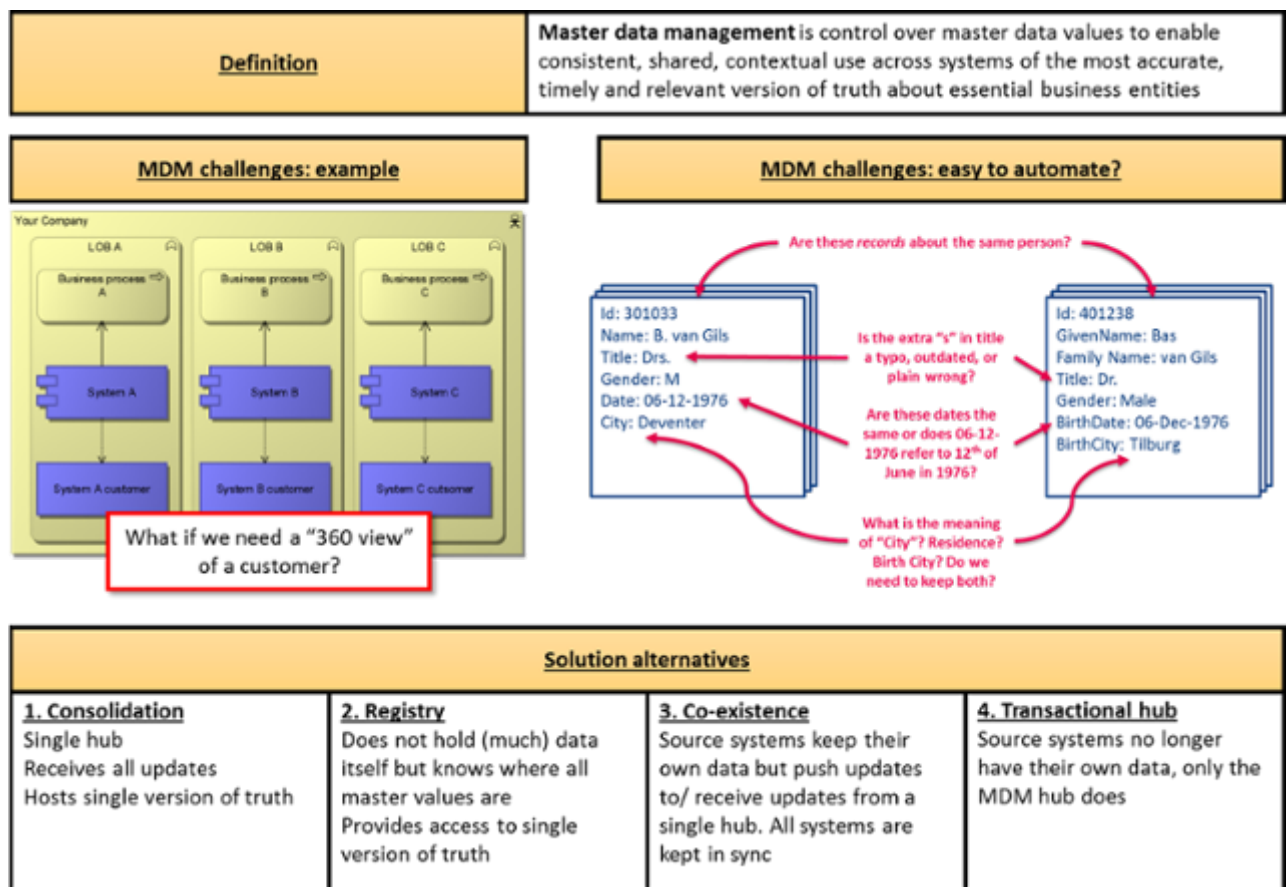
Brenda shares the good news with her team and gives them the green light for scheduling some modeling sessions for the target architecture, starting with the IT landscape.

Fleshing out the MDM part¹⁰

The team is excited about the news that they can go ahead with fleshing out the target architecture. They are particularly enthusiastic about going for a combination of best-of-breed systems mixed with an MDM solution. There is still some caution as Brenda has made it very clear that there was some ‘glazing over’ during the presentation. As before, the team decides to work in two sub teams: one team will do a “road show” to illustrate the concept of MDM to increase management buy-in, while the other team fleshes out the technical details.

Explaining MDM

Realizing that they target a mixed audience, the team creates a poster rather than a PowerPoint presentation, and makes sure that there is just enough there to warrant a good debate without adding too much technical details:



They have set up meetings with all the executives and relevant staff for 45 minute lunch sessions. The results are somewhat surprising. The team started with an explanation of the challenges: what if you want a 360 view of your customer? What if you want to consolidate data and create a single view of your product and services across the entire enterprise? A siloed approach won’t work that well. This meets with some skepticism (“Just dump the data in a single store!”) initially, but the example on the right makes it clear that this may not be as simple as it seems. Without going into the details, the team explains that there are various solution alternatives that all fall under the “MDM umbrella”. The target architecture will have to show which of the options is most relevant for the architecture of BriteLite, given its best-of-breed / data core approach.

¹⁰ <http://blog.bizzdesign.com/archimate-modeling-in-practice-fleshing-out-the-mdm-part>

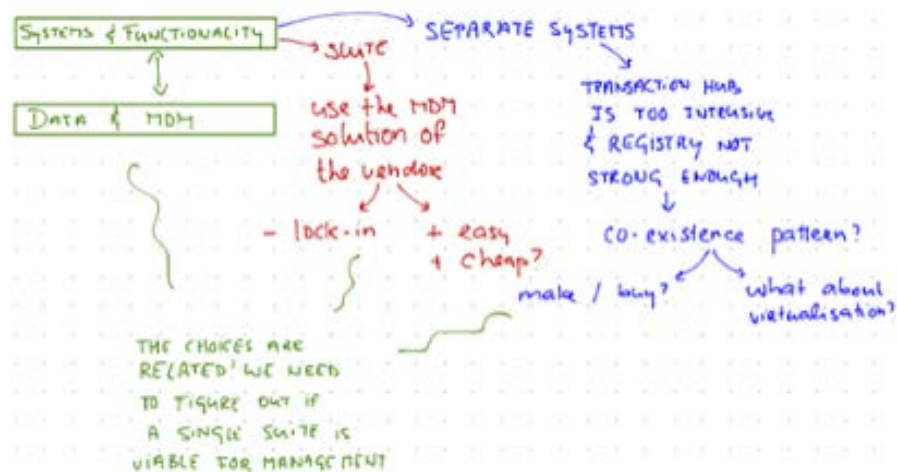
The result of this exposé is that the skepticism slowly wanes. There may not be real buy-in yet, but at least there is no push-back either. The design team will have to do a good job of showing the solution alternative.

What are the options?

The “design team” meets on Monday morning and after coffee, cookies and discussing the latest sports results (“how about them Blue Jays, eh!?”) they gather in front of the whiteboard, and discuss the following assumptions:

- We will select several systems that are best of breed, for CRM, ERP, MES etc.
- A full list of functionalities will be decided on later. The details are not so important, but the integration mechanism is
- We may select a single vendor with a *suite* but we could also go for separate systems from different vendors

Initially there is quite a bit of debate on the vendor issue, until one team member suggests that this is not a decision they can make on short notice as it all depends on a more thorough analysis of requirements and offerings. In other words, the team will have to work on



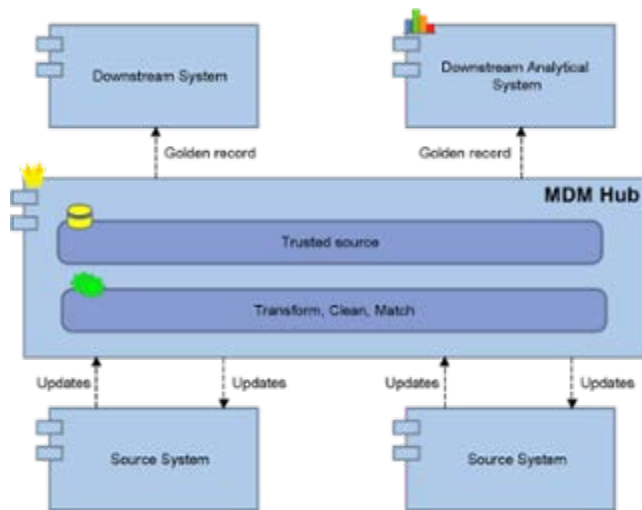
two *scenarios* as illustrated by the whiteboard sketch. A more definite course of action will be decided upon based on the discussions. The team expects this to be a ‘tough sell’ as MDM solutions require a lot of up-front investment that must be made before the benefits can be reaped.

It is decided that Brenda will have to open up this discussion with management and the team that is working on the three strategies. In the meantime, the team will start working on the *co-existence* pattern with a focus on systems, integration / data, and relevant capabilities

MDM – the co-existence pattern

The team starts by exploring the co-existence pattern in more detail. In this pattern, all source systems keep their own data, based on the data model specific for the source system. All source systems are connected to the MDM hub which receives every update in the source system to any of the data entities that are managed by the MDM hub. The MDM hub make sure that these updates are also pushed to other systems in the landscape, including other source systems, downstream systems, as well as analytical systems. The MDM hub uses dedicated functions in order to define and maintain “golden records” for a range of data entities. The team created the following diagram describing the co-existence MDM strategy, which provides the team with excellent guidance for creating the target architecture specific for the BriteLite organization.

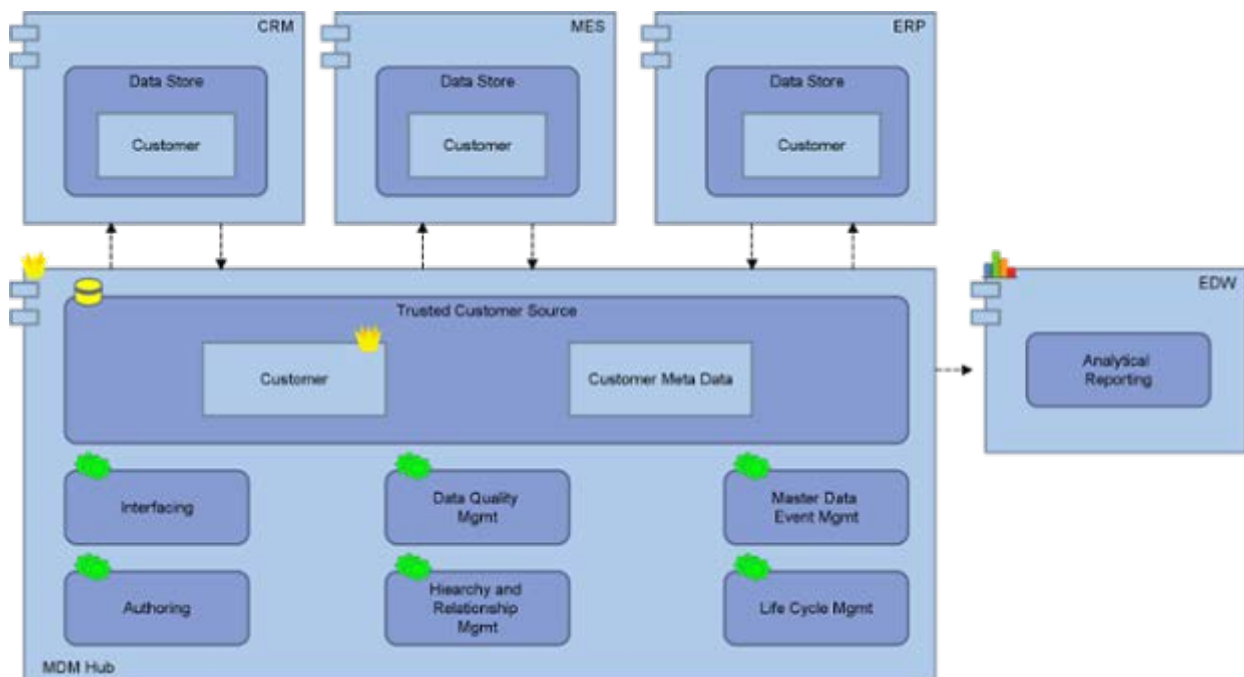
The diagram uses the usual [ArchiMate concepts](#) to model things like application components and flow relations. By using specialization of ArchiMate concepts, the different MDM roles of the objects in the diagram can be visualized. In this case, specialized objects are identified with an icon: the application component with the crown icon is an MDM system. Application functions modeled as



part of the MDM hub include data storing functions (the database icon), and processing functions (the double gear icon).

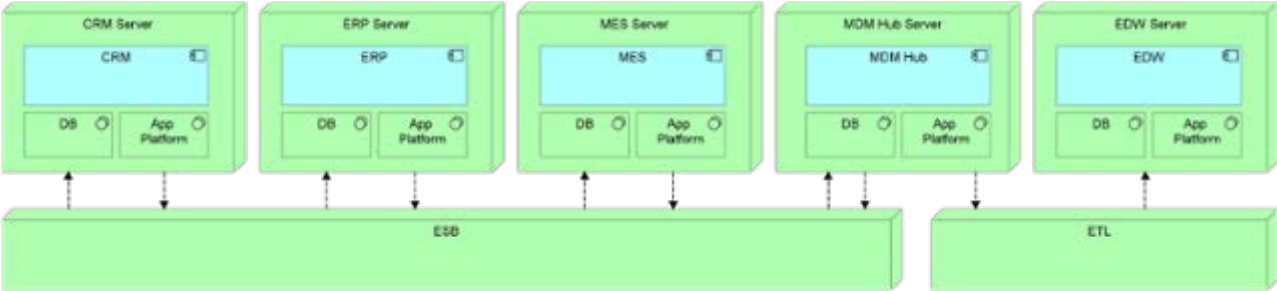
The team then starts building on this pattern, and creates a first draft of the target application landscape for the standard capabilities. The landscape is visualized below. The transaction systems CRM, ERP, and MES should provide functionalities according to the needs of BriteLite. However, as concluded before, a full requirements analysis of application functionality is yet to be made. At this point, only the data storing functions are identified as part of the

transaction systems, other functionalities will be added to the model at a later point in time. For now, the diagram focuses on the integration aspect of the architecture based on the co-existence pattern.



While the view is very “high-level”, the team is happy to be able to visualize why the MDM-solution is important for BriteLite. This diagram is expected to help in discussions on data quality, being able to deliver operational / management reports quickly, and to make sure that the various systems have access to the same data.

The team also starts thinking about the deployment perspective of the target architecture. The diagram above identifies the applications and shows that data is exchanged between components. Using technology layer concepts from the ArchiMate language, the team models an initial overview of the target technology landscape. This identifies technologies such as ESB and ETL that provide functionality to support the exchange of information among objects in the IT landscape.



The diagram serves as a starting point. In a later stage, more detail has to be added including the database platforms and application deployment technologies to support the application landscape. For now, placeholders already have been added.

Reference Models¹¹

Fleshing out the co-existence pattern was hard work for the team: Brenda had to coach them through the project, staying away from the technical details such as deployment until the concept is clearly understood and the actual go-ahead from management is obtained.

Even during the modeling exercise, the team agrees that the only way to show management the power of MDM is to work through an entire use case. In order to do so, they want to add at least a few details of the CRM system, the ERP system, and the MES system and use story boarding techniques to show how the integration will work. The team presents the idea to Brenda who is pleasantly surprised by the initiative. The only guidance she gives them is to use reference models whenever possible to figure out the main functions of each of the systems.

Selecting reference models

The team has a good meeting to divide the work. They quickly find out that reference models can be found at two levels:

- Reference models pertaining to the manufacturing industry
- Reference models from vendors

After a quick debate and some web searches, they find that a side-by-side comparison of several vendor models will result in a “good enough” reference model that can be used as the basis for the architecture. Even more, they decide to only capture the main functions as well as the main data objects, not worrying about infrastructure / deployment and other details too much.

After documenting this design decision and obtaining Brenda’s approval, the team gets to work. In the meantime, Brenda goes back to management and – surprisingly – has to take some heat!

Impatience

During her weekly update session, Brenda is told that ‘management is happy with the general approach but results are ‘too slow’. Changes are being made, the baseline models help, but the “big picture view” is lagging behind and urgently needed’. This comes as a bit of a surprise, given the conversations and regular updates over the last few months.

There seems little room to find out what caused this – even though Brenda suspects it has a lot to do with an upcoming shareholder meeting, so all she can do is promise more speed. Happy that her team presented their thoughts earlier that day, she suggests that the IT part (but without the infrastructure – this will depend on the vendor) is to be presented next week. An illustration of how business capabilities are supported with the IT landscape will be illustrated the week after. And then the team will work on a rough roadmap for implementation.

The management team grudgingly agrees. When Brenda shares the news with her team, she makes sure everyone understands that the game is on!

Developing the reference model

The team has selected the following components to develop a reference model for:

- The CRM system, which will hold all the data around relations, including customers, vendors, partners etc.

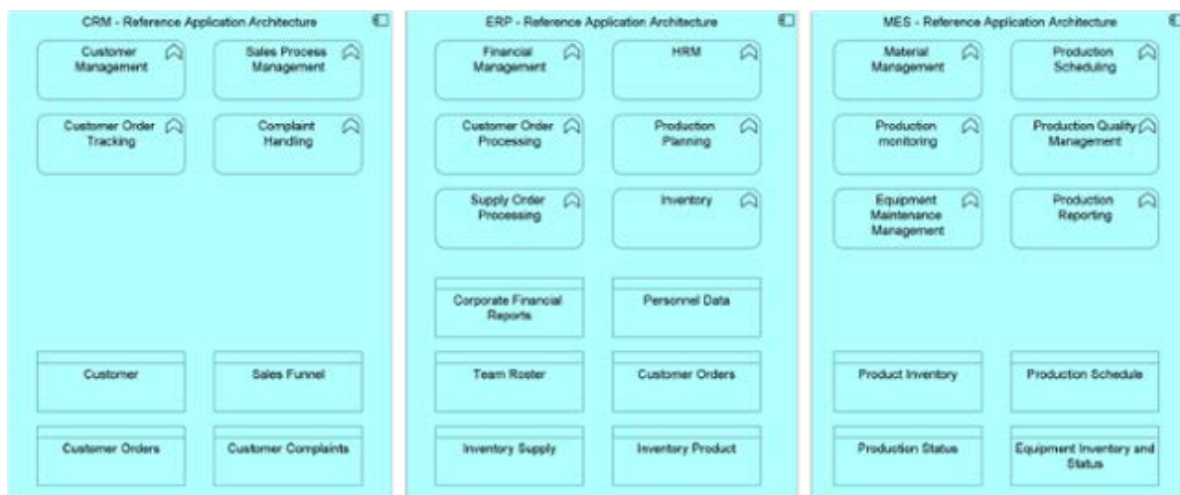
¹¹ <http://blog.bizzdesign.com/archimatemodeling-in-practice-reference-models>

- The ERP system will do anything related to planning, inventory management etc.
- The MES will support the actual manufacturing

As a word of warning, Brenda indicates that they shouldn't worry too much about synching up between countries ... yet.

As a first step, team members try to find as much guidance on the use of reference models as they can find. After some searches on the internet, they find an article on the BiZZdesign blog website here: <http://blog.bizzdesign.com/reference-architecture-models-with-archimate>. Then they decide to document reference models in their EA tool BiZZdesign Enterprise Studio, by consolidating information found in industry and vendor reference material. In this way they build up a model for each of the core applications to be adopted by BriteLite: CRM, ERP, and MES.

This is far from easy, as the team quickly finds out. It appears that each vendor has its own unique 'reference model' and integrating them is a complex task. This is unfortunate since a vendor-neutral reference model can be valuable in this phase of the project. For now, the team decides to attempt to integrate models from various sources. Each of the applications is broken down into the key application functions that will support BriteLite's business capabilities. The other part that is added to the models by the team is visualizing the key data entities that are part of the data model linked to the reference application architectures. The example below shows an early result where the applications are modeled using Application Components, with the assigned Application Functions nested in them, as well as the data entities modeled as Data Objects:



While the three core applications in the reference application landscape will have to provide distinct support for BriteLite's capabilities, the reference architectures show that there are functions that are available in multiple systems. An important aspect of deciding on the actual target architecture for BriteLite includes making decisions on what functions will be required for each of the core applications, while making sure that in the overall architecture all functions required to support BriteLite's business capabilities are available and aligned. The other aspect is to identify what information is managed in what application, and how it should be exchanged with the other application. For the actual exchange, the team will be building on the MDM patterns as explored [previously](#).

The team analyzes the reference models of the core applications, and uses coloring to identify and visualize unique and overlapping functions, as well as unique and overlapping data entities. The example below shows one of the results of this analysis:



The diagram shows that some of the functionality and data typically available in the core systems overlaps with functionality and data in the other systems. The colors show these duplications, as explained in the legend. This diagram gives the team the insight that it is critical to define a key focus for each of the systems in the target landscape. The diagram helps the team to define the requirements for systems in support of the process of software selection. The overlapping data objects in the systems underline the added value of the MDM solution. The team is confident that working on the reference models has brought a solid foundation that will help detailing the target architecture. Next step: the target application landscape!

Defining the Application Landscape¹²

The team is in full swing now, very much aware of the fact that ‘the pressure is on’. The reference models are in a “good enough” form at the moment, and some of the grumbling from management seems to be fading away. Through informal channels, the team has learned that part of the frustration seems to come from the fact that an audit (“quick scan”) by an external party has resulted in advise to management to “speed things up a notch”. So much for careful planning!

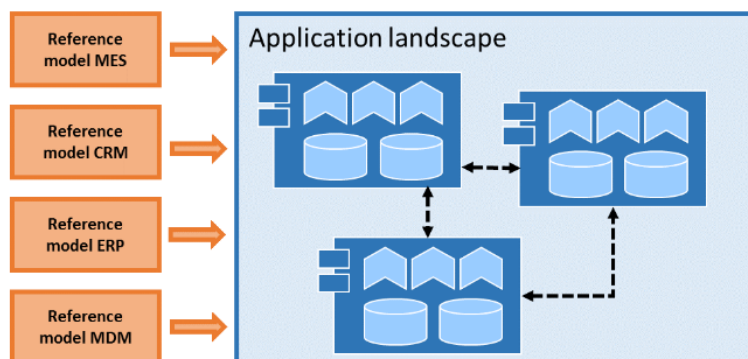
Working closely with her sponsor, Brenda is attempting to buy the team as much time as possible to do the actual work. She has successfully pitched the idea of including a security analysis in the solution models that she has promised. It may mean extra work, but it will be worth it if this is the final push for acceptance of the results from weeks of modeling by the team.

Modeling the application landscape

In order to kick-start the modeling of the actual application landscape, Brenda has developed a simple poster to guide her team. Her mantra is “model as little as possible, but not less”.

Support of capabilities by (data + functions in) the applicatie landscape

	x		x		x
		x		x	
	x				
		x	x		



Starting with the reference models that have been developed by the team, her goal is to make sure the team first understands at a high-level which capabilities are supported by which functions / data in the system landscape, and then do a mapping on the actual components. The mapping on capabilities will be done as an exercise on the whiteboard and is not a formal deliverable at this point due to timing issues. The team makes a note to pick this up later. Modeling the landscape also include clear insights in how data will move from one component to the next. This will most likely be the hard part to define, given that the team wants to use an MDM-based solution. However, everyone is confident that there will be a lot of value add in the long run, so the team quickly goes to work.

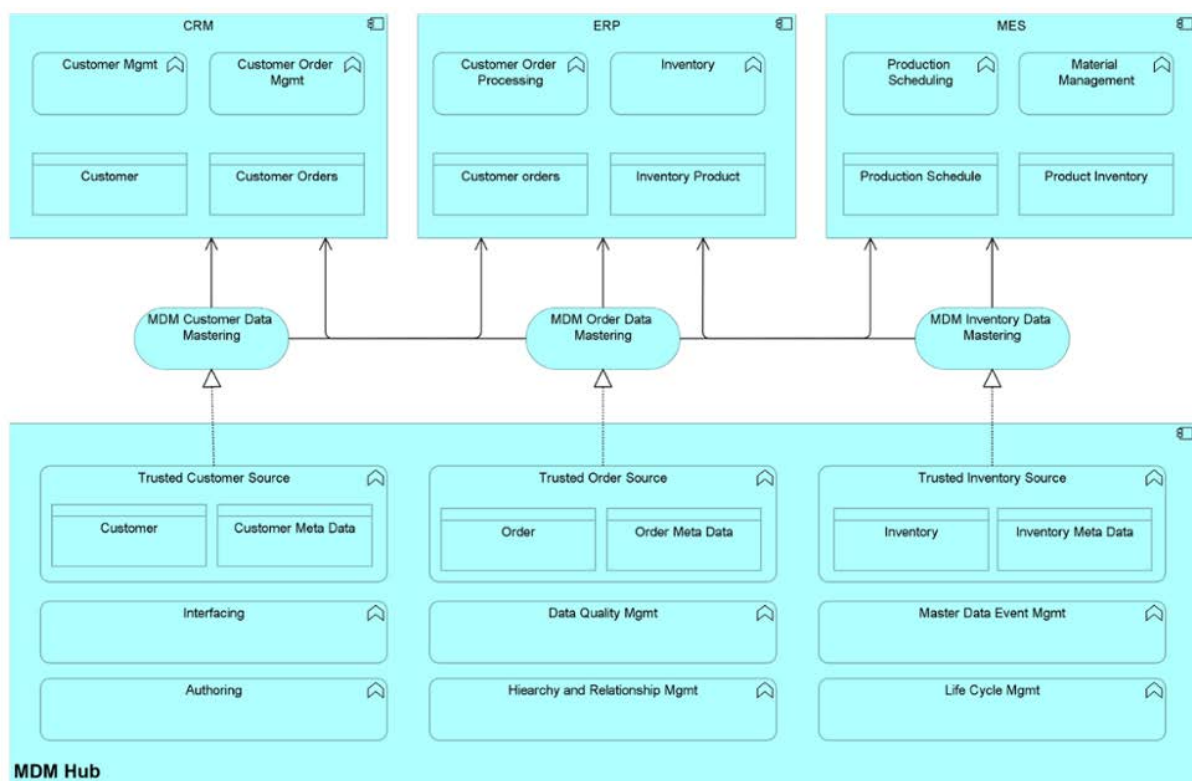
As a final word of guidance, Brenda makes sure that everyone understands that (a) this has to be done quickly, and re-use of the reference models will make that possible, and (b) next week will be all about developing a detailed model that shows how a single capability is supported by the newly developed application landscape.

¹² <http://blog.bizzdesign.com/archimate-modeling-in-practice-defining-the-application-landscape>

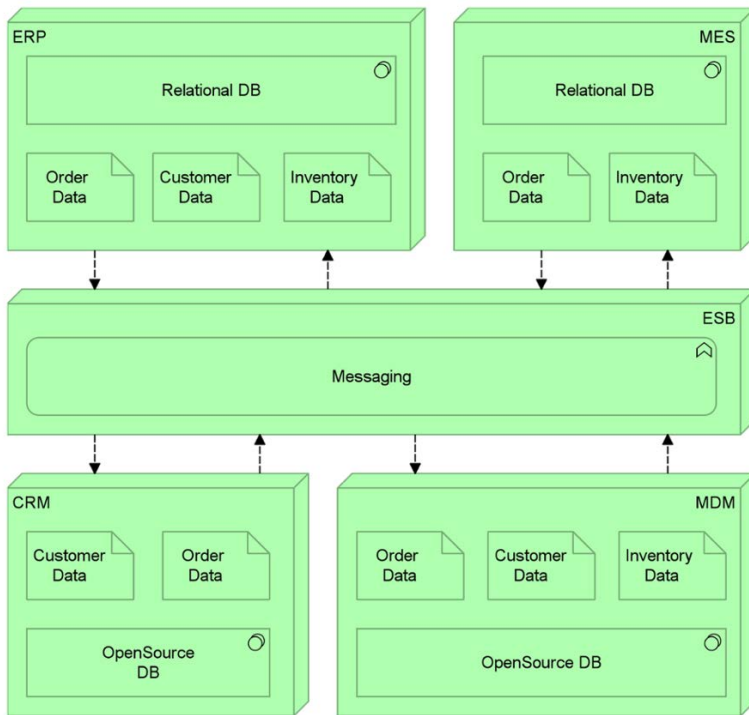
The target architecture for the application landscape

At this point in the process, the team really starts to benefit from all the preliminary work. The different pieces of the puzzle can now be connected and transformed into a solid and future proof target architecture for the BriteLite organization. The MDM studies and patterns, and the reference application models have been documented consistently in the ArchiMate language, and moreover in a single repository which is an integral part of BriteLite’s EA tooling, [BiZZdesign Enterprise Studio](#). This means that creating models for the target architecture is “merely” a matter of reusing and generating new diagrams based on existing information.

The view below is an example that illustrates this point. It visualizes how the core applications in the landscape are aligned based on the co-existence MDM pattern. The applications share functions and data around customer management, order management, as well as inventory management. The data in the individual source systems is consolidated and managed by the MDM hub. One of the key functions of the MDM hub is to maintain the “golden record” for each of the shared data objects. The team uses a “service oriented” approach. Application services represent “useful” automated functionality for users (human users, or other objects in the application landscape) of a system. Translating this idea to the target application architecture for BriteLite, the MDM hub realizes a “data mastering service” that can be used by the transaction systems. To make this picture even more specific, and to put a focus on what data is mastered by the MDM hub, three “instantiations” of a data mastering service are modeled, by type of data.



The team also works on the target technology architecture. Team members use the objects from the technology layer in ArchiMate to create diagrams that provide insight on the deployment perspective of the target architecture. The example below shows how ESB technology is incorporated in the infrastructure to support the actual exchange of data between the components, including the core applications, as well as the MDM hub.



As the development of the target architecture progresses, it is time to start thinking about the next challenge: how to get there from where we are today? In other words, a next task for the team is to start thinking about an implementation roadmap. So stay tuned for the next episode!

Planning Realization¹³

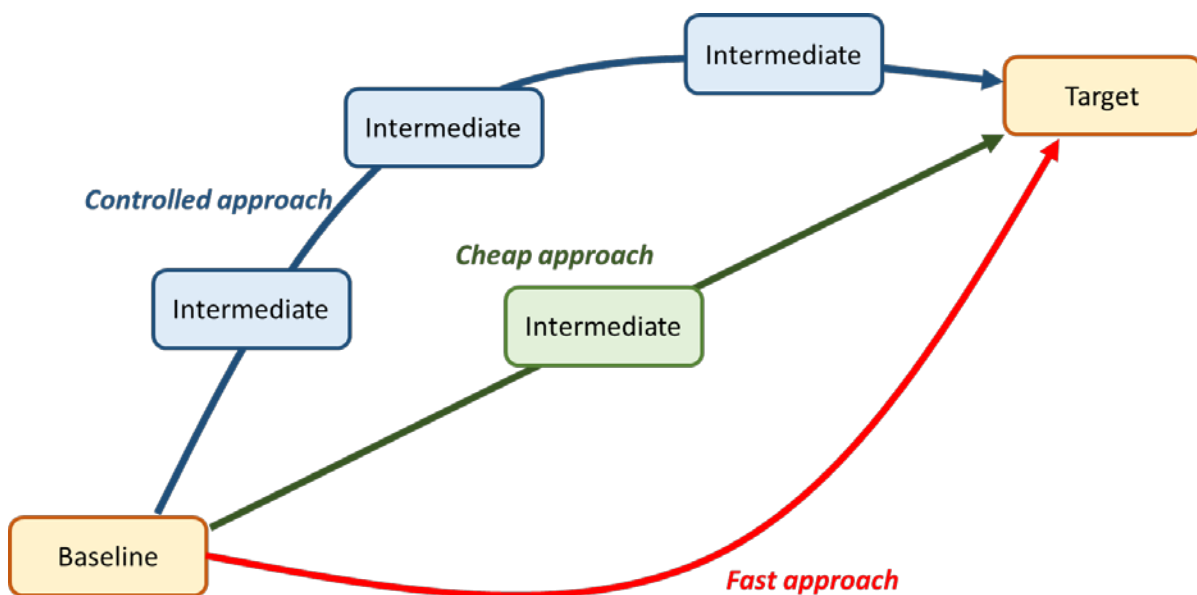
The work for gap analysis is in full swing. The team found the approach “a lot of work, but doable”. One of the team members justly remarked that “getting and modelling the information is one thing, but maintaining it will be another”. This is surely true, and Brenda is happy that the team is maturing rapidly, already thinking about the next cycle and keeping the architectural information up to date and valid. For the time being she decided that the focus should be on the current work. In the team’s working space she reserved an area on the whiteboard for “things to address in the near future” to make sure they are not lost.

The team has started with the information systems part of the landscape in their gap analysis. They keep it relatively high-level and the focus is on showing that the functionality of the system largely maps on existing functionality, yet the actual systems will change according to the new vision and target architecture. Part of the team also started working on a high-level gap analysis for the business layer, focusing on business processes and department structures.

During her weekly meeting with management, Brenda has indicated that the team is about ready for thinking about realization of the architecture. The idea is to setup a roadmap with plateaus and then worry about work packages and deliverables. In order to gain additional buy-in and speed up the work as much as possible, she requested help from one of the lead program managers of BriteLite. After all, program management is a skill and discipline in its own right and close co-operation will surely be beneficial. Management is quick to nominate Matt who is both very experienced and a big supporter of Brenda’s approach.

All roads lead to Rome

Together, Matt and Brenda work on a briefing for the team. Their first priority is to make sure the team understands that ‘all roads lead to Rome’... in other words, there is a choice to be made. Matt comes up with a simple diagram that – after some adjustment by Brenda – boils down to the following:



¹³ <http://blog.bizzdesign.com/archimate-modeling-in-practice-planning-realization>

Both are well-aware that choosing an approach will require management support, yet they are confident that management will follow whatever advice that comes from the team. Each has its own advantages and disadvantages. After some debate, they decide to present this to the team before starting the actual planning.

Brenda knows her team well, and makes sure this is presented during a lunch meeting, agreeing that she will take the lead in this. Matt is a getting-results kind of guy and doesn't mind at all. During the team meeting, the debate goes back and forth. Arguments are raised and discussed for all three approaches. For example, the fast approach is considered to be very risky, stressing the fact that big-bang migrations have a very poor reputation. The counter-argument is also made: a slow approach will reduce risk but doesn't get us to where we want fast enough. No one seems to like the "cheap" approach, which is therefore quickly discarded.

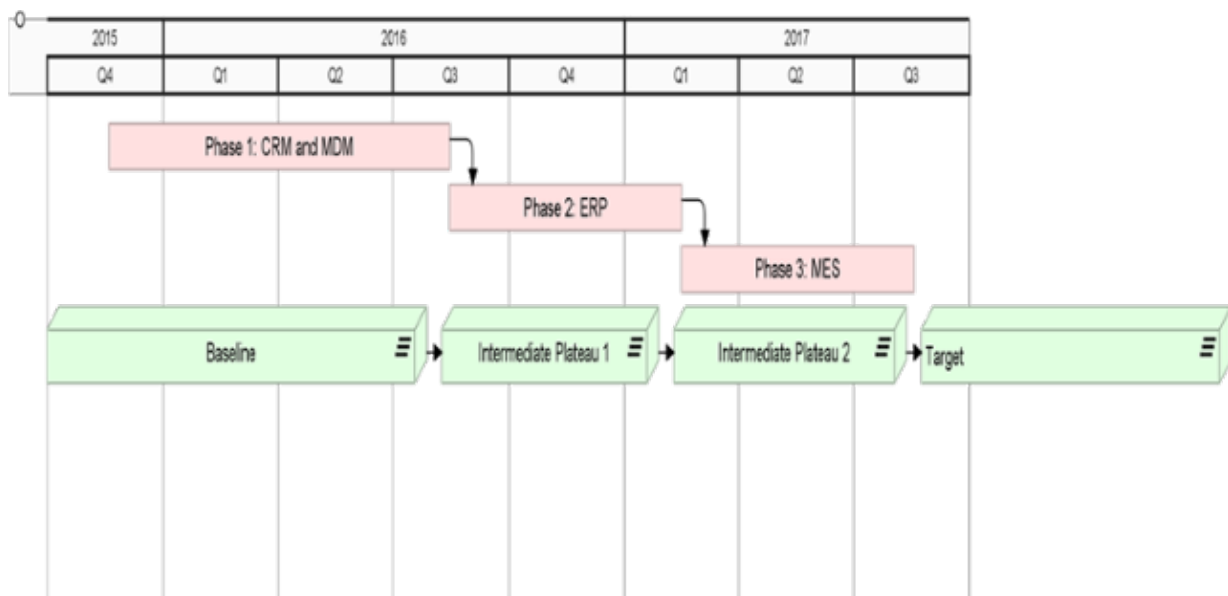
Finally the team settles on a simple approach:

- Work on CRM first: remove all the old CRM "stuff" and replace it according to the new architecture. This will be a big plateau as it will likely include a large chunk of the integration layer, the MDM solution etc.
- With CRM in place, the next two iterations should be smaller and extend what was built in the first iteration. First ERP will be built on top of the infrastructure, and finally the production systems are added.
- The team feels that such phased approach will give enough grip while also pushing for a solution with sufficient speed.

The direction is still fairly high-level but provides a good basis for furthering the road mapping and planning work.

A high-level roadmap

With the approach agreed upon – at least for now – Brenda and Matt go back to the drawing board. They're using the baseline / target modelling results to set up first draft of the high-level roadmap as follows:



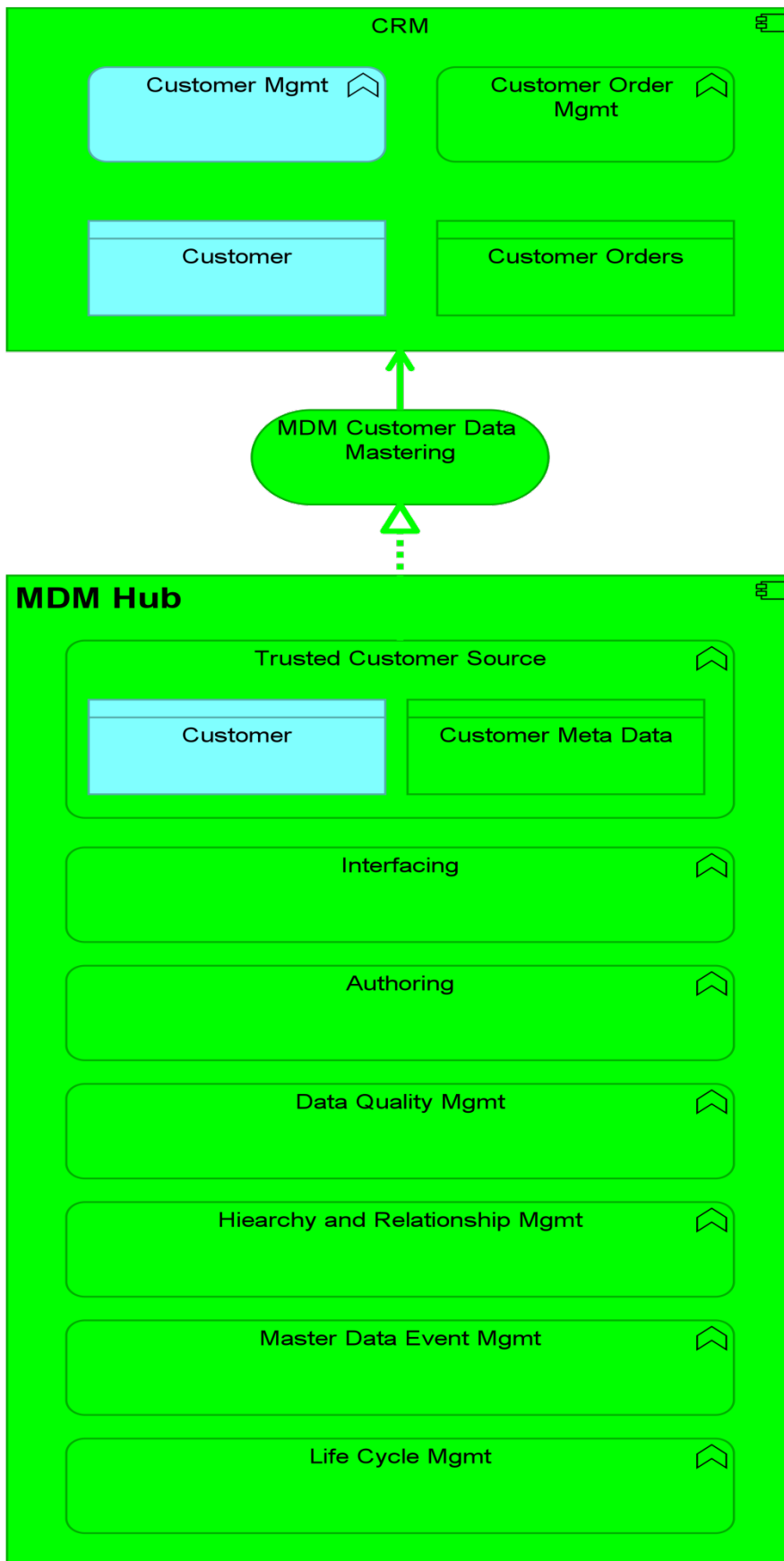
The timeline shows not only the work packages (projects) to be executed, but also the plateaus: When CRM and MDM go live, we basically transfer from the baseline state, to the first intermediary state. That is when we start preparing and configuring the ERP system, which will bring us to the second intermediary state once we take it live, etcetera.

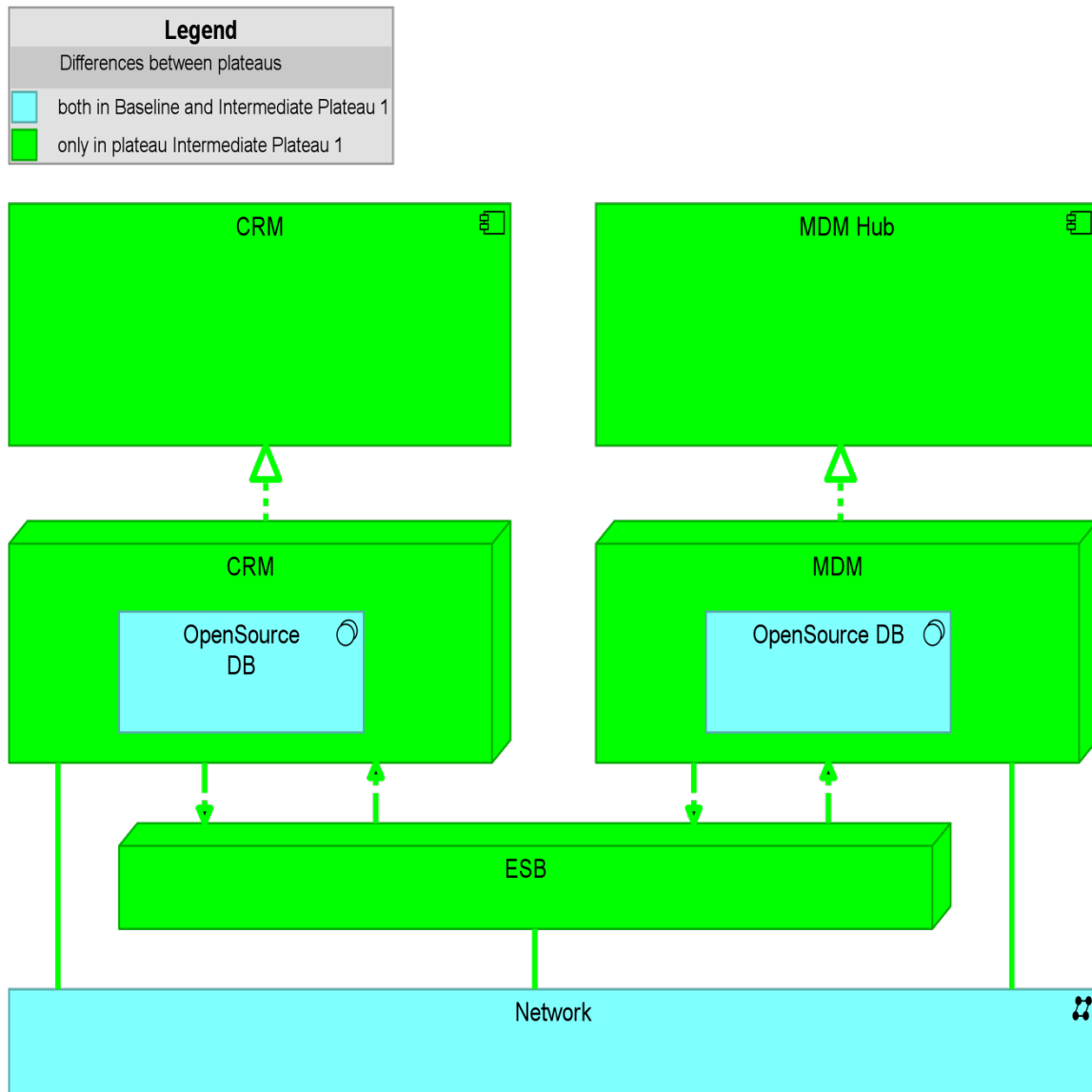
The team also starts detailing the roadmap, building on the models and gap analyses done in the previous phase. The complete roadmap, as described by the plateaus and the order in which they are organized (baseline plateau triggers 1st intermediate plateau, etcetera), is brought into the architecture model by the team, using their tooling [BiZZdesign Enterprise Studio](#). On a detailed level, objects (applications, nodes, system software representing platforms running on nodes, etc.) are assigned to the roadmap. This allows the team to execute gap analyses on a more detailed level of the roadmap. The examples below shows (a part of) the effects of moving from the baseline state to the 1st intermediary state, from an application architecture perspective, and from a deployment perspective, respectively:

Legend

Differences between plateaus

- both in Baseline and Intermediate Plateau 1
- only in plateau Intermediate Plateau 1

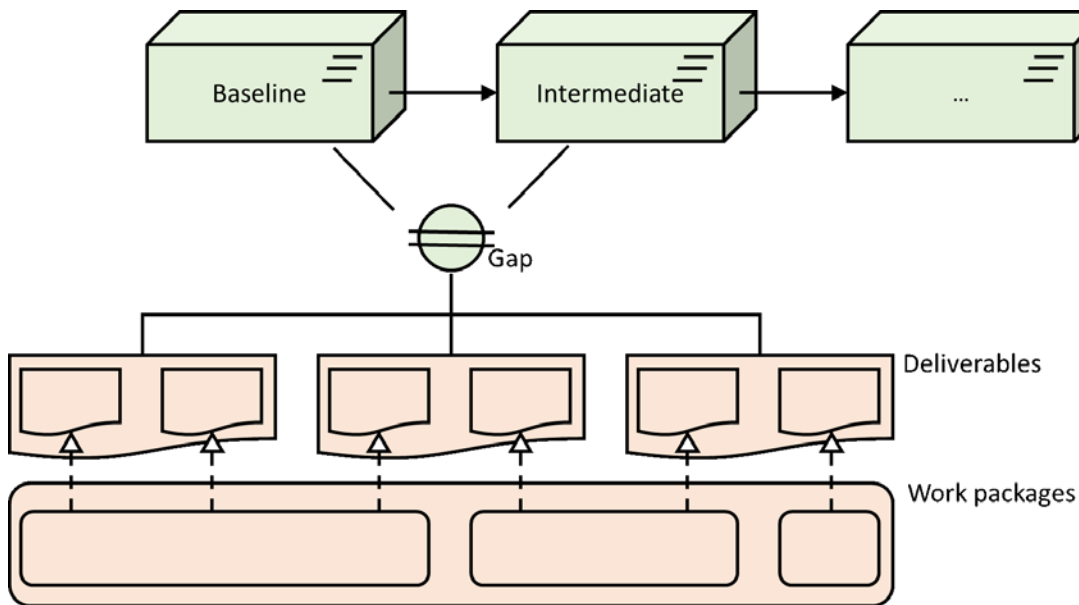




From roadmap to program planning

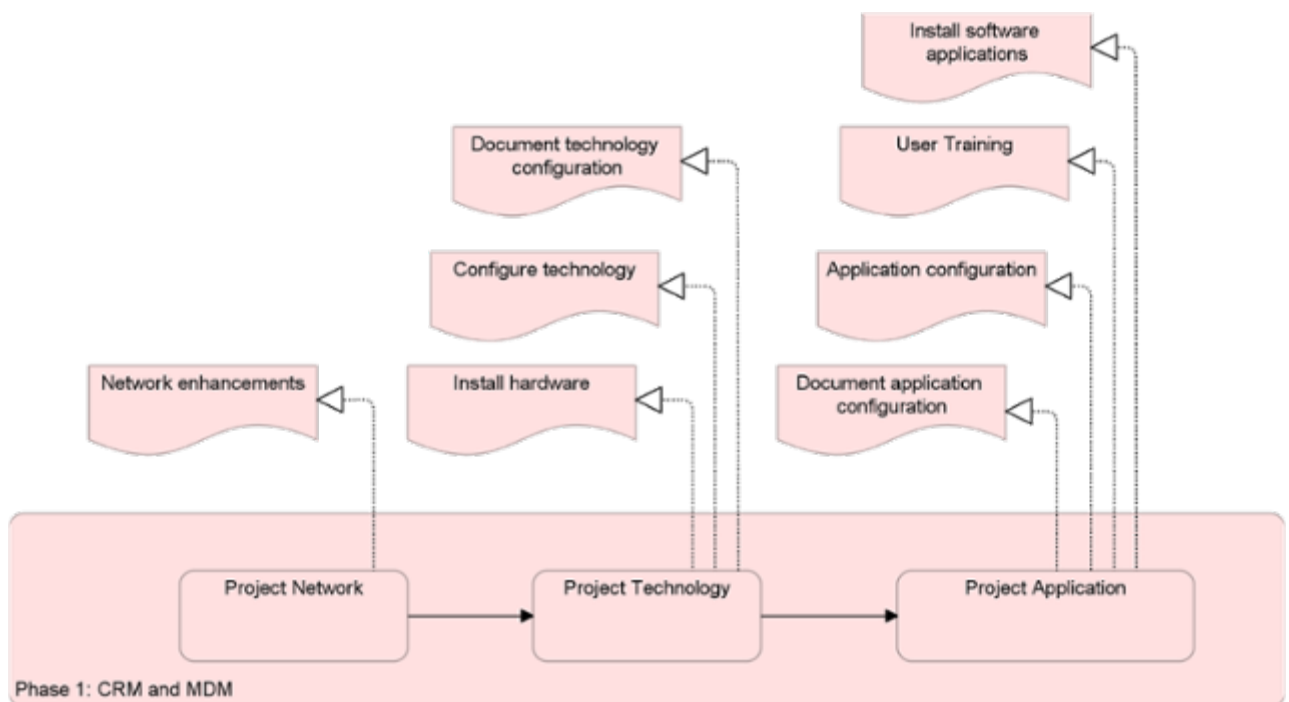
The results from the high-level roadmap are presented to the team by Matt, with support from Brenda: a good talk over dinner to line-up Matt’s ideas with the way of working that Brenda has in mind is all the prep they need. The idea is that Matt will help setting up the program so it seems to make sense to give him a platform to present his ideas and approach as well. While everyone agrees that the approach is solid and the analysis is valid at a high-level, the team suggests that (a) the analysis will have to be revisited as more detail becomes available, and (b) management should get on board as well. Chipping in, Brenda agrees and stresses that she wants to present approach + roadmap/ intermediates + high-level program plan as a whole to management a.s.a.p.

To kick off the discussion about planning, Matt presents the following diagram that he prepared with Brenda:



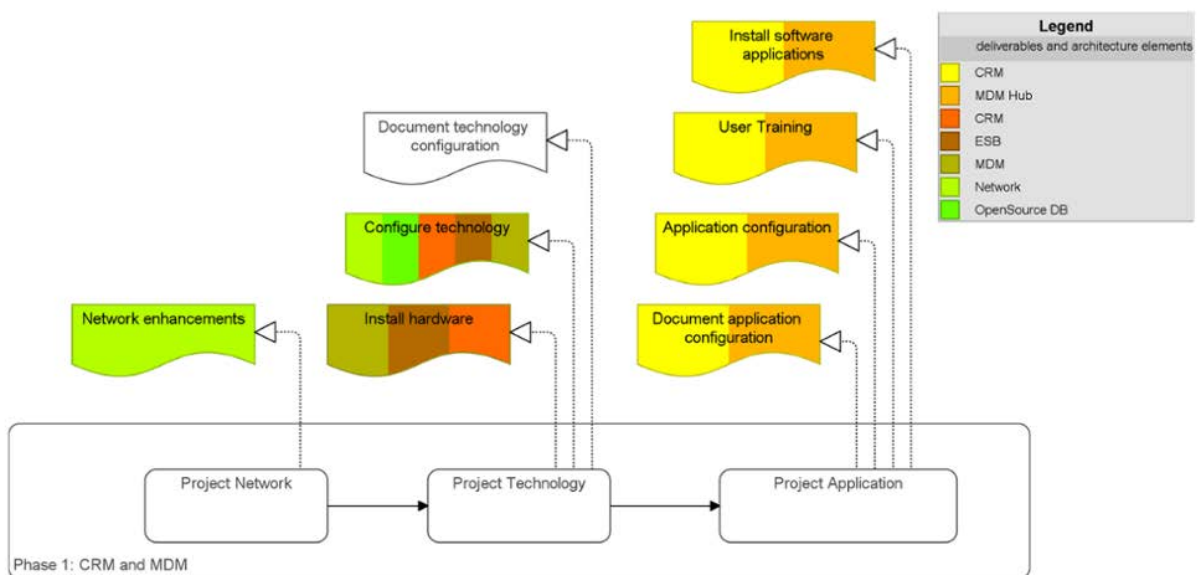
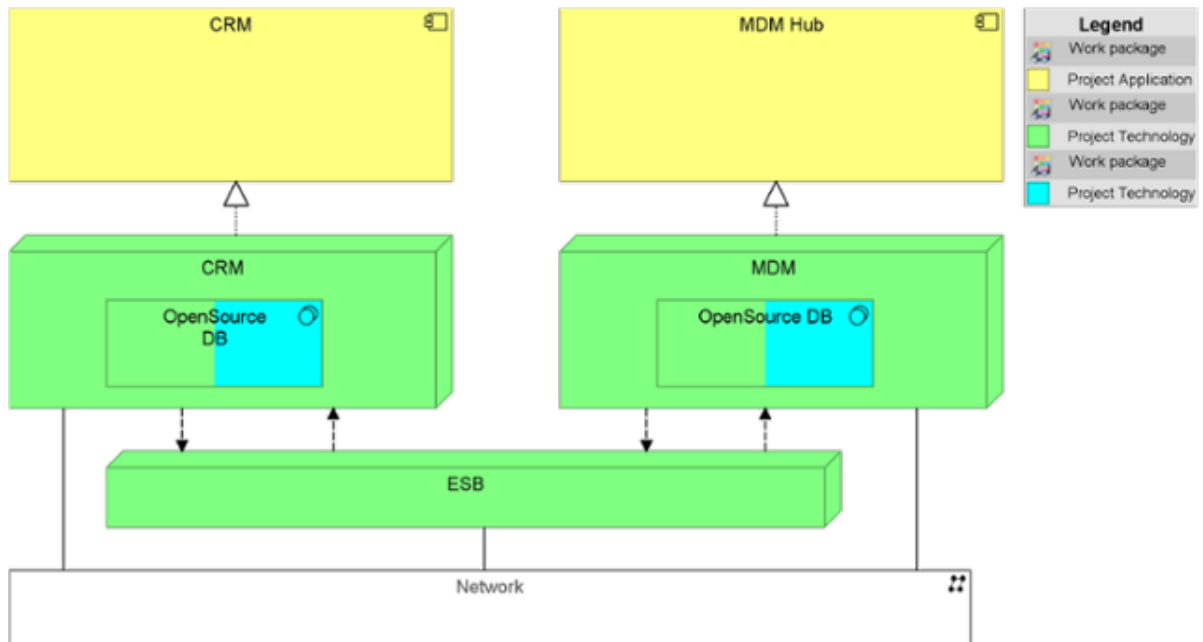
The assignment to the team is to come up with a rough break-down of the gap between baseline and the first intermediate in terms of deliverables. Matt would like these to be as concrete as possible, and include ‘hard’ things (i.e. systems installed, networks to be built) as well as ‘soft’ aspects such as training. The team gets a stack of sticky notes for their analysis with the warning by Matt that this is a preliminary analysis so it will be time-boxed to half a day.

After carefully studying the results and grouping deliverables into work packages in a modeling session with Brenda, the results that are ready for presentation are as follows:



In ArchiMate, as well as in the teams tooling BiZZdesign Enterprise Studio, the implementation and migration perspective is fully integrated. This means that the team can model, visualize, and analyze things like programs, projects, and work breakdown structures. The example above shows how the work for phase 1 is organized as a phased approach that consists of three steps executed in consecutive order. Each of the steps results in deliverables. Not only can these structures be visualized, but of course also connected to other parts of the enterprise architecture. Using this approach, the team can use the tooling functionality to perform analysis and present the results in

e.g. a diagram like in the examples below. The diagrams show the result of an impact analysis of the individual steps of Phase 1 of BriteLite’s transformation initiative. The first example shows this from the perspective of the application landscape in scope for the first phase. The second example shows results of the same impact analysis, but from the perspective of the deliverables of the work packages, and how they impact the enterprise architecture:



This analysis performed by the team sets the stage for the next phase of planning transformation at BriteLite. In order to build consensus for the roadmap among BriteLite’s leadership team, Matt and Brenda need to focus on developing the business case: what are costs, business outcomes, risks, resource requirements associated with the roadmap. Not an easy task for Matt and Brenda to get the right numbers in place, but as we will see in the next episode, the BiZZdesign Enterprise Studio will be of great help for the team to add the relevant data to the repository and present convincing views and dashboards to get management on board!

Conclusion¹⁴



Over the last few weeks we have posted a series of articles about the challenges at BriteLite and the way Brenda the Architect has helped solve them using architecture practices in general, and ArchiMate in particular. Of course, the case is a work of fiction and names of characters, businesses, places and events are either the products of the author's imagination or used in a fictitious manner. Any resemblance to actual persons or events is, of course, entirely coincidental.

We have taken great care to paint a picture of what an architecture project could look like in practice, based on our experience in various organizations in both Europe and North America. We have worked with various organizations in many different branches and aspects of these projects have made their way into this blog series.

Learning ArchiMate is not very difficult. The basic structure and principles of the language are fairly straight forward. As always, though, the proof of the pudding is in the eating: only by actually applying ArchiMate can we really learn how to use it. With this blog series we hoped give novice modelers some guidance in how to get started. Also, we hope to have inspired more experienced modelers to try new things and to share their stories. Actual case studies – of successful projects or complete failures – are very useful for the modeling community at large.

We hope that you enjoyed reading about Brenda and her team. You may want to “get your own Brenda” to give your architecture initiative a boost!

Happy modeling!

¹⁴ <http://blog.bizzdesign.com/archimate-modeling-in-practice-conclusion>