ABSTRACT
An increasing amount of people in the Netherlands needs homecare and elderly care, because of the ageing population. To keep up with these changes, the elderly care organizations must adapt their business models, especially to cope with the fast rising costs. The business modelling method (BMM) is a helpful tool to adapt the business models, but this recently developed method has not been fully tested yet and it is therefore not sure if it can justify investments (especially IT related) in those organizations. This research aims to evaluate the BMM. In this research, criteria were searched in the literature that can judge the applicability and usefulness of the BMM. A case study was performed in an elderly care organization to test the BMM in practice and finally, conclusions were drawn about the applicability and usefulness of the BMM. The results showed that the BMM is applicable in a case study in Dutch elderly care. It can also be useful enough to justify investments, but additions are needed to be fully certain of the best result.

Keywords
Business model, business modelling method, elderly care

1. INTRODUCTION IN BUSINESS MODELLING METHOD
Several authors have stressed the importance of business models over the past few years. Pateli & Giaglis [7], for example, give an overview of research on business models, which shows that many authors in the field realise the importance of it, although the definition of a business model that is used, differs between many of them. Vermolen [9] acknowledges this and adds that still no consensus is reached on how a business model must be designed and that a systematic approach to do this is still lacking.

Business modelling is still an art, instead of a science, according to Meertens et al. [5]. They mention that no scientific method for business modelling did exist until they started to develop the business modelling method (BMM), which 'enables the development of business models in a structured and repeatable manner'. Within six steps, a business model of the current situation and alternative business models with improvements are made in a systematic way.

The BMM is thus an approach for business modelling that was lacking. This research aims to evaluate this new method.

1.1 Problems with modelling Dutch elderly care organizations
Expenditures for elderly care (and healthcare in general) in the Netherlands are rising fast. The ageing population in the Netherlands is the major cause of that. The CBS (Central Bureau for Statistics) shows that the population of 70 years of age and older was 1,684,409 in 2008 and will rise to approximately 2.3 million in 2020 [3]. For the Netherlands, this means that more people need elderly care and that less people are available to work in elderly care organizations and less people to pay taxes for the costs of it. Attempts to capture the current situation in elderly care organizations using business modelling, aiming at finding improvements to reduce the rising costs, have not succeeded till now. This is partly because of a lack of a systematic approach to develop a good business model. The BMM is a helpful tool for this. However, the BMM is a recently developed method that, due to its short existence, has not been fully tested in a case study yet. Although Meertens et al. [5] have used the BMM on a case study, they did not evaluate the method itself and it is therefore still not clear if the method is useful enough to justify investments that must be made in Dutch elderly care organizations.

1.2 Aim of Research
The aim of this research is to test the usefulness of the BMM. The research aims to clarify if the BMM 1) is applicable in a real case study and 2) can justify investments (especially IT related) in Dutch elderly care organizations.

The research especially looks at improvements in IT, because the implementation of good IT solutions in those organizations could cut much of the increasing costs by improving business processes. This research examines how the BMM addresses this. The case study in this research is performed in a Dutch elderly care organization, so the BMM is tested in a real organization.

1.3 Research Questions
Based on the problems and goals stated above, the research addresses the following research questions:

- What are the criteria to measure the applicability and the usefulness of the BMM?

In order to judge the BMM, criteria for its applicability and usefulness must be searched.

- Is the BMM applicable in a case study in a Dutch elderly care organization?

- Is the BMM useful enough to justify investments (especially IT related) in Dutch elderly care organizations?
2. METHOD OF RESEARCH
The research mainly consists of three parts: 1) searching criteria to measure the applicability and usefulness of the BMM (answering the first research question), 2) creating business models of an elderly care organization to test the BMM in practice and 3) drawing conclusions of the applicability and usefulness of the BMM as it was used in the case study, according to the criteria (answering the last two research questions).

The three parts are now further explained in this paper, beginning with the literature search for criteria. Before the case study is conducted, the criteria must be set to make clear how the BMM is judged. The literature search for criteria is therefore done in the next section.

3. LITERATURE SEARCH FOR CRITERIA
When searching for criteria to judge the applicability and usefulness of the BMM, it is necessary to start with giving a definition that is used for a business model. The definition by Osterwalder & Pigneur [6] is suitable here, because of its simplicity and wide coverage: ‘A business model describes the rationale of how an organization creates, delivers, and captures value’. This definition can be supported by describing a business model through nine building blocks that the authors suggest: Customer Segment, Value Propositions, Channels, Customer Relationships, Revenue Streams, Key Resources, Key Activities, Key Partnerships and Cost Structure. For a further investigation of the applicability and usefulness of the BMM, criteria are searched in the literature.

3.1 Applicability
In this research, the applicability of the BMM says something about the way the BMM addresses the key elements of a business model and how it represents reality. By representing reality, we mean that the BMM must represent the actual situation in the elderly care organization that is observed in a complete and truthful manner; no criteria are necessary for this part of applicability.

Because of the ongoing debate on what the definition of a business model should be and which components exactly should be in a business model [9], general criteria with a wide coverage were selected instead of more specific ones. This way, no components are excluded that could be in a business model and too much focus on specific parts of it is avoided.

The nine building blocks of a business model suggested by Osterwalder & Pigneur [6] mentioned earlier, are, together with its components, a checklist to see if the BMM covers all important aspects of a business model. The wide coverage of these building blocks makes these good criteria to check if the BMM takes the most important aspects into account.

Other research on business model components was conducted by Shafer et al. [8]. They found that there are 42 different business model components that researchers in the field came up with only between 1998 and 2002, but the BMM is not checked for these components, because some are already covered by the nine building blocks and other components are too specific for the purpose of this research, as mentioned above.

3.2 Usefulness
To fully measure the usefulness of the BMM, we specify criteria to judge the usefulness of not only the result, a business model, but also of the contribution the BMM has on the result. To clarify, the usefulness of the BMM in this research tells something about the way the BMM contributes to a business model that is helpful for an organization to make decisions and helps to change its existing business model to an improved one.

To come up with criteria, criteria to evaluate a business model were first searched. The key elements and components of a business model are checked at the applicability of the BMM, so that is not further investigated here. While researching in an elderly care organization, criteria that primarily focus at judging a business model for creating a sustainable advantage, such as scarcity and inimitability according to Ishida [4], are also excluded. Such criteria are not important for a non-profit organization in Dutch healthcare.

Casadesus-Masanell & Ricart [2] discuss four desirable features of business models that contribute to the first kind of criteria that were mentioned above. These features are alignment to goal, reinforcement, virtuosity and robustness. The BMM must address these in the result.

Furthermore, Al-Dabei et al. [1] conducted a literature search on the business model and they have set up ten guidelines to clarify the idea of the business model. Some of these guidelines are useful criteria to check whether the BMM addresses some essential organizational features in the business model. The guidelines for a business model that are added to the rest of the criteria, which the BMM must address, are:

- The way in which an organization generates revenue
- An abstraction of the existing business and a future planned business
- The architecture for the organization, including its assets, products, services and information flow
- A business logic relating to the way businesses are being conducted
- The organization’s strategy or set of strategies
- The interface or theoretical layer between the business strategy and the business processes
- The conceptual tool, the business abstraction and the blueprint

To the best of our knowledge, no further research exists that can help to set up criteria for the usefulness of a method for business modelling. However, using the BMM must give satisfaction to the organization’s leaders, because the result must be a proposal for improvements for the organization; therefore, we add management satisfaction as criterion. It is important that those leaders, possibly without any knowledge about business models, can understand the result. The suggested improvements must thus be clear and realizable for the organization.

4. BMM IN PRACTICE
Having set the criteria, the next step is to test the BMM in a case study by using it to create business models of an elderly care organization in the Netherlands. The case study is conducted at ZorgAccent. ZorgAccent is a care provider which has homes of the elderly, nursing homes and homecare teams.

The case study is aimed primarily at the homes of the elderly of ZorgAccent, which names we do not mention for confidentiality reasons. Therefore, those homes of the elderly
are in this case study pretended to be one fictitious home of the elderly, called the Home.

The BMM is performed exactly as stated by Meertens et al. [5] to make this test as complete as possible. All the six steps that are mentioned by the authors are performed:

1. Identify roles
2. Recognize relations
3. Specify activities
4. Quantify model
5. Design alternatives
6. Analyse alternatives.

A business model of the current situation is finished after completing quantifying the model. When the last two steps are finished, business cases of alternative models are presented and analyse.

4.1 Results
The results from the case study are now presented according to the six steps from the BMM that were mentioned above.

4.1.1 Identify roles
The first step of the BMM is to identify ‘the relevant parties ... involved in a business model’, as Meertens et al. [5] describe. Those relevant parties, which the authors refer to as roles, are identified by conducting a stakeholder analysis. An interview with the manager of the Home is performed to identify all roles, because she knows all the relevant parties that are working with or within the Home. Table 1 displays a list of most of the roles.

Some roles need explanation, such as an EVV. This is an abbreviation of the Dutch words ‘Eerst Verantwoordelijk Verzorgende’, which literally means ‘First Responsible Nurse’. This role can be described as the head of a group of clients and nurses. The EVV is responsible for that group of clients. Menzis Zorgkantoor is an independent organisation that is further explained in the next step.

This is still a partial list of stakeholders and this list has to be limited to keep the model practical. A set of roles that most influence the way the Home ‘creates, delivers and captures value’ [6] is used in the next step. It generalizes several of the roles and excludes those not relevant to the problem we focus on.

| Table 1. Partial list of stakeholders of the Home |
|-----------------|------------------------------|------------------------------|
| Clients         | Nurses                       | Volunteer aid                |
| EVVs            | Team manager                 | Doctor                       |
| General practitioners | Administrative employees | Menzis Zorgkantoor             |
| Local government | Federal government          | Care providers                |
| Hospitals       | Homecare department         | Technology providers          |

4.1.2 Recognize relations
The second step is to discover relations among the most important roles that were found in the previous step. Such relations consist of some kind of interaction between two roles or some exchange of value of some kind. As the authors suggest, a role-relation matrix [5] is used to point out the relations between the roles. Interviewing the manager of the Home was the best way to discover those relations. The role-relation matrix is shown in Appendix A.

An explanation of some of the relations is now necessary. Therefore, we first explain some characteristics of the Dutch healthcare policies. AWBZ is a Dutch social insurance fund and it stands for ‘Algemene Wet Bijzondere Ziektekosten’. It covers medical costs that are not covered by regular health insurances from insurers, such as costs of elderly care. Taxation from all employers and employees in the Netherlands is necessary for the government to pay for this fund. The government pays independent organisations such as Menzis Zorgkantoor from the AWBZ fund, because those organisations control which care provider is providing care to clients that need AWBZ care. The Home provides such care to clients and receives payments from Menzis Zorgkantoor to pay for it. For additional care beyond the care they primarily need, clients must pay the Home themselves.

4.1.3 Specify activities
The next step is to look at the relations from the previous step and find activities that are related to them. ‘Each of the relations in the role-relation matrix consists of at least one interaction between two roles, requiring activities by both roles’, as Meertens et al. [5] explain. The main business activities (or business processes) that are related to the relations are presented in a model that shows the way the Home is doing business. Roles, relations and activities are carefully structured to make clear how the Home earns money and which activities are essential in doing so.

The model that represents the main business activities is presented in Appendix B. To come up with this model, managers at ZorgAccent and the Home were interviewed, because they know best how the organisation does business.

4.1.4 Quantify model
To complete modelling the current situation, quantifying the model is needed to create a more detailed look on the business activities at the Home and to compare innovations from the alternative business models to the current situation [5]. Cost and volumes of activities are input in this stage and accounting information could also be helpful. Managers and administrative employees at ZorgAccent and the Home were interviewed to get the information that was needed to quantify the model.

Because the case study aims to improve certain business processes where IT could fit in and cut costs, zooming in at some processes is now necessary. In cooperation with employees and managers at ZorgAccent and the Home, we have made the choice to look at business processes where those people think improvements should be best possible. This way, the BMM is not tested with processes that cannot be improved in the first place and better results can be expected, as cooperation with employees and managers probably positively influences the contribution of those people in the case study.

We now describe the problem with one of the business processes that ZorgAccent is facing. This business process is part of the main business activity of providing AWBZ care to clients, that was mentioned in the previous step. The business process also has its influence on how much money Menzis Zorgkantoor refunds ZorgAccent for the AWBZ care they provide, which is an important business activity in the model that was presented in the previous step.
Some clients at the Home do not stay there all the time; they might go on a holiday with family or have to stay in a hospital to get a surgery. When a client leaves the Home, this has to be reported as a logout. A nurse or EVV does this logout by filling in a form and sending it to the ZorgAccent administration department, which forwards it to Menzis Zorgkantoor. At Menzis Zorgkantoor, they judge the logout and (if correct) still make the payments to the Home for that client. The Home still receives payments for retaining the room for the client.

A logout has a maximum time span of 14 days (e.g. for holidays) or 42 days (e.g. for a surgery in a hospital). Most of the time, a logout is done for the maximum amount of days, to prevent that a logout must be extended soon. If a client returns to the Home, a login must be done to Menzis Zorgkantoor by the EVV of the Home. This way, at Menzis Zorgkantoor they know that everything is back to the old situation.

However, sometimes a logout must be extended if a client must stay longer than the maximum time span of a logout. This extended logout has to be done five days prior to the end of the logout to keep the payments from Menzis Zorgkantoor coming in. However, this does not happen at all at the Home. Although nurses and EVVs do have contact with hospitals, medical rehabilitation centres, the client’s family or others to check the situation of a client that is staying somewhere else, they do nothing with that information.

This way, the Home does not receive the payments from Menzis Zorgkantoor any more when a client does not return within the maximum amount of days. The Home misses payments and when this is finally noticed, administration has to do a lot of work to research what happened and to fix the extended logout.

The last step is to analyse the alternative business models. At the end of the case study, it became clear that the option where administrative employees do it, was the best alternative. Therefore, that alternative is now further explained.

All together, the problem costs ZorgAccent €56,765 per year. It is clear that a solution must be found to reduce these costs on short-term.

4.1.5 Design alternatives

With the business model of the current situation at hand, alternative business models can be made. Future states of the business at ZorgAccent are now captured in the business model [5], with IT improvements built in for the purpose of this case study. Creativity is important in this step, because outside the box thinking is necessary to come up with new scenarios for the problem ZorgAccent is coping with. Ideas from the literature or already existing solutions can also be useful input.

When looking at the business model of the current situation, it is obvious that a solution is needed that indicates when a extended logout must be done. A choice must be made about who will be responsible for doing extended logouts and how it is done.

There are two roles that could be held responsible for doing the task in the future; administrative employees and the team manager, which is the head of nurses and EVVs at the Home. This gives three options: administrative employees do it, the team manager does it or they are both reminded to do it together. Scenarios and solutions were set up for each of the options, where different alternatives were elaborated.

At the end of the case study, it became clear that the option where administrative employees do it, was the best alternative. Therefore, that alternative is now further explained.

This solution means that the responsibility of doing the extended logout is shifting from team managers, who were supposed to do it currently, to administration. To support administration, the administrative software system (TIS) must be expanded. If a logout is done in the system, TIS automatically creates a notification 35 days ahead, so the administrative employees can certainly see this notification in time. The notification indicates for which client an extended logout must be done at which date and which EVV or nurse must be contacted to find out what the status of the client is. This way, an extended logout will correctly and efficiently be done in time.

There are better alternatives for the problem ZorgAccent is facing, but ZorgAccent does not yet have the resources and organisational structure to implement those on short-term, which was the explicit goal of the to-be solution. However, these long-term alternatives were discussed with managers at ZorgAccent, to keep the judgement of the BMM as honest as possible.

4.1.6 Analyse alternatives

The last step is to analyse the alternative business models from the previous step. A business case is the final output for each of the alternatives [5]. A business case of the best alternative is worked out in this section.

It is assumed that the solution makes sure that every extended logout is correctly done in time. A huge part of the benefits is therefore €56,000 per year, which is the amount that the Home currently misses from Menzis Zorgkantoor. Next to that, it is assumed that administrative employees will only need one hour per client per year to do an extended logout. This saves 10 hours of administrative work, which amounts to 10 * €32 = €320 per year. Nurses and EVVs still need the same amount of time to check the status of a client. In total, the benefits are €56,320 per year.
The costs must also be calculated. ZorgAccent pays Topics, the technology provider of TIS, a fee for its technology and services. The TIS administrative software system is a pilot and necessary expansions of the system are therefore covered by the fee that ZorgAccent already pays. This means that ZorgAccent does not have to pay an extra amount for the expansion of the TIS system. No other significant costs are found, so no extra costs are attached to the solution.

This means that this business case is positive by €56,320 per year. The solution should therefore be implemented.

4.2 Analysis

With a complete business model and new business cases at hand from the case study, it is now possible to look if and which of the criteria that were found in the literature are addressed by the BMM. The way in which the BMM addresses the criteria, is also mentioned. The criteria for the applicability of the BMM are first investigated, secondly the criteria for the usefulness of the BMM and finally, management satisfaction is taken into account.

4.2.1 Applicability

The applicability of the BMM is judged by the way it represents reality and to what extent it covers the nine building blocks of a business model, suggested by Osterwalder & Pigneur [6].

The BMM represents the actual situation within ZorgAccent to a great extent, but not fully. Throughout the first four steps of the case study, in which the current situation was modelled, it became clear that the BMM even helps a modeller who is not familiar with ZorgAccent to get a good understanding of the organization. Then the modeller captures the organization as it is doing business and this model gives a good overview of the actual situation at ZorgAccent.

However, it was noticeable that the BMM does not address the situation the organization thinks it should be. The current strategy of the organization is not taken into account. The actual situation of an organization includes not only the physical appearance of different roles and activities, but also the current ideas and plans the organization has. Although a good representation of the actual situation is still addressed by the BMM, that part is missing. Without some knowledge about the strategy and plans of the organization, the modeller misses information that could be needed to fully understand the current thoughts of people that are working in it.

Secondly, we look to what extent the BMM addresses the nine building blocks of a business model [6]. It clearly addresses Value Propositions, Customer Segment, Customer Relationships, Revenue Streams, Cost Structure, Key Activities, Key Partnerships. Although the BMM does not fully elaborate each of these building blocks in detail, it certainly covers them. The two building blocks Channels and Key Resources are less addressed by the BMM. Nevertheless, the BMM clearly addresses seven of the nine building blocks, which is also good enough to achieve its goal. To conclude, the BMM covers the most important aspects of a business model.

4.2.2 Usefulness

Firstly, the four desirable features of business models [2] are discussed. The first feature is alignment to goal. The results and solutions from the BMM should ‘move the organization towards achieving its objectives’, according to Casadesus-Masanell & Ricart [2]. The BMM does address this in the case study, but that is mostly because of coincidence. It is not mentioned by Meertens et al. [5] that the BMM looks at specific goals of the organization. However, the BMM can indicate weaknesses in an organization and when alternatives to improve those weaknesses are implemented, this could align with the goals of the organization. When looking at the case study, the goals and strategy of ZorgAccent were not investigated. The BMM found weaknesses and solutions for those weaknesses within ZorgAccent, which do align with some of the strategic goals of ZorgAccent, although this was not the specific purpose of the BMM. To summarize, the BMM coincidently covers alignment to goal.

The second feature is reinforcement, which ‘refers to choices complementing each other well’, according to Casadesus-Masanell & Ricart [2]. For the BMM, this means that it must support existing organisational choices with complementing solutions. The BMM partly addresses this feature. While conducting the case study, it became clear that some organisational choices at ZorgAccent were taken into account when modelling the current situation. Some solutions that were designed after that were useful, partly because they fully complemented with those existing organisational choices at ZorgAccent. However, the BMM does not investigate all organisational choices, partly because the organisational strategy is never fully looked at. Although the BMM helped to discover the most important organisational choices for the case, a full scan of those choices would have brought more certainty in finding the best complementing solution. To conclude, the BMM covers reinforcement with important organisational choices for the case.

The third feature, virtuousness, describes how a business model gains strength with the presence of virtuous cycles, or positive feedback loops [2]. These virtuous cycles strengthen the value of a business model with every iteration. An example is a low price cycle at a motorcycle manufacturer. Setting low prices leads to high volume and high cumulative output. This can result in low cost producing, which enables the company to set even lower prices [2]. In this case study, no specific virtuous cycles were created or supported by the BMM. This is probably partly due to ZorgAccent being a non-profit organization in elderly care, which causes that ZorgAccent cannot make some choices that lead to the creation of a virtuous cycle. It is therefore uncertain if the BMM does not address this feature at all or if it does address this in specific cases.

The fourth feature is robustness. It measures the way the business model can sustain its effectiveness, which can be checked with four generic threats: imitation, holdup, slack and substitution [2]. Since imitation is especially focused on replicating successful business models of competitors in the market, it does not apply at the non-profit organization of ZorgAccent. Therefore, only the last three threats mentioned above are used to measure robustness.

Holdup is the threat of certain roles in the business environment of an organization that capture value created by that organization by bargaining power [2]. The BMM takes a look at roles in the business environment and seeks relations between them, but it does not take the bargaining power of those roles into account. Some roles in the case study cannot be avoided by ZorgAccent due to regulations in The Netherlands and thus have a lot of power. Other roles that could have a lot of bargaining power, are not looked at by the BMM, which is not good for the robustness of the model.

Slack is another threat that influences the robustness of an organization [2]. When looking at the case study, it is clear
that the BMM does not look at this threat. Although an administrative problem was taken down, looking for a solution while taking slack at the employees at ZorgAccent into account, was not considered.

Substitution occurs when customers think that the value that an organization creates is decreased due to the presence of other products or services [2]. During the case study, the BMM never looked at this threat. Although substitution is not a great threat in homes of the elderly as it is in for example retailing [2], shifts in the concept of providing care are possible and the BMM should take a closer look at this.

The guidelines for a business model, as Al-Debei et al. [1] describe, are now discussed. Some guidelines are clearly addressed by the BMM and need no further analysis:

- The way in which an organization generates revenue
- An abstraction of the existing business and a future planned business
- A business logic relating to the way businesses are being conducted
- The conceptual tool, the business abstraction and the blueprint

The other selected guidelines are not fully covered by the BMM. Firstly, the BMM should provide the organization’s assets, products, services and information flow, as part of the organizational architecture, according to the authors [1]. However, the BMM does not mention the organization’s assets and information flow. While conducting the case study, it became clear that an outline of the information flow in ZorgAccent would have been very useful to fully understand the problem they were facing, but the BMM does not address this. To conclude, the BMM does partly cover the architecture for the organization.

Secondly, the organization’s strategy or set of strategies [2] are not considered by the BMM. The strategy of ZorgAccent was not investigated and that way, important information was missing in the case study. A good result can still occur from the BMM, but with the strategy at hand, the result could be more aligned with the goals of ZorgAccent, as discussed earlier in this chapter.

Thirdly, the BMM must result in a model that is the interface between the business strategy and the business processes [2]. As mentioned above, the strategy is not looked at by the BMM, so an interface between the strategy and the business processes can only partly be reached, mostly because of coincidence.

The last criteria to judge the BMM is management satisfaction. Two managers, at ZorgAccent and the Home, were provided with the results and solutions from the BMM to ask them how they think about the BMM and its outcomes. Both managers highlighted that the BMM can be used in many cases and for many problems, which they said is a great advantage. Furthermore, the results and solutions were understandable, while they did not know anything about business modelling. The outcomes of the BMM gave them an insight in a specific problem at their organization, which is modelled in a way it draws their attention. One manager pointed out that with the BMM, costs are clearly considered, while managers in healthcare usually do not draw that much attention on it. The solutions were realizable, which make it more useful to the managers. However, both managers gave the impression that they found that the BMM investigates too much information in general when a very specific problem, such as the problem in the case study, is tackled. They were only interested in the problem itself and not that much in the entire business model of the homes of the elderly of ZorgAccent. Next to that, one manager thought that very precisely looking at the current situation can influence outside the box thinking, which is necessary in designing alternatives.

4.3 Discussion

It is difficult to be sure of what the impact of the BMM actually is on the result. To what extent could someone have come up with similar business models without the help of the BMM? And is the BMM the best way to convince management to implement the solutions, or do other methods better convince management? These are interesting questions, but it is not the goal of this research to answer them; further research is necessary to give an answer on these matters.

While analyzing alternatives, numbers that were not available were estimated. Costs that can be attached to the proposed solution, such as start-up costs, were considered not significant, because they were estimated to be very low compared to the benefits. Trying to give an estimation of those costs was therefore considered to be unnecessary.

5. CONCLUSIONS

In this research, criteria were firstly set up to judge the BMM. After conducting a case study at an elderly care organization, an analysis of the case study was done to give a judgement about the BMM.

Since the criteria for the applicability of the BMM were sufficiently addressed, we conclude that the BMM is applicable in a case study in a Dutch elderly care organization. Although some negative remarks were made about the applicability of the BMM, it covers much aspects of a business model that, taken together, form a complete image of the organization as it is and as it should be.

The criteria that were set up for the usefulness, are partly addressed by the BMM. The robustness of the business models is insufficiently covered and next to that, some other criteria are not met because the strategy of the organization is not fully taken into account. However, other important criteria are addressed, such as management satisfaction. This is probably the most important criteria of them all and when looking at the case study, it became clear that managers rely on the BMM when it shows that improvements must be made. To conclude, the BMM can be a useful method to justify investments in Dutch elderly care organizations, but some additions to the method or a more extensive manual are needed to be fully certain of the best results.

6. ACKNOWLEDGEMENTS

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7. REFERENCES


## APPENDIX
### A. ROLE-RELATION MATRIX

Table 2. Role-relation matrix of the Home

<table>
<thead>
<tr>
<th>Consumer Provider</th>
<th>The Home</th>
<th>Clients</th>
<th>Menzis Zorgkantoor</th>
<th>Government</th>
<th>Technology provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Home</td>
<td>X</td>
<td>Provide AWBZ care</td>
<td></td>
<td></td>
<td>Pay for technology and services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide extra care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clients</td>
<td>Pay for extra care</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menzis Zorgkantoor</td>
<td>Refund AWBZ care</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td>Fund AWBZ</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Technology providers</td>
<td>Provide technology and services</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
B. MODEL OF THE HOME

Figure 1. Qualitative model of the Home